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**LABORATORY OF NUCLEAR MEDICINE
AND
RADIATION BIOLOGY**

**UNIVERSITY OF CALIFORNIA
900 VETERAN AVENUE
LOS ANGELES, CALIFORNIA**

AEC CONTRACT AT(04-1) GEN-12

**SOME CHARACTERISTICS OF SOIL AND PERENNIAL
VEGETATION IN NORTHERN MOJAVE DESERT
AREAS OF THE NEVADA TEST SITE**

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ATOMIC ENERGY COMMISSION CONTRACT AT (04-1) GEN-12
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LOS ANGELES, CALIFORNIA 90024

SOME CHARACTERISTICS OF SOIL AND PERENNIAL
VEGETATION IN NORTHERN MOJAVE DESERT
AREAS OF THE NEVADA TEST SITE

by

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June 1973

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ABSTRACT

This report is a compilation of data from several interrelated projects conducted at the Nevada Test Site as part of a team effort to obtain more information on soil and plant relationships in the desert ecosystem in order to better understand the impact of nuclear testing on the environment. It ties together the masses of acquired data into one convenient volume for use by the funding agency and also to serve as a basis for the continuing systems analysis work involved with these projects.

Included are results from the chemical and physical characterization of soil profiles at 79 study sites located in some northern Mojave Desert areas of the Nevada Test Site. These profiles were characterized under clumps of perennial vegetation and under bare desert pavement in order to determine the modifying influence of shrubs on desert soil. Ecological attributes of perennial vegetation determined by non-destructive, dimensional analysis are reported in terms of density, area, volume and biomass according to the existence of shrubs as solitary plants or as members of a shrub clump. Mineral element compositions of leaves and stems are reported for the most common plant species at each study site. Also included are the concentrations of Cs137, and the natural K40 (as total K), uranium and thorium found in the surface fractions of the soil profile. Abiotic data compiled during a five year period from nine sampling stations are reported for rainfall, air temperature, soil temperature and soil moisture.

The cogent interrelationships derived from additional systems analysis work with these data shall form the basis for future reports.

NOMENCLATURE OF PLANTS USED IN THIS REPORT

Acamptopappus shockleyi Gray
Ambrosia dumosa (Gray) Payne (replacing Franseria dumosa Gray)
Artemisia spinescens D. C. Eat.
Atriplex canescens (Pursh) Nutt. subsp. canescens
confertifolia (Torr. & Frem.) Wats.
Coleogyne ramosissima Torr.
Dalea fremontii Torr.
polyadenia Torr. ex Wats.
Ephedra funerea Cov. & Mort.
nevadensis
Eurotia lanata (Pursh) Moq.
Grayia spinosa (Hook) Moq.
Haplopappus cooperi (Gray) Hall
Hilaria rigida (Thurb.) Benth. ex Scribn.
Hymenoclea salsola T. & G.
Krameria parvifolia Benth.
Larrea tridentata Ses. & Moc. (replacing L. divaricata Cav.)
Lepidium fremontii Wats.
Lycium andersonii Gray
pallidum Miers
shockleyi Gray (L. rickardii C.H. Mull.)
Machaeranthera tortifolia (Gray) Cronq. & Keck
Menodora spinescens Gray
Mirabilis bigelovii Gray
pudica Barneby
Opuntia basilaris Engelm. & Bigel.
Oryzopsis hymenoides (R. & S.) Ricker
Prunus fasciculata (Torr.) Gray
Salazaria mexicana Torr.
Sphaeralcea ambigua Gray
Stanleya pinnata (Nutt.) Britt.
Stipa speciosa Trin. & Rupr.
Tetradymia axillaris A. Nels.
glabrata Gray
Thamnosma montana Torr. & Frem.
Yucca brevifolia Engelm. in Wats.
schidigera Roezl ex Ortgies

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1. INTRODUCTION

A series of interactive projects are being conducted at the Nevada Test Site to help define certain aspects of the climate, soil and vegetation of the desert ecosystem in order to better understand the impact of nuclear testing on the environment. Ecologically, much of the Nevada Test Site lies in the transition zone between the Mojave and Great Basin Deserts. A large number of ecotonal variations occur from place to place, depending upon elevation, drainage, slope exposure, temperature and edaphic factors. Sharply defined ecotonal demarcation zones should provide excellent areas in which to study certain fundamental soil and plant relationships of desert soils. Accordingly, the investigations described herein were conducted at sites mainly involving localized ecotonal variations in some northern Mojave Desert areas of the Nevada Test Site.

Preliminary findings are reported for the following research activities:

1. Soil profiles were described and the chemical and physical properties were characterized at 79 study sites under both shrub clumps and bare desert pavement. This was done to investigate the modifying influence of perennial vegetation on desert soil.
2. Ecological attributes of perennial vegetation were determined for each study site from non-destructive dimensional measurements.
3. The mineral element composition of the prominent plant species at each site was determined by optical emission spectrometric analysis.
4. Concentrations of some natural radionuclides and Cs137 in the surface fractions of soil profiles were determined by gamma spectrometry.
5. Abiotic factors, including rainfall, air and soil temperature and soil moisture, were monitored at nine stations during a five year period. Some results from concomittant phenology studies at these sites have been reported (Wallace and Romney, 1972; Ackerman and Bamberg, 1972).

This work is closely related to that reported in an earlier volume (Wallace and Romney, 1972) dealing with the radioecology and ecophysiology of vegetation at the Nevada Test Site. Jointly, these volumes contain results from a five year team research effort to obtain information on soil and plant relationships in the desert biome for use in future ecosystems analysis work.

2. DESCRIPTION AND METHODS

2.1 AREA AND STUDY SITE LOCATIONS

Descriptive information for the Nevada Test Site and its environs appears in the scientific literature. Notable are the works on biotic communities by Allred, Beck and Jorgensen (1963) and Bradley and Deacon (1965). Johnson and Hibbard (1957) gave an account of the geology of this area, and more recent information from a symposium focused on the geology and hydrology of the Nevada Test Site has been published (Eckel 1968). Beatley (1969) reported on the vascular plants of this area. Numerous other works involving soil, plant and animal studies associated with nuclear testing have been reported by investigators representing several different agencies. Readers are invited to peruse the pertinent literature compiled by Wallace and Romney (1972) for references of specific interest.

Soil survey work at the Nevada Test Site has been limited to relatively small areas of local interest (Leavitt, 1970; Leavitt and Mason, 1971). Although the soils work presented herein was conducted within some relatively large areas, it was not designed to be an official soil survey of parts of the Nevada Test Site. Rather, the nature and properties of soil were investigated in relation to discrete ecotonal variations encountered at the study sites. The findings should, however, become very useful to an official agency which undertakes the survey and classification of these soils.

Figure 1 shows the general location of the five study areas investigated. Included are three "open" drainage valleys and one "closed" drainage basin. Study areas 1, 2 and 3 are rimmed and separated more or less by abruptly-rising mountain ranges of sedimentary origin, consisting of Cambrian limestones and dolomites. Areas 4 and 5 are influenced more by mountain ranges which are primarily of volcanic origin. The soil of the valleys and closed basins was formed on Quaternary alluviums (Johnson and Hibbard, 1957; Ekren, 1968). Elevations of the various sampling sites in these study areas vary from 940 to 1460 meters (3,000 to 4,800 feet) mean sea level.

2.1.1 AREA 1 - MERCURY VALLEY (Figure 2)

Study sites 1 to 10 constitute a transect down a south-facing alluvial fan from Red Mountain. Local features of each site, including visible soil and

Figure 1. Study areas in the northern Mojave Desert portion of the Nevada Test Site. 1-Mercury Valley, 2-Frenchman Flat, 3-Rock Valley, 4-Jackass Flats, 5-Yucca Flat.

Figure 2. Area 1 - Mercury Valley study sites.

Figure 3. Area 2 - Frenchman Flat study sites.

Figure 4. Area 3 - Rock Valley study sites.

Figure 5. Area 4 - Jackass Flats study sites.

Figure 6. Area 5 - Yucca Flat study sites.

vegetation characteristics, are listed in the soil profile descriptions in Appendix A. The elevation along this transect drops from 1,207 meters at site 1 down to 915 meters at site 10. Soil is formed on alluvial materials primarily of limestone origin, and much of the area is underlain with massive caliche hardpan at depths varying from 30 to 100 cm. Study sites 11 through 16 are associated with local ecotonal variations where the perennial vegetation common to the area is either absent (virtually bare sites) or a less common plant species occurs in unusually high density.

2.1.1.2 AREA 2 - FRENCHMAN FLAT (Figure 3)

The Frenchman Flat area is a "closed" drainage basin in which several of the early nuclear tests were conducted. Soils of the bajadas comprising the eastern and southern sectors of the basin are highly calcareous in nature as the result of their limestone origin, and some of them are underlain by caliche hardpan. In contrast, the soils of the western and northern bajadas are less calcareous due to the influence of alluvial materials of volcanic origin. Several

interesting ecotonal demarcation zones are found on the bajadas surrounding the "dry-lake" playa, including a prominent Larrea-Atriplex ecotone. In order to investigate differences in the soil and vegetation characteristics of these zones, several study site transects were established across distinct ecotonal demarcation lines. These transects include sites 17-19, 22-24, 25-27, 29-31, 32-34, 35-39 and 40-44. Other study sites were selected primarily to investigate the edaphic properties associated with plant communities having different species dominance. The definitive characteristics of these study sites are listed along with the soil profile descriptions in Appendix A.

2.1.3 AREA 3 - ROCK VALLEY (Figure 4)

The Rock Valley area was set aside by the USAEC as a place for long-term biological studies. Drainage from the area is to the southwest into the Amargosa Valley. The soil of the north-facing bajadas is formed on limestone alluvium while that of the south-facing bajadas is formed on alluvium of limestone and volcanic materials. Most of the area is underlain by restrictive caliche hardpan. Some of the major ecological efforts of UCLA investigators are conducted in Rock Valley. For example, four 9-hectare study plots (A-D) are involved in a chronic, gamma radiation experiment utilizing a 33,600 curie Cs137 source, tower mounted. Another plot of about 0.5 sq. km. in area serves as one of the desert biome validation sites for the International Biological Program. Sites 50 to 62 were selected primarily to characterize the soil and perennial vegetation of these long-term study plots. Their descriptions are given in Appendix A.

2.1.4 AREA 4 - JACKASS FLATS (Figure 5)

The Jackass Flats area drains to the southwest into the Amargosa Valley. Soil is formed on mixed alluvium of sedimentary and volcanic origin. Sites 63-65 and 72-73 were located in plant communities of different species composition and dominance. The study sites 66 through 71 were part of a transect extending down an alluvial fan on the east side of the Forty Mile Canyon drainage channel. Elevation along this channel drops from 1,090 meters at site 66 down to 1,000 meters at site 71. These study sites were selected to investigate the edaphic characteristics of plant communities which had some peculiar differences in species composition and dominance along this transect. The site

descriptions and visible vegetation characteristics are given in Appendix A.

2.1.5 AREA 5 - YUCCA FLAT (Figure 6)

Study transects were established in two areas of marked ecotonal variation located in southwestern Yucca Flat. Sites 74-76 extend down a bajada on the northeast slope of C. P. Hill which has a prominent ecotone involving Yucca brevifolia, Coleogyne ramosissima, Grayia spinosa and Lycium andersonii. Sites 77-79 transect across what appears to be a thermal belt of Larrea tridentata. This particular ecotonal variation is located on a south-facing slope situated near the northern limit of L. tridentata distribution (Beatley, 1965). The plant communities in the Yucca Flat area contain some species of perennial vegetation which are more common to the Great Basin Desert areas of the Nevada Test Site. Site descriptions are in Appendix A.

2.2 SOIL SAMPLING AND CHARACTERIZATION

At each study site a trench was dug with a backhoe extending across a shrub clump and out into the bare area between shrub clumps. This was done to permit an examination and sampling of the soil profile under both shrub and bare areas in order to investigate the modifying influence of perennial vegetation on desert soil. In an attempt to maintain continuity of at least one shrub species among as many sites as possible, these trenches were dug across shrub clumps containing Larrea tridentata when present. The depth of each trench was to the caliche hardpan or, if no restricting layer existed, to an arbitrary depth well into the C horizon. The horizons of the soil profile were identified, marked on tape stretched down the side of the trench, and photographed. Profile horizons were described according to the standard U.S. Department of Agriculture, Soil Conservation Service nomenclature (Soil Survey Staff, 1951). No attempt was made to map the boundaries between soils. Samples were taken from each profile horizon under both shrub and bare areas. These samples were screened in the field to pass a 6.3 mm sieve and the rock and gravel contents were estimated and discarded. The remaining samples were transported to the laboratory where they were oven-dried and then further screened to pass a 2 mm sieve.

The sand fractions were determined by mechanical separation on standard testing sieves using a Ro-Tap shaker. Silt and clay fractions were determined by the pipette method described by Day (1965). Available phosphorus

was extracted with sodium bicarbonate and determined colorimetrically using the method of Olsen et al. (1954) as described by Chapman and Pratt (1961). Lime content was determined by the manometric method of Williams (1948) with a slight modification in equipment. The available iron, zinc, copper and manganese were extracted with DTPA chelate and determined by atomic absorption as described by Lindsay and Norvell (1969). Organic nitrogen analysis was by the Kjeldahl method (Bremner, 1965). Analytical methods used to determine other physical and chemical properties were those of the USDA Salinity Laboratory Staff (1954).

The physical and chemical characteristics of the soil profiles sampled at each study site are given in Appendix B.

The contents of Cs137 and the natural K40 (as total K), uranium and thorium contents in the surface horizon of the soil profiles were determined by gamma spectrometry. The next lower horizon was examined when the Cs137 activity level exceeded three times background. This was an arbitrary judgment to determine if any of these soil profiles might indicate downward migration of fallout-deposited Cs137. Such sites are of interest for our continuing studies on the ecological cycling of long-lived fission products.

2.3 VEGETATION CHARACTERIZATION AND CHEMICAL ANALYSIS

Some cogent ecological attributes of the perennial vegetation at each study site were determined by non-destructive, dimensional measurements. Procedural details and calculations involving this method have been reported (Wallace and Romney, 1972; p. 250). Briefly, two 2x25 meter quadrats were laid out in undisturbed vegetation at right angles to each other in the proximity of the soil sampling trench. All perennial plants within each quadrat were identified by species and measured for height and width (mean of two dimensions). Their status as solitary plants or as members of a shrub clump was determined, and the size of each shrub clump was measured (again, the mean of two dimensions). Shrubs with canopies overlapping the quadrat boundary were counted inside only when their root crown was inside the boundary line. The outside edge of such a plant canopy also was taken to be the boundary for measuring one dimension of an overlapping shrub clump. Calculations using these dimensional measurements were made to estimate shrub density, frequency, relative dominance, area, volume and biomass according to the exist-

ence of vegetation as solitary plants or as members of a shrub clump. The biomass estimates were derived from regressions of dry weight on volume indexes developed for the prominent shrub species from a destructive sampling of shrubs in the general area outside of the study plots (Table 1). These regression indexes were not developed for a few of the uncommon shrub species or for those whose structural configuration is not suitable for dimensional analysis (e.g., Yucca brevifolia). Consequently, the summary biomass estimates of a few study sites lack contributions from these species. Notable are sites 14, 24, 30, 34, 35 and 74-77. Data for the ecological attributes of perennial vegetation are given in Appendix C.

Samples of clean foliage from perennial species in the vicinity of each soil sampling trench were collected for chemical analysis during the months of April, May and June. Oven-dried samples (70°C) were separated into leaf and stem material and finely ground in metal-free plastic containers in preparation for optical emission spectrometric analysis (Wallace and Romney, 1972; p. 363). Total nitrogen contents were determined using the Coleman Model 29A Nitrogen Analyzer. Data for the chemical composition of perennial vegetation are given in Appendix D.

2.4 ABIOTIC SAMPLING STATIONS

A series of abiotic sampling stations were established in the general study areas at the locations indicated by closed circles in Figures 2 to 6. The stations at Mercury and Rock Valley were positioned among long-term biological study plots. Two sets of stations were positioned in the Frenchman Flat area across Larrea-Atriplex ecotonal zones and one station was placed on the playa to determine if temperature inversions could account for the sharp ecotone demarcation line surrounding the Frenchman Lake playa. The stations located at the ecotone were positioned at the ends of a 1500 meter study transect centered on the demarcation line. In the Yucca Flat area, two stations were positioned at the ends of a study transect across the Yucca brevifolia ecotone in the southwestern sector of the valley. No sampling station was set up in the Jackass Flats area.

Data were collected at weekly or bi-weekly intervals in conjunction with phenology studies at these study sites. Rainfall measurements were taken with Clear-View rain gauges. Air temperatures were measured with Taylor and

Table 1. Biomass regression equations of dry weight (kg.) on volume indices (m^3) for perennial vegetation in northern Mojave Desert areas of the Nevada Test Site.

Species	n	r	Equation*	F-value
<u>Acamptopappus shockleyi</u>	43	0.90	$W=2.79307V$	171.3
<u>Ambrosia dumosa</u>	62	0.92	$W=2.23757V$	318.0
<u>Artemisia spinescens</u>	10	0.97	$W=4.01357V$	139.2
<u>Atriplex canescens</u>	20	0.91	$W=2.56917V$	82.9
<u>Atriplex confertifolia</u>	28	0.98	$W=4.86397V$	609.7
<u>Coleogyne ramosissima</u>	16	0.98	$W=5.23199V$	279.4
<u>Dalea fremontii</u>	9	0.95	$W=2.47023V$	59.5
<u>Ephedra funerea</u>	8	0.97	$W=2.19965V$	81.6
<u>Ephedra nevadensis</u>	7	0.92	$W=1.45191V$	26.9
<u>Eurotia lanata</u>	56	0.91	$W=3.04614V$	274.8
<u>Grayia spinosa</u>	53	0.82	$W=2.00176V$	105.3
<u>Krameria parvifolia</u>	34	0.78	$W=1.93778V$	51.3
<u>Larrea tridentata</u>	41	0.90	$W=1.53936V$	170.6
<u>Lepidium fremontii</u>	11	0.97	$W=3.23259V$	140.3
<u>Lycium andersonii</u>	56	0.83	$W=1.97537V$	118.1
<u>Lycium pallidum</u>	29	0.75	$W=0.78623V$	33.8
<u>Lycium shockleyi</u>	14	0.97	$W=3.64223V$	196.9
<u>Machaeranthera tortifolia</u>	11	0.79	$W=1.61489V$	15.0
<u>Menodora spinescens</u>	12	0.88	$W=8.19228V$	33.0
<u>Oryzopsis hymenoides</u>	7	0.80	$W=1.04357V$	8.8
<u>Sphaeralcea ambigua</u>	15	0.88	$W=0.40981V$	46.9

* Regressions are of the form $W(kg)=aV(m^3)-b$, where $b=0$. All F-values are statistically significant at the 1% level, except that of Oryzopsis hymenoides which is significant at the 5% level.

Weston Max-Min thermometers shielded from direct sunlight. These sensors were positioned 30 cm above ground. Soil temperature was measured at depths of 15, 30 and 45 cm using emplaced Fenwal KA14T thermistors monitored at the time of the site visit. Soil moisture was measured at depths of 30 and 45 cm by the gravimetric method generally at monthly intervals. Data from the nine monitoring stations are listed in Appendix E.

3. RESULTS AND DISCUSSION

Data presented herein are part of the results from an investigation of climatic, edaphic, and floristic interrelationships in the northern Mojave Desert areas of the Nevada Test Site. It should be understood that this is not a final report. Rather, it has the purpose of compiling bulk raw data into one convenient resource document. Synthesis of the data will follow and significant findings from this work will appear in future reports. Consequently, the following discussion is purposely generalized and lacking in final conclusions on specific relationships. Moreover, some of the reasoning for and detailed description of work undertaken at selected study sites has not been included because of space limitations and the intent to present a more concise treatise of specific interactions in additional reports. Some corroborative findings from other phases of this investigation have been reported elsewhere (Wallace and Romney, 1972; Ackerman and Bamberg, 1973). Among the reports from related projects are those of Leavitt (1970) and Leavitt and Mason (1971) concerning soil surveys in other parts of the Nevada Test Site. Examples of soil surveys and vegetation studies undertaken by State and Federal agencies are found in the reports of Blackburn et al., (1968-1970), Summerfield and Peterson (1971), and the USDA Nevada River Basin Survey Staff (1970). Other examples of ecological investigations are in the reports of Beatley (1969), Billings (1949), Bradley (1967), Davis (1971), Rickard and Murdock (1963), and Wells and Shields (1964).

3.1 STUDY AREA AND SOIL PROFILE DESCRIPTIONS

The soil profile under shrub clumps and bare surface and the perennial vegetation at selected study sites was characterized for the following conditions: (1) the general environs of three open-drainage valleys and one closed-drainage basin, (2) within localized areas which are virtually bare of shrubs, (3) across prominent ecotonal demarcation zones, and (4) along transects down bajadas extending into open and closed drainage areas. The proximity of these sampling sites within the study areas is shown in Figures 1 to 6.

Descriptions of the soil profiles are given in Appendix A. Most of the profiles examined were developed on alluvial deposits containing unconsolidated parent materials low in clay content. Several have developed characteristics of profiles formed in place in thermic areas which Buol (1966) described, including

(1) an accumulation of clay in the subsoil (B horizon), (2) an accumulation of carbonates within a few feet of the surface contributing to the formation of "caliche" layers, (3) low organic matter content, and (4) low carbon/nitrogen ratios. Most of them, however, have relatively low clay contents largely because of their immaturity of development on the coarse, alluvial sediments involved in their formation. These soils have developed under conditions of high temperature and low rainfall. Certainly the soil forming processes have been much slower than in more humid regions, even though the processes may be similar (Buol, 1965). Upon comparing the characteristics of soil profiles formed under shrubs and bare surface at the same location (Appendix A and B), one will note the modifying influence of the perennial vegetation on profile development in these Mojave Desert Areas. These data clearly indicate an acceleration of the soil forming processes by shrubs under thermic conditions.

Much of the diversity which exists in these soil profiles results from the mixed alluvial sediments upon which they are formed. They are relatively young in profile development and show only weak evidence of leached upper horizons as compared to soil formed under more humid conditions. In general, the soil formed near the base of the surrounding mountains on alluvial fans contains coarser fragments; the textural gradients tend to become finer near the middle of the valleys. Where clay does accumulate in the subsoil, the contents usually vary with topography; i. e., higher concentrations usually are found in the B horizon of flatter areas. The carbonate content correlates closely with the origin of the parent material. It is usually highest in those areas immediately adjacent to the limestone mountain ranges bordering the southern bajadas of Rock Valley and Frenchman Flat and the northern bajadas of Mercury Valley. The presence of high carbonates almost always predicates an occurrence of restrictive hardpan where soil has been formed in place. Those soil profiles which are relatively low in carbonate usually have developed on alluvial sediments of mixed volcanic and limestone origin on the northern bajadas of Frenchman Flat, Rock Valley, Jackass Flats and western Yucca Flat.

Distinct differences occur in the amounts of wind-deposited materials underneath shrubs and in bare areas. Both salts and loess have accumulated under shrubs. Recycling of salts through leaf-fall and litter decomposition is partly responsible in addition to wind action. Loess blankets a major portion

of the study areas (Ekren, 1968). It consists mainly of sandy materials of variable thickness. Volcanic ash falls and wind action probably are responsible for the wide distribution of these materials.

This investigation was not designed to classify soils of the study areas; however, they generally will fall in Thermic families with a few above 1200 meters elevation possibly borderline to Mesic families. The profile description data and the physical and chemical properties determined by laboratory analyses (Appendix A and B) indicate that these soils belong to several subgroups, including Typic Torripsamments, Typic Torriorthents, Haplic Nadurargids, Entic Durorthids and Typic and Duric Camborthids.

Figures 7 through 14 are photographs of some of the different kinds of soil profiles examined and the accompanying vegetation growing at the excavation sites.

3.2 PHYSICAL AND CHEMICAL PROPERTIES OF SOIL PROFILES

The literature contains numerous reports of soil and vegetation studies conducted in the various biome ecosystems. Among recent reports of typical studies conducted in arid and semi-arid regions are the works of Gates, Stoddard and Cook (1956), Mitchell, West and Miller (1966), Whittaker et al. (1968) and Branson, Miller and McQueen (1965, 1967, 1970). These studies are of particular interest to us because they deal with interrelationships between plant communities and/or individual species and certain physical and chemical properties of the supporting soil. In three valleys of western Utah, Gates et al. (1956) found significant differences between five plant associations and total soluble salts, saturation extract conductivity, exchangeable and soluble sodium, and 1/3 atmosphere moisture percentage. Soil physical properties in relation to vegetation patterns were not investigated. In a later study of an ecotonal zone in one of these valleys, Mitchell et al. (1966) found no correlation between distinct patterns of vegetation and several physical factors of the soil profile, including morphological features, mineral composition, textural analysis, bulk density and soil compressibility. The work of Whittaker et al. (1968) involved the study of vegetation, soil temperature and soil characteristics on a transect across the Santa Catalina Mountains in southeastern Arizona. Trends of inter-related characteristics of plant communities and soils were observed along an elevation gradient from high elevation (2740 meters) to low (915 meters). These

Figure 7. Study site No. 9 was characterized by a very high density of *Ambrosia dumosa* in comparison to that which normally was present at the other sites investigated. The soil profile indicated a well-drained, sandy pedon underlain with gravel deposits.

Figure 8. Site No. 13 was nearly bare of shrubs common to the surrounding area in west Mercury Valley. The soil profile showed a shallow pedon underlain with gypsum parent material. The above view shows vegetation where the gypsum outcrop was present (foreground) and absent (background).

Figure 9. A typical shallow soil profile containing coarse-textured deposits, underlain with strongly-cemented, gravel hardpan (Site No. 17). The perennial vegetation is relatively sparse and tends to grow in clumps interspaced by desert pavement.

Figure 10. The soil profile of study site No. 34 is typical of the deep, fine-textured alluvium deposited in the Frenchman Flat playa. The perennial vegetation is dominantly Atriplex canescens with some Stanleya pinnata. Note the Larrea-Atriplex ecotone line near the edge of the playa in the above photograph.

Figure 11. An example of the soil profile and the perennial vegetation located in the Rock Valley study area (Site No. 55). Soil of this area is underlain with massive, restrictive caliche hardpan at depths varying from 30 to 70 cm.

Figure 12. A view of the soil profile and the perennial vegetation of study site No. 58. This area contains an unusually high density of Grayia spinosa in comparison to other sites investigated. The soil profile contains a buried B horizon which is underlain with caliche hardpan at depths of about one meter.

Figure 13. The perennial vegetation of Site No. 63 is characterized by a prominent stand of large-sized Larrea tridentata. This soil profile was one of the few among the 79 sites examined which had well-developed A and B horizons.

Figure 14. Vast areas of Jackass Flats contain soil formed on deep, sandy, alluvial deposits as indicated by the soil profile of study site No. 72. In this area, the absence of shallow, restrictive hardpans was reflected in the greater biomass of perennial vegetation.

included decreasing productivity, biomass, and coverage of plant communities, shifts in growth-form composition of communities, decreasing litter cover and organic content of soils, increasing annual and diurnal amplitude of soil temperatures, decreasing nitrogen content and carbon/nitrogen ratio of soils, increasing pH, and increasing contents of Ca, Mg and K. The studies of Branson et al. (1965, 1967, 1970) emphasized the relationship between plant communities and soil moisture conditions. Attempts to relate salinity alone to community or species distributions gave inconsistent results; however, total soil-moisture stress and soil-moisture volume gave rational ordination of plant communities studied.

Results from the physical and chemical characterization of soil profiles in the present investigation are given in Appendix B. It is important to remember that these results must be examined in terms of soil properties developed under both shrub clumps and bare surfaces. In most instances the influence of vegetation has resulted in marked differences in certain profile characteristics, including some decomposition of the restrictive hardpan when it is present. Other prominent characteristics evident under shrubs include better developed A horizons, higher organic matter, nitrogen, and phosphorus contents, and higher salt concentrations. Wind action has been responsible for the build up of loess deposits under shrub clumps.

The particle size distribution in these soils reflects their formation on alluvial deposits; very few profiles have developed on bed-rock parent material. Laboratory data, primarily percent clay, moisture retention measurements, and cation exchange capacity, indicate the presence of considerable amorphous clays. The ratio of cation exchange capacity to percent clay is consistently within 2 to 5 and occasionally greater than 10. In addition to this relatively high ratio, the high soluble and exchangeable potassium contents also indicate the presence of amorphous clays. Because of the presence of considerable volcanic glass, ash, and pumice in the general area (Ekren, 1968), it is reasonable to assume that these materials contribute to the presence of the amorphous clays. The low clay content generally found in the various horizons of the soil profile is one of the more striking characteristics of the soils investigated. Stratifications of higher clay concentration were found occasionally in some horizons of profiles developed on alluvial sediments, but only a few sites located in the Frenchman Flat closed-

drainage basin (sites 31, 34, 45 and 47) had high concentrations of clay throughout the soil profile. Variations in the textural characteristics of the 79 soils investigated generally are attributable to differences in the distribution of sand and silt particle size fractions.

As is usually the case for soils containing low organic matter, the moisture retention characteristics strongly reflect the particle size distribution in the horizons of these soil profiles. Low silt and clay contents are largely responsible for the low moisture holding capacity of these desert soils. Some influence of soil organic matter on higher moisture retention was apparent in the A horizons under shrubs, especially where low clay contents occurred. Because of the climatic conditions which exist in these study areas, the moisture reserve in the soil profiles seldom exceeds field moisture capacity except during the winter months when most of the rainfall occurs. The onset of vegetative growth and rise in temperature during the spring months rapidly depletes the limited moisture storage capacity of these soils. For 6 to 8 months of the year the soil moisture potential will be below -30 bars, and it often will go below -90 bars during the hot dry summer months.

The pH values of the soil profiles generally fell within the range of pH 8.0 to 9.0. Occasionally, values ranging from pH 7.5 to 8.0 occurred in the A horizons under shrubs. The conductivity of the saturation extracts closely reflected the concentration of soluble cations and anions; it was higher in the A and B horizons of profiles under shrub clumps than in profiles under bare areas. Except for a few sites in the Frenchman Flat closed-drainage basin, these soils were nonsaline-nonalkali in the profile horizons within the perennial vegetation root zone; i.e., their electrical conductivity was less than 4 mmhos/cm and their exchangeable sodium percentage was less than 15 (U.S. Salinity Laboratory Staff, 1954). Saline conditions were found in the deeper profile horizons at a few sites in Rock Valley and Jackass Flats, but they occurred most frequently in and around the closed-drainage Frenchman Flat Playa. Nitrates and chlorides tended to accumulate more in the profiles under shrub clumps than under bare surfaces. This same condition generally occurred for the soluble and exchangeable cations. The highest levels of soluble salts accumulated in the deeper profile horizons of the Frenchman Flat soils. Soluble sulfates, however, usually were low in all profiles examined. The percentage of free lime in these soils closely reflects the extent

to which they were formed on limestone parent material. Soluble boron contents varied considerably among these soils. Highest levels were found in the Frenchman Flat soils, and there were higher concentrations of this anion in the profiles under shrubs at most of the sites examined.

The exchangeable cation contents show some very interesting trends among the different study areas. Soils in Mercury Valley are low in exchangeable sodium and relatively high in calcium and magnesium as was the case in Rock Valley and Yucca Flat. The soils in the Jackass Flats area tend to have lower calcium and magnesium contents, yet the sodium and potassium levels are quite similar to those in Mercury Valley, Rock Valley, and Yucca Flat. One of the most interesting characteristics is the high exchangeable potassium concentration in many of the soil profiles in the Frenchman Flat area. In several instances it exceeds the exchangeable calcium and magnesium contents of these soils. Again, it may be pointed out that the exchangeable cation contents, particularly potassium, tend to be higher in the soil profiles underneath shrubs and also in the upper horizons of these same profiles. The cation exchange capacities sharply reflect the particle size distribution in these soils, and they are relatively uniform throughout the profile horizons of many of the sites investigated. Soils of the Frenchman Flat playa had the highest cation exchange capacities; lowest values occurred in some of the sandy soils examined in Jackass Flats.

The contents of organic carbon, organic nitrogen and available phosphorus all followed similar trends in the soil profiles. Highest concentrations occurred in the upper horizons developed underneath shrub clumps. This was one of the most consistent features of the soils investigated. A common feature of most study sites was that low organic carbon and low nitrogen contents occurred at depths below the A horizons underneath both shrubs and bare surface. At these lower depths the C/N ratios were consistently around 10 in each of the study areas with the exception of study sites 77 to 79 on the west-facing slope of Mine Mountain where the C/N ratios ranged from 5 to 7. These three sites also were the highest in elevation of those examined. The highest carbon and nitrogen contents occurred in the A horizons underneath shrub clumps, and these also were the only horizons in the soil profile where the organic carbon contents exceeded one percent. At most study sites the C/N ratios in the A horizons ranged from

12 to 15; however, in some cases this ratio reached as high as 30. These results are of considerable interest in view of reports from other investigations. They also indicate the variability one must take into account when undertaking C:N studies in desert soils. Whittaker et al., (1968) observed a decrease in the C/N ratios toward lower elevations down the north and south slopes of the Santa Catalina Mountains in southeastern Arizona. This was attributed to a more rapid decrease in the organic matter content of the soil toward lower elevation. The lowest ratios obtained in that study were of the order of 10 to 12. In some earlier work, Martin and Fletcher (1943) suggested that the low C/N ratio in desert soil may be accounted for by the more plentiful supply of nitrifying bacteria than in soils of cooler climate. Wallace and Romney (1972, p. 352) found evidence of nitrogen fixation in the root zone of several plant species native to these study sites. Two of these shrubs, Artemisia tridentata and Coleogyne ramosissima, are growing upon or upslope from the three sites having lower C/N ratios on Mine Mountain. Additional studies are underway to further investigate the organic carbon and nitrogen interactions in soils of the Nevada Test Site.

The DTPA-extractable micronutrients in these soils generally were low and quite variable throughout the soil profile. Manganese contents were consistently higher in profile horizons underneath shrubs. Highest contents were found in the A horizons. No particular trends of change were apparent for iron, copper and zinc. There are no indications of micronutrient deficiency in these soils; the low extractable contents should not be unexpected in these calcareous soils with pH levels above 8.0.

The plant species of these sites are growing in a relatively harsh environment so far as most micronutrients are concerned. That they are not subject to deficiencies is undoubtedly related to the fact that they are adapted to the conditions which prevail. The values obtained for the DTPA extractions may be indicative of deficiencies under agricultural conditions when field crops are grown. There is some evidence in the data to indicate that some cycling of micronutrients has been occurring between the shrub sites and the between-shrub sites. Much more work remains to be done on the micronutrient status of these soils.

3.3 RADIONUCLIDES IN SURFACE HORIZONS OF SOIL PROFILES

Surface horizons of the soil profiles were analyzed by gamma spectrometry to determine the contents of residual long-lived Cs137 fission product and the natural K40, uranium and thorium contents. When the activity levels of Cs137 exceeded twice the background of a standard calibration soil, the next depth horizon of the soil profile was analyzed. Results are listed in Table 2. It should be noted that these results are only qualitative indications of surface-deposited Cs137 fallout because of variations in the horizon depth.

Most of the soil study sites examined were not in the paths of the fallout patterns which resulted from the above-ground nuclear weapon tests conducted in Frenchman and Yucca Flats. Consequently, the levels of Cs137 activity in the surface horizons primarily reflect input from world-wide fallout deposition. These low levels fall within the range of values usually observed for Cs137 in surface soil elsewhere within the same latitudinal zone. The levels of naturally occurring K40, uranium, and thorium were as one might expect for these high mineral soils. Slightly higher levels of K40 (hence, of total K) consistently occurred in surface horizons underneath shrub clumps, reflecting the increased soluble and exchangeable potassium levels attributable to vegetative cycling. Study sites 35 through 39 were located within fallout patterns and Cs137 was found in the surface horizons, especially at sites 35 and 36. Higher levels of Cs137 also were found underneath shrubs than in bare soil.

3.4 CHARACTERISTICS OF PERENNIAL VEGETATION AND EDAPHIC INTERACTIONS

Among the descriptions of vegetation in southern Nevada and in the environs of the Nevada Test Site are the works of Shields (1958, 1959), Allred et al. (1963), Beatley (1962, 1965, 1969), Rickard and Beatley (1965) and Tueller (1971). In earlier studies conducted elsewhere, Mason (1936) suggested that plant distribution is controlled primarily by climatic factors and secondarily by edaphic factors. In later work, Mason (1946) concluded that any one factor or any combination of several factors may serve to restrict the range of a given plant species. He further concluded that the influence of edaphic factors is most likely to result in sharply defined patterns often covering small areas. Billings (1951) found that large vegetation zones could be correlated with climate and soil and also that smaller vegetational differences within the zone may be caused by

Table 2. Radionuclide contents of soil profile surface horizons (Activity as of 1 April, 1971).

Site No.	Surface type	Profile horizon	Horizon depth, cm	Cs137 pCi/g.	K40 mg./g.	U(Bi214) μ /g.	Th(Bi212) μ /g.
1	Shrub	A2	0- 6	.43	13.74	2.43	8.88
2	Shrub	A1	0- 5	1.03	14.81	1.99	8.27
	Bare	C1	0-34	.31	13.96	2.12	8.60
3	Shrub	A1	0-10	.50	18.94	2.67	10.80
	Bare	C1	0-42	.06	17.98	2.33	10.24
4	Shrub	A1	0- 9	.68	18.28	2.33	11.46
	Bare	A2	0-10	.35	19.34	3.45	15.44
5	Shrub	A1	0- 9	.87	18.88	2.26	9.88
	Bare	C1	0-34	.33	18.18	2.86	11.67
6	Shrub	A1	0- 8	.58	19.28	2.62	10.57
	Bare	C1	0-19	.27	17.86	2.83	10.67
7	Shrub	A11	0- 9	.61	17.49	2.47	8.63
	Bare	A12	0-55	.13	15.81	2.60	8.36
8	Shrub	A11	0-11	.62	15.76	2.00	7.27
	Bare	A12	0-10	.29	13.07	1.99	6.87
9	Shrub	A11	0- 8	.34	19.98	2.26	9.02
	Bare	A12	0-17	.15	19.39	2.41	10.34
10	Shrub	A11	0- 7	.56	19.67	2.27	8.69
	Bare	A12	0-15	.12	17.61	2.35	9.27
11	Shrub	A11	0- 6	1.76	15.86	1.82	8.41
	Bare	A12	0- 9	.29	14.32	1.87	7.76
12	Shrub	A11	0- 5	.94	20.36	2.41	10.61
	Bare	A12	0-12	.51	19.23	2.48	10.93
13	Shrub	A11	0- 7	.41	21.44	2.29	9.86
	Bare	A12	0-18	.18	20.37	2.56	10.90
14	Shrub	A1	0-13	.34	20.78	2.46	10.85
	Bare	A1	0-14	.38	18.99	2.40	10.32
15	Shrub	A1	0- 6	.30	21.44	2.97	10.65
	Bare	C1	0-10	.21	19.45	2.78	11.42
16	Shrub	A11	0- 5	1.26	18.32	2.64	9.07
	Bare	A12	0-10	.38	20.02	2.95	10.24
17	Shrub	A11	0- 9	.36	26.61	2.12	11.42
	Bare	A12	0-20	.08	24.84	2.17	11.08
18	Shrub	A1	0-11	.16	25.75	2.25	10.43
	Bare	A2	0- 9	.17	24.79	2.20	11.51
19	Shrub	A1	0-12	.24	24.21	1.97	9.87
20	Shrub	C1	0- 6	.31	22.83	2.29	11.06
21	Bare	C1	0-16	.13	23.04	2.17	10.95

Table 2 (Continued)

Site No.	Surface type	Profile horizon	Horizon depth, cm	Cs137 pCi/g.	K40 mg./g.	U(Bi214) μ /g.	Th(Bi212) μ /g.
22	Shrub	A1	0-15	.23	24.51	2.19	10.82
	Bare	C1	0-32	.11	21.70	2.46	10.52
23	Shrub	A1	0- 8	.28	24.59	2.33	11.97
	Bare	C1	0-26	.14	23.22	2.29	10.29
24	Shrub	A1	0-12	.36	27.72	2.14	10.56
	Bare	C1	0-32	.14	25.81	2.07	11.22
25	Shrub	A1	0- 9	.39	24.69	2.54	10.68
	Bare	C1	0-18	.18	22.30	2.43	11.40
26	Shrub	A1	0-10	.17	29.06	2.33	11.01
	Bare	A2	0- 8	.25	25.14	2.38	12.43
27	Bare	A1	0- 9	.19	24.96	2.42	12.28
28	Shrub	A1	0- 4	1.18	15.19	2.36	8.48
29	Shrub	A1	0- 9	.81	14.82	2.32	7.79
	Bare	C1	0-19	.25	11.78	2.02	6.65
30	Shrub	A2	0-14	.24	17.75	2.83	10.45
31	Shrub	A1	0- 7	1.18	13.38	2.43	8.34
	Bare	B1	0-10	.23	15.37	2.75	11.90
32	Bare	A12	0-18	.34	18.91	3.09	10.92
33	Shrub	A11	0- 8	1.31	18.31	2.68	9.01
	Bare	A12	0-10	.62	15.51	2.57	8.69
34	Bare	C1	0-10	.28	19.62	2.71	10.58
35	Shrub	A11	0- 5	12.78	20.09	4.02	7.66
	Shrub	A12	5-12	3.52	16.50	2.61	7.23
	Shrub	C1	12-52	.12	19.33	2.14	9.45
	Bare	A12	0-10	9.54	18.94	3.69	8.26
	Bare	C1	10-75	.06	13.41	2.06	6.80
36	Shrub	A1	0- 5	19.02	25.12	5.22	7.76
	Shrub	A12	5-18	.37	16.87	2.15	7.46
	Bare	A12	0-12	4.53	15.72	2.82	7.12
	Bare	C1	12-54	.02	15.07	1.97	7.09
37	Shrub	A1	0-13	1.19	17.80	2.75	8.82
	Bare	A2	0-24	.42	13.34	1.96	7.21
38	Bare	A1	0-12	1.24	22.12	2.94	7.41
39	Shrub	A11	0-17	1.32	29.24	3.13	13.99
	Bare	A12	0-13	.13	28.82	3.35	14.56
40	Shrub	A1	0-25	.73	29.43	3.36	12.74
	Bare	A2	0-12	.32	25.77	2.91	12.32
41	Shrub	A11	0- 8	.91	30.29	3.52	13.97
	Bare	A12	0-15	.11	29.69	3.46	14.38
42	Shrub	A1	0- 5	1.09	30.73	2.49	12.75

Table 2 (Continued)

Site No.	Surface type	Profile horizon	Horizon depth, cm	Cs137 pCi/g.	K40 mg./g.	U(Bi214) μ /g.	Th(Bi212) μ /g.
42	Bare	A2	0-12	.18	29.46	2.57	14.34
43	Shrub	A1	0-28	.51	30.13	2.72	12.92
	Bare	A1	0- 2	.55	28.75	2.86	13.55
44	Shrub	A11	0-17	.43	32.52	2.89	13.08
	Bare	A12	0-12	.18	30.20	3.28	14.20
45	Shrub	A1	0-17	.02	26.60	2.89	13.04
	Bare	A2	0-11	.07	25.53	2.83	14.12
46	Shrub	A1	0-10	1.34	28.89	3.11	13.00
	Bare	A2	0-16	.15	28.06	3.22	14.40
47	Shrub	A1	0-13	.47	22.66	2.27	11.03
	Bare	A2	0-13	.12	25.41	2.87	15.04
48	Shrub	A1	0- 9	.38	29.98	2.96	14.86
	Bare	A2	0-15	.24	23.81	3.38	14.69
49	Shrub	A1	0- 6	.87	25.50	3.19	12.42
	Bare	C1	0-26	.27	25.28	3.14	13.10
50	Shrub	A1	0-13	.33	26.99	2.75	11.29
	Bare	A2	0-12	.35	25.51	2.82	11.49
51	Shrub	A11	0-10	.35	25.00	2.48	11.95
	Bare	A2	0- 8	.16	25.57	2.52	12.49
52	Bare	A2	0- 6	.36	23.58	3.02	14.44
53	Shrub	A1	0- 7	.70	22.03	2.77	10.58
	Bare	C1	0-13	.17	19.07	2.44	10.03
54	Shrub	A1	0- 6	1.50	23.53	2.74	9.98
	Bare	A2	0- 8	.36	22.03	2.78	11.61
55	Shrub	A11	0-15	.33	21.04	2.82	10.55
	Bare	A12	0-23	.16	18.86	2.49	9.74
56	Shrub	A11	0- 2	1.54	17.79	2.13	7.47
	Bare	A12	0-10	.28	17.50	2.82	8.86
57	Shrub	A1	0-15	.32	23.58	2.50	10.39
	Bare	C1	0-17	.44	22.06	2.60	10.34
58	Shrub	A11	0- 4	.37	28.20	2.14	9.09
	Bare	A12	0- 5	.27	21.12	2.36	10.59
63	Shrub	A11	0- 3	.79	28.26	2.51	11.98
	Bare	A2	0-15	.25	26.82	2.26	12.43
64	Shrub	A11	0-16	.37	30.75	2.99	13.46
	Bare	A12	0-11	.11	26.14	2.46	11.93
65	Shrub	A11	0- 7	.25	32.43	2.13	11.30
	Bare	A12	0-20	.17	31.12	2.00	12.27
66	Shrub	A11	0- 5	2.58	30.61	2.75	12.32
	Shrub	A12	5-19	.08	20.34	2.53	13.36

Table 2 (Continued)

Site No.	Surface type	Profile horizon	Horizon depth, cm	Cs137 pCi/g.	K40 mg./g.	U(Bi214) μ /g.	Th(Bi212) μ /g.
66	Bare	A12	0-17	.18	30.66	2.87	13.26
67	Shrub	A11	0-13	.23	32.46	2.22	12.25
	Bare	A12	0-18	.13	31.80	2.14	12.82
68	Shrub	A11	0-10	.46	29.48	1.81	8.82
	Bare	A12	0-18	.04	29.49	1.82	11.05
69	Shrub	A11	0- 8	.25	29.39	1.78	10.34
	Bare	A12	0-12	.22	29.30	1.83	10.85
70	Shrub	A1	0-15	.62	32.62	2.18	11.25
71	Shrub	A11	0- 7	.12	30.76	2.07	10.27
	Bare	A12	0-14	.06	31.20	2.10	11.78
72	Shrub	A11	0-15	.34	28.95	1.91	9.36
	Bare	A12	0-17	.78	28.28	1.99	10.95
73	Bare	A11	0- 9	.26	31.18	2.30	12.50
74	Shrub	A11	0- 5	2.89	19.06	3.05	10.17
	Shrub	A12	5-13	.37	19.17	2.78	10.78
	Bare	A2	0- 7	.42	19.09	2.87	11.26
75	Shrub	A11	0- 5	1.99	17.90	2.75	10.18
	Shrub	A12	0-16	.11	20.36	2.65	12.50
	Bare	A12	0-10	.34	19.40	3.27	11.94
76	Shrub	A1	0- 9	.53	20.48	2.99	11.35
77	Shrub	A1	0-15	.20	25.71	3.93	10.40
	Bare	A3	0-36	.23	22.87	3.13	9.34
78	Shrub	A1	0- 5	.58	17.40	2.65	7.19
	Bare	C1	0-26	.10	16.59	2.52	6.73
79	Shrub	A1	0- 7	.55	22.05	3.35	9.24
	Bare	C1	0-18	.12	18.42	2.90	8.03

edaphic factors, topography, or successional stages in the vegetation itself. Billings (1952) further indicated that plant growth and distribution is limited when any critical factor in the environment falls below or exceeds that which can be tolerated by the plant. Near the extremes of its distribution, however, one environmental factor may compensate for another resulting in the occurrence of a plant in habitats that may not seem to be normal. We find evidence of these observations by Mason and Billings within our study areas.

In the present study we have used nondestructive dimensional analysis methods to obtain some quantitative assessments of the perennial vegetation growing in the immediate area of the soil profile excavation sites. These assessments, listed in Appendix C, include individual species contributions and total plot summaries of density, cover, frequency, relative dominance plant volume and biomass at each study site based upon the occurrence of plants as members of shrub clumps or as solitary specimens. Soil and plant interactions are not readily discernible from this mass of data. In order to obtain a better understanding of the subtle interrelationships which might exist between the vegetative characteristics and the edaphic factors, we must rely heavily upon additional systems analysis work. Findings from further synthesis of these data shall form the basis of future reports concerning this phase of our investigation.

Some interesting features of individual shrub species and obvious interactions with edaphic conditions became apparent during the course of this work. Larrea tridentata is indigenous to most of the study areas and it usually has been named the dominant or co-dominant shrub species by most investigators describing the vegetation of this area. Results showed, however, that this shrub seldom obtains dominant or co-dominant density levels when the areas are subjected to dimensional analysis. It usually is, however, the dominant or co-dominant species contributing to the standing crop biomass of any given area where it is present. Other co-dominant shrubs commonly found in association with L. tridentata are the species Ambrosia dumosa, Grayia spinosa, Eurotia lanata, Lycium andersonii and Atriplex confertifolia. Beatley (1969) has reported the most complete description of the various vegetation types and associations which are present within the study areas. It might turn out that the occurrence of certain edaphic factors exerts more influence upon the presence or absence of some of the less prominent shrub species rather than the dominant or

co-dominant species. Marked changes among these less prominent species are especially inferred by the data in Appendix C. In some earlier work, Shantz (1938) noted that smaller or minor plant communities quite often are closely correlated with such factors as the physical composition of the soil.

The findings of this investigation support several observations on shrub species reported by other investigators. Larrea tridentata does not grow on saline-alkali soils (Shreve, 1940; Shantz and Piemeisal, 1940; Hunt, 1966; Wallace and Romney, 1972). Larrea is better developed on alluvium deposits than on soils developed in place, and on eroding slopes rather than in depositing situations (Spalding, 1909; Gardner, 1959; Shreve and Wiggins, 1964). Larrea requires well-drained, porous soils conducive to good root aeration. It does not grow on soil where water persists for long periods of time (Spalding, 1904, 1909; Livingston, 1910; Fosberg, 1940; Yang, 1950; Gardner, 1951; Dalton, 1961). Larrea grows poorly on steep, rocky slopes where soil is shallow (Gardner, 1951; Hunt, 1966). The soil of areas dominated by Larrea contains high levels of limestone and gypsum (Nichol, 1952; Gardner, 1959). These findings partly explain the Larrea-Atriplex ecotonal line surrounding the Frenchman Flat playa where several study sites were located. Soil of the playa is poorly drained, saline in the lower depths of the profile, and poorly aerated. Larrea is sensitive to excessive water (Shreve and Wiggins, 1964; Wallace and Romney, 1972 p. 320). There are no convincing indications from a 5-year monitoring of abiotic factors that low soil and air temperatures (see Appendix E) can account for this Larrea ecotone demarcation line as was suggested by Beatley (1965, 1969).

The species Atriplex canescens and Atriplex confertifolia are common to many of the study sites. A. canescens is common to all vegetation types of the study area but it prefers sandy soils and stream-bed areas. It is more widespread than other Atriplex species and it can tolerate wide ranges of salt concentration (Wallace and Romney, 1972 p. 168). Nearly pure stands of it occur in parts of the Frenchman Flat Playa. A. confertifolia is widely distributed as a dominant or co-dominant shrub near the Frenchman Flat playa and on the bajadas and calcareous foothills of northern Mercury Valley, southern Frenchman Flat and southwestern Yucca Flat (Beatley, 1965, 1969). This species is found on soils relatively low in surface salt content but high in salt concentrations below depths of 30 to 60 cm (Kearney et al., 1914; Shantz, 1938; Shantz and

Piemeisel, 1940; Fautin, 1946; Gates et al., 1956). These two Atriplex species are the dominant shrubs in opposition to L. tridentata and A. dumosa at the Larrea-Atriplex ecotone line surrounding the Frenchman Flat playa. Highest concentrations of soluble salts were found in the soils of this closed-basin Frenchman Flat area. In studies elsewhere in Nevada, Billings (1949) showed that A. confertifolia was not necessarily confined to soils high in salt concentration and that this species occurs on soils which vary widely in texture. For the most part, however, the soils on which this species grow are alkaline at all depths and rocky. Roberts (1950) and Fireman and Hayward (1952) found an increase in pH, soluble salts, and exchangeable sodium in the surface soil directly beneath A. confertifolia compared to surface soil in bare areas between shrubs. On shale-derived soils in northeastern Montana, Branson, Miller and McQueen (1970) found A. nuttallii communities in areas having high soluble salt contents, high soluble sodium percentages, high total soil moisture stress and low infiltration rates. Our results for the Atriplex species support these findings of other investigators.

Eurotia lanata is native of both the Great Basin and Mojave Desert portions of the Nevada Test Site. It grows either in association with other shrub species or in pure stands. Unlike several of the other dominant or co-dominant species native to the area, this shrub tends to grow well in poorly-aerated, fine-textured soils (Wallace and Romney, 1972 p. 80). Shantz (1938) found that soils under E. lanata in the northern desert shrub region varied considerably but were often of fine texture and underlain with salt at depths of 1 to 2 feet. In the Escalante Valley in western Utah, Shantz and Piemeisel (1940) found this shrub growing on fine-textured soils with low salt content in the upper 2 feet of the profile but with salt levels of up to 1 percent at lower depths. Stewart et al., (1940) observed similar conditions for E. lanata growing on light-textured soils with salt contents varying from 0.03 to 0.6 percent. The studies of Gates et al., (1956) in three valleys of western Utah also showed E. lanata growing on soils having similar physical and chemical properties as reported by the earlier investigators. The present investigation shows this shrub to be widespread throughout the study areas primarily as a minor species except on fine-textured sediments. It is not a dominant or co-dominant species in eroding areas. E. lanata is commonly found growing in shrub clumps in association with other

species (Wallace and Romney, 1972, p. 207).

Ambrosia dumosa is one of the more prominent of the co-dominant shrub species common to the Mojave Desert areas of the Nevada Test Site. It is confined to the relatively warm areas and its northern range is in Yucca Flat (Beatley, 1969). It does not grow at the higher elevations of the Nevada Test Site. It is relatively short-lived compared with some of the other shrubs. A. dumosa is tolerant of a moderate degree of salinity and is relatively insensitive to soil pH (Wallace and Romney, 1972 p. 153). This shrub also is one which commonly grows in shrub clump association with other species.

Grayia spinosa grows over much of the Nevada Test Site. It is a dioecious shrub which extends from the Great Basin Desert southward through most of the Mojave Desert (Benson and Darrow, 1954). G. spinosa usually is an associated species but it also can be a co-dominant shrub or it can occur in nearly pure stands (Beatley, 1965). This shrub was notably absent at sites in southeastern and eastern Frenchman Flat and along the transect down the bajada on the east side of the drainage channel of Forty Mile Canyon in Jackass Flats.

Three species of Lycium grow at the Nevada Test Site in association with other shrub species, but two of them are confined mostly to specific locations. L. shockleyi was found only at sites 29, 31 and 33 in southeastern Frenchman Flat. L. pallidum was found at most of the study sites in Rock Valley, at site 10 in Mercury Valley, sites 17, 19 and 26 in Frenchman Flat, and at site 65 in Jackass Flats. L. andersonii was more widely distributed and it occurred as a co-dominant species in nearly all areas except for sites located on the Frenchman Flat playa and on the alluvial fans of northern and eastern Frenchman Flat (Sites 33 to 46). According to Beatley (1965, 1969), the most common associations with this species are Larrea-Grayia-L. andersonii in areas of Mercury Valley, Jackass Flats, Frenchman Flat and Yucca Flat drainage basins. Another association of Coleogyne-L. andersonii occurs in areas between 1,100 and 1,600 meters elevation in these basins.

Coleogyne ramosissima occupies an intermediate zone between the Great Basin and Mojave Desert vegetation at elevations from 1,100 to 1,600 meters (Beatley, 1965). It occurs in mixed or in pure stands and is associated with coarse-textured to stony soils. It was found in the present investigation at sites 66 to 70 in Jackass Flats and at most of the sites studied in Yucca Flat

(sites 74 to 79).

Krameria parvifolia is a low-growing shrub common to the Mojave Desert areas of the Nevada Test Site. It is commonly associated with other shrub types as a dominant or associated species (Beatley, 1965, 1969). We found it growing as a single shrub or in shrub clumps with other species at most sites in Jackass Flats, Rock Valley, Mercury Valley, and at a few sites (28, 31, 32, 35, 36, 42, 47, 49) on the well-drained bajadas surrounding the Frenchman Flat playa. This species was not found at any of the study sites in Yucca Flat.

Two species of Ephedra which are common to the Mojave Desert portion of the Nevada Test Site were found in study sites. E. funerea was present only at sites 1 to 10 in Mercury Valley and at sites 31 and 49 in Frenchman Flat. The E. nevadensis species occurred in association with other shrub types at almost all sites in Mercury Valley, all sites in Rock Valley, sites 63 and 68 to 70 in Jackass Flats, all sites in Yucca Flat, and at sites 35, 42 and 47 to 49 in Frenchman Flat.

Most of the other shrub types growing at study sites were either sparsely distributed or of unusually high density. Some of them may turn out to be indicator plants of certain edaphic conditions upon completion of the additional synthesis work in progress. Several of these species, namely Acamptopappus shockleyi, Dalea fremontii, Hymenoclea salsola, and Menodora spinescens were found to show negative associations and mutual exclusiveness with other shrub species (Wallace and Romney, 1972 p. 205). Some interesting examples of where species generally of minor importance were found in dominant or co-dominant amounts include the following: M. spinescens at sites 2, 49, 67, 68, 70, 72 and 76; Oryzopsis hymenoides at sites 9, 23, 24, 69 and 76; Lepidium fremontii at site 14; Stanleya pinnata at sites 14 and 30; Machaeranthera tortifolia, D. fremontii and H. salsola at site 15; and A. shockleyi at sites 4, 8, 12, 13, 16 and 17.

Investigations centered around localized areas which were virtually bare of perennial vegetation (i.e., sites 11 and 14 in Mercury Valley; sites 20, 21 and 27 in Frenchman Flat; site 52 in Rock Valley and site 73 in Jackass Flats) showed no conclusive explanations attributable to edaphic factors. Further systems analyses may disclose some subtle interactions but, at present, the in-

conclusive evidence points most strongly toward an abnormally high density of pocket gophers and/or other burrowing small mammals at some earlier time at most of these sites. This could have occurred as long as a century ago and still be apparent because of the slow rate of natural revegetation which occurs in these Mojave Desert areas (Wallace and Romney, 1972 p. 79; Romney et al., 1973). Site 52 in Rock Valley clearly has a restrictive desert pavement surface and higher than normal concentrations of sodium and boron in the C1 and C2 horizons of the soil profile. The soil at sites 11 and 14 in Mercury Valley are developed on a massive limestone-gypsum outcrop which forms a restrictive layer at depths of 30 to 40 cm. This restrictive layer is unlike the "caliche" hardpans generally underlying these soils as the result of alkaline-hydrolysis formation processes. Small mammal populations at these two sites, however, are among the highest observed in the Mercury and Rock Valley areas (French, personal communication).

Table 3 summarizes the relative percent frequency of the shrub species growing at each soil profile study site. In the interest of conserving space, these values were rounded off to the nearest whole numbers. Mere presence of a species was rated as 1 percent. From this table, and with further reference to the additional data in Appendix C, one can obtain an overview of the relative distribution and association of the various shrub species among the different study sites. The geographic locations of these sites within each study area are shown in Figures 1 through 6.

3.5 MINERAL ELEMENT COMPOSITION OF PERENNIAL VEGETATION GROWING AT SOIL PROFILE SITES

Appendix D contains data on the nitrogen and mineral element contents of leaf and stem tissues of perennial plants growing in the immediate vicinity of each soil profile sampling site. Additional synthesis of data is underway to work out subtle correlations with soil counterparts; however, some characteristics are readily apparent from these raw data.

The nitrogen contents of these desert shrubs were relatively high and the concentrations in leaf tissues generally fell within the range commonly found in cultivated pasture crops (2.5-3.5%). Nitrogen contents of stem tissues usually were one-third to one-half of the levels found in leaf tissues. Lowest nitrogen contents occurred in the Indian rice grass, Oryzopsis hymenoides.

Several species concentrated nitrogen in leaf tissues in amounts greater than 4 percent, viz, Ambrosia dumosa, Dalea fremontii, Ephedra nevadensis, Hymenoclea salsola, Lycium andersonii, Lycium pallidum, Lycium shockleyi, Mirabilis pudica and Stanleya pinnata. The nitrogen contents of each species varied considerably among the different study sites as one might expect; however, there was less variation for nitrogen than occurred with some of the other mineral elements.

Phosphorus contents varied within the range of 0.1 to 0.5 percent. Higher levels usually occurred in leaf than in stem tissues. The shrubs having a tendency to concentrate less than 0.15 percent phosphorus included Atriplex canescens, Grayia spinosa, Larrea tridentata, L. andersonii, L. pallidum, and O. hymenoides. Shrubs tending to concentrate more than 0.35 percent phosphorus in leaf tissues included A. dumosa, Atriplex confertifolia, D. fremontii, E. nevadensis, Krameria parvifolia, Menodora spinescens, M. pudica and Sphaeralcea ambigua.

The sodium concentration picture in these desert shrubs is very interesting, primarily from the large numbers of different species which accumulate relatively low levels of this element even when high concentrations are present in the soil. Some of the prominent shrubs such as E. lanata, E. nevadensis, L. tridentata, O. hymenoides and Coleogyne ramosissima consistently accumulated low levels of sodium. Other shrubs such as the Lycium species, A. dumosa, and G. spinosa displayed the capacity to acquire both relatively low and relatively high concentrations of sodium, depending upon its availability in the soil. A. confertifolia leaf tissues consistently contained extremely high concentrations of sodium at all sampling locations. Stem tissues also accumulated high levels of sodium, but usually the concentration in stems was less than one-half of that found in leaves. The other Atriplex species, A. canescens, growing at several study sites did not concentrate appreciable amounts of sodium in either leaf or stem tissues. Additional work on sodium relationships in these and other Atriplex species growing under various edaphic conditions was reported by Wallace and Romney (1972, p. 168). These investigators also reported additional findings on some unique sodium relationships among the three Lycium species of the Nevada Test Site (ibid, p. 133). The present data show the very high sodium concentrations usually found in

Table 3. Frequency (%) of Perennial Plants at Soil Profile Study Sites.

Plant Species	1	2	3	4	7	8	9	10	12	13	14	15	16	17	18	19	22	23	24	25	26	28	29	30	31	32	33	34	35	36	37	38	39
	Mercury Valley Study Area													Frenchman Flat Study Area																			
<u>A. shockleyi</u>	8	12	10	36		19		2	55	26		49		13	6	5	23	8		9			38		3	4	12		2	9			
<u>A. canescens</u>																4			9		65			34				90				90	
<u>A. confertifolia</u>	43	14																1					3	15	21		1		6		43	10	100
<u>C. ramosissima</u>						1																			6								
<u>D. fremontii</u>					4							16	1							7		26			1				19				
<u>E. funerea</u>	18	4	5	1				5																	2								
<u>E. nevadensis</u>			2	1	2	7			3			10	4																4				
<u>E. lanata</u>	2		5	17				3	1			4	9		29	31	41	10		1	4									7	5		
<u>A. dumosa</u>	1	5	22	13	22	38	43	52		6	2		8		7	12	16		5		20		14	3	1	13	28		2	59	13		
<u>G. spinosa</u>			5	10	26				11	42		2	15		20	27	4	7	13		24	3											
<u>H. salsola</u>								5				17	1			6							1						4		5		
<u>K. parvifolia</u>	2		5		8	4	17	4				1										17			4	13			9	1			
<u>L. tridentata</u>	18	16	27	4	25	14	5	14	4	10			2		4	5		47	24		24		8	7		2	39	10		40	13	24	
<u>L. andersonii</u>	2	5	12	6	6	2	1	1	7	15	6	4	9		6	11	1	3	3		4	6	4			13							
<u>L. pallidum</u>								5							9		6				7	9											
<u>M. spinescens</u>	3	29														1									8								
<u>O. hymenoides</u>				6		13	34	13	10			2	2		6	8	8	3	42	62		12	20	4		2		2		4	5		
<u>S. ambigua</u>		11		4	4	2						5					7							4	5				2	7	3		
<u>T. axillaris</u>												1				3																	
<u>Y. schidigera</u>	4	4	5	1	2																												
<u>L. fremontii</u>			3			1		1	2	1	68	2																					
<u>M. tortifolia</u>			3						1			28			1																		
<u>S. speciosa</u>															4																		
<u>M. bigelovii</u>												7						27		6	1	1											
<u>H. cooperi</u>																																	
<u>L. shockleyi</u>																							43		32		64						
<u>S. pinnata</u>										23	1			2											47			10					
<u>Y. brevifolia</u>																									1				2				
<u>D. polyadenia</u>																	5																

49

Plant	40	41	42	43	44	46	47	48	49	50	51	53	54	55	56	57	58	63	64	65	66	67	68	69	70	71	72	74	75	76	77	78	79											
Species	Frenchman Flat Study Area									Rock Valley Study Area								Jackass Flats Study Area										Yucca Flat Study Area																
<u>A. shockleyi</u>	10				9				5	5				3				29				4				5				53	37				24									
<u>A. canescens</u>	48	23	7				86												1																									
<u>A. confertifolia</u>	48	18	4	96				2				5				1										6					17													
<u>C. ramosissima</u>										1								89										19	7	10				54	63	1	7	22	11					
<u>D. fremontii</u>	3									2								3																										
<u>E. funerea</u>																																												
<u>E. nevadensis</u>	33				14				20	3	11	3	4	17	1	7	10	4	4	7				4	13	21	9				7	11				12	16							
<u>E. lanata</u>	10	17	14				4	5	8				7	6	6				2	15				4				1	7				6	3	1	10	1	2	1					
<u>A. dumosa</u>	3	2	22	40	49				26	3	17	44	42	18	32	20	33	40	56	23	30	1	47	45	2	27																		
<u>G. spinosa</u>	2				24				13	2	22	21	1	2	13	5	15	35	15	2				2				1				1	34				9	35						
<u>H. salsola</u>	4																														3					4	1				5			
<u>K. parvifolia</u>	21				2				2				20	9	11	35	4	7	1	2	3				10	7	9	18																
<u>L. tridentata</u>	31	6		13	7				22	13	4	5	21	13	12	26	11	4	9	41	8	9	6	2	5	4	11	7	3															
<u>L. andersonii</u>	9								3	7	1	14	14	21	25	5	1	7	6	1	1	1						10				10	1	13	8	16								
<u>L. pallidum</u>										9	5	1				8	10	4	12	1										6														
<u>M. spinescens</u>	1				53				1								7										11	3	48	32	10	3				1	23							
<u>O. hymenoides</u>	6	10				4	1				4	4				3	30				8	7				11	27	14	11	11	15													
<u>S. ambigua</u>	3	7				1				1	2								2	3				2				3				6	3											
<u>T. axillaris</u>																												1					2	1										
<u>Y. schidigera</u>																																												
<u>L. fremontii</u>																																												
<u>M. tortifolia</u>										2				8														5					4											
<u>S. speciosa</u>										2																		2					21				44							
<u>M. bigelovii</u>										1				2														4																
<u>H. cooperi</u>																		2										9																
<u>L. shockleyi</u>																																												
<u>S. pinnata</u>																																												
<u>Y. brevifolia</u>																												3					2											
<u>D. polyadenia</u>	3																																											
<u>A. spinescens</u>																												1																

leaf tissues of Lycium shockleyi (Sites 29, 31, 33). High levels of sodium are not accumulated in stem tissues of this species.

Potassium is one of the most variable nutrient elements in these desert shrubs. Concentration levels ranging from 1 to 15 percent of dry tissue were found in leaf tissues of certain shrubs. This element also was one of the few for which the concentration in stem tissues often reached or exceeded that found in leaf tissues. Among those shrubs which usually accumulated less than 2 percent potassium in leaf and stem tissues were the species of C. ramosissima, D. fremontii, K. parvifolia, L. tridentata, L. shockleyi and O. hymenoides. Several shrub species consistently accumulated potassium contents in excess of 6 percent in leaf and stem tissues. These included A. canescens, A. confertifolia, A. dumosa, G. spinosa and L. andersonii. Highest potassium levels were found in leaf tissues of G. spinosa.

The calcium contents also varied considerably among these desert shrub species within the range of about 0.5 to as much as 12%. Stem tissues generally concentrated less calcium than did leaf tissues. The E. nevadensis, M. spinescens, and O. hymenoides species concentrated less than 1 percent calcium in leaf and stem tissues at most study sites. In most cases the calcium contents of stem tissues remained relatively low even when the contents of leaf-tissues exceeded 5 percent calcium. L. andersonii consistently concentrated calcium levels in leaf tissues greater than 5 percent. Other shrubs which occasionally acquired 4 to 5 percent calcium in dry leaf tissues included the species A. confertifolia, A. dumosa, L. pallidum, M. pudica and S. pinnata.

Magnesium contents of these plant tissues varied from 0.05 to about 2.50 percent and, in many cases, the trends of uptake were similar to that of calcium. Several shrub species consistently concentrated magnesium levels greater than 1 percent in leaf tissues. These included the species G. spinosa, L. andersonii, L. pallidum, and M. pudica.

The silicon contents of plant tissues ranged from 0.01 to about 2.0 percent, but only Acamptopappus shockleyi, L. tridentata and O. hymenoides tended to consistently concentrate levels greater than 0.3 percent in leaf or stem tissues. Most of these desert shrubs tended to acquire relatively low concentrations of silicon, especially in stem tissues.

The micronutrient elements varied considerably among the various

shrub species and leaf tissues usually contained higher levels of boron, copper, iron, manganese and zinc than were concentrated in stem tissues. One striking exception to this was the consistently high iron contents in both leaf and stem tissues of L. tridentata. Other species which occasionally showed high iron contents included A. confertifolia, A. dumosa, Artemisia spinescens, E. lanata and S. ambigua. All of the species investigated contained relatively low levels of copper in both leaf and stem tissues. Shrubs which consistently contained more than 100 ppm manganese in leaf tissues throughout the areas of investigation were the species A. shockleyi, E. lanata, G. spinosa and L. pallidum. The two perennial grass species, Hilaria rigida and O. hymenoides, also accumulated manganese levels above 100 ppm. The boron contents ranged from about 10 to around 200 ppm in leaf tissues; however, most of the species investigated had boron contents less than 100 ppm. A. dumosa leaf tissues consistently contained boron above 100 ppm, and the boron contents in stem tissues usually were one-half to one-third of that found in leaves. A few of the other shrubs occasionally had boron contents above 100 ppm in leaf tissues. These species included L. tridentata, L. andersonii, S. pinnata and S. ambigua. Aluminum contents generally ranged from about 30 to around 800 ppm in leaf tissues of most of the species studied. There were some exceptionally high levels but these cases are suspected of contamination from soil material. The Lycium species, Ephedra species, and the grass species, H. rigida and O. hymenoides, tended to accumulate levels of aluminum below 100 ppm in leaf and stem tissues. E. lanata and L. tridentata were two shrubs which consistently contained aluminum contents in excess of 500 ppm. The titanium contents of L. tridentata tissues were consistently higher than in tissues of other shrub species, and these levels ranged from 20 to 80 ppm. Strontium contents of plant tissues generally followed the same trends observed for calcium, but higher levels of this element were found in plant tissues grown in Frenchman Flat, Jackass Flats, and Yucca Flat than in Mercury Valley or Rock Valley. There appears to be an inverse relationship between the reduced strontium uptake by plants and the higher calcium carbonate contents in the soils of Rock Valley and Mercury Valley. The barium contents of plant tissues follow the same trend as indicated above for strontium. Aside from some inconsistent exceptions, the strontium contents of plant tissues generally ranged from 20 to around 300 ppm. Barium contents generally fell within the range of 5 to 60 ppm

in leaf and stem tissues.

Additional findings on the mineral element composition of many of these shrub species in relation to variations in the edaphic and climatic conditions under which they are grown have been reported by Wallace and Romney (1972).

3.6 ABIOTIC MEASUREMENTS IN OPEN AND CLOSED DRAINAGE BASINS

Appendix E contains data on rainfall, air and soil temperatures, and soil moisture monitored at nine stations during a five year period from 1967 through 1972. The locations of these abiotic sampling stations within the study areas are given in Figures 2 through 6 (closed circles). These measurements were obtained with two main purposes in mind. First, the data were needed to support another phase of our research program at the Nevada Test Site involving a study of the phenology of perennial vegetation in the open and closed drainage basin described in this investigation. Interim reports on some findings from this phenology work have already been issued (Wallace and Romney, 1972 p. 283; Ackerman and Bamberg, 1973). The final report for this five year phenology program will appear as a separate document upon completion of some additional systems analysis work.

The second purpose of these abiotic measurements was to obtain data which might help explain the sharp Larrea-Atriplex ecotonal demarcation zones surrounding the Frenchman Flat playa. Five monitoring stations were involved in this study; two each at the north and west ecotone zones in and out of Larrea, and one at the lowest elevation on the playa (Figure 3). It became increasingly apparent, from each successive year of new abiotic data, that air and root temperatures could not account for the sharp ecotonal demarcation zones under the present climatic conditions existing in the study area. Temperature differentials across the ecotonal zones simply are insignificant. Examples of supportive data abstracted from Appendix E are given in Tables 4, 5 and 6. The edaphic factors of salinity and poor root aeration discussed earlier in this report appear to be more convincing causal factors than air and soil temperatures. However, this does not discount the possibility that colder temperatures might have occurred in these study areas during earlier centuries of time. Wallace and Romney (1972, p. 115) observed from ring counts that Larrea communities in these study areas are probably much greater than 100 years of age.

Table 4. Air Temperatures ($^{\circ}\text{C}$) at North Frenchman Flat Larrea-Atriplex Ecotonal Area.

Date*	On Playa		In <u>Atriplex</u>		In <u>Larrea</u>	
	Max	Min	Max	Min	Max	Min
13 Feb 68	21.1	-6.1	21.7	-8.3	21.7	-6.1
2 Aug 68	41.7	14.4	43.3	13.3	43.3	15.0
2 Jan 69	17.2	-18.3	16.7	-21.1	18.3	-18.3
28 Jul 69	43.3	15.0	42.8	13.9	43.3	15.6
5 Jan 70	18.9	-22.2	18.3	-25.7	19.4	-22.2
20 Jul 70	45.6	13.9	40.0	13.3	46.1	13.8
18 Jan 71	20.1	-15.0	18.9	-17.2	20.0	-15.0
11 Aug 71	45.6	15.0	47.2	13.9	44.4	15.6
11 Feb 72	19.4	-15.6	19.4	-15.6	18.3	-16.7
21 Jul 72	46.7	11.1	46.7	9.0	46.7	9.5
12 Jan 73	18.9	-19.4	18.3	-19.4	17.8	-17.8

* Dates selected were the hottest and coldest of each year.

Table 5. Soil Temperatures ($^{\circ}\text{C}$) at North Frenchman Flat Larrea-Atriplex Ecotonal Area.

Date*	On Playa		In <u>Atriplex</u>		In <u>Larrea</u>	
	15 cm	45 cm	15 cm	45 cm	15 cm	45 cm
5 Jan 70	-0.8	2.7	-0.5	3.5	0.0	8.7
20 Jul 70	31.0	28.3	31.5	31.5	32.9	31.8
18 Jan 71	1.8	3.6	2.2	3.8	2.7	4.6
11 Aug 71	27.9	27.4	30.2	30.2	31.6	31.8
11 Feb 72	1.3	3.7	1.3	3.7	2.3	5.4
21 Jul 72	25.8	26.8	27.0	29.4	29.7	31.4
12 Jan 73	1.0	1.8	1.0	1.8	1.3	1.8

* Soil temperatures were not recorded in 1968 and 1969.

Table 6. Soil Moisture (%) at North Frenchman Flat Larrea-Atriplex
Ecotonal Area.

Date	In <u>Atriplex</u>		In <u>Larrea</u>	
	7-15 cm	30-38 cm	7-15 cm	30-38 cm
per cent dry weight				
1 Feb 68	7.7	5.3	6.1	5.7
1 Aug 68	2.7	3.9	2.9	3.8
2 Jan 69	2.4	3.1	2.7	3.1
1 Aug 69	1.3	2.0	1.5	2.0
1 Jan 70	2.6	2.7	3.1	3.3
2 Aug 70	1.8	3.3	1.8	2.9
1 Feb 71	8.3	4.4	6.9	4.6
2 Aug 71	1.4	3.9	1.0	3.0
3 Apr 72	4.7	5.0	3.8	5.1
2 Jun 72	2.2	3.9	2.4	4.1

4. SUMMARY

This document reports data from a series of interactive projects undertaken to characterize the soils, perennial vegetation, and climatic conditions in open and closed-drainage basins in northern Mojave Desert areas of the Nevada Test Site. Soil profiles were described and the chemical and physical properties of each horizon were characterized at 79 study sites under both shrub clumps and bare desert pavement. Some ecological attributes of shrubs growing at each site were determined from non-destructive dimensional measurements. The mineral element composition of plant species was determined by emission spectroscopy. Gamma spectrometry was used to determine the contents of Cs137 from nuclear weapons tests conducted previously in the general study area. Some abiotic factors of rainfall, air and soil temperatures, and soil moisture, were monitored at nine stations during a five-year period in support of these projects.

The soil profile characteristics markedly reflect the conditions under which these soils were formed. Most profiles were developed on alluvium sediments consisting mainly of mixed limestones and volcanic materials. These soil profiles are relatively young in development, and they show only weak evidence of leached upper horizons. Except in areas of recent sedimentary deposition, most soils were underlain by layers of restrictive hardpan formed from the processes of alkaline hydrolysis at depths varying from 30 to 70 cm. The clay contents were consistently low and the laboratory analyses indicate the presence of considerable amorphous clays. Cation exchange capacity to per cent clay ratios generally ranged from two to five. Variations in the textural characteristics of the soils investigated usually were attributable to differences in the distributions of sand and silt particle size fractions.

The influence of vegetation caused marked differences in several soil profile characteristics under shrubs and bare areas, including some decomposition of the restrictive hardpan. The profiles under shrubs had better developed A horizons, higher organic matter, nitrogen and phosphorus contents, and higher salt concentrations particularly in the upper horizons. Wind action has been responsible for the build-ups of loess deposits underneath shrubs. With few exceptions, these soils were nonsaline-nonalkali in their profile horizons located within the root zone of the perennial vegetation. Where saline-alkali conditions did

exist, they occurred most frequently in and around the closed-drainage basin. The highest levels of soluble salts have been accumulated in the deeper profile horizons in and around the Frenchman Flat playa. As a general rule the nitrates, chlorides, and the soluble and exchangeable cations tended to accumulate more in the profile under shrub clumps than under bare soil. Soluble sulfates usually were very low in all soil profiles examined. One of the very interesting features of this study was the higher concentrations of exchangeable potassium found in many of the profiles of soils located in the Frenchman Flat study area. Another striking feature was the consistently low organic carbon and nitrogen contents in most horizons of the soil profiles, with the exception of A horizons underneath shrubs. These C/N ratios were around ten but the C/N ratios in the A horizons, especially under shrubs, ranged from as low as 5 to as high as 30.

Natural K40, uranium and thorium contents of the soil profiles were normal for this area. The Cs137 contents in the surface horizons fell within the range generally observed from world-wide fallout deposition within the same latitudinal zone. Five of the 79 soil profile study sites were located within downwind fallout patterns from earlier aboveground nuclear weapons tests. Some residual Cs137 fallout was detectable in the surface horizons of these sites and there was some evidence of movement from the surface down into the soil profile. Higher levels of Cs137 were found underneath shrubs than in bare soil.

The perennial vegetation of this northern Mojave Desert study area characteristically exists as both solitary plants and groups of several different species clumped together. Some 30 different shrub species were found growing among the soil profile study sites, but less than a dozen of these species were prominent shrub forms within these sites. The less prominent shrubs tended to exist more as solitary plants and several of the minor species grew mutually exclusive of the major species. Many of the soil profile study sites were selected to investigate the edaphic conditions which might help explain the existence of sharp ecotonal demarcation zones which exist among some of the dominant shrub species. Except for some obvious salinity and textural interactions which have been discussed herein, the more subtle interactions between these edaphic and vegetative characteristics must await forthcoming results from the additional systems analysis work underway on these data. The findings from this continuing work shall be presented in additional reports.

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APPENDIX A

SOIL PROFILE CHARACTERISTICS

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MERCURY VALLEY - SITE NO. 1

This site is located at the highest point of elevation in a series of excavations transecting down a south-facing alluvial fan from Red Mountain in Mercury Valley. This transect includes Sites 1 through 10. Site 1 has a south slope of 4%. Dominant shrubs are Larrea tridentata and Atriplex confertifolia. Smooth relief; well-drained; moderate permeability to pan; moderate erosion; limestone, quartz and tuff parent material; surface about 90% rock and gravel; elevation 1207 meters. Perennial vegetation is Larrea tridentata, Atriplex confertifolia, Ephedra funerea, Menodora spinescens, Yucca schidigera and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Atriplex confertifolia)

A2	0-6 cm	Light gray (10YR7/2) gravelly loamy sand, brown (10YR5/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; 40% gravel; pH 8.5; clear smooth boundary.
C1	6-25 cm	Very pale brown (10YR7/3) gravelly loamy sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; 40% gravel; pH 8.5; clear smooth boundary.
C2sicam	25+ cm	Cemented pan.

Profile in Bare Area

C1	0-25 cm	Horizon descriptions are the same as under shrub.
C2sicam	25+ cm	

MERCURY VALLEY - SITE NO. 2

This site is part of a transect down an alluvial fan from Red Mountain in Mercury Valley. Parent material is tuff, limestone and quartz; south slope of 3%; excessively drained; smooth relief; moderate erosion; rapid permeability to pan; surface about 80% rock and gravel; elevation 1182 meters. Perennial vegetation is Larrea tridentata, Atriplex confertifolia, Menodora spinescens, Ephedra funerea, Yucca schidigera, Ambrosia dumosa, Lycium andersonii, Acamptopappus shockleyi and Sphaeralcea ambigua.

Profile Under Shrub (Larrea tridentata)

A1	0-5 cm	Very pale brown (10YR7/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.0; clear smooth boundary.
C1	5-34 cm	Very pale brown (10YR7/2) gravelly loamy sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, abundant medium, fine, and micro roots; 25% gravel; pH 8.7; clear wavy boundary.
C2ca	34-75+ cm	White (5YR8/1) gravelly loamy sand, very pale brown (10YR7/3) moist; cemented massive structure; hard, hard, non-sticky; violently effervescent; few fine and micro roots.

Profile in Bare Area

C1	0-25 cm	Horizon descriptions are the same as under shrub.
C2ca	25-55+ cm	

MERCURY VALLEY - SITE NO. 3

Site No. 3 is on the transect down an alluvial fan from Red Mountain in Mercury Valley. Parent material is limestone and quartz; south slope of 3%; excessively drained; smooth relief; moderate erosion; rapid permeability to the cemented pan; surface about 50% rocks and gravel; elevation 1134 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Ephedra funerea, Ambrosia dumosa, Grayia spinosa, Yucca schidigera, Lepidium fremontii, Eurotia lanata and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-10 cm	Light grayish brown (10YR6/2) very fine loamy sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine, abundant micro roots; pH 8.2; clear smooth boundary.
C1	10-48 cm	Light gray (10YR7/2) loamy sand, brown to dark brown (10YR4/3) moist; soft, friable, non-sticky; violently effervescent; few coarse, abundant medium, fine, and micro roots; pH 8.4; clear wavy boundary.
C2cam	48-100+ cm	White (5YR8/1) gravelly loamy sand, very pale brown (10YR7/3) moist; cemented massive structure; hard, friable, non-sticky; violently effervescent; few medium and fine roots.

Profile in Bare Area

C1	0-42 cm	Horizon descriptions are the same as under shrub.
C2cam	42-100+ cm	

MERCURY VALLEY - SITE NO. 4

This site is part of the series of excavations transecting down the alluvial fan from Red Mountain. Parent material is limestone and quartz; south slope of 3%; excessively drained; smooth relief; moderate erosion; slow permeability; surface about 80% rock and gravel; elevation 1103 meters. Perennial vegetation is Ambrosia dumosa, Larrea tridentata, Lycium andersonii, Eurotia lanata, Ephedra nevadensis, Ephedra funerea, Acamptopappus shockleyi, Grayia spinosa, Yucca schidigera, Sphaeralcea ambigua and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-9 cm	Light grayish brown (10YR6/2) loamy very fine sand, brown to dark brown (10YR4/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; abundant micro roots; pH 8.2; clear smooth boundary.
C1	9-27 cm	Very pale brown (10YR7/3) fine sandy loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky; violently effervescent; abundant coarse, medium, fine, and micro roots; pH 8.5; clear wavy boundary.
C2ca	27-81 cm	Very pale brown (10YR7/3) gravelly cobbly sand, dark yellowish brown (10YR4/4) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few coarse and medium, abundant fine and micro roots; 35% cobbles and 25% gravel; pH 8.5.

Profile in Bare Area

A2	0-10 cm	Light gray (10YR7/2) silty clay loam, brown (10YR5/3) moist; hard, friable, sticky; violently effervescent; pH 8.5.
C1	10-31 cm	Other horizon descriptions are the same as under shrub.
C2ca	31-80 cm	

MERCURY VALLEY - SITE NO. 5

This site is on the transect down an alluvial fan from Red Mountain. Dominant shrubs are Larrea tridentata and Ambrosia dumosa. The site slopes southwest at 3%; smooth relief; well-drained; moderate permeability to the hard pan; moderate erosion; limestone and quartz parent material; surface about 80% rock and gravel; well-developed desert pavement; elevation 1096 meters. Perennial vegetation is Ambrosia dumosa, Larrea tridentata, Lycium andersoni, Eurotia lanata, Ephedra nevadensis, Ephedra funerea, Yucca schidigera, Grayia spinosa, Krameria parvifolia, and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Lycium andersonii, Eurotia lanata)

A1	0-9 cm	Brown (10YR5/3) loamy fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.0; abrupt smooth boundary.
A2	9-13 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; moderate medium platy; slightly hard, friable, slightly sticky; violently effervescent; few medium, fine, and micro roots; 20% gravel; pH 8.4; abrupt irregular boundary; discontinuous.
C1	13-36 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; 20% gravel; pH 8.4; clear wavy boundary.
C2sicam	36+ cm	Cemented pan.

Profile in Bare Area

C1	0-34 cm	Horizon descriptions are the same as under shrub.
C2sicam	34+ cm	

MERCURY VALLEY - SITE NO. 6

This site is part of the transect on an alluvial fan from Red Mountain. Parent material is limestone and quartz; south slope of 2%; excessively drained; smooth relief; moderate erosion; slow permeability; surface about 80% rock and gravel; elevation 1090 meters. Perennial vegetation is Lycium andersonii, Larrea tridentata, Ambrosia dumosa, Ephedra nevadensis, Ephedra funerea, Yucca schidigera, Atriplex confertifolia, Acamptopappus shockleyi, Eurotia lanata and Krameria parvifolia.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-8 cm	Grayish brown (10YR5/2) loamy fine sand, very dark grayish brown (10YR3/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant micro roots; pH 8.1; clear wavy boundary.
C1	8-28 cm	Very pale brown (10YR7/3) gravelly loamy sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant coarse, medium, fine, and micro roots; 30% gravel; pH 8.2; clear smooth boundary.
C2ca	28-68 cm	Light gray (10YR7/2) cobbly gravelly fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant medium, fine, and micro roots; 20% cobbles and 35% gravel; pH 8.3.

Profile in Bare Area

C1	0-19 cm	Horizon descriptions are the same as under shrub.
C2ca	19-48+ cm	

MERCURY VALLEY - SITE NO. 7

Site No. 7 is located about midway on the transect down the alluvial fan from Red Mountain in Mercury Valley. Parent material is limestone and quartz; south slope of 3%; excessively drained; smooth relief dissected by gullies at wide intervals; moderately severe erosion; very rapid permeability; surface about 90% rock and gravel; elevation 1048 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Ambrosia dumosa, Ephedra nevadensis, Dalea fremontii, Sphaeralcea ambigua, Yucca schidigera, Krameria parvifolia and Grayia spinosa.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A11	0-9 cm	Grayish brown (10YR5/2) gravelly very fine sand, very dark grayish brown (10YR3/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant fine and micro roots; 35% gravel; pH 8.2; clear wavy boundary; resists wetting.
A12	9-42 cm	Very pale brown (10YR7/2) cobbly sand, brown (10YR5/3) moist; weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky violently effervescent; abundant medium, fine, and micro roots; 25% cobbles and 50% gravel; pH 8.6; abrupt wavy boundary.
C1	42-100+ cm	Light gray (10YR7/2) cobbly gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, non-sticky; violently effervescent; few medium, fine, and micro roots; 35% cobbles and 30% gravel; pH 8.4.

Profile in Bare Area

A12	0-55 cm	Horizon descriptions are the same as under shrub.
C1	55-100+ cm	

MERCURY VALLEY - SITE NO. 8

Site No. 8 is one of the series of excavations in a transect down an alluvial fan from Red Mountain in Mercury Valley. Parent material is limestone and quartz; south slope of 2%; well-drained; smooth relief; moderate erosion; rapid permeability; surface about 80% rock and gravel; elevation 975 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Lycium andersonii, Krameria parvifolia, Ephedra nevadensis, Acamptopappus shockleyi and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata)

A11	0-11 cm	Pale brown (10YR6/3) very fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; abundant medium, fine, and micro roots; pH 8.1; abrupt wavy boundary; moderately resistant to wetting.
A12	11-40 cm	Light gray (10YR7/2) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky; violently effervescent; abundant medium, fine, and micro roots; pH 8.6; clear wavy boundary.
C1	40-60 cm	Very pale brown (10YR7/3) cobbly gravelly sand, brown (7.5YR5/4) moist; weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky; violently effervescent; few coarse and fine roots; 30% cobbles and 20% gravel; pH 8.7; clear smooth boundary.
C2ca	60-125+ cm	Pinkish gray (7.5YR7/2) gravelly loamy sand, light brown (7.5YR6/4) moist; moderate medium subangular blocky structure breaking to single grain; slightly hard, loose, non-sticky; violently effervescent; few fine roots; 40% gravel; pH 8.7.

Profile in Bare Area

A12	0-12 cm	Horizon descriptions are the same as under shrub.
C1	10-56 cm	
C2ca	56-112+ cm	

MERCURY VALLEY - SITE NO. 9

This site is part of the transect down the alluvial fan from Red Mountain. Parent material is primarily limestone with some volcanic tuff; south-west slope of 1%; well-drained; smooth relief; slight erosion; rapid permeability; surface about 30% rock and gravel; elevation 942 meters. Perennial vegetation is Ambrosia dumosa, Oryzopsis hymenoides, Larrea tridentata, Krameria parvifolia and Lycium andersonii.

Profile Under Shrub (Larrea tridentata, Ambrosia dumosa)

A11	0-8 cm	Very pale brown (10YR7/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; strongly effervescent; few fine and micro roots; pH 8.3; clear wavy boundary.
A12	8-18 cm	Pale brown (10YR6/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; strongly effervescent; few medium, fine, and micro roots; pH 8.4; clear smooth boundary.
A13	18-36 cm	Very pale brown (10YR7/3) loamy fine sand, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; abundant medium, few fine and micro roots; pH 8.4; clear smooth boundary.
C1	36-62 cm	Light gray (10YR7/2) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant medium, few fine, and micro roots; 15% gravel; pH 8.5; clear smooth boundary.
C2	62+ cm	Light gray (10YR7/2) gravelly sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; few medium, abundant fine, very fine, and micro roots; 50% gravel; pH 8.1.

Profile in Bare Area

A12	0-17 cm	Horizon descriptions are the same as under shrub.
A13	17-30 cm	
C1	30-50 cm	
C2	50+ cm	

MERCURY VALLEY - SITE NO. 10

Site No. 10 is near the drainage outlet of Mercury Valley. Parent material is limestone, tuff, and basalt; southwest slope of 1%; well-drained; smooth relief, but with some drainage channels dissecting the area; moderate erosion; very rapid permeability; surface about 40% rock and gravel; elevation 915 meters. Perennial vegetation is Ambrosia dumosa, Larrea tridentata, Lycium andersonii, Ephedra funerea, Lycium pallidum, Oryzopsis hymenoides, Krameria parvifolia and Eurotia lanata.

Profile Under Shrub (Larrea tridentata)

A11	0-7 cm	Brown (10YR5/3) sand, dark brown (10YR3/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; strongly effervescent; few fine and micro roots; pH 7.8; clear smooth boundary; slightly resistant to wetting.
A12	7-19 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; few medium, fine, very fine, and micro roots; pH 8.3; clear smooth boundary.
C1	19-40 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure breaking to single grain; soft, loose, non-sticky; violently effervescent; few coarse, medium, fine and very fine roots; 15% cobbles and 20% gravel; pH 8.5; clear smooth boundary.
C2	40-52 cm	Light gray (10YR7/2) coarse sand, dark yellowish brown (10YR3/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine roots; pH 8.3; clear smooth boundary.
C3	52+ cm	Light gray (10YR7/2) cobbly gravelly sand, dark yellowish brown (10YR3/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine roots; 15% cobbles and 30% gravel; pH 8.1.

Profile in Bare Area

A12	0-15 cm	Horizon descriptions are the same as under shrub.
C1	15-33 cm	
C2	33-40 cm	
C3	44+ cm	

MERCURY VALLEY - SITE NO. 11

Site No. 11 is in west Mercury Valley on an alluvial fan from the Specter Range. The only perennial vegetation at this site is Stanleya pinnata, which is widely scattered, and the area appears bare from a distance. This profile sits on a very hard caliche layer which is continuous over the bare area at about 45 cm in depth. Parent material is limestone; northeast slope of 1%; well-drained; smooth relief; slight to moderate erosion; very rapid permeability to pan; surface about 40% rock and gravel; elevation 1085 meters. Perennial vegetation is Stanleya pinnata and Mirabilis pudica.

Profile Under Shrub (Stanleya pinnata)

A11	0-6 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant fine and micro roots; pH 7.9; clear smooth boundary; slightly resistant to wetting.
A12	6-18 cm	Pale brown (10YR6/3) fine sand, brown (7.5YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant coarse, medium, fine, and micro roots; pH 8.1; clear smooth boundary.
C1	18-42 cm	Light yellowish brown (10YR6/4) loamy fine sand, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; abundant fine and micro roots; pH 8.3.

Profile in Bare Area

A12	0-9 cm	Horizon descriptions are the same as under shrub.
C1	9-42 cm	

MERCURY VALLEY - SITE NO. 12

This site is located in west Mercury Valley on an alluvial fan from the Specter Range. It is positioned about 100 meters from Site No. 11 in perennial vegetation which surrounds the bare area. This area is underlain by a continuous caliche layer below 50 cm depth and the profile has chunks of broken caliche throughout which vary in size from gravel to cobbles. Parent material is limestone with a small amount of quartz; northeast slope of 1%; well-drained; smooth relief; moderate erosion; rapid permeability to pan; surface about 50% rock and gravel; elevation 1073 meters. Perennial vegetation is Larrea tridentata, Grayia spinosa, Acamptopappus shockleyi, Lycium andersonii, Lepidium fremontii, Oryzopsis hymenoides, Ephedra nevadensis and Hymenoclea salsola.

Profile Under Shrub (Larrea tridentata)

A11	0-5 cm	Brown (10YR5/3) loamy fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent, few fine and micro roots; some cobbles, pH 7.9; clear smooth boundary; slightly resistant to wetting.
A12	5-11 cm	Brown (10YR5/3) loamy fine sand, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, friable, non-sticky; strongly effervescent; abundant fine and micro roots; some cobbles; pH 8.2; clear smooth boundary; moderately resistant to wetting.
C1	11-32 cm	Pale brown (10YR6/3) loamy fine sand, dark yellowish brown (10YR4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium, fine and micro roots; some cobbles; pH 8.2; clear smooth boundary.
C2	32-50 cm	Pale brown (10YR6/3) cobbly fine sandy loam, dark yellowish brown (10YR4/4) moist; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky; violently effervescent; few medium and fine roots; 25% cobbles; pH 8.2; contains lime nodules.

Profile in Bare Area

A12	0-12 cm	Horizon descriptions are the same as under shrub.
C1	12-29 cm	
C2	29-40 cm	

MERCURY VALLEY - SITE NO. 13

Site No. 13 is in west Mercury Valley in an alluvial fan in an area which has larger than normal size Larrea tridentata. Parent material is limestone; northeast slope of 3%; well-drained; smooth relief; moderate erosion; rapid permeability; surface about 40% small rocks and gravel; surface is very soft, but the profile is underlain with hard caliche; elevation 1090 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Grayia spinosa, Ambrosia dumosa, Acamptopappus shockleyi and Lepidium fremontii.

Profile Under Shrub (Larrea tridentata, Grayia spinosa)

A11	0-7 cm	Pale brown (10YR6/3) loamy sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky; strongly effervescent; few micro roots; pH 7.8; clear smooth boundary.
A12	7-15 cm	Pale brown (10YR6/3) loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, medium and fine, abundant micro roots; pH 8.1; clear smooth boundary.
C1	15-34 cm	Pale brown (10YR6/3) loamy sand, dark yellowish brown (10YR4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; abundant coarse, medium, fine, and micro roots; pH 8.2; clear wavy boundary.
C2	34-63 cm	Pale brown (10YR6/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few coarse, medium, and fine roots; 42% gravel; pH 7.9; many chunks of caliche ranging from soft to hard.

Profile in Bare Area

A12	0-18 cm	Horizon descriptions are the same as under shrub.
C1	18-39 cm	
C2	39-58 cm	

MERCURY VALLEY - SITE NO. 14

Site No. 14 is located in west Mercury Valley on an alluvial fan from the Specter Range. This site is in an area in which no Larrea tridentata grows. Site No. 14 is paired with Site No. 13. This area is underlain by a hard caliche pan, but the surface is very soft. Parent material is limestone; northeast slope of 2%; well-drained; smooth relief; moderate erosion; rapid permeability to pan; surface about 40% rock and gravel; elevation 1090 meters. Perennial vegetation is Stanleya pinnata, Lycium andersonii, Lepidium fremontii and Ambrosia dumosa.

Profile Under Shrub (Lycium andersonii)

A1	0-13 cm	Pale brown (10YR6/3) loamy fine sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant medium, fine, and micro roots; pH 7.6; clear wavy boundary.
C1	13-46 cm	Pale brown (10YR6/3) cobbly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, abundant medium, fine, and micro roots; 39% cobbles; pH 8.2; abrupt wavy boundary.
C2ca	46-58 cm	White (5YR8/1) soft, caliche, light gray (10YR7/2) moist; massive structure; hard, friable, non-sticky; violently effervescent; few micro roots; underlain by extremely hard caliche.

Profile in Bare Area

A1	0-14 cm	Horizon descriptions are the same as under shrub.
C1	14-31 cm	
C2ca	31-62 cm	

MERCURY VALLEY - SITE NO. 15

Site No. 15 is located in west Mercury Valley in an area which has higher than normal populations of Dalea fremontii and Ephedra nevadensis. This site is on an alluvial fan from the Specter Range with a south-facing slope, although the area in general slopes east to northeast. Slope is 5%; moderately smooth relief; well-drained; moderate permeability to pan; moderate erosion; limestone-tuff basalt parent material; about 5% of surface covered with rock and gravel; elevation 1085 meters. Perennial vegetation is Ephedra nevadensis, Lycium andersonii, Dalea fremontii, Lepidium fremontii, Grayia spinosa, Mirabilis pudica, Hymenoclea salsola, Stanleya pinnata, Eurotia lanata, Sphaeralcea ambigua, and Machaeranthera tortifolia.

Profile Under Shrub (Lycium andersonii, Ephedra nevadensis)

A1	0-6 cm	Light brownish gray (10YR6/2) loamy sand, dark grayish brown (10YR4/2) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.2; clear smooth boundary.
C1	6-17 cm	Light gray (10YR7/2) gravelly sandy loam, pale brown (10YR6/3) moist; weak fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few coarse, medium fine and micro roots; 20% gravel; pH 8.3; clear wavy boundary.
C2sica	17-36 cm	Very pale brown (10YR8/3) cemented pan, very pale brown (10YR7/3) moist; strong coarse platy structure; extremely hard, firm, non-sticky; violently effervescent; few coarse, medium, fine and micro roots; clear wavy boundary.
C3sica	36-56 cm	Descriptions same as C2sica horizon, but softer consistence. Abrupt wavy boundary.
C4sica	56+ cm	Descriptions same as C3sica horizon, but softer consistence.

Profile in Bare Area

C1	0-10 cm	Horizon descriptions are the same as under shrub.
C2	10+ cm	

MERCURY VALLEY - SITE NO. 16

This site is located on the west side of Mercury Valley on an alluvial fan from the Specter Range. It was selected for study because of a greater than normal population of Acamptopappus shockleyi. Parent material is limestone; northeast slope of 1%; well-drained; smooth relief; moderate erosion; very rapid permeability; surface about 40% rock and gravel; elevation 1097 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Grayia spinosa, Ambrosia dumosa, Eurotia lanata, Acamptopappus shockleyi, Ephedra nevadensis and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata, Grayia spinosa, Lycium andersonii)

A11	0-5 cm	Dark grayish brown (10YR4/2) loamy sand, very dark grayish brown (10YR3/2) moist; single grain structure; loose, friable, non-sticky; resistant to wetting; strongly effervescent; abundant micro roots; pH 8.1; clear smooth boundary.
A12	5-14 cm	Brown (10YR5/3) loamy fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, abundant fine and micro roots; pH 8.4; abrupt wavy boundary.
C1	14-46 cm	Very pale brown (10YR7/3) gravelly fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; few coarse, abundant medium, fine and micro roots; 45% gravel; pH 8.2; clear wavy boundary.
C2	46-99 cm	Very pale brown (10YR7/3) gravelly fine sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse, medium, fine and micro roots; 60% gravel; pH 8.5.

Profile in Bare Area

A12	0-10 cm	Horizon descriptions are the same as under shrub.
C1	10-48 cm	
C2	48-80 cm	

FRENCHMAN FLAT - SITE NO. 17

This site is located in southwest Frenchman Flat on an alluvial fan from Red Mountain. Slope is northeast at 2%; parent material is limestone and quartz; excessive drainage; relief is smooth between rather large drainage channels; moderate erosion; rapid permeability to pan; surface about 15% rock and gravel; elevation 993 meters. Perennial vegetation is Larrea tridentata, Grayia spinosa, Lycium pallidum, Eurotia lanata, Stipa speciosa, Acamptopappus shockleyi, Ambrosia dumosa, Lycium andersonii, Oryzopsis hymenoides and Lycium pallidum.

Profile Under Shrub (Larrea tridentata, Eurotia lanata, Lycium pallidum)

A11	0-9 cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; few very fine and micro roots; pH 8.1; clear smooth boundary.
A12	9-23 cm	Very pale brown (10YR7/3) gravelly fine sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; few medium to abundant micro roots; 15% gravel; pH 8.2; became cold with wetting; clear smooth boundary.
C1	23-45 cm	Very pale brown (10YR7/3) fine sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse to abundant micro roots; pH 8.4; became cold with wetting; clear smooth boundary.
C2	45-64 cm	Very pale brown (10YR7/3) cobbly sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; no roots; 45% cobbles; pH 8.3.
C3	64-105 cm	Strongly cemented gravel overlying an even more strongly cemented gravel.

Profile in Bare Area

A12	0-20 cm	Horizon descriptions are the same as under shrub.
C1	20-39 cm	
C2	39-54 cm	

FRENCHMAN FLAT - SITE NO. 18

Site No. 18 is in west Frenchman Flat on an alluvial fan in Larrea near the edge of the prominent Larrea tridentata ecotonal line. This site has a northeast slope of 2%; well-drained; smooth relief; moderate erosion; moderate permeability to a buried B horizon; surface about 5% gravel; parent material is volcanic tuff and limestone. The B horizon is strongly cemented with silica and has lime streaks through the matrix; elevation 990 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Eurotia lanata, Grayia spinosa, Ambrosia dumosa, Acamptopappus shockleyi and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-11 cm	Reddish brown (2.5YR4/4) fine sand, dusky red (2.5YR3/2) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.2; clear smooth boundary.
A2	11-21 cm	Very pale brown (10YR7/3) sand, brown (10YR5/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; pH 8.2; clear smooth boundary.
C1	21-48 cm	Very pale brown (10YR7/3) sand, brown (10YR5/3) moist; single grain structure; soft, friable, non-sticky; violently effervescent; abundant medium, fine, and micro roots; pH 8.4; clear wavy boundary.
B1b	48-117 cm	Light reddish brown (5YR6/4) sand, reddish brown (5YR4/4) moist; massive structure; very hard, firm, non-sticky; violently effervescent; few fine and micro roots; pH 8.4; clear wavy boundary.
IIC2	117-149+ cm	Very pale brown (10YR7/3) sand, brown (10YR5/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and micro roots; pH 8.0.

Profile in Bare Area

A2	0-9 cm	Horizon descriptions are the same as under shrub.
C1	9-47 cm	
B1b	47-95 cm	
IIC2	95+ cm	

FRENCHMAN FLAT - SITE NO. 19

Site No. 19 is in southwest Frenchman Flat on a flood plain below the Larrea ecotonal line. This site is paired with Site No. 18 and is positioned about 150 meters downslope from the sharp ecotonal line. Slope is northeast at 1%; parent material is limestone and tuff; poorly to well-drained; smooth relief with erosion channels in the area; slight erosion with deposition in many places; moderate to slow permeability; elevation 988 meters. Perennial vegetation is Lycium pallidum, Lycium andersonii, Eurotia lanata, Ambrosia dumosa, Atriplex canescens, Oryzopsis hymenoides, Grayia spinosa, Acamptopappus shockleyi, Tetradymia axillaris, Artemisia spinescens and Hymenoclea salsola.

Profile Under Shrub (Atriplex canescens, Lycium pallidum)

A1	0-12 cm	Very pale brown (10YR7/3) fine sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; strongly effervescent; few medium and fine, abundant very fine and micro roots; pH 8.4; clear smooth boundary.
C1	12-47 cm	Very pale brown (10YR7/3) sand, brown (10YR5/3) moist; weak fine subangular blocky structure; breaking to single grain; soft, very friable, non-sticky; strongly effervescent; few coarse to fine, abundant very fine and micro roots; pH 8.6; clear smooth boundary.
C2	47+ cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR5/3) moist; weak fine subangular blocky structure breaking to single grain; soft, very friable, non-sticky; violently effervescent; few fine, abundant very fine and micro roots; 15% gravel; pH 8.5.

Profile in Bare Area

Horizon depths and descriptions are the same as under shrub.

FRENCHMAN FLAT - SITE NO. 20

This site is in southwest Frenchman Flat on an alluvial fan from Hampel Hill in an area which is virtually bare of perennial vegetation. Slope is north-east at 1%; parent material is tuff, limestone, and sandstone; well-drained; smooth relief; moderate erosion; rapid permeability; surface about 40% gravel; elevation 990 meters. Perennial vegetation is sparse and consists of Stanleya pinnata and Mirabilis pudica, but annual plant species are prevalent in the area.

Profile in Bare Area

C1	0-6 cm	Pale brown (10YR6/3) gravelly sand, dark brown (10YR3/3) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; no roots; 30% gravel; pH 8.2; clear smooth boundary.
C2	6-65 cm	Very pale brown (10YR7/3) gravelly sand, dark yellowish brown (10YR4/4) moist; massive structure; loose, loose, non-sticky; violently effervescent; few medium to micro roots; 30% gravel; pH 8.5; heated with wetting; clear smooth boundary.
C3	65-91 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4/4) moist; strong coarse subangular blocky structure; very hard, loose, non-sticky; violently effervescent; few very fine and micro roots; pH 8.4; clear wavy boundary.
C4	92-113 cm	Light yellowish brown (10YR6/4) gravelly sand, dark yellowish brown (10YR4/4) moist; single grain structure; soft, loose, non-sticky; violently effervescent; few very fine and micro roots; 15% gravel; pH 8.1; clear wavy boundary.
C5	113+ cm	Light yellowish brown (10YR6/4) gravelly sand, dark yellowish brown (10YR4/4) moist; strong coarse subangular blocky structure; very hard, loose, non-sticky; violently effervescent; no roots.

FRENCHMAN FLAT - SITE NO. 21

This site is located on the west side of Frenchman Flat in an area with no shrubs, although there are some annual plant species. It is on an alluvial fan of tuff and limestone from Hampel Hill which has an east slope of 1%; excessively drained; smooth relief; moderate erosion; very rapid permeability; surface about 40% rock and gravel; elevation 988 meters.

Profile in Bare Area

C1	0-16 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; few fine and micro roots; 15% gravel; pH 8.6; clear smooth boundary.
C2	16-61cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.7; clear smooth boundary.
C3	61-108cm	Pale brown (10YR6/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few micro roots; 25% gravel; pH 8.8; clear smooth boundary.
C4	108-152+ cm	Very pale brown (10YR7/4) sand, dark yellowish brown (10YR4/4) moist, containing darker color blotches which are light reddish brown (5YR6/4) dry, and reddish brown (5YR4/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; no roots; pH 8.4.

FRENCHMAN FLAT - SITE NO. 22

Site No. 22 is located in west Frenchman Flat on an alluvial fan comprised of tuff with some limestone from Hampel Hill. This site has a high density of larger than normal size Larrea tridentata shrubs. It has an east slope of 1%; excessively drained; smooth relief; moderate erosion; very rapid permeability; surface about 20% rock and gravel; elevation 990 meters. Perennial vegetation is Larrea tridentata, Acamptopappus shockleyi, Lycium andersonii, Grayia spinosa, Eurotia lanata, Oryzopsis hymenoides and Sphaeralcea ambigua.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-15 cm	Pale brown (10YR6/3) sand, dark brown (10YR3/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.3; clear smooth boundary.
C1	15-43 cm	Pale brown (10YR6/3) gravelly sand, dark brown (10YR3/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse and medium, abundant fine and micro roots; 15% gravel; pH 8.5; clear smooth boundary.
C2	43-84 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine, abundant micro roots; 20% gravel; pH 8.7; clear smooth boundary.
C3	84-118 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and micro roots; 15% gravel; pH 8.2; clear smooth boundary.
C4	118-186+ cm	Pale brown (10YR6/3) gravelly and cobbly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, loose, non-sticky; strongly effervescent; few fine and micro roots; 15% cobbles and gravel; pH 8.1.

Profile in Bare Area

C1	0-32 cm	Horizon descriptions are the same as under shrub.
C2	32-69 cm	
C3	69-108 cm	
C4	108-141+ cm	

FRENCHMAN FLAT - SITE NO. 23

Site No. 23 is on the west side of Frenchman Flat on the Larrea side of a transect which crosses the Larrea ecotone line. Included in this transect are Sites No. 22, 23, and 24 which are located on an alluvial fan comprised mostly of tuff, with some limestone from Hampel Hill. Site No. 23 has an east slope of 1%; excessively drained; smooth relief; moderate erosion; rapid permeability; surface about 40% rock and gravel; elevation 988 meters. Perennial vegetation is Larrea tridentata, Oryzopsis hymenoides, Lycium andersonii, Acamptopappus shockleyi, Grayia spinosa, Ambrosia dumosa and Dalea polyadenia.

Profile Under Shrub (Larrea tridentata)

A1	0-8 cm	Brown (10YR5/3) sand, dark brown (10YR3/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.1; clear smooth boundary.
C1	8-37 cm	Light gray (10YR7/2) sand, brown to dark brown (10YR4/3) moist, weak fine subangular blocky structure; loose, loose, non-sticky; violently effervescent; few coarse, medium fine and micro roots; pH 8.2; clear smooth boundary.
C2	37-82 cm	Very pale brown (10YR7/3) gravelly sand, dark yellowish brown (10YR4/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine, abundant micro roots; 15% gravel; pH 8.2; clear smooth boundary.
C3	82-137 cm	Very pale brown (10YR7/3) gravelly sand, dark yellowish brown (10YR4/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine, abundant micro roots; 20% gravel; pH 8.2; clear smooth boundary.
C4	137-154+ cm	Very pale brown (10YR7/3) gravelly sand, dark yellowish brown (10YR4/4) moist; contains some darker color blotches; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and micro roots; 30% gravel; pH 7.9.

Profile in Bare Area

C1	0-26 cm	Horizon descriptions are the same as under shrub.
C2	26-66 cm	
C3	66-134 cm	
C4	134+ cm	

FRENCHMAN FLAT - SITE NO. 24

This site is located on the west side of Frenchman Flat outside the Larrea ecotone line in an Atriplex canescens community. It is paired with Site 23 which is in the Larrea area. Site 24 is on an alluvial fan comprised mostly of tuff with some limestone from Hampel Hill and has an east slope of 1%; excessively drained; smooth relief; moderate erosion; moderate permeability; surface about 40% rock and gravel; elevation 978 meters. Perennial vegetation is Atriplex canescens, Mirabilis pudica and Oryzopsis hymenoides.

Profile Under Shrub (Atriplex canescens)

A1	0-12 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4/4) moist; single grain structure; loose, friable; non-sticky; violently effervescent; few micro roots; pH 8.4; clear smooth boundary.
C1	12-45 cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; loose, friable, non-sticky; violently effervescent; few medium, abundant fine and micro roots; pH 8.4; clear smooth boundary.
C2	45-85 cm	Very pale brown (10YR7/3) gravelly sand with some cobbles, dark yellowish brown (10YR4/4) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few medium, abundant fine and micro roots; 15% gravel; pH 8.4; clear smooth boundary.
C3	85-128 cm	Very pale brown (10YR7/3) gravelly sand, with some cobbles dark yellowish brown (10YR4/4) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few fine, abundant micro roots; 15% gravel; pH 7.9; clear smooth boundary.
C4	128-179+ cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; massive structure; loose, loose, non-sticky; mildly effervescent; few fine and micro roots; pH 7.8.

Profile in Bare Area

C1	0-32 cm	Horizon descriptions are the same as under shrub.
C2	32-82 cm	
C3	82-124 cm	
C4	124-152+ cm	

FRENCHMAN FLAT - SITE NO. 25

Site No. 25 is located in Larrea tridentata about 300 meters from the edge of the Larrea ecotonal line in west Frenchman Flat. It is paired with Site No. 26. It has a southeast slope of 2%; well-drained; smooth relief; moderate erosion; rapid permeability; surface about 20% rock and gravel; parent material is tuff, quartz and limestone. The A1 and C1 horizons are dark colored from decay of Larrea leaves, but the C1 away from the shrubs is lighter colored; elevation is 970 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Grayia spinosa, Eurotia lanata, Ambrosia dumosa, Acamptopappus shockleyi, Lycium pallidum and Dalea fremontii.

Profile Under Shrub (Larrea tridentata)

A1	0-9 cm	Reddish brown (2.5YR4/4) sand, dusky red (2.5YR3/2) moist; moderate medium platy structure; soft, friable, non-sticky; violently effervescent; few fine and micro roots; pH 8.0; clear smooth boundary.
C1	9-29 cm	Light reddish brown (5YR6/3) gravelly sand, reddish brown (5YR5/3) moist; weak fine subangular blocky structure; loose, friable, non-sticky; violently effervescent; few coarse and medium and abundant fine roots; 30% gravel; pH 8.5; clear smooth boundary.
C2	29-47 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; massive structure; loose, loose, non-sticky; violently effervescent; few coarse and medium and abundant fine and micro roots; 20% gravel; pH 8.3; clear smooth boundary.
C3	47-127 cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR5/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and micro roots; 15% gravel; pH 8.1; clear smooth boundary.
C4	127-161+ cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain; loose, loose, non-sticky; violently effervescent; few micro roots; 30% gravel; pH 7.9.

Profile in Bare Area

C1	0-18 cm	Very pale brown (10YR7/3) dry, brown to dark brown (10YR4/3) moist.
C2	18-52 cm	Other horizon descriptions are the same as under shrub.
C3	52-122 cm	
C4	122+ cm	

FRENCHMAN FLAT - SITE NO. 26

This site is located in an Atriplex canescens and Lycium pallidum community about 300 meters below the Larrea ecotone line on the edge of the Frenchman Lake flood plain. This site is paired with Site No. 25 which is on the Larrea side of the ecotone line. Site No. 26 has a 1% southeast slope; well-drained; moderate erosion; rapid permeability; smooth relief and about 5% of the surface is gravel; parent material is volcanic tuff; quartz and limestone; elevation 950 meters. Perennial vegetation is Atriplex canescens, Lycium pallidum, Oryzopsis hymenoides, Lycium andersonii and Ambrosia dumosa.

Profile Under Shrub (Atriplex canescens, Lycium pallidum)

A1	0-10 cm	Light yellowish brown (10YR6/4) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.3; clear smooth boundary.
A2	10-20 cm	Very pale brown (10YR7/3) loamy sand, brown (10YR6/3) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.3; clear wavy boundary.
C1	20-56 cm	Very pale brown (10YR7/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium and fine and abundant micro roots; pH 8.3; clear smooth boundary.
C2	56-93 cm	Very pale brown (10YR7/3) sand, brown to dark brown (10YR4/3) moist; single grain; loose, very friable, non-sticky; violently effervescent; few fine and abundant micro roots; pH 8.2; clear smooth boundary.
C3	93-168+ cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; single grain; loose, very friable, non-sticky; violently effervescent; few medium, fine and micro roots; pH 8.0.

Profile in Bare Area

A2	0-8 cm	Horizon descriptions are the same as under shrub.
C1	8-52 cm	
C2	52-91 cm	
C3	91+ cm	

FRENCHMAN FLAT - SITE NO. 27

This site is located in west Frenchman Flat in an area which has virtually no perennial vegetation. Slope is east at 1%; parent material is tuff with some limestone; well-drained; smooth relief; slight erosion; rapid permeability; surface about 50% gravel; elevation 950 meters. Perennial vegetation consists of a few widely scattered Oryzopsis hymenoides, Sphaeralcea spp., but annual species are prevalent.

Profile in Bare Area

A1	0-9 cm	Pale brown (10YR6/3) gravelly sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; strongly effervescent; few very fine and micro roots; 20% gravel; pH 8.8; clear smooth boundary.
C1	9-28 cm	Light yellowish brown (10YR6/4) gravelly sand, dark yellowish brown (10YR4/4) moist; massive structure; loose, loose, non-sticky; strongly effervescent; few fine and very fine, abundant micro roots; 30% gravel; pH 8.7; abrupt smooth boundary.
C2	28-51 cm	Light yellowish brown (10YR6/4) gravelly sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure breaking to single grain; soft, very friable, non-sticky; strongly effervescent; few micro roots; 20% gravel; pH 8.6; clear smooth boundary.
C3	51-63 cm	Same as C2 horizon, but they are separated by a very thin lens of slightly cemented sand.
C4	63-94 cm	Pale brown (10YR6/3) gravelly sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; very few micro roots; pH 8.8; 15% gravel; clear smooth boundary.
C5	94+ cm	Light yellowish brown (10YR6/4) gravelly sand, dark yellowish brown (10YR4/4) moist; massive structure; loose, loose, non-sticky; violently effervescent; no roots; 15% gravel; pH 8.5.

FRENCHMAN FLAT - SITE NO. 28

Site No. 28 is in south Frenchman Flat on an alluvial fan from Mercury Ridge with north slope of 4%. Dominant shrubs are Dalea fremontii and Larrea tridentata. Characteristics are: smooth relief; well-drained; rapid permeability; moderate erosion; limestone-quartz parent material; elevation 963 meters. Perennial vegetation is Larrea tridentata, Oryzopsis hymenoides, Ambrosia dumosa, Dalea fremontii, Krameria parvifolia and Lycium andersonii.

Profile Under Shrub (Larrea tridentata, Krameria parvifolia)

A1	0-4 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; 35% gravel; pH 8.3; clear smooth boundary.
C1	4-32 cm	Very pale brown (10YR7/3) very gravelly sand, brown (10YR5/3) moist; single grain structure; loose, friable, loose; violently effervescent; few fine and micro roots; 55% gravel; pH 8.8; clear smooth boundary.
C2	32-50 cm	Very pale brown (10YR7/3) very gravelly sand, brown (10YR5/3) moist; single grain structure; loose, friable, loose; violently effervescent; few medium, fine and micro roots; 50% gravel; pH 8.7; clear smooth boundary.
C3	50-71 cm	Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; single grain structure; loose, friable, loose; violently effervescent; few fine and micro roots; 50% gravel; pH 8.7; clear smooth boundary.
C4	71-97 cm	Light gray (10YR7/3) very gravelly sand, pale brown (10YR6/3) moist; single grain structure; soft, friable, non-sticky; violently effervescent; few fine and micro roots; 50% gravel; pH 8.7; clear smooth boundary.
C5	97-127+ cm	Very pale brown (10YR5/3) very gravelly sand, brown (10YR5/3) moist; single grain structure; loose, friable, loose; violently effervescent; few fine and micro roots; 50% gravel; pH 8.7.

Profile in Bare Area

C1	0-30 cm	Horizon descriptions are the same as under shrub.

FRENCHMAN FLAT - SITE NO. 29

This site is located in southeast Frenchman Flat near the foot of an alluvial fan from Mercury Ridge with a north slope of 2%. Dominant shrubs are Lycium shockleyi and Larrea tridentata. Characteristics are: smooth relief; well-drained; rapid permeability; moderate erosion; limestone-quartz parent material; surface about 10% rock and gravel; elevation 963 meters. Perennial vegetation is Lycium shockleyi, Larrea tridentata, Atriplex confertifolia, Ambrosia dumosa, Oryzopsis hymenoides and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Lycium shockleyi)

A1	0-9 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.1; clear smooth boundary.
C1	9-28 cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR 5/3) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few coarse, medium, and fine roots; 15% gravel; pH 8.5; clear wavy boundary.
C2	28-46 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few coarse, medium and fine roots; 15% gravel; pH 8.5; clear smooth boundary.
C3	46-67 cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR 5/3) moist; single grain structure; loose, friable; loose; violently effervescent; few coarse, medium and fine roots; 40% gravel; pH 8.6; clear smooth boundary.
C4	67-115 cm	Very pale brown (10YR7/3) loamy fine sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; pH 8.8; clear smooth boundary.
C5	115-150 cm	Light gray (10YR7/2) loamy fine sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and moderate micro roots; pH 8.0; clear smooth boundary.

Profile in Bare Area

C1	0-19 cm	Horizon descriptions are the same as under shrub.
C2	19-47 cm	

FRENCHMAN FLAT - SITE NO. 30

Site No. 30 is in southeast Frenchman Flat on the flood plain surrounding Frenchman Lake. No slope or relief; parent material is limestone; poorly drained; no erosion; very slow permeability; no gravel in this profile; elevation 950 meters. Perennial vegetation is Atriplex canescens and Stanleya pinnata with a few Atriplex confertifolia.

Profile Under Shrub (Atriplex canescens)

A2	0-14 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few fine, very fine, and micro roots; pH 8.4; clear smooth boundary.
C1	14-29 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few medium and fine, abundant very fine and micro roots; pH 8.5; clear smooth boundary.
C2	29-93 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few medium and fine, abundant very fine and micro roots; pH 8.4; clear smooth boundary.
C3	93-130 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky; violently effervescent; few fine, abundant very fine and micro roots; pH 8.6; clear smooth boundary.
C4	130-200+ cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few fine, very fine, and micro roots; pH 8.5.

Profile in Bare Area

Horizon descriptions are the same as under shrub.

FRENCHMAN FLAT - SITE NO. 31

Site No. 31 is located in southeast Frenchman Flat high on an alluvial fan from Mercury Ridge. Dominant vegetation is Larrea tridentata, Yucca brevifolia, Lycium shockleyi. This site is on a 5% north-facing slope; smooth relief with moderate erosion, but there are some moderately deep wide gullies throughout the immediate area; well-drained; slow permeability; limestone-quartz parent material; surface about 90% rock and gravel; elevation 1018 meters. Perennial vegetation is Atriplex confertifolia, Lycium shockleyi, Menodora spinescens, Ambrosia dumosa, Acamptopappus shockleyi, Krameria parvifolia, Ephedra funerea, Larrea tridentata, Coleogyne ramosissima and Yucca brevifolia.

Profile Under Shrub (Ambrosia dumosa, Lycium shockleyi)

A1	0-7 cm	Pale brown (10YR6/3) gravelly loamy sand, brown to dark brown (10YR4/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; no roots; 30% gravel; pH 8.5; clear smooth boundary.
B1	7-19 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; strong coarse platy structure; slightly hard, friable, slightly plastic to sticky; violently effervescent; few fine and micro roots; pH 8.7; clear smooth boundary.
C1	19-34 cm	Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few coarse, medium and fine roots; 20% gravel; pH 8.7; clear wavy boundary.
C2	34-49 cm	Very pale brown (10YR8/3) gravelly sand, pale brown (10YR6/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and micro roots; 25% gravel; pH 9.1; abrupt wavy boundary.
C3sica	49-81+ cm	Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; single grain structure; soft, friable, non-sticky; violently effervescent; few medium and fine roots; pH 8.0.

Profile in Bare Area

B1	0-10 cm	Horizon descriptions are the same as under shrub.
C1	10-25 cm	
C2	25-46 cm	
C3sica	45-76+ cm	

FRENCHMAN FLAT - SITE NO. 32

This site is located in southeast Frenchman Flat on an alluvial fan from Ranger Mountains. This site is on a transect line down the bajada with Sites No. 33 and No. 34. Slope is west at 3 to 4%; parent material is limestone; excessively drained; smooth relief, but many washes in the area; moderately severe erosion; rapid permeability; surface about 70% rock and gravel; elevation 994 meters. Perennial vegetation is Larrea tridentata, Krameria parvifolia, Lycium andersonii, Ambrosia dumosa and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata)

A11	0-3 cm	Brown (10YR5/3) loamy fine sand, dark brown (10YR3/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; no roots; pH 8.6; slightly resistant to wetting; clear smooth boundary.
A12	3-18 cm	Very pale brown (10YR7/4) gravelly loamy sand, light yellowish brown (10YR6/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; 35% gravel; pH 8.6; clear smooth boundary.
C1	18-52 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; massive structure; loose, loose, non-sticky; violently effervescent; few medium to micro roots; 65% cobbles and gravel; pH 8.8; clear smooth boundary.
C2	52-100 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/5) moist; slightly cemented massive structure; loose, loose, non-sticky; few micro roots; 60% cobbles and gravel; pH 8.5.

Profile in Bare Area

A12	0-16 cm	Horizon descriptions are the same as under shrub.
C1	16-60 cm	
C2	60-100 cm	

FRENCHMAN FLAT - SITE NO. 33

Site No. 33 is located in southeast Frenchman Flat in Larrea tridentata just above the Larrea ecotonal line bordering the flood plain. This site is part of a transect with Site No. 32 and Site No. 34 near the base of an alluvial fan from Ranger Mountains; west slope of 1%; parent material is limestone; well-drained; moderate erosion with shallow drainage channels; rapid permeability; surface about 5% rock and gravel; elevation 950 meters. Perennial vegetation is Larrea tridentata, Lycium shockleyi, Atriplex confertifolia, Oryzopsis hymenoides and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Lycium shockleyi)

A11	0-8 cm	Pale brown (10YR6/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few micro roots; pH 8.3; clear smooth boundary.
A12	8-24 cm	Pale brown (10YR6/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, medium, fine, and micro roots; pH 8.7; clear smooth boundary.
C1	24-94 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium and fine, abundant very fine and micro roots; 60% gravel and cobbles; pH 8.8; clear smooth boundary.
C2	94-200+ cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and micro roots; 45% cobbles and gravel; pH 8.4.

Profile in Bare Area

A12	0-10 cm	Horizon descriptions are the same as under shrub.
C1	10-89 cm	
C2	89-200+ cm	

FRENCHMAN FLAT - SITE NO. 34

This site is located about 500 meters below the Larrea ecotone line bordering the playa in southeast Frenchman Flat. Vegetation is Atriplex canescens with some Stanleya pinnata. This is the lower site in a transect which includes Sites No. 32 and No. 33. The site is on a flood plain with no slope; smooth relief; moderate drainage; slow permeability; limestone parent material; no rocks or gravel throughout the profile; elevation 945 meters.

Profile Under Shrub (Atriplex canescens)

C1	0-10 cm	Very pale brown (10YR7/3) loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; no roots; pH 8.6; clear smooth boundary.
C2	10-18 cm	Very pale brown (10YR7/3) loam, yellowish brown (10YR5/4) moist; moderate medium platy structure; soft, friable, sticky; violently effervescent; no roots; pH 8.5; clear smooth boundary.
C3	18-40 cm	Light gray (10YR7/1) loam, yellowish brown (10YR5/4) moist; strong medium platy structure; soft, friable, slightly sticky; violently effervescent; no roots; pH 8.5; clear smooth boundary.
C4	40-53 cm	Light gray (10YR7/2) loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.1; clear smooth boundary.
C5	53-68 cm	Light gray (10YR7/2) loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.1; clear smooth boundary.
C6	68+ cm	Light gray (10YR7/2) sandy loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.5.

Profile in Bare Area

Horizon descriptions are the same as under shrub.

FRENCHMAN FLAT - SITE NO. 35

Site No. 35 is located in east Frenchman Flat high on an alluvial fan which separates the Ranger Mountains and Buried Hills. This site is the upper end of a transect which also includes Sites No. 35, 36, 37 and 38 extending down the alluvial fan across a *Larrea* ecotone line into the flood plain of Frenchman Lake. Slope is west at 2%; parent material is limestone with some volcanic material; well-drained; generally smooth relief but with drainage washes; moderate to locally severe erosion; rapid permeability; surface about 60% rock and gravel; elevation 1036 meters. Perennial vegetation is *Larrea tridentata*, *Dalea fremontii*, *Atriplex confertifolia*, *Ephedra nevadensis*, *Krameria parvifolia*, *Yucca brevifolia*, *Ambrosia dumosa* and *Hymenoclea salsola*.

Profile Under Shrub (*Larrea tridentata*)

A11	0-5 cm	Pale brown (10YR6/3) gravelly sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; 20% gravel; pH 8.3; clear smooth boundary.
A12	5-12 cm	Dark yellowish brown (10YR4/4) gravelly sand, dark brown (7.5YR3/2) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; strongly effervescent; few very fine and micro roots; 25% gravel; pH 8.3; clear smooth boundary.
C1	12-52 cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR5/3) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few coarse, abundant medium to micro roots; 35% gravel; pH 9.2; gradual wavy boundary.
C2	52-86 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; abundant fine to micro roots; 45% cobbles and gravel; pH 8.8; clear wavy boundary.
C3	86-140+ cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; massive structure breaking to single grain; slightly hard, loose, non-sticky; violently effervescent; no roots; 45% cobbles and gravel; pH 8.7.

Profile in Bare Area

A12	0-10 cm	Horizon descriptions are the same as under shrub.
C1	10-75 cm	
C2	75-120 cm	

FRENCHMAN FLAT - SITE NO. 36

This site is located in east Frenchman Flat on an alluvial fan which separates the Ranger Mountains and Buried Hills. This site is part of a transect which includes Sites No. 35, 37 and 38 extending across a Larrea ecotone line into the flood plain of Frenchman Lake. Slope is west at 3%; parent material is limestone; well-drained; smooth relief; moderate erosion; moderate permeability; surface is about 15% rock and gravel; elevation 988 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Eurotia lanata, Krameria parvifolia and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata)

A11	0-5 cm	Pale brown (10YR6/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few very fine and micro roots; pH 8.1; slightly resistant to wetting; clear wavy boundary.
A12	5-18 cm	Pale brown (10YR6/3) fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse to micro roots; pH 8.4; clear smooth boundary.
C1	18-56 cm	Very pale brown (10YR7/3) gravelly fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few coarse and medium, abundant fine to micro roots; 20% gravel; pH 8.8; clear wavy boundary.
C2	56-110 cm	Pale brown (10YR6/3) cobbly gravelly fine sand, yellowish brown (10YR5/4) moist; massive to single grain structure; soft, very friable, non-sticky; violently effervescent; few fine to micro roots; 55% cobbles and gravel; pH 8.6.

Profile in Bare Area

A12	0-12 cm	Horizon descriptions are the same as under shrub.
C1	12-54 cm	
C2	53-146 cm	

FRENCHMAN FLAT - SITE NO. 37

This site is located in east Frenchman Flat on an alluvial fan which separates the Ranger Mountains from Buried Hills. This site is in Larrea just above the Larrea ecotone line and is part of a transect which includes Sites No. 35, 36 and 38. Slope is west at 1%; parent material is limestone; well-drained; smooth relief; moderate erosion; slow permeability; surface is about 10% rock and gravel; elevation is 957 meters. Perennial vegetation is Larrea tridentata, Atriplex confertifolia, Ambrosia dumosa, Eurotia lanata, Oryzopsis hymenoides and Sphaeralcea ambigua.

Profile Under Shrub (Larrea tridentata)

A1	0-13 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, very friable; non-sticky; strongly effervescent; few fine to micro roots; pH 8.7; clear wavy boundary.
B1	13-41 cm	Very pale brown (10YR7/3) loamy sand, light yellowish brown (10YR6/4) moist; weak fine platy, breaking to crumb structure; soft, friable; slightly sticky; violently effervescent; few medium to micro roots; pH 8.4; vesiculated; clear smooth boundary.
C1	41-73 cm	Very pale brown (10YR7/3) gravelly fine sand, light yellowish brown (10YR6/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; 35% gravel; pH 8.9; clear wavy boundary.
C2	73-120 cm	Very pale brown (10YR7/3) gravelly fine sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine to micro roots; 35% gravel; abrupt smooth boundary; pH 9.0.
C3cam	120+ cm	Caliche hard pan.

Profile in Bare Area

B1	0-24 cm	Horizon descriptions are the same as under shrub.
C1	24-54 cm	
C2	54-116 cm	
C3cam	116+ cm	

FRENCHMAN FLAT - SITE NO. 38

Site No. 38 is in east Frenchman Flat on an alluvial fan which separates the Ranger Mountains and Buried Hills. This site is between the flood plain and the Larrea ecotone line. Slope is zero; parent material is limestone; poorly drained; smooth relief; moderate erosion; very slow permeability; surface less than 1% rock and gravel; elevation 945 meters. Perennial vegetation is Atriplex canescens and Atriplex confertifolia. All of the C horizons have numerous thin lenses of coarse hard materials.

Profile Under Shrub (Atriplex canescens)

A1	0-12 cm	Pale brown (10YR6/3) very fine sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.1; clear smooth boundary.
A2	12-23 cm	Very pale brown (10YR7/3) fine sandy loam, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky; violently effervescent; few medium to micro roots; pH 8.7; clear smooth boundary.
C1	23-66 cm	Very pale brown (10YR7/3) fine sandy loam, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.2; clear smooth boundary.
C2	66-75 cm	Very pale brown (10YR7/3) fine sandy loam, light yellowish brown (10YR6/4) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few fine and very fine roots; pH 8.1; clear smooth boundary.
C3	75-90 cm	Very pale brown (10YR7/3) fine sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; very soft, friable, non-sticky; violently effervescent; few fine roots; pH 8.4; clear smooth boundary.
C4	90-94 cm	Very pale brown (10YR7/3) fine sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; slightly hard, very friable; slightly sticky; violently effervescent; no roots; pH 8.2; clear smooth boundary.

Profile in Bare Area

A2	0-11 cm	Horizon descriptions are the same as under shrub.
C1	11-54 cm	
C2	54-63 cm	
C3	63-78 cm	
C4	78-82 cm	

FRENCHMAN FLAT - SITE NO. 39

This site is located in north-central Frenchman Flat midway between the flood plain and the Larrea ecotone line. Slope is south at less than 1%; parent material is tuff; poorly drained; smooth relief; moderate erosion; slow permeability; surface about 1% cobbles and coarse gravel; elevation is 940 meters. Perennial vegetation is Atriplex confertifolia.

Profile Under Shrub (Atriplex confertifolia)

A11	0-17 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4.5/4) moist; weak fine subangular blocky structure; loose, loose, non-sticky; strongly effervescent; no roots; pH 8.5; clear smooth boundary.
A12	17-29 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; pH 9.0; slightly vesiculated; clear smooth boundary.
C1	29-47 cm	Very pale brown (10YR7/4) sandy loam, yellowish brown (10YR5/5) moist; moderate fine subangular blocky structure; medium hard, friable, non-sticky; violently effervescent; few medium, abundant fine micro roots; pH 8.6; clear smooth boundary.
C2	47-62 cm	Very pale brown (10YR7/4) loamy sand, yellowish brown (10YR5/5) moist; moderate fine subangular blocky structure; medium hard, friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.4; clear smooth boundary.
C3	62-88 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few medium to micro roots; pH 8.7; clear smooth boundary.
C4	88-115 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few medium to micro roots; pH 8.4; abrupt smooth boundary.

Profile in Bare Area

A12	0-13 cm	Horizon descriptions are the same as under shrub.
C1	13-30 cm	
C2	30-47 cm	
C3	47-75 cm	
C4	75-110 cm	

FRENCHMAN FLAT - SITE NO. 40

Site No. 40 is in northeast Frenchman Flat on the Nye Canyon alluvial fan. This site is on the Larrea side of a Larrea ecotone line and is paired with Site No. 41 which is on the other side of the ecotone line. Slope is south at 1%; parent material is limestone; well-drained; smooth relief; moderate erosion; moderate permeability; surface is about 5% rock and gravel with some large stones (6-8 in.) on the surface; elevation is 960 meters. Perennial vegetation is Larrea tridentata, Atriplex canescens, Ambrosia dumosa, Sphaeralcea ambigua, Eurotia lanata and Dalea polyadenia.

Profile Under Shrub (Larrea tridentata)

A1	0-25 cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; abundant fine to micro roots; pH 8.2; moderately resistant to wetting; clear smooth boundary.
A2	25-38 cm	Weakly developed. Very pale brown (10YR7/3) fine sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; abundant medium to micro roots; pH 8.1; vesiculated; clear smooth boundary.
C1	38-68 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; abundant coarse to micro roots; pH 8.1; clear smooth boundary.
C2	68-117 cm	Very pale brown (10YR7/3) gravelly sand, yellowish brown (10YR5/4) moist; massive structure; loose, loose, non sticky; violently effervescent; few medium to very fine roots; 30% gravel; pH 8.1; abrupt smooth boundary.
C3	117 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; moderately hard, loose, non-sticky; cemented; violently effervescent; no roots; pH 8.1.

Profile in Bare Area

A2	0-12 cm	Horizon descriptions are the same as under shrub, except that C3 is not cemented.
C1	12-46 cm	
C2	46-86 cm	
C3	86+ cm	

FRENCHMAN FLAT - SITE NO. 41

Site No. 41 is located in northeast Frenchman Flat between the flood plain and the Larrea ecotone line. Slope is south at less than 1%; parent material is tuff and limestone; well-drained; smooth relief; moderate erosion with shallow drainage channels; moderate permeability; surface less than 1% rock and gravel; elevation 945 meters. Perennial vegetation is Atriplex confertifolia, Atriplex canescens, Eurotia lanata, Oryzopsis hymenoides, Ambrosia dumosa and Hymenoclea salsola.

Profile Under Shrub (Atriplex confertifolia, Eurotia lanata)

A11	0-8 cm	Pale brown (10YR6/3) sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few fine to micro roots; pH 8.3; clear smooth boundary.
A12	8-18 cm	Pale brown (10YR6/3) loamy sand, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; very slightly hard, very friable, non-sticky; violently effervescent; few medium, abundant fine to micro roots; pH 8.8; clear smooth boundary.
C1	18-47 cm	Light gray (10YR7/2) loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.6; clear smooth boundary.
C2	47-74 cm	Light gray (10YR7/2) cobbly gravelly sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few fine to micro roots; 30% cobbles and gravel; pH 8.3; clear smooth boundary.
C3	74-95 cm	Light gray (10YR7/2) gravelly sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few very fine and micro roots; 20% gravel; pH 8.2; abrupt smooth boundary.
C4	95-107 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, non-sticky; violently effervescent; few very fine and micro roots; pH 8.0; smooth boundary.

Profile in Bare Area

A12	0-15 cm	Horizon descriptions are the same as under shrub.
C1	15-48 cm	

FRENCHMAN FLAT - SITE NO. 42

This site is located in Frenchman Flat on the Nye canyon alluvial fan. It was selected because of a very high population of Ephedra nevadensis. Slope is southwest at 3%; parent material is tuff, quartz and limestone; excessive drainage; smooth relief; moderate to severe erosion; rapid permeability; surface about 15% gravel with a high percentage chalc-dony; elevation 1006 meters. Perennial vegetation is Ephedra nevadensis, Atriplex confertifolia, Ambrosia dumosa, Larrea tridentata, Krameria parvifolia and Menodora spinescens.

Profile Under Shrub (Atriplex confertifolia, Ephedra nevadensis, Krameria parvifolia)

A1	0-5 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; no roots; pH 8.2; clear smooth boundary.
A2	5-17 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.7; clear wavy boundary.
A3	17-30 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; moderate and slightly hard mixed, very friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.5; clear wavy boundary.
C1	30-51 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few medium to micro roots; pH 8.3; gradual boundary.
C2	51+ cm	Light gray (10YR7/2) coarse sand, light yellowish brown (10YR6/4) moist; massive structure; soft, loose, non-sticky; violently effervescent; few fine to micro roots; pH 8.1.

Profile in Bare Area

A2	0-12 cm	Horizon descriptions are the same as under shrub.
A3	12-29 cm	
C1	29-54 cm	
C2	54+ cm	

FRENCHMAN FLAT - SITE NO. 43

Site No. 43 is located in north Frenchman Flat on the Larrea side of a transect which crosses the Larrea ecotone line. Site No. 44 is at the other end of the transect in Atriplex canescens. This site is just above the flood plain of Frenchman Lake and is on the alluvial fan from Nye Canyon. It has a 1% slope; parent material is volcanic tuff and limestone; well-drained; smooth relief; rapid permeability; surface is about 20% rocks and gravel; elevation 970 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Atriplex canescens, Eurotia lanata, Lycium andersonii, Acamptopappus shockleyi, Oryzopsis hymenoides, Grayia spinosa and Atriplex confertifolia.

Profile Under Shrub (Larrea tridentata, Eurotia lanata)

A1	0-28 cm	Brown (10YR5/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft friable, non-sticky; violently effervescent; few micro roots; pH 8.3; clear wavy boundary.
A2	28-41 cm	Light gray (10YR7/2) loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium, fine and micro roots; pH 8.5; abrupt wavy boundary.
C1	41-63 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; abundant medium and fine roots; pH 8.5; clear smooth boundary.
C2	63-97 cm	Very pale brown (10YR7/3) sand, brown to dark brown (10YR4/3) moist; single grain, soft, friable, non-sticky; violently effervescent; abundant fine and micro roots; pH 8.3; clear smooth boundary.
C3	97-153 cm	Very pale brown (10YR7/3) sand, brown to dark brown (10YR4/3) moist; single grain; loose, friable, non-sticky; violently effervescent; few fine and micro roots; pH 8.1.

Profile in Bare Area

A1	0-2 cm	Horizon descriptions are the same as under shrub.
A2	2-12 cm	
C1	12-32 cm	
C2	32-72 cm	
C3	72-128 cm	

FRENCHMAN FLAT - SITE NO. 44

This site is located in north Frenchman Flat on an alluvial fan from Nye Canyon. It is between the flood plain and the Larrea ecotone line. It is paired with Site No. 43 which is 300 meters upslope and in the Larrea zone. Slope is south at less than 1%; parent material is tuff with a small amount of limestone; well-drained; smooth relief; moderate erosion; moderate permeability; surface is about 15% rock and gravel; elevation is 957 meters. Perennial vegetation is Atriplex canescens, Eurotia lanata and Oryzopsis hymenoides.

Profile Under Shrub. (Atriplex canescens)

A11	0-17 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, loose, non-sticky; strongly effervescent; few medium, abundant fine to micro roots; pH 8.1; moderately resistant to wetting; clear smooth boundary.
A12	17-28 cm	Light gray (10YR7/2) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few medium, abundant fine to micro roots; pH 8.3; slightly vesiculated; clear smooth boundary.
C1	28-42 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.5; clear smooth boundary.
C2	42-62 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few medium to micro roots; pH 8.0; clear smooth boundary.
C3	62-85 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; massive structure; loose, loose, non-sticky; violently effervescent; few very fine micro roots; pH 8.1; abrupt smooth boundary.
C4	85-104 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, loose, non-sticky; violently effervescent; few very, few very fine and fine roots; pH 8.0; clear smooth boundary.

Profile in Bare Area

A12	0-12 cm	Horizon descriptions are the same as under shrub.
C1	12-36 cm	
C2	36-53 cm	
C3	53-76 cm	
C4	76-96 cm	

FRENCHMAN FLAT - SITE NO. 45

Site No. 45 is located on the north side of the Frenchman Lake flood plain. This area has no gravel on the surface, but there are occasional large exposed rocks (up to 30 cm diameter). Perennial vegetation is very sparse and is limited to Kochia americana and Atriplex confertifolia. This site has no slope; parent material is volcanic tuff; poorly drained; smooth relief; slow permeability; elevation 940 meters. Shrub clumps are on built-up mounds.

Profile Under Shrub (Atriplex confertifolia)

A1	0-17 cm	Light brownish gray (10YR5/2) sandy loam, brown to dark brown (10YR4/2) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.5; clear smooth boundary.
A2	17-28 cm	Very pale brown (10YR7/3) sandy clay loam, brown (10YR5/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky; violently effervescent; few micro roots; pH 8.5; clear smooth boundary.
C1	28-43 cm	Very pale brown (10YR7/3) loam, brown (10YR5/3) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.6; clear smooth boundary.
C2	43-79 cm	Very pale brown (10YR7/3) sandy clay loam, yellowish brown (10YR5/4) moist; weak fine platy structure; slightly hard, friable, non-sticky; violently effervescent; few fine and micro roots; pH 8.7; clear smooth boundary.
C3	79-146+ cm	Pink (5YR7/4) very fine loam, reddish brown (5YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few micro roots; pH 7.9.

Profile in Bare Area

A2	0-11 cm	Horizon descriptions are the same as under shrub.
C1	11-24 cm	
C2	24-39 cm	
C3	39-68+ cm	

FRENCHMAN FLAT - SITE NO. 46

This site is located in Frenchman Flat north of the flood plain and below the Larrea ecotone line. Slope is south at 1%; parent material is volcanic tuff; moderately well-drained; smooth relief; moderate erosion with shallow drainage channels; slow permeability; large rocks exposed in the drainage channels; elevation 940 meters. Perennial vegetation is Atriplex confertifolia and Eurotia lanata.

Profile Under Shrub (Atriplex confertifolia)

A1	0-10 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; strongly effervescent; few very fine and micro roots; pH 8.6; slightly resistant to wetting; clear smooth boundary.
A2	10-27 cm	Very pale brown (10YR7/3) sandy loam, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium to very fine roots; pH 8.5; clear smooth boundary.
C1	27-42 cm	Light yellowish brown (10YR6/4) loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to very fine roots; pH 8.4; abrupt smooth boundary.
C2	42-61 cm	Very pale brown (10YR7/4) sandy loam, dark yellowish brown (10YR4/4) moist; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky; violently effervescent; few medium to very fine roots; pH 8.5; abrupt smooth boundary.
C3	61-87 cm	Very pale brown (10YR7/4) loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; pH 8.0; clear smooth boundary.
C4	87-125 cm	Very pale brown (10YR7/4) cobbly gravelly sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; very soft, very friable, non-sticky; violently effervescent; few medium to micro roots; 40% cobbles and gravel; pH 7.9; abrupt smooth boundary.

Profile in Bare Area

A2	0-16 cm	Horizon descriptions are the same as under shrub.
C1	16-30 cm	
C2	30-49 cm	
C3	49-74 cm	
C4	74-110 cm	

FRENCHMAN FLAT - SITE NO. 47

Site No. 47 is located in northwest Frenchman Flat on an alluvial fan of tuff and limestone from Cane Spring Wash. Southeast slope of 2%; excessively drained; smooth relief; moderate erosion; moderate permeability to the cemented pan; surface about 80% rock and gravel; elevation 1000 meters. This profile is very shallow, but is one of the few locations sampled with a well developed profile. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Grayia spinosa, Dalea fremontii, Ephedra nevadensis and Krameria parvifolia.

Profile Under Shrub (Larrea tridentata)

A1	0-13 cm	Brown to dark brown (10YR4/3) fine sand, very dark grayish brown (10YR3/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.5; clear smooth boundary.
A2	13-25 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, friable, slightly sticky; violently effervescent; few coarse, medium, fine and micro roots; pH 8.3; clear smooth boundary.
B1	25-55 cm	Reddish brown (5YR5/4) gravelly sandy loam, reddish brown (5YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, medium, fine, and micro roots; 25% gravel; pH 8.7; distinct line streaks.
Cm	55+ cm	Strongly cemented pan.

Profile in Bare Area

A2	0-13 cm	Horizon descriptions are the same as under shrub.
B1	13-40 cm	
Cm	40+ cm	

FRENCHMAN FLAT - SITE NO. 48

This site is located in northwest Frenchman Flat on the north side of Cane Spring Wash on an alluvial fan of limestone and tuff. It has an easterly slope of 2%; excessively drained; smooth relief; moderate erosion; rapid permeability; surface about 50% rock and gravel; elevation 1036 meters. Perennial vegetation is Larrea tridentata, Acamptopappus shockleyi, Grayia spinosa, Ambrosia dumosa, Lycium andersonii, Ephedra nevadensis, Sphaeralcea ambigua and Hymenoclea salsola.

Profile Under Shrub (Larrea tridentata)

A1	0-9 cm	Light yellowish brown (10YR6/4) sand, very dark grayish brown (10YR3/2) moist; weak fine sub-angular blocky structure; soft, friable, non-sticky; violently effervescent; abundant micro roots; pH 8.2; clear smooth boundary.
C1	9-42 cm	Light yellowish brown (10YR6/4) loamy sand, dark yellowish brown (10YR4/4) moist; massive structure; soft, friable, non-sticky; violently effervescent; few coarse, medium, fine, and micro roots; pH 8.8; clear smooth boundary.
C2	42-71 cm	Very pale brown (10YR7/3) gravelly sand, dark yellowish brown (10YR4/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse, medium, fine, and micro roots; pH 8.5; clear wavy boundary.
C3	72-127 cm	Light gray (10YR7/2) gravelly sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse, medium, fine, and micro roots; 45% gravel; pH 8.4.
C4sicam	127+ cm	White (10YR8/1) pale brown (10YR6/3) moist; cemented pan.

Profile in Bare Area

A2	0-15 cm	Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate medium platy structure; slightly hard, friable, slightly sticky; violently effervescent; 20% gravel; pH 8.6.
C1	15-41 cm	Other horizon descriptions are the same as under shrub.
C2	41-76 cm	
C3	76-111+ cm	

FRENCHMAN FLAT - SITE NO. 49

Site No. 49 is located high on an alluvial fan in the pass separating Frenchman Flat and Yucca Lake Basin. This fan has limestone and tuff parent material; south slope of 3%; excessively drained; smooth relief; moderate erosion; rapid permeability to pan; surface about 60% rock and gravel; elevation 1090 meters. Perennial vegetation is Menodora spinescens, Larrea tridentata, Acamptopappus shockleyi, Eurotia lanata, Krameria parvifolia, Ambrosia dumosa, Oryzopsis hymenoides, Atriplex confertifolia, Lycium andersonii, Sphaeralcea ambigua, Ephedra nevadensis, Grayia spinosa and Dalea fremontii.

Profile Under Shrub (Larrea tridentata)

A1	0-6 cm	Pale brown (10YR6/3) fine sand, dark (10YR3/3) moist; weak fine platy structure; loose, friable, non-sticky; violently effervescent; few micro roots; pH 8.3; clear smooth boundary.
C1	6-25 cm	Very pale brown (10YR7/3) gravelly loamy sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, medium fine, and micro roots; 30% gravel; pH 9.0; clear wavy boundary.
C2	25-70 cm	Very pale brown (10YR7/3) gravelly sand, yellowish brown (10YR5/4) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few coarse, medium, fine and micro roots; 45% gravel; pH 9.1. Underlain by strongly cemented layer.

Profile in Bare Area

C1	0-26 cm	Horizon descriptions are the same as under shrub.
C2	26-61+ cm	

ROCK VALLEY - SITE NO. 50

Site No. 50 is located on the south slope of Skull Mountain. This area has a weak desert pavement with many large volcanic rocks on the surface with cobbles throughout the shallow profile. Surface rocks are varnished. This location is on a moderately eroded alluvial fan with a 3% slope; parent material is volcanic tuff, basalt, and limestone; well-drained to the pan; smooth relief; moderately rapid permeability. Elevation 1060 meters. Perennial vegetation is Larrea tridentata, Lycium pallidum, Grayia spinosa, Ambrosia dumosa, Eurotia lanata, Krameria parvifolia, and Ephedra nevadensis.

Profile Under Shrub (Larrea tridentata, Grayia spinosa)

A1	0-13 cm	Pale brown (10YR6/3) sand, dark grayish brown (10YR4/2) moist; weak, fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few fine roots; class 5 stoniness; pH 8.4; abrupt smooth boundary.
A2	10-20 cm	Very pale brown (10YR7/3) loamy sand, brown (10YR5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky; strongly effervescent; few fine roots; pH 8.5; abrupt wavy boundary.
C1	20-33 cm	Very pale brown (10YR7/3) loamy sand, brown (10YR5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, soft; violently effervescent; few very fine, fine, and medium roots; pH 8.4.
C2sicam	33+ cm	Silica - lime pan.

Profile in Bare Area

A2	0-12 cm	Very pale brown (10YR7/3) loam, brown (10YR5/3) moist; vesicular; moderate medium subangular blocky structure; soft, friable, non-sticky; violently effervescent; no roots; pH 8.4; abrupt wavy boundary.
B
(faint)	12-21 cm	Light yellowish brown (10YR6/4) sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and very fine roots; pH 8.0; abrupt wavy boundary.
C1	21-28 cm	Pale brown (10YR6/3) coarse sandy loam, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and very fine roots; pH 8.2.
C2sicam	28+ cm	Silica - lime pan.

ROCK VALLEY - SITE NO. 51

This site is located in Rock Valley study area downslope from Plot C*. The site is near the foot of an alluvial fan from Specter Range; slope northwest at 2%; smooth relief; well-drained to pan; moderate permeability; moderate erosion; limestone-tuff parent material; surface about 30% rock and gravel; elevation 1015 meters. Perennial vegetation is Ambrosia dumosa, Lycium andersonii, Lycium pallidum, Larrea tridentata, Grayia spinosa, Atriplex confertifolia, Ephedra nevadensis, Krameria parvifolia and Eurotia lanata.

Profile Under Shrub (Larrea tridentata, Grayia spinosa, Krameria parvifolia)

A11	0-10 cm	Pale brown (10YR6/3) sand, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.0; wavy boundary.
A12	10-20 cm	Pale brown (10YR6/3) loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium, fine and micro roots; pH 8.5; abrupt wavy boundary.
A2	20-28 cm	Light gray (10YR7/2) sandy loam, brown (10YR5/3) moist; weak fine platy; slightly hard; slightly friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.3; abrupt wavy boundary.
C1	28-49 cm	Very pale brown (10YR7/3) loamy sand, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; pH 8.5; abrupt wavy boundary.
C2sica	49+ cm	Cemented pan.

Profile in Bare Area

A2	0-8 cm	Horizon descriptions are the same as under shrub.
C1	8-36 cm	
C2sica	36+ cm	

* See 2.1.3

ROCK VALLEY - SITE NO. 52

This site is located on the west side of Plot C in the Rock Valley study area on an alluvial fan on the north side of Specter Range. Slope is northeast at 3%; parent material is limestone; well-drained; smooth relief; moderate erosion; moderately slow permeability; surface about 70% rock and gravel; elevation 1036 meters. This site is in a small area which is devoid of any vegetation.

Profile in Bare Area

A2	0-6 cm	Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; vesiculated; crumb structure; medium hard, firm, slightly sticky; violently effervescent; no roots; pH 8.2; clear smooth boundary.
C1	6-24 cm	Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; soft, friable; non-sticky; violently effervescent; few medium roots; 30% gravel; pH 8.5; clear smooth boundary.
C2	24-60 cm	Very pale brown (10YR7/3) gravelly sandy loam, light yellowish brown (10YR6/4) moist; massive structure; soft, friable, non-sticky; violently effervescent; no roots; 50% gravel; pH 7.8.

ROCK VALLEY - SITE NO 53

Site No. 53 is located in the Rock Valley study area between Plots A and C. The site is on an alluvial fan on a northwest slope of the Specter Range; 4% slope; smooth relief; well-drained; moderate permeability; moderate erosion; limestone-tuff parent material; surface about 50% rock and gravel; elevation 1036 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Lycium andersonii, Krameria parvifolia, Ephedra nevadensis, Grayia spinosa and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A1	0-7 cm	Grayish brown (10YR5/2) fine gravelly loamy sand, dark yellowish brown (10YR4/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; 20% gravel; pH 7.8; clear smooth boundary.
C1	7-16 cm	Pale brown (10YR6/3) fine gravelly loamy sand, dark grayish brown (10YR4/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and micro roots; 20% gravel; pH 8.4; abrupt wavy boundary.
C2	16-30 cm	Very pale brown (10YR7/3) gravelly loamy sand to gravelly loamy sand, brown (10YR5/3) moist; massive structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; 45% gravel; pH 8.4; clear smooth boundary.
C3	30-40 cm	Very pale brown (10YR7/3) gravelly loamy sand, brown (10YR5/3) moist; massive structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; 50% gravel; pH 8.5; clear smooth boundary.
C4	40-56 cm	Very pale brown (10YR7/3) gravelly sand, brown (10YR5/3) moist; single grain structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; 60% gravel; pH 8.2; wavy boundary.
C5	56-70 cm	Very pale brown (10YR7/3) fine gravelly sand, pale brown (10YR6/3) moist; single grain structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; 20% gravel; pH 8.4; abrupt wavy boundary.
C6sica	70-90+ cm	Cemented pan.

Profile in Bare Area

C1	0-13 cm	Horizon descriptions are the same as under shrub.
C2	13-27 cm	
C3	27-40 cm	

ROCK VALLEY - SITE NO. 54

This site is located in the Rock Valley study area between plots A and D on an alluvial fan from the north end of the Spector Range. Parent material mostly limestone with some tuff and basalt; north slope of 2%; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 30% rock and gravel; elevation 1030 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Grayia spinosa, Lycium pallidum, Ambrosia dumosa, Krameria parvifolia and Ephedra nevadensis.

Profile Under Shrub (Larrea tridentata, Ephedra nevadensis, Krameria parvifolia)

A1	0-6 cm	Brown (10YR5/3) loamy very fine sand, dark brown (10YR3/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few micro roots; pH 7.9; slightly resistant to wetting; clear smooth boundary.
C1	6-24 cm	Very pale brown (10YR7/3) gravelly loamy very fine sand, yellowish brown (10YR5/4) moist; very fine subangular blocky structure; soft, friable, non-sticky violently effervescent; few coarse, medium fine and micro roots; 15% gravel; pH 8.3; clear wavy boundary.
C2	24-70 cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; massive structure; soft, friable, non-sticky; violently effervescent; abundant medium, few fine and micro roots; 45% gravel; pH 8.2; clear smooth boundary.
C3cam	70+ cm	Cemented caliche.

Profile in Bare Area

A2	0-8 cm	Very pale brown (10YR7/3) very fine sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, friable, slightly sticky.
C1	8-16 cm	Horizon descriptions are the same as under shrub.
C2	16-63 cm	
C3cam	63+ cm	

ROCK VALLEY - SITE NO. 55

Site No. 55 is located on the west side of Plot B in the Rock Valley study area on an alluvial fan on a north slope of the Specter Range. Slope is 3% and facing northwest; parent material is limestone and tuff; well-drained; smooth relief; but with a number of shallow drainage channels near; moderate erosion; moderate permeability to pan; surface about 60% rock and gravel; elevation 1048 meters. Perennial vegetation is Larrea tridentata, Lycium pallidum, Grayia spinosa, Lycium andersonii, Ephedra nevadensis, Ambrosia dumosa, Krameria parvifolia and Eurotia lanata.

Profile Under Shrub (Larrea tridentata, Grayia spinosa, Lycium pallidum)

A11	0-15 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few medium and fine, abundant very fine and micro roots; pH 8.0; clear smooth boundary.
A12	15-23 cm	Pale brown (10YR6/3) loamy sand, dark brown (10YR3/3) moist; very weak fine subangular blocky structure; soft, firm, non-sticky; strongly effervescent; few coarse, abundant medium, fine, and micro roots; pH 8.4; clear wavy boundary.
C	23-110 cm	Pale brown (10YR6/3) gravelly sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; violently effervescent; no roots; 40% gravel; pH 8.6; underlain by very hard caliche layer.

Profile in Bare Area

A12	0-23 cm	Horizon descriptions are the same as under shrub.
C	23-106 cm	

ROCK VALLEY - SITE NO. 56

Site No. 56 is located on the east site of Plot B in the Rock Valley study area, on an alluvial fan on the north side of the Specter Range. The slope is northwest at 3%; parent material is limestone and tuff; well-drained; smooth relief; moderate erosion; moderate permeability to pan; surface about 60% rock and gravel; elevation 1055 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Grayia spinosa, Lycium pallidum, Ephedra nevadensis and Ambrosia dumosa.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A11	0-2 cm	Brown (10YR5/3) fine sand, brown to dark brown (10YR4/3) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; strongly effervescent; few micro roots; pH 7.4; clear smooth boundary; slightly resistant to wetting.
A12	2-9 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, abundant very fine and micro roots; pH 8.0; clear smooth boundary.
C	9-50 cm	Pale brown (10YR6/3) cobbly gravelly loamy sand, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse and medium, abundant fine, very fine, and micro roots; 35% cobbles and gravel; pH 8.3.

Profile in Bare Area

A12	0-10 cm	Horizon descriptions are the same as under shrub.
C	10-54 cm	

ROCK VALLEY - SITE NO. 57

Site No. 57 is located in the Rock Valley study area below Plot B. This site is on an alluvial fan on a northwest slope of the Specter Range; 4% slope; smooth relief; well-drained; slow permeability; moderate erosion; limestone-tuff parent material; weak desert pavement with about 5% of the surface covered by rock and gravel. Elevation 1048 meters. Perennial vegetation is Ambrosia dumosa, Lycium andersonii, Lycium pallidum, Larrea tridentata, Grayia spinosa, Coleogyne ramosissima, Eurotia lanata, Ephedra nevadensis, Oryzopsis hymenoides and Krameria parvifolia.

Profile Under Shrub (Larrea tridentata, Grayia spinosa, Ambrosia dumosa)

A1	0-15 cm	Brown (10YR5/3) fine sand, dark grayish brown (10YR4/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and medium roots; pH 8.2; abrupt wavy boundary.
C1	15-33 cm	Very pale brown (10YR7/3) gravelly loamy sand, brown (10YR5/3) moist; weak medium subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few fine and medium roots; 30% gravel; pH 8.0; abrupt wavy boundary.
C2sica	33-57 cm	Cemented gravel.

Profile in Bare Area

C1	0-17 cm	Very pale brown (10YR7/3) gravelly sandy loam, brown (10YR5/3) moist; weak medium subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and medium roots; pH 8.2; clear smooth boundary.
C2	17-43 cm	Very pale brown (10YR7/3) gravelly sandy loam, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and medium roots; pH 8.0; abrupt wavy boundary.
C3sica	43+ cm	Cemented gravel.

ROCK VALLEY - SITE NO. 58

Site No. 58 is located on an alluvial fan on the south side of Skull Mountain. This site was selected because Grayia spinosa constitutes a great majority of the vegetation. Parent material is tuff, basalt and limestone; south slope of 2%; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 15% rock and gravel; elevation 1110 meters. Perennial vegetation is Grayia spinosa, Lycium pallidum, Ambrosia dumosa, Larrea tridentata, Oryzopsis hymenoides and Ephedra nevadensis.

Profile Under Shrub (Larrea tridentata, Grayia spinosa)

A11	0-4 cm	Brown (10YR5/4) fine sand, dark brown (10YR3/3) moist; weak medium subangular blocky structure; soft, friable, non-sticky; no effervescence; few micro roots; pH 8.4; moderately resistant to wetting; clear smooth boundary.
A12	4-11 cm	Brown (10YR5/3) fine sand, dark brown (10YR3/3) moist; weak medium platy structure; soft, friable, non-sticky; strongly effervescent; abundant medium fine, and micro roots; pH 8.5; clear smooth boundary.
C1	11-23 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few coarse, abundant medium, fine, and micro roots; pH 8.4; clear smooth boundary.
C2	23-40 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; massive structure; slightly hard, friable, non-sticky; violently effervescent; few coarse medium, fine, and abundant micro roots; 30% cobbles; pH 8.3; clear smooth boundary.
C3	40-62 cm	Pale brown (10YR6/3) cobbly sand, brown to dark brown (10YR4/3) moist; massive structure; slightly hard, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; 30% cobbles; pH 8.3; abrupt wavy boundary.
B2b	62-99 cm	Yellowish brown (10YR5/4) sand, dark to yellowish brown (10YR4/4) moist; moderate medium subangular blocky structure; moderately hard, friable, non-sticky; weakly effervescent on ped surfaces, but no effervescence in the ped itself; abundant fine and micro roots; pH 8.4; abrupt smooth boundary.
HC4cam	99-144 cm	Cemented caliche

Profile in Bare Area

A12	0-5 cm	Horizon descriptions are the same as under shrub.
C1	5-14 cm	
C2	14-35 cm	

ROCK VALLEY - SITE NO. 59

Site No. 59 is located in the southeast corner of the IBP validation plot in the Rock Valley study area on an alluvial fan on the north side of Specter Range. Slope is northeast at 3%; parent material is limestone; well-drained; smooth relief; slight erosion; moderate permeability; surface about 50% rock and gravel; elevation 1024 meters. Perennial vegetation is Larrea tridentata, Lycium andersonii, Ambrosia dumosa, Ephedra nevadensis, Lycium pallidum and Krameria parvifolia.

Profile Under Shrub (*Larrea tridentata*)

A11	0-6 cm	Brown (10YR5/3) loamy sand, dark grayish brown (10YR4/2) moist; very weak friable platy structure; breaking to single grain; loose, friable, non-sticky; violently effervescent; pH 8.3; abrupt smooth boundary.
A12	6-12 cm	Pale brown (10YR6/3) loamy sand, brown to dark brown (10YR4/3) moist; weak medium subangular blocky structure; soft, friable, non-sticky; violently effervescent; pH 8.8; clear smooth boundary.
C1	12-23 cm	Very pale brown (10YR7/3) loamy sand, brown to dark brown (10YR4/4) moist; weak medium subangular blocky structure; soft, friable, non-sticky; violently effervescent; pH 8.8; clear smooth boundary.
C2	23-34 cm	Very pale brown (10YR7/3) loamy sand, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, friable, non-sticky; violently effervescent; pH 8.8; clear smooth boundary.
C3ca	34-57 cm	Pale brown (10YR6/3) cobbly gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; 20% gravel; pH 8.7.

Profile not sampled in bare area

ROCK VALLEY - SITE NO. 60

This site is located in the southwest corner of the IBP validation plot in the Rock Valley study area on an alluvial fan on the north side of Specter Range. Slope is northeast at 1%; parent material is limestone; well-drained; smooth relief; slight erosion; rapid permeability; surface about 70% gravel with some outcrops of cobbles; elevation 1024 meters. Perennial vegetation is Lycium andersonii, Larrea tridentata, Ambrosia dumosa, Lycium pallidum, Krameria parvifolia and Ephedra nevadensis.

Profile Under Shrub (Larrea tridentata, Krameria parvifolia)

A1	0-5 cm	Brown (10YR5/3) loamy sand, brown to dark brown (10YR4/3) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; pH 7.9; abrupt smooth boundary.
A2	5-18 cm	Very pale brown (10YR7/3) sandy loam, brown (10YR5/3) moist; strong medium platy structure; slightly hard, friable, slightly sticky; violently effervescent; pH 8.6; abrupt wavy boundary.
A3	18-38 cm	Pale brown (10YR6/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; very weak subangular blocky structure; soft, friable, non-sticky; violently effervescent; 25% gravel; pH 8.7; clear smooth boundary.
C1	38-63 cm	Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; 45% gravel; pH 8.6.

Profile not sampled in bare area.

ROCK VALLEY - SITE NO. 61

This site is located in the northeast corner of the IBP validation plot in the Rock Valley study area on an alluvial fan on the north side of Specter Range. Slope is northeast at 1%; parent material is limestone; well-drained; smooth relief; slight erosion; rapid permeability; surface about 30% gravel; elevation 1024 meters. Perennial vegetation is Larrea tridentata, Eurotia lanata, Ambrosia dumosa, Ephedra nevadensis, Lycium pallidum and Grayia spinosa.

Profile Under Shrub (Larrea tridentata)

A1	0-9 cm	Brown to dark brown (10YR4/3) loamy sand, dark brown (10YR3/3) moist; very weak sub-angular blocky structure; breaking to single grain; soft, friable, non-sticky; strongly effervescent; pH 8.1; clear smooth boundary.
A2	9-19 cm	Very pale brown (10YR7/3) loamy sand, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; slightly hard, friable, very slightly sticky; violently effervescent; pH 8.6; abrupt smooth boundary.
B	19-37 cm	Light yellowish brown (10YR6/4) gravelly loamy sand, brown to dark brown (7.5YR4/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; violently effervescent; 20% gravel; pH 8.7; clear smooth boundary.
C1	37-47 cm	Very pale brown (10YR7/3) gravelly loamy sand, light yellowish brown (10YR6/4) moist; moderate fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; 30% gravel; pH 8.7.

Profile not sampled in bare area.

ROCK VALLEY - SITE NO. 62

Site No. 62 is located in the northwest corner of the IBP validation plot in the Rock Valley study area on an alluvial fan on the north side of Specter Range. Slope is northeast at 2%; parent material is limestone; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 30% rock and gravel; elevation 1018 meters. Perennial vegetation is Lycium pallidum, Atriplex canescens, Grayia spinosa, Ambrosia dumosa, Eurotia lanata and Larrea tridentata.

Profile Under Shrub (Larrea tridentata)

A1	0-9 cm	Yellowish brown (10YR5/4) loamy sand, brown to dark brown (10YR4/3) moist; very weak fine sub-angular blocky structure; soft, friable, non-sticky; effervescent; pH 8.3; clear smooth boundary.
A2	9-21 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky; violently effervescent; pH 8.7; clear smooth boundary.
C1	21-32 cm	Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; weak fine sub-angular blocky structure; soft, very friable, non-sticky; violently effervescent; 15% gravel; pH 8.7; clear smooth boundary.
C2	32-50 cm	Very pale brown (10YR7/3) gravelly sandy loam, light yellowish brown (10YR6/4) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; 20% gravel; pH 8.7.

Profile not sampled in bare area.

JACKASS FLATS - SITE NO. 63

Site No. 63 is located on one alluvial fan on the north side of Skull Mountain. Parent material is basalt and tuff underlain with limestone; north slope of 1%; well-drained; smooth relief; moderate erosion; moderate permeability to the B2 horizon; moist below the Cca horizon; surface about 20% rock and gravel; elevation 1085 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Lycium andersonii, Ephedra nevadensis, Dalea fremontii, Acamptopappus shockleyi, Grayia spinosa, Krameria parvifolia and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata, Lycium andersonii)

A11	0-3 cm	Brown (10YR5/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky; slightly effervescent; no roots; pH 7.9; clear smooth boundary.
A12	3-6 cm	Brown (10YR5/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; slightly effervescent; few fine and micro roots; pH 8.2; abrupt smooth boundary.
A2	6-23 cm	Very pale brown (10YR7/3) loamy sand, yellowish brown (10YR7/3) moist; vesiculated weak fine platy structure; slightly hard, friable, slightly sticky; strongly effervescent; few medium, abundant fine and micro roots; pH 8.5; clear wavy boundary.
B1	23-33 cm	Pale brown (10YR6/3) cobbly loamy sand, dark yellowish brown (10YR4/4) moist; moderate fine subangular blocky structure; moderately hard, friable, non-sticky; strongly effervescent; few medium, abundant fine and micro roots; 15% cobbles; pH 8.5; clear smooth boundary.
B21	33-68 cm	Brown (7.5YR5/4) sandy loam, brown to dark brown (7.5YR4/4) moist; strong medium subangular blocky structure; hard, loose, non-sticky; slightly effervescent; few medium and fine roots; pH 8.5; contains lime pockets; clear wavy boundary.
B22	68-99 cm	Brown (7.5YR5/4) sand, brown to dark brown (7.5YR4/4) moist; single grain structure; loose, loose, non-sticky; slightly effervescent; few fine roots; pH 8.4; contains lime pockets; abrupt smooth boundary.
Cca	99-130 cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; massive structure; moderately hard, loose, non-sticky; violently effervescent; no roots; pH 8.4.

Profile in Bare Area

A2	0-15 cm	Horizon descriptions are the same as under shrub, but a hard cemented lens about 3 cm thick separates the B22 and Cca horizons.
B1	15-39 cm	
B21	39-63 cm	
B22	63-91 cm	
Cca	91-130 cm	

JACKASS FLATS - SITE NO. 64

This site is located in southeast Jackass Flats on an alluvial fan from Skull Mountain. Slope is north at 1%; parent material is tuff and basalt overlying limestone; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 10% gravel; elevation 1097 meters. Perennial vegetation is mostly large sized Larrea tridentata, with Oryzopsis hymenoides, Ambrosia dumosa and Lycium andersonii.

Profile Under Shrub (Larrea tridentata)

A11	0-16 cm	Yellowish brown (10YR5/4) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; slightly effervescent; few coarse to micro roots; pH 8.0; slightly resistant to wetting; clear smooth boundary.
A12	16-33 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable; non-sticky; strongly effervescent; few coarse and medium, abundant fine to micro roots; pH 8.3; clear smooth boundary.
C1	33-58 cm	Yellowish brown (10YR5/4) coarse sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, abundant medium to micro roots; pH 7.9; clear smooth boundary.
C2	58-115 cm	Light brown (7.5YR6/4) sand with some cobbles, strong brown (7.5YR5/6) moist; strong coarse subangular blocky structure; very hard, loose, non-sticky; violently effervescent; few fine to micro roots; pH 7.9; overlying hard caliche.

Profile in Bare Area

A12	0-11 cm	Horizon descriptions are the same as under shrub.
C1	11-48 cm	
C2	48-100 cm	

JACKASS FLATS - SITE NO. 65

Site No. 65 is located on the north side of a hill which rises in west-central Jackass Flats. Parent material is tuff and limestone; north slope of 1%; well-drained; smooth relief; moderate erosion; rapid permeability; some moisture in the C3 horizon; C3 horizon is dark colored, but is alluvial, not cemented and not calcareous except on the surface of peds; surface about 5% rock and gravel; elevation 1027 meters. Perennial vegetation is Larrea tridentata, Acamptopappus shockleyi, Ambrosia dumosa, Lycium pallidum, Lycium andersonii, Grayia spinosa, Eurotia lanata and Haplopappus cooperi.

Profile Under Shrub (Larrea tridentata, Eurotia lanata)

A11	0-7 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, very friable, non-sticky; slightly effervescent; no roots; pH 7.9; slightly resistant to wetting; clear smooth boundary.
A12	7-20 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, very friable, non-sticky; slightly effervescent; few medium, fine, and micro roots; pH 8.3; diffuse boundary.
C1	20-75 cm	Pale brown (10YR6/3) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few medium, abundant fine and very fine roots; pH 8.4; diffuse boundary.
C2	75-125 cm	Light yellowish brown (10YR6/4) sand, dark yellowish brown (10YR4/4) moist; weak fine subangular structure breaking to single grain; soft, friable, non-sticky; strongly effervescent; contains some cemented chunks that break to single grain; few medium abundant fine and micro roots; pH 8.4; abrupt smooth boundary.
C3	125+ cm	Yellowish brown (10YR5/4) cobbly gravelly sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; no effervescence; abundant fine and very fine roots; 25% cobbles and gravel; pH 8.1.

Profile in Bare Area

A12	0-20 cm	Horizon descriptions are the same as under shrub.
C1	20-75 cm	
C2	75-125 cm	
C3	125+ cm	

JACKASS FLATS - SITE NO. 66

Site No. 66 is in northwest Jackass Flats on an alluvial fan from Calico Hills. It is the start of a transect series extending down an alluvial fan on the east site of the Forty Mile Canyon drainage channel and includes Sites No. 66 through 71. Parent material is tuff and limestone; south slope of 2-3%; well-drained; smooth relief; moderate erosion; rapid permeability; surface about 30% rock and gravel; elevation 1090 meters. Perennial vegetation is predominantly Coleogyne ramosissima and Larrea tridentata, with a few Lycium andersonii and Ambrosia dumosa.

Profile Under Shrub (Larrea tridentata)

A11	0-5 cm	Brown (10YR5/3) fine sand, dark brown (10YR3/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; no effervescence; no roots; pH 8.1; clear smooth boundary.
A12	5-19 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; no effervescence; few medium, fine and micro roots; pH 8.5; clear smooth boundary.
C1	19-67 cm	Light yellowish brown (10YR6/4) gravelly sand, brown to dark brown (10YR4/3) moist; slightly cemented massive structure breaking to single grain; slightly hard, loose, non-sticky; violently effervescent; few medium, fine and very fine roots; 70% cobbles and gravel; pH 8.3; clear smooth boundary.
C2	67-140+ cm	Light yellowish brown (10YR6/4) gravelly sand, brown to dark brown (10YR4/3) moist; cemented massive structure breaking to single grain; slightly hard, loose, non-sticky; violently effervescent; few medium, fine, and micro roots; 45% gravel; pH 8.6.

Profile in Bare Area

A12	0-17 cm	Horizon descriptions are the same as under shrub.
C1	17-68 cm	
C2	68+ cm	

JACKASS FLATS - SITE NO. 67

This site is located in northwest Jackass Flats in an area predominated by Coleogyne ramosissima and Larrea tridentata but with several other species also present. About 5% of the soil surface is rock or gravel. This site is on a southwest facing alluvial fan from the Calico Hills with a 3% slope; smooth relief; well-drained; very rapid permeability; moderate erosion; parent material is volcanic tuff. The profile contains a buried B horizon which is strongly cemented and which extends up as tongues into the overlying C₂ horizon. Elevation 1067 meters. Perennial vegetation is Coleogyne ramosissima, Ambrosia dumosa, Larrea tridentata, Krameria parvifolia, Grayia spinosa, Acamptopappus shockleyi, Oryzopsis hymenoides, Eurotia lanata and Menodora spinescens.

Profile Under Shrub (Larrea tridentata, Ambrosia dumosa)

A11	0-13 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR 4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; slightly effervescent; few fine and micro roots; pH 8.4; abrupt smooth boundary.
A12	13-38 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; slightly effervescent; few fine and medium roots; pH 8.6; abrupt wavy boundary.
C1	38-55 cm	Very pale brown (10YR7/3) sand, brown (10YR5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, non-sticky; strongly effervescent; few fine and medium roots; pH 8.6; abrupt wavy boundary.
C2	55-80 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; breaking to single grain; soft, friable, non-sticky; violently effervescent; few fine and micro roots; pH 8.5; diffuse broken boundary.
B1b	80-103 cm	Reddish brown (5YR5/4) sand, reddish brown (5YR4/4) moist; strong coarse subangular blocky structure; very hard, friable, non-sticky; violently effervescent; few fine roots; pH 8.5; abrupt wavy boundary; silica-line cemented.
IIC3	102-134 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; single grain structure; soft, friable, non-sticky; strongly effervescent; few fine and very fine roots; pH 8.5; abrupt wavy boundary.
C4sica	134-145+ cm	Cemented pan.

Profile in Bare Area

A12	0-18 cm	Horizon descriptions are the same as under shrub.
C1	18-36 cm	
C2	36-84 cm	
B1b	84-97 cm	
IIC3	97-122 cm	
C4sica	122+ cm	

JACKASS FLATS - SITE NO. 68

Site No. 68 is part of a transect in northwest Jackass Flats on an alluvial fan from Calico Hills. This site has a higher density of Ambrosia dumosa than is normally found in adjacent areas. Parent material is tuff; south slope is 1%; well-drained; smooth relief; moderate erosion; very rapid permeability; moisture below about 150 cm; surface about 5% rock and gravel; elevation 1052 meters. Perennial vegetation is Ambrosia dumosa, Larrea tridentata, Coleogyne ramosissima, Ephedra nevadensis, Krameria parvifolia, Menodora spinescens, Oryzopsis hymenoides and Acamptopappus shockleyi.

Profile Under Shrub (Larrea tridentata, Ambrosia dumosa)

A11	0-10 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; loose, friable, non-sticky; no effervescence; few micro roots; pH 8.0; slightly resistant to wetting; clear smooth boundary.
A12	10-25 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; no effervescence; few fine and micro roots; pH 8.4; clear smooth boundary.
C1	25-70 cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak medium subangular blocky structure; soft, friable, non-sticky; slightly effervescent below about 60 cm; few medium, fine and very fine roots; pH 8.7; clear smooth boundary.
C2	70-150+ cm	Pale brown (10YR6/3) fine sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; very soft, friable, non-sticky; violently effervescent; few medium, fine, and very fine roots; pH 8.6.

Profile in Bare Area

A12	0-18 cm	Horizon descriptions are the same as under shrub.
C1	18-65 cm	
C2	65+ cm	

JACKASS FLAT - SITE NO. 69

Site No. 69 is located in Northwest Jackass Flats on an alluvial fan from Calico Hills. This site is near to, and between, Sites No. 68 and 70, but the vegetation does not include Coleogyne ramosissima. Parent material is tuff and limestone; southwest slope of 1%; well-drained; smooth relief; slight erosion; rapid permeability; surface about 1%; gravel and very soft; elevation 1036 meters. Perennial vegetation is Larrea tridentata, Acamptopappus shockleyi, Krameria parvifolia, Ephedra nevadensis, Menodora spinescens, Oryzopsis hymenoides with a few Ambrosia dumosa.

Profile Under Shrub (Larrea tridentata)

A11	0-8 cm	Brown (10YR5/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure breaking to single grain; loose, very friable, non-sticky; no effervescence; no roots; pH 7.8; moderately resistant to wetting; clear smooth boundary.
A12	8-19 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; slightly effervescent; few coarse and fine roots; pH 8.2; clear smooth boundary.
C1	19-53 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; very slightly hard, friable, non-sticky; strongly effervescent; few coarse, medium, fine, and very fine roots; pH 8.3; clear smooth boundary.
C2	53-96 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few fine and very fine roots; pH 8.5; abrupt wavy boundary.
B1b	96-115+ cm	Yellowish brown (10YR5/6) fine sand, yellowish red (5YR4/8) moist; moderate medium subangular blocky structure; moderately hard, friable, non-sticky; no effervescence; few fine roots; pH 8.2.

Profile in Bare Area

A12	0-12 cm	Horizon descriptions are the same as under shrub.
C1	12-45 cm	
C2	45-90 cm	
C3	90-143+ cm	

JACKASS FLATS - SITE NO. 70

This site is located in west Jackass Flats on an alluvial fan from Calico Hills. It was chosen because of the dominance of Menodora spinescens growing in the area. Slope is south-southwest at 1%; parent material is tuff and limestone; well-drained; smooth relief; moderate erosion; very rapid permeability; surface about 5% rock and gravel; elevation 1006 meters. Perennial vegetation is predominantly Menodora spinescens with Coleogyne ramosissima, Ephedra nevadensis, Krameria parvifolia, Larrea tridentata and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata)

A1	0-15 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure breaking to single grain; loose, loose, non-sticky; no effervescence; few fine and very fine roots; pH 8.2; slightly resistant to wetting; clear smooth boundary.
C1	15-64 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; very soft, very friable; non-sticky; strongly effervescent; few large and medium, abundant fine to micro roots; pH 8.3; abrupt smooth boundary.
C2	64-86 cm	Pale brown (10YR6/3) cobbly gravelly sand, dark yellowish brown (10YR4/4) moist; massive structure; loose, loose, non-sticky; violently effervescent; few coarse to fine roots; 60% cobbles and gravel; pH 8.5; clear smooth boundary.
C3	86+ cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; massive structure; soft, loose, non-sticky; strongly effervescent; few medium to micro roots; pH 8.4.

Profile in Bare Area

A1	0-7 cm	Descriptions are the same as under shrub, except that lime appears at the bottom of the C1 horizon.
C1	7-56 cm	
C2	56-78 cm	
C3	78+ cm	

JACKASS FLATS - SITE NO. 71

Site No. 71 is at the lowest elevation in a series of study sites transecting down an alluvial fan from Calico Hills. It is located in west Jackass Flats in an area which contains larger than normal size Ephedra nevadensis and Menodora spinescens. About 10% of the soil surface is gravel or rocks. It has a 2% south-facing slope and smooth relief; parent material is volcanic tuff; well-drained; very rapid permeability; the A11 horizon under the shrubs is windblown loess. Elevation 1000 meters. Perennial vegetation is Ephedra nevadensis, Menodora spinescens, Krameria parvifolia, Larrea tridentata, Eurotia lanata and Oryzopsis hymenoides.

Profile Under Shrub (Larrea tridentata)

A11	0-7 cm	Pale brown (10YR6/3) sand, dark grayish brown (10YR4/2) moist; single grain; loose, friable, loose slightly effervescent; no roots; pH 8.0; clear smooth boundary.
A12	7-15 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft, friable, non-sticky; strongly effervescent; very few medium, fine and micro roots; pH 8.4; abrupt wavy boundary.
C1	15-41 cm	Very pale brown (10YR7/3) sand, brown to dark brown (10YR4/3) moist; single grain; soft, friable, non-sticky; violently effervescent; few medium, fine, and micro roots; pH 8.5; abrupt smooth boundary.
C2	41-141+ cm	Very pale brown (10YR7/3) very fine sand, brown to dark brown (10YR4/3) moist, single grain; soft, friable; non-sticky; violently effervescent; few fine roots; pH 8.5.

Profile in Bare Area

A12	0-14 cm	Horizon descriptions are the same as under shrub.
C1	14-33 cm	
C2	33-133+ cm	

JACKASS FLATS - SITE NO. 72

Site No. 72 is located in west Jackass Flats in the shrub area surrounding a bare area in which Site No. 73 is located. This is on an alluvial fan with south slope of 1%; parent material is tuff; well-drained; smooth relief; moderate erosion; rapid permeability; surface is gravelly and soft; elevation 988 meters. Perennial vegetation is Larrea tridentata, Ambrosia dumosa, Menodora spinescens, Acamptopappus shockleyi, Eurotia lanata, Oryzopsis hymenoides and Atriplex canescens.

Profile Under Shrub (Larrea tridentata, Eurotia lanata)

A11	0-15 cm	Brown (10YR5/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure breaking to single grain; soft, very friable; non-sticky; no effervescence; no roots; slightly resistant to wetting; pH 7.8; clear smooth boundary.
A12	15-27 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; no effervescence; few coarse, medium, and fine roots; pH 8.0; clear smooth boundary.
C1	27-44 cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, non-sticky; slightly effervescent; few coarse, medium, and fine roots; pH 8.3; clear smooth boundary.
C2	44-150+ cm	Pale brown (10YR6/3) fine sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; strongly effervescent; few coarse, medium and fine, abundant micro roots; pH 8.3.

Profile in Bare Area

A12	0-17 cm	Horizon descriptions are the same as under shrub.
C1	17-36 cm	
C2	36-150+ cm	

JACKASS FLATS - SITE NO. 73

Site No. 73 is located in west Jackass Flats in an area of about one hectare in size which is bare of shrubs. The surface is gravelly and soft. This location is on a well-drained alluvial fan with a 1% slope; parent material is volcanic tuff; smooth relief; well-drained; rapid permeability. The profile contains a buried B2 horizon. Elevation 988 meters.

Profile in Bare Area

A11	0-9 cm	Light yellowish brown (10YR6/4) sand, brown to dark brown (10YR4/3) moist; very weak platy structure breaking to single grain; loose, loose, non-sticky; strongly effervescent; very few very fine roots; pH 8.6; clear smooth boundary.
A12	9-20 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak moderate sub-angular blocky structure; soft, friable, non-sticky; strongly effervescent; very few fine roots; pH 8.7; clear wavy boundary.
C1	20-36 cm	Very pale brown (10YR7/3) sand, yellowish brown (10YR5/4) moist; weak moderate sub-angular blocky structure; soft, friable, non-sticky; violently effervescent; very few fine and very fine roots; pH 8.8; clear wavy boundary.
C2	36-71 cm	Pale brown (10YR6/3) sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure breaking to single grain; soft friable, non-sticky; violently effervescent; very few micro and very fine roots; pH 8.9; abrupt wavy boundary.
B2b	71-107 cm	Light reddish brown (5YR6/4) loam, reddish brown (5YR5/4) moist; strong coarse subangular blocky structure; hard, friable, non-sticky; violently effervescent; lime streaks; no roots; pH 8.7.

YUCCA FLAT - SITE NO. 74

Site No. 74 is located in southwest Yucca Flat Basin on an alluvial fan from C. P. Hills. This is the upper site in a transect down the bajada which also includes Sites No. 75 and 76. Slope is east at 7-8%; parent material is limestone; excessively drained; smooth convex relief; moderate to severe erosion; rapid permeability to pan; surface about 60% rock and gravel; elevation 1298 meters. Perennial vegetation is Coleogyne ramosissima, Lycium andersonii, Ephedra nevadensis, Eurotia lanata, Atriplex confertifolia, Yucca brevifolia and Grayia spinosa.

Profile Under Shrub (Coleogyne ramosissima)

A11	0-5 cm	Pale brown (10YR6/3) gravelly sandy loam, dark brown (10YR3/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few micro roots; 20% gravel; pH 7.8; clear smooth boundary.
A12	5-13 cm	Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; few medium, abundant fine to micro roots; 30% gravel; pH 8.3; clear smooth boundary.
C1	13-24 cm	Very pale brown (10YR7/3) gravelly sandy silt loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; abundant medium to micro roots; pH 8.1; abrupt wavy boundary.
C3	34-52 cm	Partially cemented gravel overlying hard caliche.

Profile in Bare Area

A2	0-7 cm	Very pale brown (10YR7/3) gravelly sandy silt loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; slightly hard, friable, non-sticky; violently effervescent; no roots; pH 8.1; vesiculated; clear smooth boundary.
C1	7-29 cm	Horizon descriptions are the same as under shrub.
C2	29-44 cm	

YUCCA FLAT - SITE NO. 75

Site No. 75 is located in southwest Yucca Flat Basin on an alluvial fan from C. P. Hills. This is the middle site in a 3-site transect which also includes Sites No. 74 and 76. Slope is east at 7%; parent material is limestone; excessively drained; smooth relief; moderate to severe erosion; rapid permeability; surface about 60% rock and gravel; elevation 1265 meters. Perennial vegetation is predominately Coleogyne ramosissima with Yucca brevifolia, Lycium andersonii, Ephedra nevadensis and Eurotia lanata.

Profile Under Shrub (Coleogyne ramosissima)

A11	0-5 cm	Brown (10YR5/3) gravelly loamy sand, dark brown (10YR3/3) moist; weak fine subangular blocky structure; loose, friable, non-sticky; strongly effervescent; no roots; 15% gravel; pH 7.8; slightly resistant to wetting; clear smooth boundary.
A12	5-16 cm	Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few medium to micro roots; 15% gravel; pH 8.5; clear smooth boundary.
C1	16-31 cm	Light yellowish brown (10YR6/4) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; very weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; abundant medium to micro roots; 40% gravel; pH 8.3; abrupt wavy boundary.
C2	31+ cm	Weakly cemented gravel.

Profile in Bare Area

A12	0-10 cm	Horizon descriptions are the same as under shrub, except that C2 is strongly cemented and very hard.
C1	10-21 cm	
C2	21+ cm	

YUCCA FLAT - SITE NO. 76

Site No. 76 is located in southwest Yucca Flat Basin on an alluvial fan from C. P. Hills. This site is at the lowest elevation in a transect which includes Sites No. 74 and 75. Slope is east at 3%; parent material is limestone and tuff; well-drained; smooth relief; moderate erosion with some shallow gullies in the area; rapid permeability; surface about 70% rock and gravel; elevation 1220 meters. Perennial vegetation is Yucca brevifolia, Atriplex confertifolia, Lycium andersonii, Opuntia echinocarpa, Mirabilis pudica, Menodora spinescens, Oryzopsis hymenoides and Acamptopappus shockleyi.

Profile Under Shrub (Atriplex confertifolia, Acamptopappus shockleyi)

A1	0-9 cm	Pale brown (10YR6/3) gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine sub-angular blocky structure; soft, friable, non-sticky; violently effervescent; few fine to micro roots; 45% gravel; pH 8.2; clear smooth boundary. No build-up under shrubs.
C1	9-57 cm	Pale brown (10YR6.5/3) gravelly sand, yellowish brown (10YR5/4) moist; massive to single grain structure; soft, friable, non-sticky; violently effervescent; few medium to micro roots; 68.8% gravel; pH 8.4; clear smooth boundary.
C2	57+ cm	Pale brown (10YR6.5/3) gravelly sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few medium and fine roots; 55% gravel; pH 8.6.

Profile in Bare Area

Horizon descriptions are the same as under shrub.

YUCCA FLAT - SITE NO. 77

Site No. 77 is located on Mine Mountain Road in west Yucca Flat Basin. There is a belt of Larrea tridentata about 300 yards wide extending along the hills in southwest Yucca. Site No. 77 is above this Larrea belt. Site No. 78 is in the middle of the belt and Site No. 79 is below it. Site No. 77 is on an alluvial fan of shale and limestone coming from Mine Mountain and has an east-facing slope of 5%; well-drained; smooth relief; moderate erosion; moderate to slow permeability; surface about 50% rock and gravel; elevation 1463 meters. Perennial vegetation is Grayia spinosa, Coleogyne ramosissima, Haplopappus cooperi, Ephedra nevadensis, Tetradymia axillaris, Hymenoclea salsola, Lycium andersonii and Stipa speciosa.

Profile Under Shrub (Ephedra nevadensis, Grayia spinosa)

A1	0-15 cm	Reddish brown (5YR5/3) gravelly loamy sand, dark reddish brown (5YR3/2) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few coarse, medium, fine and micro roots; 15% gravel; pH 8.4; clear wavy boundary.
A3	15-46 cm	Light reddish brown (5YR6/4) gravelly loamy sand, reddish brown (5YR4/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky; violently effervescent; few coarse and medium, abundant fine and micro roots; 20% gravel; pH 8.5; clear wavy boundary.
B2	46-89+ cm	Reddish brown (5YR5/4) sandy loam, reddish brown (5YR4/4) moist; strong coarse subangular blocky structure; firm, friable, slightly sticky; violently effervescent; few fine and micro roots; pH 8.2.

Profile in Bare Area

A3	0-36 cm	Horizon descriptions are the same as under shrub.
B2	36-79+ cm	

YUCCA FLAT - SITE NO. 78

This site is located on Mine Mountain in west Yucca Flat in the middle of a belt of Larrea about 300 yards wide extending along the hills in southwest Yucca Basin. This site is on an alluvial fan of shale and limestone from Mine Mountain and has an east-facing slope of 6%; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 30% rock and gravel; elevation 1402 meters. Perennial vegetation is Larrea tridentata, Coleogyne ramosissima, Grayia spinosa, Lycium andersonii, Haplopappus cooperi, Ephedra nevadensis, Stipa speciosa and Eurotia lanata.

Profile Under Shrub (Larrea tridentata, Grayia spinosa)

A1	0-5 cm	Brown to dark brown (10YR4/3) gravelly sand, very dark grayish brown (10YR3/2) moist; single grain structure; soft, friable, non-sticky; violently effervescent; no roots; 15% gravel; pH 8.1; clear smooth boundary.
C1	5-31 cm	Pale brown (10YR6/3) gravelly sand, brown to dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, friable, non-sticky; violently effervescent; few medium, fine and micro roots; 15% gravel; pH 8.5; clear smooth boundary.
C2	31-82 cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse, medium and fine and abundant micro roots; 40% gravel; pH 8.3; clear wavy boundary.
C3	82-112+ cm	Very pale brown (10YR7/3) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few fine and abundant micro roots; 25% gravel; pH 8.5.

Profile in Bare Area

C1	0-26 cm	Horizon descriptions are the same as under shrub.
C2	26-76 cm	
C3	76-108+ cm	

YUCCA FLAT - SITE NO. 79

Site No. 79 is located on Mine Mountain Road in west Yucca Flat Basin. This site is below a belt of Larrea about 300 yards wide extending along the hills in southwest Yucca Basin. This Site is on an alluvial fan of shale and limestone from Mine Mountain and has an easterly slope of 4%; well-drained; smooth relief; moderate erosion; moderate permeability; surface about 30% rock and gravel; elevation 1341 meters. Perennial vegetation is Grayia spinosa, Coleogyne ramosissima, Lycium andersonii, Ephedra nevadensis, Tetradymia axillaris, Tetradymia glabrata, Oryzopsis hymenoides, Hymenoclea salsola and Stipa speciosa.

Profile Under Shrub (Lycium andersonii, Grayia spinosa)

A1	0-7 cm	Brown (10YR5/3) fine sand, very dark grayish brown (10YR3/2) moist; weak fine platy structure; soft, friable, non-sticky; violently effervescent; few micro roots; pH 8.3; clear smooth boundary.
C1	7-30 cm	Yellowish brown (10YR5/4) gravelly sand, brown to dark brown (10YR4/3) moist; single grain structure; loose, friable, non-sticky; violently effervescent; few coarse, medium, and fine and plentiful micro roots; 15% gravel; pH 8.4; clear smooth boundary.
C2	30-59 cm	Very pale brown (10YR7/3) gravelly sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few coarse and medium, abundant fine and plentiful micro roots; 20% gravel; pH 8.4; clear smooth boundary.
C3	59-113+ cm	Very pale brown (10YR7/3) cobbly gravelly sand, yellowish brown (10YR5/4) moist; single grain structure; loose, loose, non-sticky; violently effervescent; few fine and abundant micro roots; 25% cobbles and 15% gravel; pH 8.4.

Profile in Bare Area

C1	0-18 cm	Horizon descriptions are the same as under shrub.
C2	18-46 cm	
C3	46+ cm	

APPENDIX B

CHEMICAL AND PHYSICAL PROPERTIES OF SOIL PROFILES

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
1	MERCURY VALLEY	1207	4	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A2	000-006	10YR7/2	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	20.4	58.8	14.8	6.0
SHRUB	C1	006-025	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	20.1	59.8	13.4	6.7

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT LIME	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS				SAT. EX
		0	1/3	1	15		EXT.	(MMHOS /CM)	(<2.0MM)	NA	K	CA	MG	BORON
		SAT.	BAR	BAR	BAR	PASTE				(MEQ/LITER)				PPM
										(MEQ/LITER)				
SHRUB	A2	23.0	15.7	13.2	6.7	8.5	8.5	0.41	15.0	0.68	0.34	3.36	0.42	0.00
SHRUB	C1	30.7	17.3	14.9	5.8	8.5	8.4	0.32	17.0	0.68	0.34	2.01	0.73	0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	A2	0.36	0.46	0.94	3.60	4.6	10.0	0.44	0.3	0.90	0.15	0.95	.027 WK.FINE	PLATY
SHRUB	C1	0.35	0.46	0.94	11.60	3.5	13.0	0.08	0.2	0.57	0.10	1.30	.021 WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
2	MERCURY VALLEY	1183	3	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A1	000-005	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	26.4	50.7	7.0	5.9
SHRUB	C1	005-034	10YR7/2	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	23.2	62.0	9.7	5.1
BARE	C1	000-025	10YR7/2	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	12.3	74.0	9.9	3.8

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	45.6	16.7	14.0	10.2	8.0	8.2	3.48	12.0	12.16	8.80	18.37	17.87	8.85	0.05	0.13	0.00	
SHRUB	C1	35.1	15.4	13.9	7.5	8.7	8.7	1.53	17.0	11.20	4.06	4.02	1.06	5.95	0.00	0.13	2.20	
BARE	C1	33.0	15.9	14.1	7.8	8.4	8.4	0.65	15.0	2.55	0.78	3.36	0.81	2.81	0.00	0.07	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
									PPM	PPM	PPM	PPM			
SHRUB	A1	2.08	0.60	2.40	11.38	4.2	14.4	1.72	0.8	0.90	0.10	8.20	.054	WK.FINE	SUB.ANG.B
SHRUB	C1	0.53	1.11	3.09	7.68	9.3	11.9	0.40	0.5	0.55	0.10	1.35	.066	WK.FINE	SUB.ANG.B
BARE	C1	0.38	0.67	1.35	9.86	5.6	11.9	0.32	0.3	0.88	0.20	1.30	.044	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
3	MERCURY VALLEY	1134	3	S	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-010	10YR6/2	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	23.0	61.5	9.5	6.0
SHRUB	C1	010-048	10YR7/2	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	19.6	63.8	12.0	4.6
BARE	C1	000-042	10YR7/2	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.5	56.6	11.2	3.7

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON	PPM
SHRUB	A1	46.0	18.3	15.5	9.5	8.2	8.4	1.63	17.0	0.68	3.20	6.44	13.25	0.94	0.00	0.20	1.50	
SHRUB	C1	45.1	21.7	17.4	9.1	8.4	8.5	0.68	20.0	0.76	1.93	3.49	2.63	0.22	0.00	0.17	2.20	
BARE	C1	40.0	19.3	8.4	7.8	8.5	8.4	0.39	22.0	0.31	0.92	4.16	0.29	0.60	0.00	0.07	0.90	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
SHRUB	A1	1.45	0.42	2.35	12.86	2.7	15.6	2.06	1.0	1.05	0.15	4.05	.148	WK.FINE SUB.ANG.B
SHRUB	C1	0.52	0.45	2.61	11.32	3.1	14.4	0.48	0.5	0.67	0.15	2.30	.057	WK.FINE SUB.ANG.B
BARE	C1	0.43	0.44	2.01	8.80	3.9	11.3	0.32	0.3	0.62	0.15	1.40	.042	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
4	MERCURY VALLEY	1104	3	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	EXCESSIVE	SLOW

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR6/2	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	25.1	61.1	8.8	5.0
SHRUB	C1	009-027	10YR7/3	7.5YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	24.1	51.6	17.0	7.3
SHRUB	C2C	027-031	10YR7/3	10YR4/4	COBB & GRAVL	LOOSE	FRIABLE	NON-STICKY	49.4	41.2	6.2	3.2
BARE	A2	000-010	10YR7/2	10YR5/3	SMOOTH	HARD	FRIABLE	NON-STICKY	15.8	51.0	24.0	8.2
BARE	C1	010-031	10YR7/3	7.5YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	21.4	59.0	14.9	4.7
BARE	C2C	031-030	10YR7/3	10YR4/4	COBB & GRAVL	LOOSE	FRIABLE	NON-STICKY	41.9	39.2	11.8	7.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A1	42.6	14.2	11.0	8.3	8.2	8.3	2.74	15.0	0.98	4.50	5.64	25.26	1.75	0.00	0.57	8.30
SHRUB	C1	34.3	18.4	14.6	8.0	8.5	8.5	0.80	17.0	0.42	2.05	2.95	4.61	1.90	0.00	0.15	3.50
SHRUB	C2C	32.8	12.8	10.8	6.1	8.5	8.5	0.75	25.0	2.80	1.00	4.03	0.14	2.05	0.00	0.05	5.20
BARE	A2	39.2	14.8	12.4	7.2	8.5	8.3	0.46	17.0	1.36	0.78	2.15	1.00	1.30	0.00	0.07	2.70
BARE	C1	43.0	19.4	13.6	7.5	8.6	8.6	0.31	22.0	1.45	0.20	3.64	2.00	0.62	0.00	0.05	0.00
BARE	C2C	29.9	16.2	12.2	6.6	8.4	8.3	4.01	30.0	40.00	0.34	4.48	2.34	26.81	0.00	1.50	16.20

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	2.12	0.41	2.31	13.53	5.0	16.3	3.16	1.0	1.03	0.15	5.30	.191	WK.FINE PLATY
SHRUB	C1	0.68	0.44	2.98	13.46	2.6	16.9	0.32	0.3	0.82	0.15	0.95	.068	MOD.MED. SUB.ANG.B
SHRUB	C2C	0.22	0.84	1.92	7.24	8.4	10.0	0.04	0.5	2.00	0.10	0.95	.021	NO STR. SINGLE.GR
BARE	A2	0.22	0.62	2.04	12.97	4.0	15.6	0.20	0.3	2.53	0.20	0.70	.025	WK.FINE PLATY
BARE	C1	0.30	0.72	1.24	12.42	5.0	14.4	0.04	0.3	1.20	0.10	1.10	.029	MOD.MED. SUB.ANG.B
BARE	C2C	0.23	2.93	0.70	8.87	23.4	12.5	0.04	0.5	3.40	0.10	0.95	.021	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
5	MERCURY VALLEY	1096	3	SW	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05- 0.002	<0.002
SHRUB	A1	000-009	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.8	53.9	10.9	6.4
SHRUB	A2	009-013	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	26.2	41.3	23.4	9.1
SHRUB	C1	013-036	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	21.0	56.7	16.2	6.1
BARE	C1	000-034	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	25.5	50.2	16.9	7.4

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	44.7	15.7	13.4	9.6	8.0	8.4	4.74	16.0	2.50	13.20	31.81	28.82	19.69	0.00	1.00	5.10	
SHRUB	A2	26.6	17.7	14.5	8.7	8.4	8.2	1.49	17.0	8.32	2.95	5.64	1.92	5.14	0.00	0.14	3.60	
SHRUB	C1	32.8	19.5	15.3	7.8	8.4	8.6	0.55	17.0	1.84	1.65	2.09	1.65	0.56	0.00	0.02	0.00	
BARE	C1	26.2	16.5	14.7	8.1	8.3	8.7	0.40	17.0	0.56	0.63	4.33	0.54	0.76	0.00	0.07	2.90	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	2.12	0.27	4.06	13.17	1.5	17.5	3.26	0.5	0.80	0.20	5.00	.211	WK.FINE	SUB.ANG.B
SHRUB	A2	0.48	0.71	3.92	12.87	4.1	17.5	0.36	0.1	0.80	0.30	1.50	.050	MOD.MED.	PLATY
SHRUB	C1	0.36	0.42	3.45	13.01	2.5	16.9	0.04	0.2	0.80	0.20	1.15	.044	WK.FINE	SUB.ANG.B
BARE	C1	0.33	0.47	1.78	13.38	3.0	15.6	0.24	0.1	0.95	0.25	0.95	.035	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
6	MERCURY VALLEY	1091	2	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	EXCESSIVE	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A1	000-008	10YR5/2	10YR3/2	SMOOTH	SOFT		FRIABLE	NON-STICKY	17.6	65.1	11.5	5.8
SHRUB	C1	008-028	10YR7/3	10YR5/3	GRAVELLY	SOFT		FRIABLE	NON-STICKY	20.5	57.9	15.6	6.0
SHRUB	C2C	028-068	10YR7/2	10YR4/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	51.9	38.2	6.6	3.3
BARE	C1	000-019	10YR7/3	10YR5/3	GRAVELLY	SOFT		FRIABLE	NON-STICKY	21.4	60.9	12.6	5.1
BARE	C2C	019-049	10YR7/2	10YR4/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	43.4	44.3	8.2	4.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A1	44.9	17.4	12.1	7.9	8.1	8.3	5.22	15.0	4.28	8.80	53.69	26.10	20.26	0.00	0.63	17.00	
SHRUB	C1	34.8	20.9	14.6	8.1	8.2	8.5	2.37	17.0	2.20	6.00	20.13	7.90	6.20	0.00	1.05	5.60	
SHRUB	C2C	29.0	11.7	9.6	4.9	8.3	8.5	3.48	30.0	18.15	3.55	15.17	8.56	8.77	0.00	1.25	20.00	
BARE	C1	29.5	16.5	13.1	6.7	8.4	8.5	0.36	20.0	0.37	0.38	3.36	0.29	0.22	0.00	0.02	3.00	
BARE	C2C	33.5	14.8	7.7	7.0	8.4	8.7	0.64	36.0	1.08	1.29	3.89	0.67	1.06	0.00	0.01	3.60	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	2.38	0.29	2.95	11.51	2.0	14.8	3.40	0.6	0.92	0.10	4.15	.217	WK.FINE SUB.ANG.B
SHRUB	C1	0.79	0.37	3.92	10.46	2.5	14.8	0.32	0.5	0.75	0.15	1.65	.089	WK.FINE SUB.ANG.B
SHRUB	C2C	0.24	0.92	2.85	5.98	9.4	9.8	0.08	0.3	1.48	0.10	1.18	.032	WK.FINE SUB.ANG.B
BARE	C1	0.34	0.29	1.24	8.47	2.9	10.0	0.32	0.3	1.40	0.15	1.20	.029	WK.FINE SUB.ANG.B
BARE	C2C	0.35	0.34	2.46	5.33	4.2	8.1	0.04	0.5	3.60	0.15	2.35	.035	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
7	MERCURY VALLEY	1049	3	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	EXCESSIVE	VERY RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR	COLOR	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
			DRY	WET					COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A11	000-009	10YR5/2	10YR3/2	GRAVELLY	SOFT		FRIABLE	NON-STICKY	24.2	64.7	6.0	5.1
SHRUB	A12	009-042	10YR7/2	10YR5/3	COBB & GRAVL	LOOSE		FRIABLE	NON-STICKY	29.8	61.6	5.8	3.0
SHRUB	C1	042-100	10YR7/2	10YR4/3	COBB & GRAVL	LOOSE		LOOSE	NON-STICKY	41.1	54.4	3.5	1.0
BARE	A12	000-055	10YR7/2	10YR5/3	COBB & GRAVL	LOOSE		FRIABLE	NON-STICKY	25.3	66.9	5.8	2.0
BARE	C1	055-100	10YR7/2	10YR4/3	COBB & GRAVL	LOOSE		LOOSE	NON-STICKY	42.8	52.5	3.7	1.0

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	46.1	14.4	10.4	8.7	8.2	8.0	2.05	17.0	0.69	5.75	38.28	17.07	6.25	0.00	1.45	1.96	
SHRUB	A12	31.1	11.1	7.9	5.6	8.6	8.4	0.57	25.0	0.37	1.53	5.28	0.12	0.23	0.00	0.15	1.32	
SHRUB	C1	28.9	10.1	7.7	4.7	8.4	8.6	0.66	36.0	0.92	2.55	3.90	0.15	0.00	0.00	0.13	2.28	
BARE	A12	29.3	11.6	8.0	4.6	8.3	8.6	0.39	24.0	0.20	0.35	3.96	0.69	0.20	0.00	0.05	0.84	
BARE	C1	27.3	10.2	7.7	2.1	8.5	8.6	0.39	33.0	0.55	1.08	2.64	2.76	0.08	0.00	0.10	1.16	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	2.34	0.22	2.35	11.18	1.6	13.8	2.80	1.0	1.22	0.15	7.60	.194	WK.FINE	SUB.ANG.B
SHRUB	A12	0.45	0.24	2.27	6.56	2.6	9.1	0.40	0.3	1.38	0.15	2.15	.030	WK.FINE	SUB.ANG.B
SHRUB	C1	0.27	0.32	3.38	5.05	3.7	8.8	0.20	0.1	1.02	0.10	1.15	.026	WK.FINE	SINGLE.GR
BARE	A12	0.34	0.19	0.99	7.89	2.1	9.1	0.52	0.2	0.83	0.10	1.20	.034	WK.FINE	SUB.ANG.B
BARE	C1	0.29	0.35	2.17	6.23	4.0	8.8	0.16	0.2	1.29	0.10	1.30	.028	STR.CRSE	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
1	MERCURY VALLEY	976	2	S	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOP- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05- 0.002	<0.002
SHRUB	A11	000-011	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	11.7	82.5	2.4	3.4
SHRUB	A12	011-040	10YR7/2	10YR4/3	SMOOTH	LOOSE	FRIABLE	NON-STICKY	15.7	77.1	4.8	2.4
SHRUB	C1	040-060	10YR7/3	7.5YR5/4	COBB & GRAVL	LOOSE	FRIABLE	NON-STICKY	21.5	68.5	5.8	4.2
SHRUB	C2	060-125	7.5YR7/2	7.5YR6/4	GRAVELLY	SLTLY HARD	LOOSE	NON-STICKY	45.4	41.0	8.4	5.2
BARE	A12	000-010	10YR7/2	10YR4/3	SMOOTH	LOOSE	FRIABLE	NON-STICKY	18.5	70.7	6.8	4.0
BARE	C1	010-055	10YR7/3	7.5YR5/4	COBB & GRAVL	LOOSE	FRIABLE	NON-STICKY	28.9	64.9	3.4	2.8
BARE	C2	055-112	7.5YR7/2	7.5YR6/4	GRAVELLY	SLTLY HARD	LOOSE	NON-STICKY	36.9	50.9	7.6	5.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)	(MEQ/LITER)	(MEQ/LITER)	(MEQ/LITER)	(MEQ/LITER)	(MEQ/LITER)			
SHRUB	A11	42.9	10.1	8.2	7.0	8.1	8.3	2.80	12.0	1.60	4.50	19.80	15.30	5.09	0.00	0.55	1.00	
SHRUB	A12	34.0	9.9	7.0	5.1	8.6	8.5	0.52	14.0	0.37	1.80	5.28	0.12	0.28	0.00	0.15	1.12	
SHRUB	C1	36.5	11.7	9.0	6.0	8.7	8.2	0.65	17.0	0.84	2.60	3.94	1.96	0.48	0.00	0.15	1.48	
SHRUB	C2	44.3	16.4	13.6	7.0	8.7	8.6	0.74	27.0	2.00	2.90	3.96	2.79	0.94	0.00	0.08	2.00	
BARE	A12	24.1	11.0	7.8	4.7	8.2	8.7	0.52	16.0	0.23	0.50	3.86	1.54	0.30	0.00	0.10	0.80	
BARE	C1	22.7	7.0	5.4	3.2	8.4	8.6	0.39	20.0	0.29	0.60	3.46	3.29	0.43	0.00	0.05	0.84	
BARE	C2	47.1	16.5	12.5	5.0	8.3	8.6	0.56	21.0	1.90	0.70	3.96	1.44	0.80	0.00	0.08	0.80	

PROFILE TYPE	HOP- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA *	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	1.17	0.23	1.86	8.16	2.0	10.3	2.56	0.6	1.00	0.15	9.20	.122	WK.FINE	SUB.ANG.B
SHRUB	A12	0.47	0.24	2.19	6.32	2.7	8.8	2.12	0.5	0.42	0.10	1.20	.057	WK.FINE	SUB.ANG.B
SHRUB	C1	0.49	0.29	3.01	7.20	2.8	10.5	0.32	0.1	1.25	0.10	1.45	.040	WK.FINE	SUB.ANG.B
SHRUB	C2	0.25	0.28	1.49	5.23	3.7	7.5	0.20	0.5	1.12	0.10	0.80	.024	MOD.MED.	SUB.ANG.B
BARE	A12	0.36	0.19	0.89	5.42	2.9	6.5	0.56	0.6	1.90	0.15	1.20	.039	WK.FINE	SUB.ANG.B
BARE	C1	0.16	0.19	0.99	5.32	2.9	6.5	0.32	0.1	3.75	0.10	1.10	.019	WK.FINE	SUB.ANG.B
BARE	C2	0.27	0.36	1.42	7.09	4.1	8.9	0.20	0.5	1.63	0.15	1.30	.022	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
9	MERCURY VALLEY	942	1	SW	BAJADA	SLIGHT	20-40%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-008	10YR7/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	25.7	69.7	2.7	1.9
SHRUB	A12	008-018	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	22.5	67.4	6.2	3.9
SHRUB	A13	018-036	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	22.9	64.7	7.4	5.0
SHRUB	C1	036-062	10YR7/2	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	32.4	58.5	6.7	2.4
SHRUB	C2	062-+	10YR7/2	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	67.1	29.0	3.0	0.9
BARE	A12	000-017	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	24.0	60.8	8.6	6.6
BARE	A13	017-030	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	23.3	64.0	7.5	5.2
BARE	C1	030-050	10YR7/2	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	41.5	48.9	7.0	2.6
BARE	C2	050-+	10YR7/2	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	36.3	59.0	4.3	0.4

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS							SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4	
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A11	33.1	7.5	5.8	4.4	8.3	7.9	1.66	8.0	0.50	2.60	13.20	8.40	2.28	0.00	0.45	1.32
SHRUB	A12	30.7	9.4	7.4	4.9	8.4	8.5	0.78	10.0	0.38	1.15	6.60	2.85	1.36	0.00	0.18	1.32
SHRUB	A13	32.1	11.6	8.7	5.4	8.4	8.4	0.66	11.0	0.65	1.00	5.28	2.82	2.00	0.00	0.10	1.80
SHRUB	C1	32.4	13.5	8.8	5.8	8.5	8.4	0.50	10.0	1.75	0.45	3.96	2.79	0.60	0.00	0.03	1.56
SHRUB	C2	26.1	8.8	6.3	4.7	8.1	8.1	2.80	15.0	13.80	0.95	29.07	14.20	3.71	18.00	2.70	3.12
BARE	A12	23.4	9.9	8.8	5.6	8.4	8.6	0.40	10.0	0.41	0.45	3.90	2.00	0.65	0.00	0.08	1.32
BARE	A13	30.8	11.5	8.4	5.9	8.5	8.5	0.26	12.0	0.38	0.58	3.96	1.44	0.29	0.00	0.05	1.28
BARE	C1	30.8	12.2	8.9	5.1	8.5	8.5	0.28	9.0	0.84	0.47	2.64	1.41	0.30	0.00	0.03	1.28
BARE	C2	24.7	9.6	7.0	4.9	8.5	8.2	0.76	16.0	5.10	0.25	3.96	0.69	0.86	0.00	0.20	1.08

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
SHRUB	A11	0.38	0.20	4.14	4.14	2.3	8.6	0.68	0.3	0.38	0.15	3.25	.045	WK.FINE SUB.ANG.B
SHRUB	A12	0.43	0.36	3.91	6.48	3.3	10.8	0.48	0.2	0.48	0.10	1.25	.038	WK.FINE SUB.ANG.B
SHRUB	A13	0.43	0.38	3.29	9.58	2.9	13.3	0.20	0.1	0.60	0.10	1.10	.031	WK.MED. SUB.ANG.B
SHRUB	C1	0.20	0.86	3.44	8.20	6.9	12.5	0.16	0.1	0.48	0.10	1.10	.021	WK.FINE SUB.ANG.B
SHRUB	C2	0.15	2.34	3.63	4.28	22.3	10.3	0.16	0.1	1.42	0.00	0.65	.014	WK.FINE SUB.ANG.B
BARE	A12	0.52	0.29	3.28	8.18	2.5	11.8	0.36	0.2	0.60	0.15	0.95	.021	WK.FINE SUB.ANG.B
BARE	A13	0.13	0.31	3.55	8.39	2.5	12.3	0.24	0.2	0.68	0.10	1.10	.015	WK.MED. SUB.ANG.B
BARE	C1	0.14	0.72	5.16	6.62	5.8	12.5	0.16	0.2	0.90	0.10	0.70	.015	WK.FINE SUB.ANG.B
BARE	C2	0.15	2.94	3.24	5.57	25.0	11.8	0.16	0.1	1.72	0.10	0.50	.014	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
10	MERCURY VALLEY	915	1	SW	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-007	10YR5/3	10YR3/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	35.6	59.4	2.0	3.0
SHRUB	A12	007-019	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	40.9	54.6	2.2	2.3
SHRUB	C1	019-040	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	44.2	48.7	4.8	2.3
SHRUB	C2	040-052	10YR7/2	10YR3/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	67.5	30.0	1.9	0.6
SHRUB	C3	052--	10YR7/2	10YR3/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	72.8	24.4	2.0	0.8
BARE	A12	000-015	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	38.3	54.7	4.2	2.8
BARE	C1	015-033	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	62.1	34.6	2.4	0.9
BARE	C2	033-044	10YR7/2	10YR3/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	66.4	30.8	2.0	0.8
BARE	C3	044--	10YR7/2	10YR3/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	72.6	25.4	1.4	0.6

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				P _H	P _H SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A11	36.4	9.3	8.4	7.6	7.8	8.4	2.53	12.0	1.40	3.00	26.40	14.10	3.53	0.00	1.13	1.28	
SHRUB	A12	33.7	7.4	7.1	4.8	8.3	8.5	1.56	13.0	1.02	1.90	13.20	7.05	2.24	0.00	0.50	1.32	
SHRUB	C1	28.0	11.4	8.2	5.2	8.5	8.7	0.58	16.0	0.72	0.95	5.28	0.62	0.69	16.00	0.60	1.20	
SHRUB	C2	27.8	7.1	6.1	4.6	8.3	8.4	1.27	14.0	2.07	0.85	10.56	76.52	1.55	20.00	0.60	0.76	
SHRUB	C3	28.6	8.3	7.9	5.2	8.1	8.1	4.09	16.0	7.25	0.97	38.28	14.37	9.88	74.00	1.60	3.12	
BARE	A12	26.4	8.9	7.1	4.6	8.4	8.7	0.36	13.0	0.52	0.40	3.96	1.44	0.73	10.00	0.50	1.04	
BARE	C1	27.2	7.8	6.5	4.4	8.4	8.5	0.31	15.0	0.38	0.45	3.86	2.10	0.49	0.00	0.50	0.60	
BARE	C2	25.9	7.2	5.9	4.4	8.6	8.5	0.30	15.0	0.52	0.27	2.64	2.82	0.61	0.00	0.03	0.92	
BARE	C3	27.4	6.9	6.3	4.2	8.6	8.4	0.29	19.0	0.61	0.28	3.96	0.09	0.33	0.00	0.60	0.80	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	1.37	0.35	4.89	7.01	2.9	12.3	2.04	0.5	0.33	0.10	5.60	.121	WK.FINE SUB.ANG.B
SHRUB	A12	0.62	0.34	3.99	7.54	2.9	11.9	1.88	0.2	0.30	0.10	2.15	.085	WK.FINE SUB.ANG.B
SHRUB	C1	0.26	0.43	5.29	6.78	3.4	12.5	0.26	0.1	1.00	0.10	0.90	.028	WK.FINE SUB.ANG.B
SHRUB	C2	0.11	1.81	4.23	6.21	14.8	12.3	0.24	0.1	0.10	0.10	0.60	.012	NO STR. SINGLE.GR
SHRUB	C3	0.13	1.99	3.22	4.79	19.9	10.0	0.24	0.1	0.55	0.10	0.65	.017	NO STR. SINGLE.GR
BARE	A12	0.15	0.41	2.66	6.18	4.4	9.3	0.40	0.1	0.40	0.10	0.75	.019	WK.FINE SUB.ANG.B
BARE	C1	0.18	0.66	5.44	4.15	6.4	10.3	0.24	0.1	0.22	0.10	0.55	.009	WK.FINE SUB.ANG.B
BARE	C2	0.12	0.74	3.64	4.37	8.5	8.8	0.20	0.1	0.10	0.05	0.60	.011	NO STR. SINGLE.GR
BARE	C3	0.10	0.90	4.49	5.11	8.6	10.5	0.20	0.1	0.50	0.10	0.45	.009	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	ERUSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
11	MERCURY VALLEY	1085	1	NE	BAJADA	SLIGHT	40-60%	LIMESTONE	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-006	10YR6/3	10YR4/3	SMOOTH	SOFT	LOOSE	NON-STICKY	37.8	55.2	3.6	3.4
SHRUB	A12	006-018	10YR6/3	7.5YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	28.2	61.4	4.8	5.6
SHRUB	C1	018-042	10YR6/4	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	31.5	54.1	6.6	7.8
BARE	A12	000-009	10YR6/3	7.5YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	25.7	68.1	4.0	2.2
BARE	C1	009-042	10YR6/4	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	28.0	56.6	6.0	9.4

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)							
SHRUB	A11	42.9	16.0	12.6	10.6	7.9	8.2	2.05	14.0	0.61	4.50	15.84	12.51	1.68	0.00	0.40	1.40
SHRUB	A12	36.0	16.0	12.5	8.1	8.1	8.4	0.70	17.0	0.23	1.50	6.68	1.42	0.49	0.00	0.13	1.52
SHRUB	C1	40.6	16.4	13.6	9.0	8.3	8.6	0.41	15.0	0.38	0.50	3.96	0.09	0.61	0.00	0.60	1.08
BARE	A12	35.1	14.1	12.0	8.3	8.2	8.5	0.42	15.0	0.10	0.58	3.06	2.34	0.00	0.00	0.03	0.72
BARE	C1	35.8	13.9	11.9	8.5	8.3	8.5	0.33	14.0	0.20	0.54	2.64	1.41	0.49	0.00	0.03	1.28

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	Ca+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.73	0.29	1.93	9.03	2.6	11.3	2.12	0.8	1.22	0.20	27.60	.117	WK.FINE	SUB.ANG.B
SHRUB	A12	0.35	0.34	1.65	8.26	3.3	10.3	0.44	0.3	0.65	0.20	1.80	.033	WK.FINE	SUB.ANG.B
SHRUB	C1	0.23	0.33	1.10	8.82	3.2	10.3	0.32	0.3	0.45	0.20	1.10	.023	MOD.FINE	SUB.ANG.B
BARE	A12	0.33	0.30	1.18	7.77	3.2	9.3	1.08	0.5	0.58	0.20	1.70	.037	WK.FINE	SUB.ANG.B
BARE	C1	0.26	0.24	1.30	8.71	2.3	10.3	0.56	0.3	0.45	0.20	1.50	.027	MOD.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
12	MERCURY VALLEY	1073	1	NE	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-005	10YR5/3	10YR4/3	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	31.8	48.6	9.8	9.8
SHRUB	A12	005-011	10YR5/3	10YR4/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	28.0	55.0	10.0	7.0
SHRUB	C1	011-032	10YR6/3	10YR4/4	COBB & GRAVL	SLTLY HARD	FRIABLE	NON-STICKY	22.2	59.4	11.8	6.6
SHRUB	C2	032-050	10YR6/3	10YR4/4	COBB & GRAVL	SLTLY HARD	FRIABLE	NON-STICKY	47.9	26.3	14.3	11.5
BARE	A12	000-012	10YR5/3	10YR4/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	20.8	64.7	9.6	4.9
BARE	C1	012-029	10YR6/3	10YR4/4	COBB & GRAVL	SLTLY HARD	FRIABLE	NON-STICKY	25.7	56.6	11.3	6.4
BARE	C2	029-040	10YR6/3	10YR4/4	COBB & GRAVL	SLTLY HARD	FRIABLE	NON-STICKY	31.2	42.6	13.5	12.8

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A11	58.0	18.9	17.5	14.0	7.9	8.4	2.66	12.0	1.02	8.40	27.72	15.48	7.59	0.00	1.00		1.80
SHRUB	A12	50.0	17.3	10.2	11.0	8.2	8.2	3.33	15.0	2.25	6.25	56.76	14.79	5.46	13.00	1.70		1.32
SHRUB	C1	42.6	19.4	15.5	9.4	8.2	8.4	2.31	14.0	3.65	2.50	22.44	8.61	3.05	53.20	1.08		1.20
SHRUB	C2	51.1	23.7	18.9	12.4	8.2	8.6	0.79	21.0	1.87	0.86	5.28	2.82	0.58	8.00	0.10		2.00
BARE	A12	36.3	15.9	13.4	8.7	8.2	8.3	1.00	12.0	0.22	1.80	9.28	5.57	0.38	0.00	0.13		0.80
BARE	C1	37.3	17.6	10.9	10.3	8.3	8.8	0.40	17.0	0.23	1.35	3.96	0.09	0.00	0.00	0.06		1.08
BARE	C2	44.9	22.4	16.2	11.2	8.3	8.6	0.30	20.0	0.30	0.35	3.96	0.89	0.20	0.00	0.03		0.76

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	4.14	0.51	3.01	17.35	2.4	20.9	4.16	1.3	0.75	0.35	9.70	.283	WK.FINE	SUB.ANG.B
SHRUB	A12	2.29	0.31	3.06	11.63	2.1	15.0	3.64	0.7	0.65	0.20	2.20	.211	WK.MED.	SUB.ANG.B
SHRUB	C1	0.62	0.41	2.39	11.57	2.9	14.4	0.36	0.3	0.70	0.25	1.60	.066	MOD.MED.	SUB.ANG.B
SHRUB	C2	0.45	0.40	1.53	15.32	2.3	17.3	0.32	0.5	1.30	0.20	1.90	.053	MOD.MED.	SUB.ANG.B
BARE	A12	0.80	0.29	2.18	10.28	2.3	12.8	1.52	0.6	1.40	0.25	3.85	.098	WK.MED.	SUB.ANG.B
BARE	C1	0.39	0.31	2.45	0.36	2.2	14.1	0.36	0.3	0.59	0.25	1.90	.039	MOD.MED.	SUB.ANG.B
BARE	C2	0.37	0.31	1.23	10.18	2.9	11.8	0.28	0.5	0.96	0.30	1.95	.037	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
13	MERCURY VALLEY	1091	3	NE	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-007	10YR6/3	10YR4/3	SMOOTH	LOOSE	FRIABLE	NON-STICKY	27.6	59.3	6.1	7.0
SHRUB	A12	007-015	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	24.4	63.6	6.7	5.3
SHRUB	C1	015-034	10YR6/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	19.1	67.1	8.1	5.7
SHRUB	C2	034-063	10YR6/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	30.3	45.1	12.0	12.6
BARE	A12	000-018	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	21.1	67.0	7.2	4.7
BARE	C1	018-039	10YR6/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	23.9	60.9	8.6	6.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS							SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4	
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A11	45.2	19.0	14.1	10.7	7.8	8.3	2.32	21.0	0.60	9.60	10.80	9.45	3.76	0.00	0.48	1.00
SHRUB	A12	39.7	17.4	13.0	9.8	8.1	8.4	1.96	17.0	1.10	9.40	13.20	7.05	2.92	30.00	0.90	1.20
SHRUB	C1	38.6	17.4	14.8	9.8	8.2	8.4	0.88	27.0	1.07	1.80	7.92	2.88	0.68	0.00	0.43	1.50
SHRUB	C2	44.8	24.5	18.0	11.8	7.9	8.5	1.55	25.0	1.87	0.98	9.24	8.31	2.61	34.00	0.48	2.20
BARE	A12	34.1	16.9	15.0	10.4	8.1	8.6	0.52	18.0	0.21	0.78	5.28	1.47	0.09	0.00	0.10	0.40
BARE	C1	34.9	19.3	15.6	9.8	8.2	8.8	0.37	16.0	0.22	0.67	2.64	7.26	0.05	0.00	0.10	0.50

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	1.62	0.27	4.27	11.76	1.7	16.3	2.40	0.5	0.55	0.20	6.35	.151	WK.FINE	SUB.ANG.B
SHRUB	A12	1.01	0.38	4.10	10.64	2.6	15.1	1.48	0.3	0.40	0.15	2.20	.101	WK.FINE	SUB.ANG.B
SHRUB	C1	0.52	0.36	2.10	11.54	2.6	14.0	0.76	0.3	0.54	0.20	2.20	.055	MOD.MED.	SUB.ANG.B
SHRUB	C2	0.47	0.34	1.16	13.62	2.2	15.1	0.40	0.3	0.44	0.30	2.75	.049	MOD.MED.	SUB.ANG.B
BARE	A12	0.39	0.34	1.47	11.44	2.6	13.3	1.24	0.3	0.55	0.15	2.00	.041	WK.FINE	SUB.ANG.B
BARE	C1	0.38	0.31	1.58	10.23	2.6	12.1	0.56	0.2	0.80	0.20	6.00	.041	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
14	MERCURY VALLEY	1091	2	NE	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-013	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	22.8	62.5	9.2	5.5
SHRUB	C1	013-046	10YR6/3	10YR4/4	COBBLY	SOFT	FRIABLE	NON-STICKY	29.0	52.8	10.9	7.3
BARE	A1	000-014	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	26.1	57.2	10.2	6.5
BARE	C1	014-031	10YR6/3	10YR4/4	COBBLY	SOFT	FRIABLE	NON-STICKY	27.7	52.7	11.4	8.2

PROFILE TYPE	HORI- ZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)								
SHRUB	A1	38.4	20.5	16.1	10.8	7.6	8.2	1.06	14.0	0.40	3.00	7.92	8.28	0.93	0.00	0.20	0.60	
SHRUB	C1	41.6	21.6	17.7	11.6	8.2	8.5	0.58	27.0	0.47	1.90	3.96	4.14	0.00	0.00	0.18	0.70	
BARE	A1	33.1	22.0	15.8	10.5	8.1	8.6	0.49	18.0	0.20	0.60	5.28	0.12	0.00	0.00	0.13	0.00	
BARE	C1	36.3	20.7	17.4	11.0	8.2	8.6	0.34	17.0	0.22	0.70	2.64	1.41	0.00	0.00	0.10	0.30	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	0.62	0.35	2.30	10.85	2.6	13.5	1.21	0.3	0.72	0.20	3.85	.081 WK.FINE	SUB.ANG.B
SHRUB	C1	0.46	0.33	2.47	10.95	2.4	13.8	0.40	0.3	0.68	0.20	1.85	.039 WK.FINE	SUB.ANG.B
BARE	A1	0.44	0.29	1.33	10.25	2.4	11.9	1.40	0.3	0.96	0.25	2.00	.043 WK.FINE	SUB.ANG.B
BARE	C1	0.36	0.34	1.72	11.44	2.5	13.5	0.56	0.3	0.70	0.20	1.60	.037 WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
15	MERCURY VALLEY	1085	5	S	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-006	10YR6/2	10YR4/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	42.4	44.5	7.8	5.3
SHRUB	C1	006-017	10YR7/2	10YR6/3	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	62.3	14.4	13.3	10.0
BARE	C1	000-010	10YR8/3	10YR7/3	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	56.0	25.5	10.1	8.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	46.9	17.4	13.3	10.0	8.2	8.2	1.59	9.0	0.53	3.50	14.85	8.10	1.53	0.00	0.63	0.90	
SHRUB	C1	31.3	20.6	17.8	12.7	8.3	8.7	0.71	14.0	0.49	1.40	5.28	4.17	1.41	0.00	0.30	0.90	
BARE	C1	25.0	16.4	14.2	10.1	8.3	8.8	0.43	13.0	0.55	0.60	3.96	2.79	0.24	0.00	0.10	0.84	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.82	0.35	4.84	12.88	1.9	18.1	2.00	0.3	0.60	0.10	3.05	.152	WK.FINE	SUB.ANG.B
SHRUB	C1	0.80	0.38	4.58	15.61	1.8	20.6	0.40	0.3	0.80	0.25	0.80	.061	WK.FINE	SUB.ANG.B
BARE	C1	0.29	0.41	2.60	13.61	2.5	16.6	0.40	0.1	0.56	0.20	0.60	.020	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
16	MERCURY VALLEY	1098	1	NE	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-005	10YR4/2	10YR3/2	SMOOTH	LOOSE	FRIABLE	NON-STICKY	37.2	44.1	9.3	9.4
SHRUB	A12	005-014	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	21.8	61.2	9.5	7.5
SHRUB	C1	014-046	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	23.5	65.0	8.2	3.3
SHRUB	C2	046-099	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	34.3	57.0	5.7	3.0
BARE	A12	000-010	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	20.7	67.0	8.6	3.7
BARE	C1	010-048	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	19.7	68.3	7.9	4.1

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A11	47.1	24.6	19.0	15.3	8.1	8.7	2.05	18.0	0.45	6.40	14.56	9.74	1.44	0.00	0.55	1.52	
SHRUB	A12	51.4	14.6	11.4	9.6	8.4	8.6	1.06	18.0	0.40	4.40	10.52	4.33	0.53	0.00	0.50	1.52	
SHRUB	C1	39.0	13.4	10.0	9.0	8.2	8.9	0.70	23.0	0.50	3.45	3.96	1.44	0.68	0.00	0.18	1.00	
SHRUB	C2	35.5	12.1	9.4	7.8	8.5	8.9	0.67	30.0	0.61	5.17	3.90	0.15	0.96	0.00	0.15	1.60	
BARE	A12	29.0	13.3	8.7	6.8	8.4	8.7	0.63	16.0	0.19	0.65	5.28	1.47	0.83	0.00	0.10	1.12	
BARE	C1	30.8	12.9	8.7	7.4	8.3	8.7	0.32	21.0	0.20	0.40	5.28	0.77	1.14	0.00	0.05	0.68	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	7.76	0.33	2.95	18.84	3.0	22.1	8.20	1.0	1.60	0.20	18.40	.403	NO STR. SINGLE.GR
SHRUB	A12	3.04	0.33	3.52	11.77	2.1	15.6	6.25	0.5	1.85	0.15	4.40	.232	WK.FINE SUB.ANG.B
SHRUB	C1	0.59	0.30	3.87	7.33	2.6	11.5	0.25	0.1	0.95	0.15	3.20	.056	WK.FINE SUB.ANG.B
SHRUB	C2	0.42	0.55	5.07	2.38	6.9	8.0	0.36	0.1	1.45	0.10	1.40	.046	NO STR. SINGLE.GR
BARE	A12	0.43	0.29	1.18	8.03	3.1	9.5	0.84	0.5	1.48	0.15	3.20	.053	WK.FINE SUB.ANG.B
BARE	C1	0.30	0.31	1.31	10.13	2.5	11.8	0.36	0.2	1.55	0.15	1.30	.036	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
17	FRENCHMAN FLAT	994	2	NE	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A11	000-009	10YR6/3	10YR4/4	SMOOTH	SOFT		VERY FRIABLE	NON-STICKY	33.3	58.9	3.5	4.3
SHRUB	A12	009-023	10YR7/3	10YR5/4	GRAVELLY	SOFT		VERY FRIABLE	NON-STICKY	29.2	62.5	4.7	3.6
SHRUB	C1	023-045	10YR7/3	10YR5/4	GRAVELLY	SOFT		FRIABLE	NON-STICKY	33.3	58.3	5.2	3.2
SHRUB	C2	045-064	10YR7/3	10YR5/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	35.0	56.0	5.8	3.2
BARE	A12	000-020	10YR7/3	10YR5/4	GRAVELLY	SOFT		VERY FRIABLE	NON-STICKY	41.6	50.9	4.2	3.3
BARE	C1	020-039	10YR7/3	10YR5/4	GRAVELLY	SOFT		FRIABLE	NON-STICKY	21.9	69.7	5.7	2.7
BARE	C2	039-054	10YR7/3	10YR5/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	36.6	53.9	6.2	3.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A11	42.0	12.7	11.5	9.7	8.1	8.5	4.35	9.0	7.25	4.06	44.29	43.97	37.50	1.25	0.22		4.70
SHRUB	A12	31.5	11.0	10.2	7.4	8.2	8.6	3.30	12.0	6.90	2.95	31.54	15.40	9.93	2.50	1.60		2.80
SHRUB	C1	33.9	11.6	10.4	7.5	8.4	8.6	0.85	12.0	1.45	1.29	5.77	2.18	1.63	0.00	0.25		0.80
SHRUB	C2	34.7	14.2	12.7	8.6	8.3	8.7	0.87	15.0	1.66	1.08	6.04	1.39	0.83	0.00	0.30		0.00
BARE	A12	29.3	11.5	9.8	7.6	8.5	8.6	0.30	12.0	0.26	0.63	3.28	2.20	0.00	0.00	0.07		0.00
BARE	C1	33.6	12.5	10.3	8.4	8.5	8.6	0.32	13.0	0.39	0.68	2.62	1.34	0.00	0.00	0.05		0.00
BARE	C2	35.9	15.5	13.8	10.2	8.5	8.4	0.31	14.0	0.64	0.68	2.01	0.21	0.00	0.00	0.07		0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	1.41	1.18	14.83	4.87	5.7	20.9	2.04	0.5	0.56	0.10	6.55	.117	WK.FINE SUB.ANG.B
SHRUB	A12	0.43	1.61	10.31	8.08	8.1	20.0	0.36	0.2	0.56	0.10	2.20	.038	WK.FINE SUB.ANG.B
SHRUB	C1	0.26	1.55	11.84	5.99	8.0	19.4	0.04	0.1	0.45	0.10	2.35	.024	WK.FINE SUB.ANG.B
SHRUB	C2	0.29	1.69	11.21	3.98	10.0	16.9	0.04	0.2	0.30	0.10	2.40	.029	WK.FINE SUB.ANG.B
BARE	A12	0.21	0.69	9.86	11.95	3.1	22.5	0.16	0.2	0.32	0.10	1.75	.019	WK.FINE SUB.ANG.B
BARE	C1	0.23	0.64	12.78	9.71	2.8	23.1	0.04	0.2	0.22	0.10	1.90	.023	WK.FINE SUB.ANG.B
BARE	C2	0.30	0.98	12.78	8.74	4.4	22.5	0.04	0.3	0.94	0.10	2.25	.016	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
18	FRENCH-MAN FLAT	991	2	NE	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A1	000-011	2.5Y4/4	2.5Y3/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	34.0	61.5	2.6	1.9
SHRUB	A2	011-021	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	48.0	41.5	6.4	4.1
SHRUB	C1	021-048	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	50.3	40.9	4.2	4.6
SHRUB	B1	048-117	5YR6/4	5YR4/4	GRAVELLY	VERY HARD	HARD	NON-STICKY	61.0	29.8	3.8	5.4
SHRUB	C2	117-149	10YR7/3	10YR5/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	70.0	26.9	1.8	1.3
BARE	A2	000-009	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	42.6	47.4	5.6	4.4
BARE	C1	009-047	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	46.7	42.5	5.2	5.6
BARE	B1	047-095	5YR6/4	5YR4/4	GRAVELLY	VERY HARD	HARD	NON-STICKY	55.6	33.8	4.6	6.0
BARE	C2	095+	10YR7/3	10YR5/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	65.0	32.2	1.7	1.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	33.9	8.2	7.1	6.0	8.2	8.4	2.83	1.6	1.40	4.60	43.56	19.89	4.90	22.00	22.30	1.75	
SHRUB	A2	27.5	12.1	10.8	7.4	8.2	8.8	1.00	3.4	1.00	1.88	10.56	11.04	1.30	8.00	2.80	1.75	
SHRUB	C1	29.6	11.0	9.5	6.8	8.4	8.7	0.53	3.0	1.36	1.02	3.96	5.49	0.00	0.00	1.40	0.80	
SHRUB	B1	30.1	10.8	10.2	7.7	8.4	8.5	1.28	0.8	7.10	0.90	7.26	0.17	5.00	16.00	4.80	0.00	
SHRUB	C2	25.9	8.5	7.4	6.3	8.0	8.2	2.68	3.2	18.50	1.00	13.20	7.05	29.40	94.00	3.20	0.50	
BARE	A2	22.9	10.0	8.6	5.8	8.4	8.8	0.46	2.0	0.45	0.90	3.96	1.44	0.00	3.60	1.40	0.75	
BARE	C1	23.7	10.7	9.4	7.1	8.4	8.6	0.30	3.0	0.45	0.80	2.64	1.12	0.00	0.00	1.40	1.20	
BARE	B1	24.7	13.9	12.3	8.2	8.5	8.8	0.47	0.4	4.56	0.40	2.06	0.64	0.30	4.00	2.00	0.25	
BARE	C2	28.7	9.6	8.4	6.4	8.4	8.8	1.34	2.6	11.07	0.60	5.28	14.97	9.80	30.00	0.60	1.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
									PPM	PPM	PPM	PPM			
SHRUB	A1	0.79	0.48	9.47	6.80	2.9	16.8	2.40	0.5	0.38	0.10	2.35	.078	WK.FINE	PLATY
SHRUB	A2	0.38	0.67	8.32	11.01	3.4	20.0	2.00	0.3	0.33	0.20	1.30	.034	WK.FINE	PLATY
SHRUB	C1	0.24	1.11	8.72	10.17	5.5	20.0	0.40	0.2	0.21	0.10	1.05	.023	NO STR.	SINGLE.GR
SHRUB	B1	0.31	3.32	7.22	11.46	15.1	22.0	0.00	1.1	1.68	0.20	1.50	.007	NO STR.	MASSIVE
SHRUB	C2	0.11	3.79	2.72	10.24	22.6	16.8	0.00	0.3	0.20	0.10	0.55	.008	NO STR.	SINGLE.GR
BARE	A2	0.15	0.36	7.23	9.16	2.1	16.8	0.00	0.3	0.42	0.15	1.05	.018	WK.FINE	PLATY
BARE	C1	0.11	5.29	10.35	5.61	24.9	21.3	0.00	0.2	0.32	0.15	0.95	.013	NO STR.	SINGLE.GR
BARE	B1	0.03	3.91	6.49	12.60	17.0	23.0	0.00	1.5	0.20	0.15	1.10	.007	NO STR.	MASSIVE
BARE	C2	0.13	4.18	3.23	12.59	20.9	20.0	0.00	0.5	0.54	0.10	0.80	.011	NO STR.	SINGLF.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
19	FRENCHMAN FLAT	988	1	NE	PLAYA	SLIGHT	NONE	ALLUVIUM	SMOOTH	MODERATE	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-012	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	31.2	63.0	2.9	2.9
SHRUB	C1	012-047	10YR7/3	10YR5/3	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	35.0	57.0	4.4	3.6
SHRUB	C2	047+	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	51.4	37.0	6.0	5.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (≤ 2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	34.1	9.1	8.4	6.8	8.4	8.6	1.02	7.2	4.02	0.85	6.60	1.50	0.80	14.00	2.40	0.00	
SHRUB	C1	29.8	11.3	9.3	6.7	8.6	8.8	0.57	7.6	5.71	0.35	2.48	0.28	0.30	4.00	1.40	1.30	
SHRUB	C2	26.2	12.9	10.8	7.9	8.5	8.8	0.94	7.6	11.50	0.60	2.26	0.44	0.50	4.00	4.00	8.25	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	A1	0.26	2.61	11.22	4.17	14.5	18.0	2.00	0.3	0.40	0.10	1.40	.034	WK.FINE SUB.ANG.B
SHRUB	C1	0.17	5.88	8.74	7.38	26.7	22.0	0.00	0.1	1.50	0.10	1.00	.017	WK.FINE SUB.ANG.B
SHRUB	C2	0.14	10.57	7.35	7.08	42.3	25.0	0.00	0.3	0.48	0.15	1.40	.012	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
20	FRENCHMAN FLAT	991	1	NE	PLAYA	MODERATE	20-40%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	C1	000-006	10YR6/3	10YR3/3	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	53.7	40.5	3.4	2.4
SHRUB	C2	006-065	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	59.0	35.4	3.8	1.8
SHRUB	C3	065-091	10YR6/4	10YR4/4	GRAVELLY	VERY HARD	LOOSE	NON-STICKY	70.6	21.2	2.8	5.4
SHRUB	C4	091-113	10YR6/4	10YR4/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	59.0	33.4	2.4	5.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
										(MEQ/LITER)				(MEQ/LITER)				
SHRUB	C1	25.2	12.0	9.8	6.2	8.2	8.9	0.59	1.4	0.42	0.68	5.28	1.47	0.80	8.00	2.00	0.90	
SHRUB	C2	23.5	9.2	8.6	5.8	8.5	8.8	0.50	2.2	1.85	0.58	3.96	1.49	0.47	7.00	1.80	2.20	
SHRUB	C3	31.8	9.8	8.1	6.3	8.4	8.6	0.53	0.8	3.20	0.42	2.64	0.32	0.00	0.00	2.00	1.90	
SHRUB	C4	39.1	8.0	7.4	5.5	8.1	8.4	1.38	0.8	9.50	0.30	5.24	4.21	7.50	2.60	1.40	2.20	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	C1	0.06	1.47	4.24	9.79	9.5	15.5	0.00	1.0	1.90	0.20	1.15	.057 WK.FINE	SUB.ANG.B
SHRUB	C2	0.17	1.21	4.62	8.92	8.2	14.8	0.00	0.3	0.22	0.15	0.95	.013 NO STR.	MASSIVE
SHRUB	C3	0.38	1.14	4.11	9.50	7.7	14.8	0.00	0.3	0.47	0.15	1.10	.007 STR.CRSE	SUB.ANG.B
SHRUB	C4	0.07	2.13	2.99	8.63	15.5	13.8	0.00	0.5	0.21	0.15	1.10	.006 NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
21	FRENCHMAN FLAT	988	1	E	PLAYA	MODERATE	20-40%	ALLUVIUM	SMOOTH	EXCESSIVE	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
BARE	C1	000-016	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	44.4	50.8	2.7	2.1
BARE	C2	016-061	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	46.2	49.0	3.7	1.1
BARE	C3	061-108	10YR6/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	70.4	25.6	1.7	2.3
BARE	C4	108-152	10YR7/4	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	64.1	29.2	1.3	5.4

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)			(MEQ/LITER)				
BARE	C1	20.0	8.7	7.8	5.3	8.6	9.0	0.53	2.2	0.40	0.65	4.02	1.19	0.10	0.00	0.11	0.00
BARE	C2	21.1	9.1	7.2	5.6	8.7	8.9	0.42	2.0	0.65	0.43	2.68	0.98	0.10	0.00	0.10	0.00
BARE	C3	23.1	7.6	6.1	4.9	8.8	8.8	0.90	2.2	4.75	0.20	4.02	1.25	2.20	1.20	0.25	0.00
BARE	C4	18.2	6.5	6.0	4.7	8.4	8.3	2.90	1.0	14.15	0.70	26.84	9.67	22.10	9.40	0.67	0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
BARE	C1	0.20	0.24	4.29	7.22	2.0	11.8	0.00	0.2	0.48	0.10	0.90	.020 WK.FINE	SUB.ANG.B
BARE	C2	0.14	0.47	4.12	5.91	4.5	10.5	0.00	0.3	0.37	0.10	0.50	.014 WK.FINE	SUB.ANG.B
BARE	C3	0.09	2.29	2.20	4.51	25.4	9.0	0.00	0.5	0.17	0.05	0.95	.007 NO STR.	SINGLE.GR
BARE	C4	0.04	1.89	1.69	5.92	19.9	9.5	0.00	0.5	0.37	0.10	0.95	.006 NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
22	FRENCHMAN FLAT	1000	1	E	BAJADA	MODERATE	20-40%	LMSTN_TUF	SMOOTH	EXCESSIVE	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) ϕ				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05-0.002	<0.002	
SHRUB	A1	000-015	10YR6/3	10YR3/3	SMOOTH	SOFT		FRIABLE	NON-STICKY	47.8	43.5	5.0	3.7
SHRUB	C1	015-043	10YR6/3	10YR3/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	42.2	50.3	4.6	2.9
SHRUB	C2	043-084	10YR7/3	10YR4/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	61.9	31.4	5.0	1.7
SHRUB	C3	084-118	10YR7/3	10YR4/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	54.6	38.5	4.6	2.3
SHRUB	C4	118-186	10YR6/3	10YR4/3	COBB & GRAVL	LOOSE		LOOSE	NON-STICKY	62.2	31.8	3.6	2.4
BARE	C1	000-032	10YR6/3	10YR3/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	43.7	49.8	4.7	1.8
BARE	C2	032-069	10YR7/3	10YR4/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	52.9	41.2	4.4	1.5
BARE	C3	069-108	10YR7/3	10YR4/3	GRAVELLY	LOOSE		LOOSE	NON-STICKY	59.5	34.4	4.4	1.7
BARE	C4	108-141	10YR6/3	10YR4/3	COBB & GRAVL	LOOSE		LOOSE	NON-STICKY	66.8	27.6	2.8	2.8

PROFILE TYPE	HOR-IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON PPM	
SHRUB	A1	31.4	10.7	8.3	7.0	8.3	8.8	2.17	1.6	1.30	6.10	41.62	9.23	4.30	4.40	0.17	0.00	
SHRUB	C1	25.2	9.3	7.6	5.6	8.5	8.8	1.30	2.0	1.70	3.75	16.10	6.06	1.20	3.10	1.05	0.00	
SHRUB	C2	21.1	10.0	7.7	5.3	8.7	8.7	1.11	3.0	2.85	2.25	12.07	4.88	0.20	1.90	0.99	0.00	
SHRUB	C3	19.2	9.2	6.9	5.2	8.2	8.1	3.48	3.0	21.20	1.57	65.20	33.64	22.40	81.20	1.67	3.80	
SHRUB	C4	19.1	7.6	6.5	4.5	8.1	8.1	4.35	3.0	26.00	1.30	76.93	22.94	26.90	106.20	1.58	2.00	
BARE	C1	20.2	9.2	7.3	5.1	8.6	8.9	0.54	2.0	0.28	0.52	6.03	2.02	0.70	1.20	0.08	0.00	
BARE	C2	20.9	8.4	6.7	4.7	8.7	8.8	0.64	2.4	1.60	0.92	4.69	2.02	1.00	1.90	0.08	0.00	
BARE	C3	19.7	9.1	6.5	4.8	8.4	8.5	3.26	2.2	10.85	1.50	33.55	10.73	15.30	17.50	0.93	0.00	
BARE	C4	19.0	6.2	5.1	3.8	8.4	8.4	3.26	0.8	15.00	0.56	18.78	8.06	10.60	23.10	0.27	0.00	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	1.30	0.21	6.96	9.83	1.2	17.0	3.20	0.1	0.68	0.10	3.15	.132	WK.FINE PLATY
SHRUB	C1	0.58	0.34	7.54	5.62	2.3	14.5	1.16	0.1	0.30	0.10	1.10	.058	NO STR. SINGLE.GR
SHRUB	C2	0.26	0.44	5.08	3.98	4.6	9.5	0.44	0.2	0.34	0.10	0.60	.026	NO STR. SINGLE.GR
SHRUB	C3	0.15	0.72	1.22	8.06	7.2	10.0	0.00	0.2	0.44	0.15	0.90	.012	NO STR. SINGLE.GR
SHRUB	C4	0.13	0.80	1.13	6.32	9.7	8.3	0.00	0.2	0.16	0.00	1.05	.004	NO STR. SINGLE.GR
BARE	C1	0.17	0.09	1.79	8.12	0.9	10.0	0.00	0.5	0.42	0.10	0.60	.015	NO STR. SINGLE.GR
BARE	C2	0.16	0.35	3.03	7.12	3.3	10.5	0.00	0.3	0.28	0.10	0.75	.013	NO STR. SINGLE.GR
BARE	C3	0.14	0.74	1.77	4.99	9.9	7.5	0.00	0.2	0.30	0.10	1.55	.011	NO STR. SINGLE.GR
BARE	C4	0.09	0.79	0.94	6.27	9.9	8.0	0.00	0.3	0.35	0.10	1.00	.006	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
23	FRENCHMAN FLAT	988	1	E	BAJADA	MODERATE	40-60%	L MSTN_TUF	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-008	10YR5/3	10YR3/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	36.3	55.2	4.4	4.1
SHRUB	C1	008-037	10YR7/2	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	48.0	45.6	4.4	2.0
SHRUB	C2	037-082	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	46.4	47.2	4.9	1.5
SHRUB	C3	082-137	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	58.0	36.7	3.6	1.7
SHRUB	C4	137+	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	61.5	29.1	4.8	4.6
BARE	C1	000-026	10YR7/2	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	41.8	50.0	5.4	2.8
BARE	C2	026-066	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	50.0	43.6	4.4	2.0
BARE	C3	066-134	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	59.5	36.4	2.8	1.3
BARE	C4	134+	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	61.0	33.8	3.1	2.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	32.8	11.1	9.4	6.9	8.1	8.6	2.22	1.4	1.10	2.45	26.40	10.05	2.60	14.00	14.40	7.25	
SHRUB	C1	24.7	9.6	8.4	5.3	8.2	8.9	0.82	2.0	1.63	1.30	6.60	1.56	0.80	10.00	1.40	1.50	
SHRUB	C2	24.6	9.3	7.8	5.0	8.2	8.8	0.76	2.6	4.36	0.80	3.96	1.49	0.70	12.00	0.60	1.75	
SHRUB	C3	21.8	8.2	7.0	4.7	8.2	8.5	1.46	1.8	10.00	0.80	6.60	2.85	3.30	30.00	2.40	0.00	
SHRUB	C4	23.3	8.3	7.5	5.1	7.9	8.2	4.25	0.8	22.60	1.00	25.08	11.37	15.10	131.00	4.80	0.00	
BARE	C1	20.4	9.5	9.2	5.2	8.3	8.8	0.42	1.4	0.50	0.31	3.96	2.79	0.00	4.40	1.00	1.30	
BARE	C2	22.3	8.9	8.3	5.4	8.4	8.8	0.31	2.4	1.38	0.68	2.64	4.11	0.00	1.00	1.40	2.60	
BARE	C3	24.4	8.3	7.0	4.7	8.5	8.6	0.43	2.0	4.00	0.20	3.20	0.18	0.20	4.00	1.00	0.10	
BARE	C4	23.6	7.7	6.9	4.9	8.3	8.4	1.31	1.2	11.50	0.60	5.28	4.22	3.60	24.00	0.40	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	1.30	0.33	5.17	8.75	2.3	14.3	7.20	0.5	0.43	0.15	3.80	.112 WK.FINE	PLATY
SHRUB	C1	0.18	0.59	5.97	6.69	4.5	13.3	1.20	0.1	0.63	0.10	1.85	.019 WK.FINE	SUB.ANG.B
SHRUB	C2	0.10	1.09	4.73	6.68	8.7	12.5	0.40	0.1	0.20	0.10	0.65	.011 NO STR.	SINGLE.GR
SHRUB	C3	0.10	1.53	2.85	6.87	13.6	11.3	0.80	0.3	0.18	0.10	1.20	.007 NO STR.	SINGLE.GR
SHRUB	C4	0.05	1.72	2.48	8.30	13.8	12.5	1.20	0.2	0.20	0.10	0.70	.007 NO STR.	SINGLE.GR
BARE	C1	0.13	1.74	3.62	6.64	14.5	12.0	1.60	0.1	0.41	0.10	2.20	.008 WK.FINE	SUB.ANG.B
BARE	C2	0.09	0.77	5.35	6.88	5.9	13.0	2.20	0.1	0.28	0.10	0.70	.007 NO STR.	SINGLE.GR
BARE	C3	0.08	2.07	2.36	7.57	17.3	12.0	1.20	0.1	0.28	0.10	1.10	.007 NO STR.	SINGLE.GR
BARE	C4	0.12	2.40	2.24	6.86	20.9	11.5	0.40	0.2	0.70	0.10	0.65	.007 NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
24	FRENCHMAN FLAT	979	1	E	BAJADA	MODERATE	40-60%	LMSTN_TUF	SMOOTH	EXCESSIVE	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-012	10YR6/4	10Y4/4	SMOOTH	LOOSE	FRIABLE	NON-STICKY	41.6	51.7	3.1	3.6
SHRUB	C1	012-045	10YR6/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	37.2	55.6	3.6	3.6
SHRUB	C2	045-085	10YR7/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	47.6	48.2	2.8	1.4
SHRUB	C3	085-128	10YR7/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	60.3	33.3	4.4	2.0
SHRUB	C4	128-170	10YR6/3	10Y4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	75.2	19.2	2.0	3.6
BARE	C1	000-032	10YR6/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	32.6	62.7	2.9	1.8
BARE	C2	032-092	10YR7/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	39.2	56.9	2.7	1.2
BARE	C3	092-124	10YR7/3	10Y4/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	51.5	40.9	4.4	3.2
BARE	C4	124-152	10YR6/3	10Y4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	78.5	16.0	2.5	3.0

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR													
SHRUB	A1	31.0	9.5	8.2	6.1	8.4	8.7	1.96	2.2	0.80	5.74	10.56	12.39	3.20	11.00	3.20	2.40	
SHRUB	C1	25.6	10.2	8.5	5.7	8.4	8.8	0.85	2.6	0.98	2.38	3.96	4.14	0.50	7.00	1.80	2.00	
SHRUB	C2	28.3	9.2	8.0	6.2	8.4	8.5	0.71	2.8	2.70	0.90	3.98	1.42	1.00	16.00	1.80	0.50	
SHRUB	C3	25.5	9.3	8.5	6.0	7.9	8.1	3.64	1.2	18.00	1.00	23.76	11.34	23.30	116.00	3.40	0.00	
SHRUB	C4	23.6	7.0	5.4	4.2	7.8	8.2	6.38	0.2	23.20	1.60	44.88	19.92	40.50	150.00	45.60	1.90	
BARE	C1	25.6	9.2	8.2	5.8	8.4	8.7	0.64	2.4	0.50	1.65	5.20	0.20	0.30	8.00	1.80	1.90	
BARE	C2	26.9	9.2	8.2	5.9	8.5	8.6	0.35	2.8	1.50	0.68	3.30	0.08	0.00	2.00	1.80	2.75	
BARE	C3	26.0	10.7	9.7	6.2	8.2	8.4	1.20	1.4	8.00	0.60	5.28	1.47	4.40	24.00	32.00	1.30	
BARE	C4	22.2	7.3	6.7	4.5	7.9	8.0	4.25	0.3	20.00	1.00	25.08	8.67	34.40	131.00	28.00	1.50	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A1	0.35	0.41	16.32	2.52	2.1	19.3	4.00	0.3	0.41	0.15	3.00	.060	NO STR.	SINGLE.GR
SHRUB	C1	0.16	0.51	11.69	5.05	3.0	17.3	1.20	0.2	0.50	0.10	1.45	.018	WK.FINE	SUB.ANG.B
SHRUB	C2	0.10	1.47	6.84	8.44	8.8	16.8	0.00	0.1	0.22	0.10	0.60	.010	NO STR.	SINGLE.GR
SHRUB	C3	0.07	2.21	3.10	8.44	16.1	13.8	0.00	0.5	0.21	0.10	1.10	.008	NO STR.	SINGLE.GR
SHRUB	C4	0.03	1.40	2.09	7.01	13.3	10.5	0.00	0.5	0.21	0.10	0.75	.004	NO STR.	MASSIVE
BARE	C1	0.25	0.36	11.21	3.93	2.3	15.5	2.00	0.3	0.72	0.15	1.50	.030	WK.FINE	SUB.ANG.B
BARE	C2	0.11	1.29	9.98	4.98	7.9	16.3	0.40	0.2	0.18	0.10	1.20	.009	NO STR.	SINGLE.GR
BARE	C3	0.08	2.64	4.35	8.51	17.0	15.5	0.40	0.2	0.97	0.15	0.75	.010	NO STR.	SINGLE.GR
BARE	C4	0.05	1.56	2.35	6.84	14.5	10.8	0.40	0.5	0.39	0.15	1.15	.004	NO STR.	MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
25	FRENCHMAN FLAT	970	2	SE	BAJADA	MODERATE	20-40%	LMSTN_TUF	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A1	000-009	2.5YR4/4	2.5YR3/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	39.6	52.2	4.4	3.8
SHRUB	C1	009-029	5YR6/3	5YR5/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	38.9	53.0	5.1	3.0
SHRUB	C2	029-047	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	57.8	35.9	4.4	1.9
SHRUB	C3	047-127	10YR7/3	10YR5/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	61.2	33.2	3.3	2.3
SHRUB	C4	127+	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	54.5	35.5	5.7	4.3
BARE	C1	000-018	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	51.7	41.2	5.1	2.0
BARE	C2	018-052	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	68.1	24.8	4.1	3.0
BARE	C3	052-122	10YR7/3	10YR5/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	69.7	25.2	2.8	2.3
BARE	C4	122+	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	54.8	35.6	5.4	4.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT, SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	35.0	9.2	8.4	7.5	8.0	8.8	3.48	1.8	2.00	10.24	49.66	17.75	3.88	0.00	0.90	2.80	
SHRUB	C1	27.7	9.3	8.1	5.7	8.5	8.6	2.09	3.0	1.84	7.68	18.12	3.26	2.83	8.75	0.37	4.10	
SHRUB	C2	22.5	9.3	7.8	5.4	8.3	8.7	2.37	4.0	6.35	4.16	15.03	5.18	2.41	11.25	0.35	5.70	
SHRUB	C3	23.1	7.2	7.0	5.0	8.1	8.4	2.09	3.0	10.25	2.28	56.78	22.49	10.06	42.50	1.10	7.20	
SHRUB	C4	23.0	8.2	7.8	5.4	7.9	8.3	10.43	2.0	15.15	2.12	57.72	25.07	21.63	53.13	0.65	0.00	
BARE	C1	17.8	7.9	6.9	4.7	8.5	8.6	0.43	2.0	0.37	0.46	5.37	0.50	1.29	1.88	0.07	0.00	
BARE	C2	18.7	7.3	7.3	4.9	8.5	8.8	0.31	3.0	0.68	0.78	1.34	3.35	0.42	0.00	0.05	0.00	
BARE	C3	20.9	7.2	6.8	5.5	8.7	8.7	0.35	2.0	2.20	0.30	1.61	3.30	0.51	0.00	0.05	0.00	
BARE	C4	24.5	8.2	7.5	5.6	8.0	8.2	4.01	2.0	12.20	1.29	23.49	14.31	18.09	23.75	0.07	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	A1	1.72	0.31	7.02	7.05	2.2	14.4	3.52	0.5	0.48	0.10	3.95	.143	MOD.MED. PLATY
SHRUB	C1	0.41	0.45	8.67	2.76	3.8	11.9	0.56	0.5	0.50	0.10	0.85	.048	WK.FINE SUB.ANG.B
SHRUB	C2	0.21	0.74	6.49	5.77	5.7	13.0	0.12	0.3	0.48	0.10	0.80	.021	NO STR. MASSIVE
SHRUB	C3	0.09	1.21	3.00	3.29	16.1	7.5	0.04	0.2	0.28	0.10	0.45	.010	NO STR. SINGLE.GR
SHRUB	C4	0.08	1.55	2.75	5.70	15.5	10.0	0.04	0.5	0.59	0.10	0.60	.011	NO STR. SINGLE.GR
BARE	C1	0.16	0.32	1.94	8.24	3.0	10.5	0.04	0.1	0.35	0.15	0.60	.013	WK.FINE SUB.ANG.B
BARE	C2	0.12	0.47	3.69	4.34	5.5	8.5	0.04	0.2	0.59	0.10	0.45	.013	NO STR. MASSIVE
BARE	C3	0.07	2.15	3.49	6.86	17.2	12.5	0.04	0.3	0.30	0.10	0.60	.006	NO STR. SINGLE.GR
BARE	C4	0.02	1.60	2.47	6.43	15.2	10.5	0.04	0.5	0.54	0.10	0.50	.011	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
26	FRENCHMAN FLAT	951	1	SE	PLAYA	MODERATE	<20%	LMSTN_TUF	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-010	10YR6/4	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.3	59.8	6.9	5.0
SHRUB	A2	010-020	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	23.7	59.9	11.9	4.5
SHRUB	C1	020-056	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	29.6	58.3	8.1	4.0
SHRUB	C2	056-093	10YR7/3	10YR4/3	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	30.6	60.7	5.4	3.3
SHRUB	C3	093+	10YR7/3	10YR5/4	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	33.4	55.4	6.9	4.3
BARE	A2	000-008	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	29.5	52.1	12.7	5.7
BARE	C1	008-052	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	42.0	47.5	7.0	3.5
BARE	C2	052-091	10YR7/3	10YR4/3	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	29.2	50.6	5.7	4.5
BARE	C3	091+	10YR7/3	10YR5/4	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	27.9	52.9	6.1	3.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)				SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR					NA	K	CA	MG	
SHRUB	A1	30.1	13.0	10.8	8.6	8.3	8.3	5.79	4.0	8.30	22.80	40.54	41.73	2.80
SHRUB	A2	23.9	14.5	13.1	7.8	8.3	8.6	2.37	4.0	9.30	19.52	44.03	29.89	0.00
SHRUB	C1	22.6	11.9	9.9	6.7	8.3	8.7	1.41	7.0	4.00	3.20	12.35	4.99	0.00
SHRUB	C2	26.1	9.8	8.9	6.6	8.2	8.4	2.27	4.0	8.50	2.05	20.54	6.84	0.00
SHRUB	C3	24.5	10.0	9.3	6.7	8.0	8.0	3.48	3.0	16.00	2.63	40.94	12.51	0.00
BARE	A2	18.5	12.8	12.5	7.2	8.5	8.6	0.53	3.0	0.73	1.40	4.30	0.00	0.00
BARE	C1	20.2	11.9	9.5	7.2	8.7	8.6	0.27	3.0	0.48	0.92	1.74	1.43	0.00
BARE	C2	25.8	10.1	8.8	6.2	8.7	8.7	0.35	4.0	1.94	0.46	2.01	1.77	0.00
BARE	C3	25.7	10.1	8.4	6.9	8.3	8.4	2.01	3.0	8.90	1.29	12.08	4.74	0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	1.32	0.55	10.77	5.56	3.3	16.9	5.60	0.3	0.43	0.30	3.50	.194	WK.FINE SUB.ANG.B
SHRUB	A2	0.41	0.71	14.16	5.13	3.6	20.0	1.08	0.2	0.95	0.25	1.50	.044	WK.FINE PLATY
SHRUB	C1	0.15	0.91	7.56	10.28	4.9	18.8	0.16	0.3	0.34	0.15	0.60	.014	WK.FINE SUB.ANG.B
SHRUB	C2	0.15	1.68	5.83	7.49	11.2	15.0	0.08	0.2	0.29	0.20	0.75	.014	NO STR. SINGLE.GR
SHRUB	C3	0.11	2.21	5.24	10.05	12.6	17.5	0.04	0.3	0.30	0.10	0.65	.011	NO STR. SINGLE.GR
BARE	A2	0.15	0.47	4.97	11.44	2.8	16.9	0.08	0.3	0.38	0.20	0.75	.018	WK.FINE PLATY
BARE	C1	0.09	0.49	6.96	8.38	3.1	15.8	0.08	0.1	0.35	0.30	0.40	.010	WK.FINE SUB.ANG.B
BARE	C2	0.11	1.78	5.69	10.66	9.8	18.1	0.08	0.2	0.23	0.20	0.30	.012	NO STR. SINGLE.GR
BARE	C3	0.08	2.15	4.97	9.76	12.7	16.9	0.04	0.3	0.35	0.10	0.55	.012	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
27	FRENCHMAN FLAT	951	1	E	BAJADA	SLIGHT	40-60%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
BARE	A1	000-009	10YR6/3	10YR4/3	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	35.7	57.8	5.1	1.4
BARE	C1	009-028	10YR6/4	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	47.5	45.0	4.7	2.8
BARE	C2	028-051	10YR6/4	10YR4/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	54.4	39.2	4.6	1.8
BARE	C3	051-063	10YR6/4	10YR4/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	55.2	37.9	5.1	1.8
BARE	C4	063-094	10YR6/3	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	43.1	49.7	4.9	2.3
BARE	C5	094+	10YR6/4	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	42.2	51.7	5.0	1.1

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHUS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)							
BARE	A1	21.8	10.1	7.6	6.0	8.8	9.1	0.59	2.0	0.80	0.83	6.71	1.11	0.40	0.00	0.14	0.00
BARE	C1	22.2	9.7	7.9	5.5	8.7	8.8	0.48	2.4	0.65	0.92	2.68	1.23	0.50	0.00	0.08	0.00
BARE	C2	18.8	8.9	7.3	5.4	8.6	9.0	0.37	2.4	0.95	0.52	1.34	1.34	0.60	0.00	0.10	0.00
BARE	C3	19.4	8.8	8.0	5.5	8.6	9.0	0.37	3.0	1.20	0.52	2.01	0.67	0.50	0.00	0.11	0.00
BARE	C4	21.5	9.4	7.7	5.9	8.8	9.0	0.41	4.0	1.85	0.40	2.01	0.48	0.90	0.00	0.09	0.00
BARE	C5	18.4	9.9	7.9	5.5	8.5	8.6	1.41	2.0	5.75	0.56	5.36	2.49	3.30	5.00	0.19	0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
BARE	A1	0.15	0.18	3.18	8.39	1.5	11.8	0.00	0.2	0.51	0.10	1.00	.019	WK.FINE	SUB.ANG.B
BARE	C1	0.15	0.32	4.78	6.65	2.7	11.8	0.00	0.1	0.51	0.10	0.60	.014	NO STR.	MASSIVE
BARE	C2	0.09	0.46	3.07	8.22	3.9	11.8	0.00	0.1	0.57	0.10	0.55	.011	WK.FINE	SUB.ANG.B
BARE	C3	0.13	0.46	2.29	9.00	3.9	11.8	0.00	0.2	0.56	0.10	0.50	.011	WK.FINE	SUB.ANG.B
BARE	C4	0.12	0.86	2.94	6.95	8.0	10.8	0.00	0.2	0.30	0.10	0.50	.011	WK.FINE	SUB.ANG.B
BARE	C5	0.10	1.39	2.44	9.17	10.7	13.0	0.00	0.2	0.51	0.10	0.70	.009	NO STR.	MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
28	FRENCHMAN FLAT	963	4	N	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-004	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	16.6	72.4	5.9	5.1
SHRUB	C1	004-032	10YR7/3	10YR5/3	GRAVELLY	LOOSE	FRIABLE	LOOSE	26.0	65.6	4.6	3.8
SHRUB	C2	032-050	10YR7/2	10YR5/3	GRAVELLY	LOOSE	FRIABLE	LOOSE	28.9	62.6	5.9	2.4

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PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A1	31.3	11.2	8.2	5.4	8.3	8.3	0.90	25.0	0.40	2.73	11.60	4.12	1.20	0.00	0.16		1.10
SHRUB	C1	26.5	7.8	5.6	3.5	8.8	8.8	0.64	30.0	0.30	2.00	4.43	1.57	0.80	0.00	0.06		1.10
SHRUB	C2	23.4	9.3	6.3	3.6	8.7	8.7	0.75	36.0	4.75	0.30	2.30	3.50	3.50	2.19	0.14		0.60

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	0.80	0.37	1.11	6.40	4.7	7.9	2.40	0.7	1.05	0.15	5.25	.085	WK.FINE	PLATY
SHRUB	C1	0.38	0.27	1.08	5.65	3.9	7.0	1.36	0.1	0.78	0.10	1.45	.035	NO STR.	SINGLE.GR
SHRUB	C2	0.18	0.52	0.49	7.12	6.4	8.1	0.40	0.1	0.92	0.10	1.05	.011	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
29	FRENCHMAN FLAT	963	2	N	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE 2-0.25	SAND FINE 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	9.1	80.5	6.2	4.2
SHRUB	C1	009-028	10YR7/3	10YR5/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	14.1	76.7	6.4	2.8
SHRUB	C2	028-046	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	15.3	74.2	7.1	3.4
SHRUB	C3	046-067	10YR7/3	10YR5/3	GRAVELLY	LOOSE	FRIABLE	LOOSE	23.5	65.9	6.9	3.7
SHRUB	C4	067-115	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	11.3	71.2	13.3	4.2
SHRUB	C5	115-150	10YR7/2	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	17.1	65.7	13.2	4.0
BARE	C1	000-019	10YR7/3	10YR5/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	17.8	72.7	7.3	2.2
BARE	C2	019-047	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	23.7	66.9	7.0	2.4
BARE	C3	047-077	10YR7/3	10YR5/3	GRAVELLY	LOOSE	FRIABLE	LOOSE	20.9	68.4	7.8	2.9
BARE	C4	077-112	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	13.2	65.3	17.2	4.3
BARE	C5	112-145	10YR7/2	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	15.6	63.5	16.8	4.1
BARE	C6	145-193	10YR7/2	10YR5/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	21.4	70.2	6.4	2.0

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	39.6	10.9	8.8	7.0	8.1	8.3	1.89	16.0	2.55	2.80	12.15	8.10	1.19	0.00	0.50	1.60	
SHRUB	C1	33.3	10.2	7.8	5.3	8.5	8.3	0.96	19.0	3.00	3.00	2.76	5.34	0.66	0.00	0.43	1.70	
SHRUB	C2	29.1	10.3	8.3	4.7	8.5	8.5	0.78	20.0	2.45	3.30	2.70	2.70	0.54	0.00	0.30	1.50	
SHRUB	C3	26.6	10.1	8.3	4.6	8.6	8.8	0.75	22.0	3.35	3.35	1.32	4.08	0.81	0.00	0.20	1.80	
SHRUB	C4	30.8	15.4	12.4	5.8	8.8	8.9	1.00	21.0	6.80	3.45	2.70	2.76	0.68	0.00	0.30	2.50	
SHRUB	C5	31.4	13.6	10.6	6.2	8.0	7.7	3.92	22.0	50.00	1.12	4.48	5.51	44.00	285.00	3.00	10.00	
BARE	C1	27.0	9.5	7.4	4.4	8.4	8.7	0.70	21.0	1.64	1.25	3.96	5.49	0.05	0.00	0.13	0.80	
BARE	C2	25.2	10.5	8.7	4.9	8.7	8.8	0.64	23.0	5.63	0.85	2.64	1.41	0.13	0.00	0.13	1.20	
BARE	C3	28.0	10.5	9.3	4.4	8.7	8.6	0.67	24.0	6.52	0.80	3.82	1.13	0.13	0.00	0.13	0.70	
BARE	C4	35.6	16.1	13.9	6.0	8.3	8.2	2.83	25.0	33.50	1.00	5.28	1.47	11.40	850.00	1.10	4.50	
BARE	C5	33.6	16.7	14.2	6.7	7.9	7.8	3.64	24.0	43.65	0.54	3.64	4.46	50.60	285.00	1.38	3.33	
BARE	C6	25.7	8.5	6.4	4.2	8.0	7.8	5.10	24.0	27.40	0.60	5.28	4.47	24.30	222.50	1.38	2.80	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.42	0.40	1.99	9.48	3.4	11.9	2.32	0.5	0.70	0.15	3.70	.133	WK.FINE	SUB.ANG.B
SHRUB	C1	0.49	0.47	2.30	8.35	4.2	11.1	1.16	0.5	0.47	0.10	0.90	.058	NO STR.	SINGLE.GR
SHRUB	C2	0.33	0.43	2.77	6.30	4.5	9.5	0.40	0.3	0.92	0.10	2.50	.030	NO STR.	SINGLE.GR
SHRUB	C3	0.34	0.53	3.01	7.41	4.8	11.0	0.28	0.2	0.51	0.10	1.15	.035	NO STR.	SINGLE.GR
SHRUB	C4	0.24	1.16	4.59	9.37	7.7	15.1	0.16	0.2	0.43	0.10	0.85	.025	WK.FINE	SUB.ANG.B
SHRUB	C5	0.27	1.53	0.68	11.84	10.9	14.1	0.20	0.1	0.45	0.15	0.75	.022	WK.FINE	SUB.ANG.B
BARE	C1	0.39	0.43	1.22	7.85	4.5	9.5	1.08	0.5	1.00	0.10	1.45	.042	NO STR.	SINGLE.GR
BARE	C2	0.27	1.11	1.78	6.61	11.7	9.5	0.28	0.1	1.42	0.10	0.65	.026	NO STR.	SINGLE.GR
BARE	C3	0.30	1.34	2.15	7.01	12.8	10.5	0.24	0.1	1.02	0.10	0.70	.027	NO STR.	SINGLE.GR
BARE	C4	0.27	2.21	1.31	11.03	15.2	14.6	0.24	0.1	0.90	0.10	0.70	.025	WK.FINE	SUB.ANG.B
BARE	C5	0.25	1.83	0.50	12.79	12.1	15.1	0.32	0.1	0.47	0.20	0.95	.024	WK.FINE	SUB.ANG.B
BARE	C6	0.16	0.80	0.50	7.45	9.1	8.8	0.32	0.1	2.08	0.10	0.55	.014	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
30	FRENCHMAN FLAT	951	0	1	PLAYA	NONE	<20%	ALLUVIUM	NONE	POOR	VERY SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A2	000-014	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	12.9	52.0	26.3	8.8
SHRUB	C1	014-029	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	9.5	52.7	29.3	8.5
SHRUB	C2	029-093	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	11.4	51.8	29.4	7.4
SHRUB	C3	093-130	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	12.7	61.2	20.3	5.8
SHRUB	C4	130-200	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	9.3	58.3	22.9	9.5

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A2	35.7	21.5	17.9	8.3	8.4	8.8	0.65	9.0	0.66	2.90	4.65	3.45	0.06	0.00	0.15	0.20	
SHRUB	C1	39.4	32.0	19.3	8.9	8.5	8.5	0.46	26.0	1.80	1.50	1.32	1.38	0.00	0.00	0.10	0.50	
SHRUB	C2	39.9	31.3	19.1	8.3	8.4	8.5	0.46	24.0	2.07	0.54	2.76	1.29	0.00	0.00	0.13	0.50	
SHRUB	C3	36.4	27.9	15.4	8.9	8.6	8.8	0.55	20.0	5.47	0.10	2.87	1.76	0.03	0.00	0.13	0.60	
SHRUB	C4	33.2	25.0	17.4	8.7	8.5	8.4	0.59	21.1	4.95	0.22	1.32	1.53	0.00	0.00	0.10	1.90	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A2	0.56	0.38	3.47	12.77	2.3	16.6	1.16	0.2	0.26	0.10	1.35	.062	WK.FINE	PLATY
SHRUB	C1	0.38	0.50	3.14	15.86	2.6	19.5	0.52	0.1	0.27	0.15	0.70	.041	WK.FINE	SUB.ANG.B
SHRUB	C2	0.34	0.59	1.80	15.98	3.3	18.4	0.36	0.1	0.20	0.15	0.60	.030	WK.FINE	SUB.ANG.B
SHRUB	C3	0.29	1.62	0.92	15.53	9.0	18.1	0.36	0.2	0.30	0.20	0.80	.026	MOD.MED.	SUB.ANG.B
SHRUB	C4	0.25	1.46	1.41	15.50	7.9	18.4	0.36	0.2	0.48	0.20	0.35	.032	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
31	FRENCHMAN FLAT	1018	5	N	BAJADA	MODERATE	80-100	LIMESTONE	SMOOTH	WELL	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-007	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	28.6	57.3	9.6	4.5
SHRUB	B1	007-019	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	37.3	28.8	22.5	11.4
SHRUB	C1	019-034	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	38.5	34.5	14.7	12.3
SHRUB	C2	034-049	10YR8/3	10YR6/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	44.3	40.1	9.9	5.7
BARE	B1	000-010	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	24.2	39.0	24.3	12.5
BARE	C1	010-025	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	37.9	43.6	12.4	6.1
BARE	C2	025-046	10YR8/3	10YR6/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	56.5	30.5	7.9	5.1

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)							
SHRUB	A1	32.7	13.9	10.0	5.6	8.5	8.7	1.83	28.0	17.20	2.18	6.72	6.48	1.00	0.00	0.25	0.00
SHRUB	B1	21.4	17.5	14.8	8.1	8.7	9.0	1.24	29.0	11.00	1.50	2.08	1.89	17.80	0.00	0.10	0.80
SHRUB	C1	30.9	20.3	16.5	10.5	8.7	8.9	0.65	27.0	6.10	0.65	0.87	0.52	0.00	0.00	0.06	0.00
SHRUB	C2	29.2	15.2	12.8	8.5	9.1	9.0	0.63	34.0	6.90	0.60	1.30	1.38	0.00	0.00	0.06	0.20
BARE	B1	21.8	18.3	15.0	8.6	8.4	8.5	2.31	23.0	17.55	1.90	6.72	3.78	11.60	3.75	0.08	1.00
BARE	C1	35.8	21.8	16.4	8.9	8.6	8.6	2.05	27.0	24.00	0.78	3.38	3.28	11.60	1.56	0.40	0.90
BARE	C2	31.0	14.0	11.9	6.2	8.6	8.5	5.32	40.0	41.25	0.78	9.38	10.34	29.10	5.31	1.05	2.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.10	1.32	1.21	9.35	11.1	11.9	1.72	0.8	0.98	0.30	4.25	.113	WK.FINE	PLATY
SHRUB	B1	0.36	1.56	2.60	13.59	8.8	17.8	0.48	0.3	1.03	0.30	0.55	.043	STR.CRSE	PLATY
SHRUB	C1	0.39	1.56	2.26	15.56	8.0	19.4	0.32	0.3	0.82	0.10	1.20	.052	WK.FINE	SUB.ANG.B
SHRUB	C2	0.34	1.60	1.86	9.54	12.3	13.0	0.20	0.5	1.18	0.20	0.65	.039	NO STR.	SINGLE.GR
BARE	B1	0.21	1.42	1.96	15.37	7.6	18.8	0.40	0.3	0.85	0.25	0.75	.018	STR.CRSE	PLATY
BARE	C1	0.39	1.72	1.17	12.74	11.0	15.6	0.20	0.2	0.84	0.10	1.10	.050	WK.FINE	SUB.ANG.B
BARE	C2	0.28	1.12	0.48	7.78	11.9	9.4	0.40	0.1	1.29	0.10	0.70	.028	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
32	FRENCHMAN FLAT	994	3	W	BAJADA	SEVERE	60-80%	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A12	000-018	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	9.9	70.0	14.2	5.9
SHRUB	C1	018-052	10YR7/4	10YR6/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	25.3	65.0	6.6	3.1
SHRUB	C2	052-100	10YR7/3	10YR5/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	45.2	50.2	3.0	1.6
BARE	A12	000-016	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	45.1	39.0	11.8	4.1
BARE	C1	016-060	10YR7/4	10YR6/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	10.9	75.4	9.3	4.4
BARE	C2	060-100	10YR7/3	10YR5/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	16.9	75.6	5.4	2.1

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A12	31.0	17.1	11.4	4.8	8.6	8.7	0.92	26.0	1.75	2.50	5.20	1.20	0.80	0.75	0.10		0.00
SHRUB	C1	27.7	12.9	8.4	4.3	8.8	8.7	1.72	36.0	5.80	9.04	3.33	0.95	2.70	3.75	0.10		1.50
SHRUB	C2	27.0	11.1	8.7	5.7	8.5	7.7	26.60	36.0	98.52	18.80	38.68	17.65	128.90	93.75	1.60		2.50
BARE	A12	24.9	14.8	9.5	5.8	8.6	8.8	0.55	23.0	1.00	0.52	5.30	0.68	1.80	1.56	0.10		0.00
BARE	C1	32.0	13.0	10.9	5.2	8.7	8.9	0.33	31.0	0.90	0.60	1.86	2.64	0.00	0.00	0.05		0.00
BARE	C2	24.6	16.9	10.4	5.6	8.4	8.4	5.32	37.0	67.50	1.70	13.20	6.81	52.70	20.94	1.53		0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A12	0.60	0.58	3.57	10.23	4.0	14.4	0.29	0.2	0.86	0.30	1.45	.060	WK.FINE	SUB.ANG.B
SHRUB	C1	0.25	0.34	6.17	3.49	3.4	10.0	0.10	0.1	1.00	0.10	0.80	.019	WK.FINE	SUB.ANG.B
SHRUB	C2	0.22	1.86	3.99	7.15	14.3	13.0	0.40	0.1	1.58	0.10	0.65	.015	NO STR.	MASSIVE
BARE	A12	0.31	0.31	1.24	7.58	3.4	9.1	0.72	0.1	1.55	0.20	1.00	.028	WK.FINE	SUB.ANG.B
BARE	C1	0.23	0.25	2.18	9.95	2.0	12.4	0.40	0.1	1.20	0.10	0.95	.023	WK.FINE	SUB.ANG.B
BARE	C2	0.28	2.32	2.00	8.93	17.5	13.3	0.40	0.1	1.60	0.10	1.00	.023	NO STR.	MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
33	FRENCHMAN FLAT	951	1	W	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-008	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	3.9	89.9	3.4	2.8
SHRUB	A12	008-024	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	5.6	87.8	3.6	3.0
SHRUB	C1	024-092	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	32.1	58.8	5.3	3.8
SHRUB	C2	092-200	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	27.5	67.8	2.9	1.8
BARE	A12	000-010	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	10.5	82.9	5.0	1.6
BARE	C1	010-089	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	21.7	71.2	4.8	2.3
BARE	C2	089-200	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	21.8	71.4	4.6	2.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)								
SHRUB	A11	35.8	8.8	6.4	5.2	8.3	8.7	1.17	23.2	1.15	1.90	10.40	4.00	0.00	0.00	0.38	1.00	
SHRUB	A12	32.8	8.4	6.0	5.1	8.7	9.0	0.95	28.0	1.20	1.90	8.00	2.10	0.00	0.75	0.18	0.00	
SHRUB	C1	23.8	10.3	7.3	4.1	8.8	8.9	0.99	38.0	5.35	2.70	1.37	2.35	0.00	0.94	0.06	0.60	
SHRUB	C2	24.4	8.7	5.9	4.1	8.4	8.0	3.80	34.0	92.25	6.55	27.92	34.15	49.40	34.38	2.18	0.00	
BARE	A12	26.1	7.8	5.6	3.7	8.6	9.0	0.48	30.0	1.15	0.36	5.30	1.50	0.00	0.00	0.13	0.70	
BARE	C1	26.4	9.0	6.4	4.4	8.7	9.0	0.53	28.0	1.35	1.36	1.37	1.45	0.00	0.75	0.06	0.90	
BARE	C2	24.9	9.5	6.9	4.0	8.4	8.4	2.26	28.0	10.00	3.34	4.82	6.91	14.80	9.06	0.05	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE. PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	0.57	0.44	1.48	8.83	4.1	10.8	1.52	0.5	0.60	0.10	0.95	.035	WK.FINE SUB.ANG.B
SHRUB	A12	0.39	0.36	1.82	8.32	3.4	10.5	2.36	0.2	0.47	0.10	0.70	.021	WK.FINE SUB.ANG.B
SHRUB	C1	0.23	0.75	3.14	6.61	7.1	10.5	0.32	0.1	0.70	0.10	4.95	.075	WK.FINE SUB.ANG.B
SHRUB	C2	0.11	1.65	2.89	5.46	16.5	10.0	0.40	0.1	0.67	0.10	1.60	.067	WK.FINE SUB.ANG.B
BARE	A12	0.15	0.17	0.71	7.25	2.8	6.1	1.52	0.1	0.59	0.10	0.75	.023	WK.FINE SUB.ANG.B
BARE	C1	0.17	0.29	3.01	6.08	3.1	9.4	0.20	0.1	0.50	0.10	0.70	.019	WK.FINE SUB.ANG.B
BARE	C2	0.14	0.63	2.97	4.90	7.4	8.5	0.00	0.1	0.92	0.10	0.50	.019	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
34	FRENCHMAN FLAT	945	0	1	PLAYA	SLIGHT	NONE	ALLUVIUM	SMOOTH	MODERATE	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
BARE	C1	000-010	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	20.2	24.3	39.6	15.9
BARE	C2	010-018	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	STICKY	20.1	24.5	41.1	14.3
BARE	C3	018-040	10YR7/1	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	25.0	16.1	46.3	12.6
BARE	C4	040-053	10YR7/2	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	26.0	23.8	35.5	14.7
BARE	C5	053-068	10YR7/2	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	26.5	17.3	40.8	15.4
BARE	C6	068+	10YR7/2	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	25.5	30.4	32.3	11.8

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS							SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4	
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
BARE	C1	37.6	34.7	23.1	10.8	8.6	8.7	1.21	28.0	0.80	6.20	2.78	1.84	1.30	0.00	0.24	0.50
BARE	C2	41.2	36.3	18.9	10.6	8.5	8.8	0.49	30.0	0.75	1.97	2.07	1.23	0.00	0.00	0.06	0.10
BARE	C3	42.7	30.7	23.4	10.0	8.5	8.4	0.58	26.0	1.90	1.13	2.52	1.45	0.50	0.00	0.06	0.00
BARE	C4	36.8	28.1	20.1	10.1	8.1	7.9	2.66	27.0	11.25	0.74	24.20	11.30	10.30	22.81	0.58	0.00
BARE	C5	40.5	33.3	23.4	11.6	8.1	7.9	2.80	29.0	8.90	0.40	18.08	8.02	7.10	18.75	0.20	0.00
BARE	C6	36.4	28.4	22.2	10.8	8.5	7.9	1.18	27.0	6.90	0.12	4.15	2.45	2.10	3.75	0.13	0.90

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
BARE	C1	0.93	0.35	6.65	15.50	1.6	22.5	2.52	0.5	0.20	0.30	4.05	.101 WK.FINE	PLATY
BARE	C2	0.59	0.37	3.20	18.93	1.6	22.5	1.80	0.1	0.10	0.20	1.85	.067 MOD.MED.	PLATY
BARE	C3	0.46	0.55	2.35	19.60	2.4	22.5	1.52	0.3	0.17	0.30	1.75	.055 STR.MED.	PLATY
BARE	C4	0.34	0.77	1.10	19.88	3.5	21.8	1.20	0.2	0.15	0.25	2.05	.048 MOD.MED.	SUB.ANG.B
BARE	C5	0.34	0.82	0.83	22.98	3.3	24.6	1.24	0.3	0.15	0.25	1.90	.049 MOD.MED.	SUB.ANG.B
BARE	C6	0.31	1.23	0.73	20.54	5.5	22.5	1.08	0.3	0.15	0.30	1.70	.038 MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
35	FRENCHMAN FLAT	1037	2	W	BAJADA	MODEKATE	60-80%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05-0.002	<0.002	
SHRUB	A11	000-005	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	22.5	67.0	6.4	4.1	
SHRUB	A12	005-012	10YR4/4	7.5YR3/2	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	24.3	63.2	7.1	5.4	
SHRUB	C1	012-052	10YR7/3	10YR5/3	GRAVELLY	SOFT	LOOSE	NON-STICKY	36.5	54.5	6.7	2.3	
SHRUB	C2	052-086	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	37.1	54.4	7.1	1.4	
SHRUB	C3	086-140	10YR7/3	10YR5/4	COBB & GRAVL	SLTLY HARD	LOOSE	NON-STICKY	56.2	39.1	3.3	1.4	
BARE	A12	000-010	10YR4/4	7.5YR3/2	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	18.4	72.3	6.6	2.7	
BARE	C1	010-075	10YR7/3	10YR5/3	GRAVELLY	SOFT	LOOSE	NON-STICKY	28.1	63.8	6.4	1.7	
BARE	C2	075-120	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	47.1	47.6	4.1	1.2	

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PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME ($<2.0\text{MM}$)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	36.0	11.2	7.6	6.2	8.3	8.4	3.13	23.0	3.10	4.60	32.10	11.00	0.90	8.75	0.84	2.10	
SHRUB	A12	36.2	11.2	7.3	6.1	8.3	8.5	4.43	21.0	8.60	8.70	63.82	19.58	2.70	18.13	1.44	5.80	
SHRUB	C1	25.6	11.0	7.1	4.5	9.2	8.9	0.99	33.0	1.75	5.55	4.08	4.28	0.80	1.56	0.08	3.50	
SHRUB	C2	25.4	9.4	6.9	3.5	8.8	8.8	1.30	40.0	4.50	5.64	4.72	5.46	0.20	3.75	0.18	4.80	
SHRUB	C3	19.3	6.3	4.9	3.4	8.7	8.5	2.96	43.0	12.35	5.40	7.07	10.90	4.50	10.31	0.45	1.80	
BARE	A12	27.0	9.6	5.8	4.4	8.6	8.8	0.58	24.0	0.30	0.49	4.76	2.50	0.00	0.00	0.08	0.00	
BARE	C1	24.5	9.7	7.1	3.8	8.9	8.9	0.39	31.0	0.30	0.65	2.30	1.00	0.00	0.63	0.05	0.50	
BARE	C2	21.1	7.8	5.0	3.3	9.0	8.8	0.72	47.0	3.45	1.30	1.66	2.70	0.00	0.63	0.06	0.40	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
									PPM	PPM	PPM	PPM			
SHRUB	A11	1.33	0.09	2.28	8.38	0.8	10.8	6.40	0.5	1.28	0.10	5.80	.150	WK.FINE	SUB.ANG.B
SHRUB	A12	1.69	0.17	2.39	10.44	1.3	13.0	7.12	0.7	0.74	0.10	3.30	.167	WK.FINE	SUB.ANG.B
SHRUB	C1	0.31	0.24	3.86	4.03	3.0	8.1	0.72	0.1	0.75	0.10	1.00	.036	WK.FINE	SUB.ANG.B
SHRUB	C2	0.23	0.22	3.06	2.47	3.8	5.8	0.52	0.2	1.21	0.05	0.40	.028	WK.FINE	SUB.ANG.B
SHRUB	C3	0.18	0.24	1.85	3.16	4.6	5.3	0.20	0.5	2.05	0.05	1.05	.016	NO STR.	MASSIVE
BARE	A12	0.46	0.12	0.87	8.39	1.3	9.4	0.92	0.5	1.74	0.10	1.20	.052	WK.FINE	SUB.ANG.B
BARE	C1	0.25	0.12	1.23	7.15	1.4	8.5	0.32	0.2	1.10	0.05	1.00	.029	WK.FINE	SUB.ANG.B
BARE	C2	0.17	0.31	1.22	4.60	5.1	6.1	0.24	0.2	1.00	0.05	0.65	.018	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
36	FRENCHMAN FLAT	988	3	W	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A11	000-005	10YR6/3	10YR5/4	SMOOTH	SOFT		FRIABLE	NON-STICKY	8.1	84.0	4.2	3.7
SHRUB	A12	005-018	10YR6/3	10YR5/4	SMOOTH	SOFT		FRIABLE	NON-STICKY	7.5	86.1	3.6	2.8
SHRUB	C1	018-056	10YR7/3	10YR5/4	GRAVELLY	SOFT		FRIABLE	SLTLY STICKY	10.1	81.9	4.6	3.4
SHRUB	C2	056-140	10YR6/3	10YR5/4	COBB & GRAVL	SOFT		VERY FRIABLE	NON-STICKY	28.7	68.0	2.2	1.1
BARE	A12	000-012	10YR6/3	10YR5/4	SMOOTH	SOFT		FRIABLE	NON-STICKY	7.7	81.5	6.4	4.4
BARE	C1	012-054	10YR7/3	10YR5/4	GRAVELLY	SOFT		FRIABLE	SLTLY STICKY	8.0	86.4	3.4	2.2
BARE	C2	054-146	10YR6/3	10YR5/4	COBB & GRAVL	SOFT		VERY FRIABLE	NON-STICKY	31.0	65.0	3.0	1.0

PROFILE TYPE	HOR-IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A11	39.8	10.8	8.1	8.0	8.1	8.7	2.31	19.0	2.65	5.30	25.90	8.72	2.70	1.88	0.70	0.30	
SHRUB	A12	30.1	8.3	6.0	4.3	8.4	8.6	2.80	22.0	1.50	6.00	28.18	7.82	2.20	12.81	0.63	1.20	
SHRUB	C1	29.7	10.7	7.4	4.9	8.8	8.8	0.73	27.0	0.70	2.50	2.15	2.53	0.00	0.75	0.05	0.70	
SHRUB	C2	22.2	6.8	4.3	3.2	8.6	8.6	3.94	31.0	17.20	3.50	12.48	21.24	14.10	11.56	0.87	2.90	
BARE	A12	22.6	9.5	7.6	5.4	8.6	8.8	0.43	26.0	0.60	0.60	3.33	1.87	0.00	0.00	0.10	0.40	
BARE	C1	30.9	9.7	7.7	5.2	8.9	8.9	0.34	26.0	0.55	1.00	1.60	1.08	0.00	0.00	0.05	0.50	
BARE	C2	19.7	6.9	4.6	3.2	9.1	9.0	0.62	36.0	4.20	1.13	1.18	1.00	0.00	0.00	1.53	0.10	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	1.72	0.17	2.49	9.72	1.4	12.4	5.40	0.6	1.45	0.15	8.00	.135	WK.FINE SUB.ANG.B
SHRUB	A12	0.63	0.20	3.02	6.16	2.1	9.4	2.40	0.1	0.40	0.10	1.65	.051	WK.FINE SUB.ANG.B
SHRUB	C1	0.23	0.23	2.88	5.39	2.7	8.5	0.60	0.1	0.41	0.10	1.10	.023	WK.FINE SUB.ANG.B
SHRUB	C2	0.16	0.45	1.62	3.43	8.2	5.5	0.32	0.0	0.40	0.10	0.85	.016	NO STR. MASSIVE
BARE	A12	0.24	0.12	0.99	8.27	1.3	9.4	0.80	0.1	0.56	0.15	0.65	.027	WK.FINE SUB.ANG.B
BARE	C1	0.21	0.18	2.17	7.03	1.9	9.4	0.32	0.1	0.32	0.10	0.50	.020	WK.FINE SUB.ANG.B
BARE	C2	0.18	0.50	2.03	2.72	9.5	5.3	0.40	0.0	0.35	0.10	0.45	.016	NO STR. MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
37	FRENCHMAN FLAT	957	1	W	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-013	10YR6/3	10YR4/3	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	9.4	85.4	2.7	2.5
SHRUB	B1	013-041	10YR7/3	10YR6/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	25.6	54.2	9.1	11.1
SHRUB	C1	041-073	10YR7/3	10YR6/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	23.3	70.3	4.0	2.4
SHRUB	C2	073-120	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	24.1	68.6	4.5	2.8
BARE	B1	000-024	10YR7/3	10YR6/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	26.0	56.6	8.6	8.8
BARE	C1	024-054	10YR7/3	10YR6/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	24.5	69.5	4.0	2.0
BARE	C2	054-116	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	35.4	60.0	3.6	1.0

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	31.7	7.5	5.1	5.0	8.7	8.8	1.13	21.0	1.20	2.00	10.02	4.02	0.30	0.00	0.41	0.00	
SHRUB	B1	22.3	12.6	10.4	6.8	8.4	8.8	0.90	27.0	3.45	2.85	4.56	3.36	3.80	0.00	0.41	0.80	
SHRUB	C1	28.1	8.9	6.5	4.3	8.9	8.8	0.76	29.0	3.10	2.33	1.72	0.86	7.80	0.00	0.18	0.50	
SHRUB	C2	25.4	8.1	6.0	3.8	9.0	9.0	0.86	36.0	8.60	1.00	0.80	0.64	3.60	1.25	0.06	0.40	
BARE	B1	29.2	11.2	9.0	5.5	8.7	8.8	0.55	30.0	1.75	1.30	2.68	1.34	1.20	0.00	0.10	0.00	
BARE	C1	24.0	9.5	7.1	4.1	9.0	8.6	0.48	31.0	2.00	1.64	2.07	0.61	0.30	0.00	0.09	0.00	
BARE	C2	23.2	7.3	5.0	3.6	9.0	8.5	1.06	35.0	10.85	2.18	1.34	1.34	2.30	5.00	0.11	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	0.77	0.16	1.99	4.85	2.3	7.0	1.16	0.3	0.35	0.10	4.25	.062	WK.FINE	SUB.ANG.B
SHRUB	B1	0.22	0.32	3.14	5.92	3.4	9.4	0.52	0.1	0.38	0.20	1.05	.026	WK.FINE	PLATY
SHRUB	C1	0.16	0.36	3.13	5.64	3.9	9.1	0.20	0.3	0.20	0.10	0.65	.017	WK.FINE	SUB.ANG.B
SHRUB	C2	0.18	1.03	2.27	5.20	12.1	8.5	0.20	0.5	0.42	0.10	0.70	.014	WK.FINE	SUB.ANG.B
BARE	B1	0.21	0.25	2.18	8.07	2.4	10.5	0.52	0.1	0.35	0.20	0.80	.025	WK.FINE	PLATY
BARE	C1	0.16	0.33	2.66	5.51	3.9	8.5	0.20	0.2	0.59	0.10	0.55	.017	WK.FINE	SUB.ANG.B
BARE	C2	0.15	0.83	2.25	4.42	11.1	7.5	0.24	0.0	0.40	0.10	0.50	.014	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
38	FRENCHMAN FLAT	947	0	1	PLAYA	MODERATE	NONE	ALLUVIUM	SMOOTH	POOR	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
BARE	A1	000-012	10YR6/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	12.4	60.7	20.6	6.3
BARE	A2	012-023	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	HARD	SLTLY STICKY	25.3	32.4	31.4	10.9
BARE	C1	023-066	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	19.4	50.4	25.9	4.3
BARE	C2	066-075	10YR7/3	10YR6/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	35.4	38.3	22.6	3.7
BARE	C3	075-090	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	18.9	74.3	5.1	1.7
BARE	C4	090-094	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	SLTLY STICKY	28.7	30.9	32.5	7.9
BARE	C5	094-100	10YR7/3	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	15.7	74.6	6.9	2.8
BARE	C6	100-129	10YR7/3	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	21.7	68.4	6.8	3.1
BARE	C7	129-156	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	42.6	48.8	5.3	3.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT LIME	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.	(MMHOS /CM)	(<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		PPM
BARE	A1	35.6	22.7	13.4	7.9	8.1	8.9	3.33	25.0	17.00	10.26	6.71	10.24	5.90	0.00	0.15		0.00
BARE	A2	26.1	23.2	16.3	8.9	8.7	8.7	1.02	29.0	4.50	2.48	2.68	2.54	2.40	0.00	0.15		0.00
BARE	C1	34.8	26.4	17.2	8.2	8.2	8.1	2.96	27.0	30.00	1.03	34.76	31.73	13.40	75.00	1.81		0.00
BARE	C2	31.3	24.2	16.4	7.6	8.1	7.8	13.30	29.0	23.20	0.70	81.85	16.73	32.30	387.50	1.16		0.00
BARE	C3	27.5	8.7	5.6	4.8	8.4	7.5	53.20	16.0	31.50	1.20	47.64	39.69	11.10	156.20	1.26		0.00
BARE	C4	29.1	23.5	16.6	7.8	8.2	8.0	53.20	29.0	30.00	2.25	45.03	40.40	9.30	150.00	1.71		3.40
BARE	C5	23.3	9.2	7.9	4.6	8.3	8.0	3.80	19.0	14.50	1.70	24.29	26.56	2.80	50.00	0.43		0.00
BARE	C6	25.0	10.7	8.5	5.5	8.4	7.9	3.30	15.0	11.25	1.78	22.14	13.06	2.60	33.70	0.28		0.00
BARE	C7	23.1	8.9	7.0	5.2	8.3	8.1	4.84	15.0	11.60	2.40	25.49	26.71	2.80	46.20	0.83		0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
BARE	A1	0.94	0.52	5.51	8.35	3.6	14.4	1.08	0.5	0.96	0.20	3.30	.090	WK.FINE PLATY
BARE	A2	0.45	0.76	4.94	7.55	5.7	13.3	1.16	0.3	0.59	0.20	1.00	.053	MOD.FINE SUB.ANG.B
BARE	C1	0.28	1.36	1.11	9.41	11.4	11.9	0.24	0.1	0.54	0.20	1.00	.033	WK.FINE SUB.ANG.B
BARE	C2	0.23	2.02	0.43	11.30	14.7	13.8	0.20	0.2	0.70	0.20	0.85	.018	WK.FINE PLATY
BARE	C3	0.10	1.21	1.12	7.05	12.9	9.4	0.24	0.1	0.48	0.10	0.35	.008	WK.FINE SUB.ANG.B
BARE	C4	0.22	0.63	1.43	6.07	7.7	8.1	0.40	0.3	1.06	0.35	0.65	.019	WK.FINE PLATY
BARE	C5	0.11	0.66	1.66	4.68	9.4	7.0	0.32	0.1	0.23	0.10	0.30	.011	WK.FINE PLATY
BARE	C6	0.12	1.02	2.16	7.57	9.5	10.8	0.20	0.1	0.35	0.10	0.45	.009	WK.FINE SUB.ANG.B
BARE	C7	0.11	0.56	1.89	5.55	7.0	8.0	0.20	0.2	0.50	0.20	0.55	.009	WK.FINE SUB. B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	ERUSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
39	FRENCHMAN FLAT	939	1	S	PLAYA	MODERATE	<20%	ALLUVIUM	SMOOTH	POOR	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE 2-0.25	SAND FINE 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-017	10YR6/4	10YR4/4	SMOOTH	LOOSE	LOOSE	NON-STICKY	19.7	72.1	4.4	3.8
SHRUB	A12	017-029	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	19.6	55.6	15.6	9.2
SHRUB	C1	029-047	10YR7/4	10YR5/5	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	33.4	41.7	10.0	14.9
SHRUB	C2	047-062	10YR7/4	10YR5/5	GRAVELLY	HARD	FRIABLE	NON-STICKY	39.3	41.5	9.3	9.9
SHRUB	C3	062-088	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	35.4	51.0	8.7	4.9
SHRUB	C4	088-115	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	28.2	51.5	6.6	3.7
BARE	A12	000-013	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	20.3	59.5	13.0	7.2
BARE	C1	013-030	10YR7/4	10YR5/5	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	28.0	52.4	9.1	10.5
BARE	C2	030-047	10YR7/4	10YR5/5	GRAVELLY	HARD	FRIABLE	NON-STICKY	42.1	29.7	12.8	15.4
BARE	C3	047-075	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	33.5	54.4	7.0	5.1
BARE	C4	075-110	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	25.3	66.7	5.2	2.8
BARE	C5	110-145	10YR7/4	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	59.4	36.2	2.1	2.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR												(MEQ/LITER)	
SHRUB	A11	32.2	11.0	8.7	7.0	8.5	8.7	3.80	7.0	34.00	4.45	10.73	7.52	18.00	1.20	0.75	0.00	
SHRUB	A12	18.7	16.4	13.2	8.0	9.0	9.3	1.90	9.0	20.50	3.34	1.34	1.26	5.20	0.00	0.40	0.00	
SHRUB	C1	20.8	17.3	14.3	10.2	8.6	8.5	1.90	7.0	14.50	3.60	5.36	1.16	11.40	0.00	0.17	0.00	
SHRUB	C2	25.4	16.2	13.3	9.0	8.4	8.4	2.66	7.0	9.50	3.83	12.07	2.27	14.90	0.00	0.50	0.00	
SHRUB	C3	26.6	15.2	13.2	8.4	8.7	8.7	0.90	7.0	5.20	0.70	2.68	1.23	3.50	0.00	0.13	0.00	
SHRUB	C4	27.8	12.8	9.6	7.3	8.4	8.5	2.53	5.0	10.85	0.36	8.05	1.07	11.20	7.50	0.03	0.00	
BARE	A12	22.0	14.1	12.8	7.4	9.0	9.2	0.70	9.0	4.15	1.70	1.34	2.64	0.70	0.00	0.11	0.00	
BARE	C1	23.4	15.6	13.0	9.3	9.0	9.2	0.67	6.0	4.30	1.50	1.34	0.14	0.90	0.00	0.15	0.00	
BARE	C2	20.4	18.2	15.7	11.2	8.9	9.3	0.82	7.0	6.50	0.92	1.34	0.31	0.80	0.00	0.14	0.00	
BARE	C3	27.2	15.5	11.3	7.7	9.0	9.2	1.10	5.0	9.00	0.36	1.34	0.74	1.00	0.00	0.26	0.00	
BARE	C4	26.1	10.8	8.9	6.0	8.3	8.4	5.32	4.0	32.30	0.92	50.99	7.69	28.20	23.10	2.18	0.00	
BARE	C5	22.0	7.8	7.4	5.3	8.4	8.4	5.60	2.2	25.40	1.20	42.94	7.91	17.70	30.00	1.41	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.52	3.39	7.01	5.85	20.9	16.3	0.20	0.1	0.76	0.15	4.20	.046	WK.FINE	SUB.ANG.B
SHRUB	A12	0.24	4.55	8.64	5.56	24.3	18.8	0.20	0.1	0.57	0.20	1.40	.027	WK.FINE	SUB.ANG.B
SHRUB	C1	0.18	2.83	9.51	4.66	16.6	17.0	0.20	0.1	1.18	0.30	1.60	.019	MOD.FINE	SUB.ANG.B
SHRUB	C2	0.20	1.51	7.90	8.72	8.3	18.1	0.20	0.0	0.60	0.25	1.55	.020	MOD.FINE	SUB.ANG.B
SHRUB	C3	0.18	2.01	4.98	10.76	11.3	17.8	0.20	0.1	1.06	0.20	1.75	.018	WK.FINE	SUB.ANG.B
SHRUB	C4	0.15	2.45	1.79	8.76	18.8	13.0	0.00	0.1	1.20	0.10	1.80	.013	WK.FINE	SUB.ANG.B
BARE	A12	0.24	1.41	7.34	6.25	9.4	15.0	0.60	0.1	0.36	0.35	2.30	.025	WK.FINE	SUB.ANG.B
BARE	C1	0.19	2.30	10.66	9.54	10.2	22.5	0.32	0.1	0.40	0.20	2.10	.020	MOD.FINE	SUB.ANG.B
BARE	C2	0.17	4.80	8.86	11.34	19.2	25.0	0.24	0.1	1.03	0.25	0.80	.019	MOD.FINE	SUB.ANG.B
BARE	C3	0.15	4.56	4.29	9.40	25.0	18.3	0.00	0.1	0.30	0.20	1.65	.015	WK.FINE	SUB.ANG.B
BARE	C4	0.10	2.59	2.17	9.74	17.9	14.5	0.00	0.1	0.20	0.10	0.90	.011	WK.FINE	SUB.ANG.B
BARE	C5	0.06	2.64	2.47	7.89	20.3	13.0	0.00	0.1	0.35	0.10	0.85	.006	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
40	FRENCHMAN FLAT	960	1	S	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-025	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	5.3	86.7	4.0	4.0
SHRUB	A2	025-038	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	35.0	52.5	6.0	6.5
SHRUB	C1	038-068	10YR7/3	10YR5/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	37.7	53.5	5.0	3.8
SHRUB	C2	068-117	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	45.0	49.3	3.2	2.5
SHRUB	C3	117+	10YR7/3	10YR5/4	GRAVELLY	HARD	LOOSE	NON-STICKY	8.2	88.3	1.5	2.0
BARE	A2	000-012	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	34.3	49.7	10.3	5.7
BARE	C1	012-046	10YR7/3	10YR5/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	33.3	57.5	5.1	4.1
BARE	C2	046-086	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	48.1	48.8	3.8	1.3
BARE	C3	086+	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	LOOSE	NON-STICKY	8.8	87.1	2.3	1.8

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 HAR	15 HAR					NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A1	35.2	10.8	8.9	7.9	8.2	8.7	2.48	10.0	1.30	4.20	24.30	7.12	4.40	5.00	0.63	0.70	
SHRUB	A2	23.6	13.0	9.7	7.3	8.1	8.1	7.45	11.0	8.00	8.80	59.07	38.05	23.80	66.90	0.43	0.00	
SHRUB	C1	25.4	10.3	9.0	6.5	8.1	8.2	3.48	11.0	7.80	2.85	18.95	13.00	9.10	18.70	0.50	0.00	
SHRUB	C2	23.3	9.1	7.3	5.2	8.1	8.2	3.26	10.0	13.00	1.00	20.72	15.13	20.00	25.60	0.25	0.00	
SHRUB	C3	21.9	5.4	4.7	3.5	8.1	7.8	2.90	10.0	11.20	1.12	19.20	10.96	16.60	15.60	0.45	0.00	
BARE	A2	20.6	14.2	9.9	7.1	8.5	8.7	0.57	13.0	0.70	1.05	4.15	2.00	0.00	0.00	0.13	0.00	
BARE	C1	26.6	11.8	9.4	6.5	8.7	8.6	0.38	10.0	1.20	1.00	2.06	1.62	0.00	0.00	0.10	1.20	
BARE	C2	25.5	10.6	8.1	5.4	8.7	8.6	0.47	10.0	2.70	0.35	1.82	2.00	0.00	0.62	0.10	0.00	
BARE	C3	25.9	7.5	5.7	4.7	8.3	8.1	2.01	10.0	9.90	0.55	10.08	4.92	8.40	6.90	0.45	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.02	0.40	6.90	7.70	2.7	15.0	3.20	0.2	0.58	0.15	4.05	.095	WK.FINE	SUB.ANG.B
SHRUB	A2	0.22	0.76	7.84	5.15	5.5	13.8	0.84	0.0	0.58	0.15	1.50	.027	MOD.MED.	SUB.ANG.B
SHRUB	C1	0.10	1.48	6.81	4.71	11.4	13.0	0.32	0.1	0.30	0.10	0.80	.019	WK.FINE	SUB.ANG.B
SHRUB	C2	0.09	1.28	3.18	8.04	10.2	12.5	0.24	0.1	0.42	0.10	0.70	.012	NO STR.	MASSIVE
SHRUB	C3	0.05	2.00	1.38	4.75	24.6	8.1	0.24	0.2	0.71	0.10	0.35	.006	MOD.MED.	SUB.ANG.B
BARE	A2	0.24	0.49	6.51	9.25	3.0	16.3	0.80	0.1	0.38	0.15	1.10	.028	MOD.MED.	SUB.ANG.B
BARE	C1	0.13	0.97	5.41	9.37	9.0	15.8	0.32	0.2	0.34	0.10	0.70	.014	WK.FINE	SUB.ANG.B
BARE	C2	0.10	2.18	4.09	8.73	14.5	15.0	0.32	0.1	0.25	0.10	0.55	.010	NO STR.	MASSIVE
BARE	C3	0.07	2.32	2.27	7.29	19.5	11.9	0.32	0.1	0.20	0.10	0.45	.007	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
41	FRENCHMAN FLAT	945	1	S	BAJADA	MODERATE	NONE	ALLUVIUM	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-008	10YR6/3	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	20.6	68.7	7.1	3.6
SHRUB	A12	008-018	10YR6/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	22.3	61.4	11.5	4.8
SHRUB	C1	018-047	10YR7/2	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	34.5	48.8	9.2	7.9
SHRUB	C2	047-074	10YR7/2	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	39.0	55.0	3.7	2.3
SHRUB	C3	074-095	10YR7/2	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	37.0	58.2	3.0	1.8
SHRUB	C4	095-107	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	28.7	60.3	4.9	6.1
BARE	A12	000-015	10YR6/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	27.5	60.1	9.1	3.3
BARE	C1	015-048	10YR7/2	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	32.7	51.2	8.1	8.0
BARE	C2	048-073	10YR7/2	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	10.4	83.1	4.3	2.2
BARE	C3	073-087	10YR7/2	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	33.8	59.9	3.3	3.0
BARE	C4	087-096	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	39.6	45.6	6.0	8.8
BARE	C5	096+	10YR7/3	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	33.2	59.7	4.9	2.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)			(MEQ/LITER)				
SHRUB	A11	38.2	16.4	10.8	8.7	8.3	8.2	2.01	8.0	13.00	2.36	7.42	3.68	5.20	0.00	0.20	2.30
SHRUB	A12	20.3	15.5	11.8	9.6	8.8	9.3	1.68	9.0	14.20	3.65	3.60	1.10	8.30	0.00	0.40	1.00
SHRUB	C1	22.4	13.7	12.7	8.9	8.6	9.0	1.45	10.0	10.20	1.93	2.72	1.11	4.50	0.62	0.24	1.00
SHRUB	C2	27.1	9.0	7.9	5.2	8.3	8.1	3.73	9.0	17.80	2.10	21.63	7.90	17.50	21.90	0.55	0.00
SHRUB	C3	27.0	8.6	7.9	5.6	8.2	8.1	5.49	8.0	20.00	2.00	38.19	13.37	34.90	32.50	0.45	3.00
SHRUB	C4	27.0	13.1	11.9	9.3	8.0	8.0	7.45	10.0	23.80	2.43	57.10	33.02	43.50	43.70	1.40	0.90
BARE	A12	29.1	15.9	10.9	7.1	8.6	8.6	0.52	8.0	1.20	0.85	3.43	1.03	0.00	0.62	0.13	0.00
BARE	C1	21.3	12.8	11.6	8.5	8.6	8.7	0.72	10.0	0.80	1.20	2.04	0.91	0.00	0.00	0.13	0.00
BARE	C2	27.6	9.7	7.7	5.5	8.5	8.5	0.93	8.0	5.20	0.70	4.50	0.33	0.80	0.62	0.23	0.00
BARE	C3	25.7	9.4	7.8	6.0	8.2	8.3	1.58	9.0	7.10	1.18	13.82	4.18	3.80	15.00	0.30	0.00
BARE	C4	29.5	13.8	11.4	8.8	7.9	7.9	5.22	9.0	19.50	2.70	50.36	29.26	28.90	58.70	0.35	0.00
BARE	C5	28.5	11.3	9.0	6.9	8.5	8.3	1.37	7.0	6.80	0.55	6.50	1.22	2.20	3.70	0.43	0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A11	0.92	3.13	6.66	7.09	18.5	16.9	1.52	0.3	0.76	0.15	4.00	.077	WK.FINE	SUB.ANG.B
SHRUB	A12	0.36	4.56	10.93	6.25	21.0	21.8	1.52	0.1	0.40	0.15	1.25	.036	WK.MED.	SUB.ANG.B
SHRUB	C1	0.16	4.15	9.09	5.51	22.1	18.8	0.60	0.2	0.32	0.15	0.70	.021	MOD.MED.	SUB.ANG.B
SHRUB	C2	0.13	3.67	5.64	0.07	39.1	9.4	0.24	0.1	0.30	0.10	0.65	.016	WK.FINE	SUB.ANG.B
SHRUB	C3	0.08	3.41	4.78	5.56	24.8	13.8	0.24	0.1	0.10	0.10	0.45	.009	WK.FINE	SUB.ANG.B
SHRUB	C4	0.10	2.56	4.03	8.41	17.1	15.0	0.24	0.1	0.60	0.20	0.45	.013	MOD.MED.	SUB.ANG.B
BARE	A12	0.20	0.85	6.51	5.64	6.5	13.0	0.80	0.1	0.38	0.10	0.90	.026	WK.FINE	SUB.ANG.B
BARE	C1	0.13	2.31	9.35	6.47	12.7	18.1	0.52	0.1	0.58	0.15	0.45	.016	MOD.MED.	SUB.ANG.B
BARE	C2	0.10	2.44	5.81	3.00	21.7	11.3	0.24	0.1	0.21	0.10	0.60	.012	WK.FINE	SUB.ANG.B
BARE	C3	0.08	1.70	4.37	5.07	16.6	14.4	0.24	0.2	0.37	0.10	0.56	.012	WK.FINE	SUB.ANG.B
BARE	C4	0.11	1.57	4.02	10.66	9.7	16.3	0.32	0.2	0.30	0.20	0.58	.015	MOD.MED.	SUB.ANG.B
BARE	C5	0.08	2.64	4.08	3.28	26.4	10.0	0.32	0.1	0.23	0.10	0.40	.010	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
42	FRENCHMAN FLAT	1006	3	SW	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-005	10YR6/3	10YR4/3	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	52.5	43.1	2.5	1.9
SHRUB	A2	005-017	10YR7/3	10YR5/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	48.3	34.4	10.6	6.7
SHRUB	A3	017-030	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	50.5	29.7	7.6	12.2
SHRUB	C1	030-051	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	56.7	39.7	1.6	2.0
SHRUB	C2	051+	10YR7/2	10YR6/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	87.3	11.7	0.0	1.0
BARE	A2	000-012	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	40.0	43.8	11.0	5.2
BARE	A3	012-029	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	VERY FRIABLE	NON-STICKY	50.9	30.9	5.2	13.0
BARE	C1	029-054	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	52.6	43.5	2.2	1.7
BARE	C2	054+	10YR7/2	10YR6/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	84.0	14.8	0.1	1.1

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PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS										SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4				
SHRUB	A1	26.3	7.3	5.2	4.4	8.2	8.7	1.42	2.0	5.00	2.62	9.24	13.71	2.20	0.00	2.75				1.70
SHRUB	A2	23.5	12.8	10.3	6.0	8.7	8.9	0.90	5.0	6.00	1.47	5.28	2.82	2.60	0.00	1.38				2.10
SHRUB	A3	23.3	13.4	11.6	9.3	8.5	8.7	1.26	4.7	6.00	2.34	5.28	4.17	6.90	0.00	0.10				1.30
SHRUB	C1	31.9	9.8	8.3	5.7	8.3	8.7	1.54	6.3	10.00	1.56	8.26	6.59	7.60	0.00	0.45				0.00
SHRUB	C2	26.4	6.3	3.3	2.9	8.1	8.2	4.62	3.6	42.00	1.15	29.04	16.84	24.00	0.00	2.60				2.50
BARE	A2	19.8	11.0	9.4	5.7	8.7	8.7	0.57	5.1	1.55	1.22	2.64	6.81	0.70	0.00	0.10				2.50
BARE	A3	22.0	12.2	11.1	9.7	8.4	8.8	0.48	8.0	2.65	1.25	3.96	1.44	0.20	0.00	0.10				0.00
BARE	C1	31.4	9.6	7.9	2.9	8.8	8.8	0.44	5.0	4.00	0.25	2.64	2.76	0.20	0.00	0.13				1.50
BARE	C2	25.8	3.3	3.2	2.7	8.8	8.3	4.26	3.4	26.50	1.02	30.36	10.14	15.50	0.00	2.33				5.50

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	0.38	2.06	3.43	2.31	26.4	7.8	2.20	0.2	0.25	0.10	2.90	.041	WK.FINE SUB.ANG.B
SHRUB	A2	0.18	1.64	5.85	5.51	12.6	13.0	2.80	0.1	0.35	0.20	0.70	.021	WK.FINE SUB.ANG.B
SHRUB	A3	0.13	1.46	7.95	8.34	8.2	17.8	0.00	0.1	0.55	0.20	0.80	.017	MOD.MED. SUB.ANG.B
SHRUB	C1	0.08	2.31	4.65	5.79	18.1	12.8	0.00	0.0	0.32	0.10	0.45	.012	WK.FINE SUB.ANG.B
SHRUB	C2	0.03	2.35	1.52	4.38	28.5	8.3	0.00	0.1	0.20	0.10	0.20	.004	NO STR. MASSIVE
BARE	A2	0.08	0.55	4.06	5.64	5.4	10.3	0.00	0.1	0.29	0.20	0.45	.015	WK.FINE SUB.ANG.B
BARE	A3	0.09	1.37	7.85	6.78	8.6	16.0	0.00	0.2	0.48	0.30	0.45	.016	MOD.MED. SUB.ANG.B
BARE	C1	0.09	3.25	3.59	4.66	28.3	11.5	0.00	0.1	0.15	0.10	0.35	.012	WK.FINE SUB.ANG.B
BARE	--	0.04	2.30	1.72	1.73	40.0	5.8	0.00	0.1	0.13	0.10	0.25	.004	NO STR. MA

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
43	FRENCHMAN FLAT	970	1	SW	BAJADA	MODERATE	20-40%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-028	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	23.6	73.1	1.7	1.6
SHRUB	A2	028-041	10YR7/2	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	26.1	59.5	6.0	8.4
SHRUB	C1	041-063	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	29.8	62.1	2.9	5.2
SHRUB	C2	063-097	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	23.9	69.2	2.5	4.4
SHRUB	C3	097-153	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	38.9	55.3	3.2	2.6
BARE	A1	000-002	10YR5/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	27.6	65.2	4.3	2.9
BARE	A2	002-012	10YR7/2	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	30.0	57.0	4.9	8.1
BARE	C1	012-032	10YR7/3	10YR5/4	SMOOTH	LOOSE	FRIABLE	NON-STICKY	28.2	60.2	4.3	7.3
BARE	C2	032-072	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.7	64.9	2.3	4.4
BARE	C3	072-128	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	34.4	59.3	2.3	4.0

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)							
SHRUB	A1	30.8	7.4	5.6	5.2	8.3	8.6	2.13	1.8	0.60	4.60	17.77	10.23	11.00	0.00	0.70	0.00
SHRUB	A2	22.1	11.0	10.2	7.3	8.5	8.4	1.23	7.0	1.00	4.50	5.38	3.54	4.10	0.00	0.25	5.00
SHRUB	C1	28.4	9.4	7.9	5.8	8.5	8.8	1.26	4.0	1.80	3.25	4.72	2.26	4.50	0.00	0.23	5.00
SHRUB	C2	29.8	8.7	7.5	5.3	8.3	8.5	2.27	4.0	0.80	3.55	14.28	6.42	6.70	0.00	1.05	0.00
SHRUB	C3	24.7	9.0	7.1	4.9	8.1	8.3	3.48	3.0	23.80	2.36	33.84	11.16	57.40	1.25	1.40	0.00
BARE	A1	22.8	7.7	6.9	3.9	8.5	8.6	0.66	4.0	0.50	0.98	4.50	2.20	2.20	0.00	0.18	3.00
BARE	A2	20.0	9.8	9.5	5.9	8.4	8.6	0.50	4.0	0.30	1.40	2.62	1.18	0.00	0.00	0.10	0.70
BARE	C1	23.0	9.5	8.8	5.8	8.5	8.5	0.41	5.0	0.50	1.78	1.43	1.33	0.00	0.00	0.10	0.00
BARE	C2	25.0	8.7	7.1	5.2	8.7	8.5	0.44	4.0	2.10	1.12	1.36	0.92	0.00	0.00	0.10	3.40
BARE	C3	23.5	8.5	7.5	4.9	7.8	8.7	0.52	3.0	4.00	0.50	2.00	0.30	1.40	0.00	0.10	0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	0.35	0.28	5.36	4.86	2.7	10.5	0.76	0.2	0.47	0.15	2.90	.046	WK.FINE SUB.ANG.B
SHRUB	A2	0.27	0.46	8.63	5.29	3.2	14.4	0.12	0.0	0.53	0.20	0.85	.024	MOD.MED. SUB.ANG.B
SHRUB	C1	0.22	0.83	8.36	6.44	5.3	15.6	0.04	0.1	0.18	0.10	1.60	.011	WK.FINE SUB.ANG.B
SHRUB	C2	0.16	0.98	7.52	5.25	7.1	13.8	0.04	0.1	0.18	0.00	0.85	.017	NO STR. SINGLE.GR
SHRUB	C3	0.09	3.36	4.44	5.95	24.4	13.8	0.04	0.1	0.36	0.05	0.70	.011	NO STR. SINGLE.GR
BARE	A1	0.22	0.37	3.33	5.68	3.9	9.4	0.12	0.3	0.16	0.10	1.10	.013	WK.FINE SUB.ANG.B
BARE	A2	0.12	0.37	5.10	8.91	2.0	14.4	0.16	0.2	0.39	0.20	0.70	.011	MOD.MED. SUB.ANG.B
BARE	C1	0.05	0.47	7.96	6.57	3.1	15.0	0.04	0.1	0.73	0.10	0.80	.011	WK.FINE SUB.ANG.B
BARE	C2	0.11	1.25	7.12	2.38	11.6	10.8	0.04	0.1	0.41	0.10	0.60	.011	NO STR. SINGLE.GR
BARE	C3	0.10	3.31	5.87	2.70	27.9	11.9	0.04	0.2	0.16	0.10	0.80	.011	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
44	FRENCHMAN FLAT	957	1	S	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-017	10YR6/3	10YR4/3	SMOOTH	SOFT	LOOSE	NON-STICKY	11.4	63.7	2.2	2.7
SHRUB	A12	017-028	10YR7/2	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	23.4	69.5	3.7	3.4
SHRUB	C1	028-042	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	33.1	58.1	4.0	4.8
SHRUB	C2	042-062	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	32.2	57.9	5.5	4.4
SHRUB	C3	062-085	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	14.9	74.1	3.0	3.0
SHRUB	C4	085-104	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	38.5	52.2	4.4	4.9
BARE	A12	000-012	10YR7/2	10YR5/4	SMOOTH	SOFT	LOOSE	NON-STICKY	28.2	56.8	8.6	6.4
BARE	C1	012-036	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	18.9	69.7	5.4	6.0
BARE	C2	036-053	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	LOOSE	NON-STICKY	30.8	60.3	4.9	4.0
BARE	C3	053-076	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	49.0	43.4	4.3	3.3
BARE	C4	076-096	10YR7/3	10YR5/4	GRAVELLY	SOFT	LOOSE	NON-STICKY	37.3	54.1	4.2	4.4
BARE	C5	096-110	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	33.5	62.5	2.0	2.0

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15		SAT.	(MMHOS	LIME	NA	K	CA	MG	CL	NO3	SO4		BORON
		SAT.	BAR	BAR	BAR	PASTE	EXT.	/CM)	(<2.0MM)	(MEQ/LITER)				(MEQ/LITER)				PPM
SHRUB	A11	35.7	8.1	7.6	6.1	8.1	8.9	4.35	3.0	1.80	17.20	29.48	22.92	42.50	0.62	1.05	4.30	
SHRUB	A12	28.2	9.6	8.5	6.0	8.3	8.8	1.45	3.0	1.00	4.40	6.54	3.18	5.20	0.00	0.24	0.00	
SHRUB	C1	26.6	11.0	10.1	7.1	8.5	8.6	0.91	5.0	0.90	2.58	3.58	2.35	3.70	0.00	0.03	0.00	
SHRUB	C2	24.6	10.6	9.7	6.5	8.0	8.8	1.04	4.0	1.40	2.43	4.50	1.40	4.60	0.00	0.13	3.20	
SHRUB	C3	24.1	9.4	8.5	5.8	8.1	8.0	3.36	4.0	13.00	1.78	18.62	4.84	28.90	7.50	0.24	1.40	
SHRUB	C4	26.7	10.9	9.8	5.7	8.0	8.0	6.52	4.0	32.20	1.66	49.96	12.12	77.50	28.70	0.13	2.10	
BARE	A12	20.1	12.2	11.1	7.6	8.4	8.6	1.02	5.0	1.20	2.30	5.00	2.80	1.20	1.87	0.33	0.00	
BARE	C1	22.0	10.0	9.6	6.8	8.5	8.8	0.46	4.0	0.70	1.55	1.80	0.28	0.00	0.00	0.06	0.00	
BARE	C2	24.1	10.4	8.9	6.9	8.5	8.5	0.51	4.0	1.50	1.35	2.04	0.42	0.60	0.00	0.10	1.00	
BARE	C3	24.0	9.8	9.6	6.6	8.5	8.4	0.52	4.0	2.80	0.55	1.62	0.75	0.70	0.62	0.10	0.00	
BARE	C4	25.0	10.5	8.4	6.6	8.4	8.3	1.58	4.0	9.50	0.59	5.65	0.85	8.90	5.00	0.23	0.00	
BARE	C5	22.0	7.2	6.4	5.0	8.3	7.6	3.73	4.0	18.20	1.18	20.53	4.59	31.20	8.12	0.58	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.71	0.39	9.27	2.84	3.1	12.5	1.32	0.2	0.58	0.10	3.60	.046	WK.FINE	SUB.ANG.B
SHRUB	A12	0.25	0.47	9.76	2.27	3.8	12.5	0.24	0.1	0.25	0.10	1.25	.022	WK.FINE	SUB.ANG.B
SHRUB	C1	0.18	0.58	9.53	3.14	4.4	13.3	0.12	0.1	0.25	0.10	0.75	.018	WK.FINE	SUB.ANG.B
SHRUB	C2	0.17	1.12	8.82	3.81	8.1	13.8	0.08	0.1	0.25	0.10	1.10	.017	WK.FINE	SUB.ANG.B
SHRUB	C3	0.18	3.09	5.66	6.25	20.6	15.0	0.04	0.2	0.20	0.10	1.10	.015	NO STR.	MASSIVE
SHRUB	C4	0.11	4.14	4.09	5.02	31.2	13.3	0.08	0.1	0.35	0.15	0.95	.012	WK.FINE	SUB.ANG.B
BARE	A12	0.16	0.63	7.75	7.87	3.9	16.3	0.24	0.1	0.39	0.20	0.95	.021	WK.FINE	SUB.ANG.B
BARE	C1	0.11	0.63	8.42	5.33	4.4	14.4	0.20	0.2	0.29	0.15	0.50	.013	WK.FINE	SUB.ANG.B
BARE	C2	0.13	0.96	7.77	6.90	6.1	15.6	0.08	0.1	0.22	0.10	0.70	.014	WK.FINE	SUB.ANG.B
BARE	C3	0.13	2.93	6.57	4.88	20.4	14.4	0.08	0.2	0.20	0.10	0.70	.013	NO STR.	MASSIVE
BARE	C4	0.10	4.14	4.12	7.37	26.5	15.6	0.04	0.2	0.34	0.10	0.75	.011	WK.FINE	SUB.ANG.B
BARE	C5	0.05	3.75	3.47	6.53	27.3	13.8	0.04	0.2	0.10	0.10	0.60	.006	NO STR.	MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
45	FRENCHMAN FLAT	939	0	1	PLAYA	NONE	<20%	ALLUVIUM	SMOOTH	POOR	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-017	10YR5/2	10YR4/3	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	34.9	36.9	9.9	18.3
SHRUB	A2	017-028	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	42.0	10.2	25.1	22.7
SHRUB	C1	028-043	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	52.7	0.0	28.6	19.4
SHRUB	C2	043-079	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	59.8	0.0	21.3	23.5
SHRUB	C3	079+	5YR7/4	5YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	25.5	16.8	38.0	19.7
BARE	A2	000-011	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	46.2	0.7	30.4	22.7
BARE	C1	011-024	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	39.2	11.7	34.2	14.9
BARE	C2	024-039	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	53.0	0.0	32.9	20.1
BARE	C3	039+	5YR7/4	5YR5/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	20.4	16.9	41.5	21.2

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PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	31.3	20.2	13.2	11.9	8.5	8.9	1.21	8.0	7.75	2.35	2.37	1.14	1.23	1.88	0.03	0.50	
SHRUB	A2	26.1	24.0	22.4	14.5	8.5	9.0	0.87	10.0	8.30	1.53	2.68	2.27	1.29	0.00	0.03	0.00	
SHRUB	C1	31.0	25.6	22.8	13.4	8.6	8.8	0.97	10.0	9.15	0.88	2.68	0.57	2.07	0.00	0.05	0.00	
SHRUB	C2	35.0	24.3	23.5	14.3	8.7	8.7	1.58	7.0	11.00	0.63	4.83	0.39	1.91	6.88	0.07	0.00	
SHRUB	C3	41.6	30.8	26.9	14.4	7.9	8.0	26.08	7.0	30.00	1.65	55.28	35.75	9.89	93.80	0.07	0.00	
BARE	A2	25.9	24.4	23.1	14.7	8.4	8.5	0.83	9.0	5.80	1.08	3.62	3.42	1.14	4.38	0.03	2.50	
BARE	C1	34.5	25.3	22.1	11.3	8.6	8.5	0.54	8.0	5.70	0.55	2.74	1.61	0.54	0.00	0.03	0.00	
BARE	C2	41.4	28.0	24.4	13.4	8.1	8.0	2.61	7.0	20.00	0.82	35.23	9.49	4.73	53.13	0.03	0.00	
BARE	C3	46.2	35.2	31.5	16.1	7.9	7.8	26.08	8.0	33.00	1.65	63.62	35.21	11.04	3.13	1.05	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.26	1.96	8.18	14.36	8.0	24.5	1.00	0.5	0.30	0.30	1.95	.071	WK.FINE	PLATY
SHRUB	A2	0.59	3.41	8.84	15.88	12.1	28.1	0.56	0.3	0.45	0.40	0.80	.050	MOD.MED.	PLATY
SHRUB	C1	0.37	4.22	6.37	12.54	18.2	23.1	0.40	0.2	0.35	0.40	1.15	.045	WK.FINE	PLATY
SHRUB	C2	0.24	4.11	4.63	16.89	16.0	25.6	0.28	0.5	0.51	0.55	1.45	.032	WK.FINE	PLATY
SHRUB	C3	0.24	0.90	2.33	28.52	2.8	31.8	0.24	0.2	0.50	0.50	1.00	.021	MOD.MED.	SUB.ANG.B
BARE	A2	0.46	1.45	5.67	18.51	5.7	25.6	0.52	0.5	0.60	0.60	1.30	.050	MOD.MED.	PLATY
BARE	C1	0.41	0.23	4.63	19.64	0.9	24.5	0.32	0.2	0.47	0.45	1.25	.043	WK.FINE	PLATY
BARE	C2	0.26	2.27	2.17	19.31	9.6	23.8	0.24	0.2	0.48	0.70	1.55	.031	WK.FINE	PLATY
BARE	C3	0.27	0.86	1.97	32.67	2.4	35.5	0.24	0.5	0.46	0.55	1.50	.029	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
46	FRENCHMAN FLAT	939	1	S	PLAYA	MODERATE	<20%	ALLUVIUM	SMOOTH	MODERATE	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-010	10YR6/4	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	55.0	41.0	1.1	2.9
SHRUB	A2	010-027	10YR7/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	34.8	38.3	13.0	13.9
SHRUB	C1	027-042	10YR6/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	29.3	54.5	7.6	8.6
SHRUB	C2	042-061	10YR7/4	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	22.5	51.5	12.8	13.2
SHRUB	C3	061-087	10YR7/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	36.5	48.4	7.3	7.8
SHRUB	C4	087-125	10YR7/4	10YR4/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	33.8	55.0	6.6	4.6
BARE	A2	000-016	10YR7/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	35.4	40.5	12.8	11.3
BARE	C1	016-030	10YR6/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	37.5	46.7	6.8	9.0
BARE	C2	030-049	10YR7/4	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	36.6	37.5	11.7	14.2
BARE	C3	049-074	10YR7/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	20.6	65.4	6.0	8.0
BARE	C4	074-110	10YR7/4	10YR4/4	COBB & GRAVL	SOFT	VERY FRIABLE	NON-STICKY	31.2	56.8	7.1	4.9
BARE	C5	110-135	10YR6/4	10YR4/4	SMOOTH	HARD	FRIABLE	NON-STICKY	45.0	36.3	9.1	9.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A1	36.0	8.4	6.9	6.6	8.6	8.3	2.09	4.4	13.75	3.30	8.05	3.68	7.86	2.50	0.07		0.00
SHRUB	A2	18.7	14.1	13.7	8.6	8.5	8.3	1.80	7.0	11.20	2.85	4.12	2.40	13.80	0.00	0.25		4.70
SHRUB	C1	24.0	12.0	11.4	8.1	8.4	8.8	1.24	3.0	6.50	2.10	3.10	0.86	5.00	0.00	0.20		4.80
SHRUB	C2	21.9	16.1	13.6	8.8	8.5	8.5	0.85	7.0	5.50	1.20	2.00	0.08	2.40	0.00	0.08		3.40
SHRUB	C3	25.3	11.9	10.5	7.3	8.0	8.5	2.90	4.0	9.90	1.18	27.16	2.64	10.70	2.50	1.60		7.00
SHRUB	C4	26.4	10.8	9.6	6.3	7.9	8.3	4.53	4.0	14.50	0.85	62.27	7.96	12.80	46.20	1.88		0.30
BARE	A2	17.9	13.6	12.5	7.3	8.6	8.7	0.78	7.0	4.50	1.30	1.95	0.55	0.00	1.25	0.13		0.00
BARE	C1	21.3	12.5	11.1	7.9	8.4	8.7	0.69	4.0	4.70	1.10	1.63	1.73	0.00	0.00	0.13		0.00
BARE	C2	23.6	14.0	14.0	9.4	8.5	8.7	0.71	6.0	4.70	1.10	3.06	0.32	0.80	0.00	0.08		0.00
BARE	C3	22.7	10.5	10.1	7.0	8.2	8.7	0.71	3.0	4.00	0.66	3.00	0.07	0.00	0.00	0.03		0.00
BARE	C4	24.1	12.3	12.1	6.7	7.3	8.2	4.17	4.0	9.90	0.73	32.40	17.02	18.80	3.75	0.18		0.00
BARE	C5	25.6	13.0	12.3	8.1	7.8	7.9	6.95	5.0	18.60	1.18	79.23	15.89	28.50	83.70	0.33		0.00

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	0.73	2.60	7.68	7.60	6.6	18.9	0.32	0.2	0.54	0.15	5.20	.040	WK.FINE	SUB.ANG.B
SHRUB	A2	0.19	2.64	7.75	9.61	13.2	20.0	0.16	0.1	0.33	0.20	1.30	.020	WK.FINE	SUB.ANG.B
SHRUB	C1	0.20	2.09	8.40	3.89	14.5	14.4	0.08	0.1	0.42	0.15	1.40	.013	WK.FINE	SUB.ANG.B
SHRUB	C2	0.15	2.48	7.60	8.67	13.2	18.8	0.08	0.2	0.53	0.30	0.90	.013	MOD.MED.	SUB.ANG.B
SHRUB	C3	0.12	1.35	3.47	10.81	8.6	15.6	0.08	0.1	0.40	0.20	0.90	.012	WK.FINE	SUB.ANG.B
SHRUB	C4	0.09	1.45	1.78	6.15	15.5	9.4	0.04	0.2	0.40	0.10	0.90	.013	WK.FINE	SUB.ANG.B
BARE	A2	0.18	2.05	6.73	6.85	13.1	15.6	0.20	0.2	0.40	0.20	1.45	.019	WK.FINE	SUB.ANG.B
BARE	C1	0.14	2.50	7.61	8.02	13.8	18.1	0.04	0.1	0.40	0.20	1.10	.008	WK.FINE	SUB.ANG.B
BARE	C2	0.12	2.64	6.72	9.39	14.1	18.8	0.08	0.2	0.65	0.30	0.90	.013	MOD.MED.	SUB. 3
BARE		0.13	1.74	4.29	6.47	13.9	12.5	0.08	0.2	0.59	0.20	1.25	.013	WK.FINE	SUB. 3
BARE		0.09	1.21	1.56	10.48	9.1	13.3	0.12	0.1	0.33	0.15	1.10	.013	WK.FINE	SUB. 3
BARE	--	0.09	1.35	1.92	12.98	8.3	16.3	0.08	0.1	0.47	0.30	0.95	.010	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
47	FRENCHMAN FLAT	1000	2	SE	BAJADA	MODERATE	80-100	LMSTN_TUF	SMOOTH	EXCESSIVE	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-013	10YR4/3	10YR3/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	25.0	66.1	4.7	4.2
SHRUB	A2	013-025	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	38.1	38.7	12.1	11.1
SHRUB	B1	025-055	5YR5/4	5YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	66.9	4.0	11.2	17.9
BARE	A2	000-013	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	42.2	35.9	12.6	9.3
BARE	B1	013-040	5YR5/4	5YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	59.4	21.0	9.1	10.5

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)				SAT. EX BORON PPM		
		0 SAT.	1/3 BAR	1 BAR	15 BAR					NA	K	CA	MG	CL	NO3	SO4
SHRUB	A1	28.4	8.6	7.3	5.7	8.5	8.6	2.90	0.8	1.60	9.20	56.36	12.75	4.00	0.00	2.41
SHRUB	A2	21.4	15.7	14.0	8.5	8.3	8.7	2.90	4.0	1.60	5.40	33.55	6.87	4.00	8.70	1.63
SHRUB	B1	35.9	17.1	14.7	11.6	8.7	8.9	0.61	1.0	2.30	0.73	4.03	0.19	1.30	0.00	0.21
BARE	A2	18.1	13.2	11.7	7.7	8.6	9.0	0.58	3.0	0.50	0.60	5.36	1.16	0.50	0.00	0.07
BARE	B1	36.4	19.0	16.7	14.0	8.3	8.9	0.35	0.6	0.85	0.33	2.68	1.07	0.70	0.00	0.07

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A1	1.21	0.15	2.94	10.66	1.1	13.8	4.48	0.3	0.65	0.15	3.50	.089	WK.FINE	SUB.ANG.8
SHRUB	A2	0.37	0.25	3.88	15.87	1.3	20.0	0.80	0.2	0.34	0.15	0.85	.039	WK.FINE	PLATY
SHRUB	B1	0.29	0.55	2.17	14.78	3.1	17.5	0.00	0.5	0.38	0.20	0.95	.019	WK.FINE	SUB.ANG.8
BARE	A2	0.21	0.19	1.49	14.07	1.2	15.8	0.00	0.3	0.40	0.20	1.15	.023	WK.FINE	PLATY
BARE	B1	0.24	0.30	1.94	21.51	1.3	23.8	0.00	0.5	0.70	0.20	0.50	.030	WK.FINE	SUB.ANG.8

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	ARFA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
48	FRENCHMAN FLAT	1037	2	E	BAJADA	MODERATE	40-60%	LMSTN_TUF	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR6/4	10YR3/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	31.2	56.7	8.2	3.9
SHRUB	C1	009-042	10YR6/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	26.1	55.3	12.8	5.8
SHRUB	C2	042-071	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	29.5	61.4	6.6	2.5
BARE	A2	000-015	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	SLTLY STICKY	21.5	52.2	19.2	7.1
BARE	C1	015-041	10YR6/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	38.2	43.4	13.4	5.0
BARE	C2	041-076	10YR7/3	10YR4/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	61.0	32.7	5.3	1.0

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR					NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A1	30.8	11.8	9.1	6.2	8.2	9.0	2.09	1.4	0.65	3.50	17.44	7.33	1.50	0.00	0.47	0.00	
SHRUB	C1	24.1	14.3	10.7	6.7	8.8	9.0	0.63	4.0	0.60	2.48	6.03	0.49	1.00	0.00	0.20	0.00	
SHRUB	C2	22.1	13.3	10.1	6.6	8.5	8.6	1.93	3.0	10.60	4.87	31.53	10.19	2.30	5.00	2.51	0.00	
BARE	A2	14.2	13.5	10.7	6.5	8.6	8.9	0.55	2.0	0.75	0.78	5.36	1.16	0.80	0.00	0.11	0.00	
BARE	C1	17.7	13.2	11.0	6.9	8.6	9.4	0.35	1.0	0.85	0.60	2.68	0.97	0.80	0.00	0.11	0.00	
BARE	C2	24.6	11.3	9.3	7.2	8.7	8.9	0.37	1.2	2.85	0.17	2.68	1.10	0.50	0.00	0.11	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.30	0.11	3.27	9.87	0.8	13.3	2.40	0.5	0.83	0.20	5.50	.112	WK.FINE	SUB.ANG.B
SHRUB	C1	0.25	0.24	4.07	10.19	1.7	14.5	1.52	0.2	0.33	0.15	1.00	.063	NO STR.	MASSIVE
SHRUB	C2	0.30	0.77	3.89	8.59	5.8	13.3	0.20	0.3	0.62	0.15	1.20	.035	NO STR.	SINGLE.GR
BARE	A2	0.22	0.12	1.59	8.29	1.2	10.0	0.20	0.2	0.60	0.25	1.05	.026	MOD.MED.	PLATY
BARE	C1	0.16	0.23	1.69	13.08	1.5	15.0	0.00	0.1	0.41	0.15	0.85	.019	NO STR.	MASSIVE
BARE	C2	0.13	0.88	1.15	11.72	6.4	13.8	0.00	0.3	1.17	0.20	1.00	.019	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
49	FRENCHMAN FLAT	1091	3	S	BAJADA	MODERATE	60-80%	LMSTN_TUF	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-006	10YR6/3	10YR3/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	25.4	63.5	5.4	5.7
SHRUB	C1	006-025	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	22.7	60.7	11.2	5.4
SHRUB	C2	025-070	10YR7/3	10YR5/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	30.7	57.8	7.8	3.7
BARE	C1	000-026	10YR7/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	20.5	71.3	6.6	1.6
BARE	C2	026-061	10YR7/3	10YR5/4	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	35.2	56.1	6.4	2.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)								
SHRUB	A1	43.0	12.3	11.8	9.3	8.3	8.6	2.90	5.8	12.70	7.00	33.53	20.07	6.10	2.50	1.71	0.00	
SHRUB	C1	25.9	13.8	9.9	5.6	9.0	8.9	0.95	10.0	6.25	3.02	2.68	2.68	1.90	0.00	0.29	0.00	
SHRUB	C2	28.5	12.1	9.5	5.4	9.1	9.0	1.49	11.0	15.30	3.43	2.68	1.23	2.40	1.20	0.48	0.00	
BARE	C1	23.7	10.5	8.2	5.5	8.8	8.8	0.43	8.0	0.40	0.43	4.02	0.94	1.50	0.00	0.09	0.00	
BARE	C2	24.3	10.4	8.7	5.2	8.9	8.9	0.43	11.0	1.10	0.83	3.35	3.17	0.80	0.00	0.11	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	2.61	0.80	4.20	8.75	5.8	13.8	7.60	0.8	1.10	0.15	6.85	.237	WK.FINE	PLATY
SHRUB	C1	0.37	1.14	5.62	6.24	8.8	13.0	0.20	0.2	0.98	0.20	0.70	.038	WK.FINE	SUB.ANG.B
SHRUB	C2	0.27	2.14	5.90	6.46	14.8	14.5	0.00	0.1	0.65	0.15	0.50	.028	NO STR.	SINGLE.GR
BARE	C1	0.25	0.24	1.37	5.89	3.2	7.5	0.00	0.2	0.60	0.15	0.45	.028	WK.FINE	SUB.ANG.B
BARE	C2	0.21	0.30	2.28	5.67	3.6	8.3	0.00	0.2	1.65	0.10	1.60	.023	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
50	ROCK VALLEY	1061	3	S	BAJADA	MODERATE	40-60%	LMSTN_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A1	000-013	10YR6/3	10YR4/2	STONY	SOFT	FRIABLE	NON-STICKY	19.4	72.2	5.3	3.1
SHRUB	A2	013-020	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	20.6	59.9	11.3	8.2
SHRUB	C1	020-033	10YR7/3	10YR5/3	STONY	SLTLY HARD	FRIABLE	SOFT	28.0	57.9	7.5	6.6
BARE	A2	000-012	10YR7/3	10YR5/3	STONY	SOFT	FRIABLE	NON-STICKY	28.9	57.7	9.2	4.4
BARE	B1	012-021	10YR6/4	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	33.3	44.2	10.8	11.7
BARE	C1	021-028	10YR6/3	10YR5/3	STONY	SOFT	FRIABLE	NON-STICKY	27.3	61.7	6.8	4.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	31.6	9.4	8.8	6.2	8.4	8.6	1.09	2.8	0.53	3.07	9.24	2.91	0.79	0.00	0.25	1.40	
SHRUB	A2	23.3	12.4	12.0	9.4	8.5	8.9	0.58	5.4	0.65	2.50	3.96	1.50	0.86	0.00	0.13	1.95	
SHRUB	C1	31.4	13.8	12.9	9.6	8.4	8.7	0.43	4.2	0.69	0.98	3.94	0.10	1.61	0.00	0.10	0.48	
BARE	A2	24.4	10.3	9.8	7.0	8.4	8.7	0.57	3.4	0.50	0.60	5.28	2.88	0.00	0.00	0.13	0.96	
BARE	B1	26.0	14.5	14.1	12.1	8.0	8.7	0.31	3.6	0.41	0.31	3.96	0.09	1.60	0.00	0.03	0.10	
BARE	C1	36.7	14.6	13.5	10.9	8.4	8.4	0.35	3.4	0.80	0.28	3.90	1.50	0.86	0.00	0.05	0.60	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
			(MEQ/100 GM)	(MEQ/100 GM)	(MEQ/100 GM)				PPM	PPM	PPM	PPM			
SHRUB	A1	1.88	0.33	3.15	6.52	3.3	10.0	1.24	0.7	0.84	0.20	1.60	.045	WK.FINE	SUB.ANG.B
SHRUB	A2	0.21	0.33	4.56	6.61	2.9	11.5	0.52	0.5	0.71	0.30	2.00	.028	MOD.MED.	SUB.ANG.B
SHRUB	C1	0.27	0.55	2.64	11.81	3.7	15.0	0.36	0.2	0.55	0.20	0.75	.027	MOD.MED.	SUB.ANG.B
BARE	A2	0.20	0.31	1.56	11.25	2.4	13.1	0.36	0.3	0.52	0.20	0.95	.023	MOD.MED.	SUB.ANG.B
BARE	B1	0.17	0.56	1.74	14.45	3.3	16.8	0.36	0.5	0.92	0.30	0.65	.019	WK.FINE	SUB.ANG.B
BARE	C1	0.23	0.42	1.44	7.64	4.4	9.5	0.36	0.5	0.40	0.15	0.85	.024	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
51	ROCK VALLEY	1015	2	NW	BAJADA	MODERATE	20-40%	LMSTN_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-010	10YR6/3	10YR4/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	34.4	54.9	5.9	4.8
SHRUB	A12	010-020	10YR6/3	10YR4/3	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	30.8	53.5	9.2	6.5
SHRUB	A2	020-028	10YR7/2	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	49.0	24.0	14.8	12.2
SHRUB	C1	028-049	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	34.4	49.0	9.3	7.3
BARE	A2	000-008	10YR7/2	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	53.4	21.3	13.6	11.7
BARE	C1	008-036	10YR7/3	10YR5/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	40.6	34.3	12.6	12.5

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A11	33.3	11.3	8.6	5.2	8.0	8.8	1.07	4.0	0.97	2.38	10.56	5.70	2.70	0.00	0.23		2.10
SHRUB	A12	22.5	14.0	10.2	5.0	8.5	8.9	0.66	5.6	0.65	2.34	5.69	3.49	0.10	0.00	0.15		2.40
SHRUB	A2	23.1	18.7	14.4	8.3	8.3	8.8	0.47	5.6	0.97	1.65	3.96	2.79	0.00	0.00	0.08		3.20
SHRUB	C1	33.8	17.3	12.0	7.3	8.5	8.8	0.57	6.4	1.95	1.86	2.64	6.81	0.00	0.00	0.08		1.50
BARE	A2	21.8	16.0	12.6	6.9	8.3	8.7	0.44	3.8	0.97	1.13	3.96	2.79	0.00	0.00	0.10		0.10
BARE	C1	33.6	17.2	12.6	9.3	8.5	8.7	0.27	3.0	0.52	0.96	3.96	2.91	0.00	0.00	0.08		2.30

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.64	0.35	4.10	9.05	2.6	13.5	5.20	0.3	0.55	0.15	3.55	.138	WK.FINE	SUB.ANG.B
SHRUB	A12	0.35	0.34	6.38	6.78	2.5	13.5	0.00	0.2	0.40	0.20	1.15	.039	WK.MED.	SUB.ANG.B
SHRUB	A2	0.21	0.43	6.26	11.81	2.3	18.5	0.00	0.3	0.30	0.25	1.05	.024	WK.FINE	PLATY
SHRUB	C1	0.30	0.68	6.87	5.45	5.2	13.0	0.00	0.2	0.35	0.10	0.90	.033	WK.FINE	SUB.ANG.B
BARE	A2	0.13	0.43	4.56	12.01	2.5	17.0	0.00	0.3	0.42	0.30	0.65	.026	WK.FINE	PLATY
BARE	C1	0.16	0.48	6.00	13.27	2.4	19.8	0.00	0.2	0.30	0.15	0.65	.025	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
52	ROCK VALLEY	1037	3	NE	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	WELL	SLOW

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
BARE	A2	000-006	10YR7/3	10YR5/4	SMOOTH	HARD	HARD	SLTLY STICKY	27.2	43.2	19.3	10.3
BARE	C1	006-024	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	22.6	53.3	14.5	9.6
BARE	C2	024-060	10YR7/3	10YR6/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	38.3	39.1	13.1	9.5

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)							
BARE	A2	41.4	26.7	12.3	8.3	8.2	8.7	0.35	14.3	0.90	0.44	2.64	4.11	0.00	0.00	0.05	0.30
BARE	C1	44.9	27.7	16.1	7.9	8.5	8.9	1.07	18.2	10.90	0.64	3.96	1.44	3.00	0.00	0.18	1.70
BARE	C2	39.2	23.7	15.5	7.7	7.8	7.8	27.70	31.8	93.20	2.75	61.84	36.41	107.40	0.00	2.25	9.80

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
BARE	A2	0.09	0.41	2.04	13.30	2.6	15.8	0.00	0.2	0.70	0.35	0.40	.017	MOD.MED. SUB.ANG.B
BARE	C1	0.16	2.76	2.57	6.67	23.0	12.0	0.00	0.2	0.68	0.15	0.50	.021	MOD.FINE SUB.ANG.B
BARE	C2	0.13	3.05	1.32	7.63	25.4	12.0	3.20	0.2	1.05	0.35	0.60	.016	NO STR. MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
53	ROCK VALLEY	1037	4	NW	BAJADA	MODERATE	40-60%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-007	10YR5/2	10YR4/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	10.3	77.1	8.2	4.4
SHRUB	C1	007-016	10YR6/3	10YR4/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	12.0	75.1	9.4	3.5
SHRUB	C2	016-030	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	10.8	75.0	10.4	3.8
SHRUB	C3	030-040	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	17.3	68.6	10.3	3.8
SHRUB	C4	040-056	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	20.5	67.3	8.7	3.5
SHRUB	C5	056-070	10YR7/3	10YR6/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	48.6	45.4	4.7	1.3
BARE	C1	000-013	10YR6/3	10YR4/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	9.1	78.5	8.9	3.5
BARE	C2	013-027	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	12.3	75.5	8.8	3.4
BARE	C3	027-063	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	16.6	71.4	9.3	2.7

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A1	41.2	15.8	9.7	7.1	7.8	7.4	2.32	17.0	0.82	3.25	15.84	11.16	4.25	0.00	0.38		0.80
SHRUB	C1	29.9	15.7	8.8	5.2	8.4	8.2	0.70	20.0	0.60	1.56	3.96	2.79	0.25	0.00	0.11		0.70
SHRUB	C2	29.6	15.8	9.2	5.7	8.5	8.3	0.50	20.0	0.62	1.17	3.46	0.59	0.25	0.00	0.11		0.00
SHRUB	C3	33.5	17.7	9.7	5.7	8.5	8.1	0.47	26.0	0.61	0.95	3.30	0.75	0.00	0.00	0.11		0.00
SHRUB	C4	33.6	18.3	10.3	6.6	8.3	8.2	0.46	29.0	0.92	0.88	2.64	0.06	0.00	0.00	0.01		0.00
SHRUB	C5	28.6	12.1	7.4	5.4	8.4	8.2	0.50	44.0	1.53	0.95	2.64	0.12	0.00	0.00	0.08		0.00
BARE	C1	24.7	14.1	8.8	4.9	8.3	7.9	0.39	18.0	0.32	0.25	3.96	0.09	0.00	0.00	0.05		0.00
BARE	C2	29.5	16.5	9.0	5.0	8.2	8.0	0.31	20.0	0.35	0.31	2.64	0.12	0.00	0.00	0.01		0.00
BARE	C3	32.5	17.8	9.3	5.7	8.5	7.9	0.31	22.0	0.40	0.35	2.64	0.06	0.00	0.00	0.01		0.70

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.75	0.54	1.82	12.64	3.6	15.0	11.60	1.0	0.95	0.15	7.60	.049	WK.FINE	SUB.ANG.B
SHRUB	C1	0.47	0.61	1.96	9.93	4.9	12.5	2.40	0.3	0.55	0.15	2.35	.046	WK.FINE	SUB.ANG.B
SHRUB	C2	0.40	0.73	2.17	9.90	5.7	12.8	0.40	0.1	0.57	0.15	2.40	.034	NO STR.	MASSIVE
SHRUB	C3	0.50	0.78	2.07	8.95	6.6	11.8	0.40	0.2	1.48	0.15	2.60	.039	NO STR.	MASSIVE
SHRUB	C4	0.42	0.85	2.07	6.68	8.9	9.6	0.60	0.5	0.74	0.10	2.20	.043	NO STR.	SINGLE.GR
SHRUB	C5	0.35	0.76	1.47	5.67	9.6	7.9	1.40	0.2	0.80	0.10	1.10	.031	NO STR.	SINGLE.GR
BARE	C1	0.23	0.69	0.89	10.22	5.8	11.8	1.60	0.5	0.50	0.20	0.95	.025	WK.FINE	SUB.ANG.B
BARE	C2	0.30	0.74	0.94	10.82	5.9	12.5	1.60	0.2	0.44	0.15	1.05	.024	NO STR.	MASSIVE
BARE	C3	0.32	0.63	1.19	9.68	5.5	11.5	0.80	0.1	0.42	0.15	1.20	.028	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
54	ROCK VALLEY	1030	2	N	BAJADA	MODERATE	20-40%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-006	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	20.2	67.3	6.6	5.9
SHRUB	C1	006-024	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	12.2	73.8	8.8	5.2
SHRUB	C2	024-070	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	37.4	49.6	7.7	5.3
BARE	A2	000-008	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	SLTLY STICKY	18.2	61.5	12.9	7.4
BARE	C1	008-016	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	14.8	67.7	11.0	6.5
BARE	C2	016-063	10YR7/3	10YR5/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	31.0	59.1	5.6	4.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON	PPM
SHRUB	A1	42.9	13.5	10.2	9.8	7.9	8.6	2.52	10.4	1.75	7.75	33.00	14.25	1.60	0.05	0.63	2.10	
SHRUB	C1	37.0	17.1	10.1	6.5	8.3	8.9	0.55	15.3	0.28	2.58	5.28	2.88	0.00	0.00	0.10	2.50	
SHRUB	C2	20.0	23.0	15.8	8.8	8.2	8.7	0.41	10.2	0.61	1.55	2.64	5.46	0.00	0.00	0.10	1.50	
BARE	A2	22.9	15.7	10.8	7.5	8.0	8.8	0.40	12.2	0.45	0.54	5.28	4.17	0.00	0.00	0.10	0.50	
BARE	C1	28.1	16.6	11.0	7.4	8.3	8.7	0.31	19.4	0.37	0.53	2.64	2.84	0.00	0.00	0.08	0.80	
BARE	C2	37.5	17.1	11.4	6.4	8.3	8.8	0.30	28.0	0.40	0.67	2.64	2.76	0.00	0.00	0.08	1.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A1	2.42	0.17	3.10	11.73	1.1	15.0	6.60	0.8	1.35	0.20	23.20	.228	WK.FINE	SUB.ANG.B
SHRUB	C1	0.52	0.22	3.05	9.48	1.7	12.8	0.00	0.3	0.78	0.15	2.35	.048	WK.FINE	SUB.ANG.B
SHRUB	C2	0.27	0.29	2.35	7.61	2.8	10.3	0.00	0.3	0.70	0.10	1.60	.036	NO STR.	MASSIVE
BARE	A2	0.20	0.24	1.42	10.59	2.0	12.3	0.00	0.5	0.90	0.30	1.35	.030	WK.FINE	PLATY
BARE	C1	0.17	0.24	1.49	10.27	2.0	12.0	0.00	0.2	0.98	0.20	1.60	.026	WK.FINE	SUB.ANG.B
BARE	C2	0.20	0.23	1.40	8.37	2.3	10.0	0.00	0.3	2.50	0.10	1.90	.026	NO STR.	MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
55	ROCK VALLEY	1049	3	NW	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-015	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	14.2	74.5	7.0	4.3
SHRUB	A12	015-023	10YR6/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	9.1	77.6	9.1	4.2
SHRUB	C	023-110	10YR6/3	10YR4/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	26.3	63.9	7.2	2.6
BARE	A12	000-023	10YR6/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	17.5	73.7	6.5	2.3
BARE	C	023-106	10YR6/3	10YR4/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	25.6	65.0	7.2	2.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A1	39.9	14.1	8.8	7.3	8.0	7.6	4.45	17.0	3.22	4.52	19.80	34.20	34.30	0.00	1.40	0.60
SHRUB	A12	40.4	15.9	10.3	6.6	8.4	7.8	1.29	17.0	1.32	2.33	9.24	4.26	4.50	0.00	0.36	1.00
SHRUB	C	32.5	16.1	9.9	6.7	8.6	8.3	0.65	30.0	1.15	2.33	3.33	0.72	0.50	0.00	0.03	0.20
BARE	A12	36.1	12.6	8.6	5.5	8.5	8.2	0.40	25.0	0.32	0.42	3.96	0.09	0.50	0.00	0.08	0.40
BARE	C	31.8	15.4	9.1	5.8	8.4	8.2	0.37	29.0	0.76	0.92	4.21	1.99	0.00	0.00	0.08	0.30

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A1	1.05	0.49	1.77	9.24	4.3	11.5	12.80	0.6	0.72	0.15	6.75	.108 WK.FINE	SUB.ANG.B
SHRUB	A12	1.12	0.55	2.01	10.94	4.1	13.5	6.80	0.5	0.40	0.10	2.70	.113 WK.FINE	SUB.ANG.B
SHRUB	C	0.59	0.54	2.88	8.58	4.5	12.0	0.00	0.5	1.10	0.15	2.35	.055 WK.FINE	SUB.ANG.B
BARE	A12	0.42	0.52	0.99	7.49	5.8	9.0	3.40	0.5	0.70	0.10	2.10	.039 WK.FINE	SUB.ANG.B
BARE	C	0.34	0.67	1.87	6.86	7.1	9.4	0.40	0.3	0.82	0.10	1.75	.034 WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
56	ROCK VALLEY	1055	3	NW	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A11	000-002	10YR5/3	10YR4/3	SMOOTH	SOFT		VERY FRIABLE	NON-STICKY	17.9	69.5	8.0	4.6
SHRUB	A12	002-009	10YR6/3	10YR4/3	SMOOTH	SOFT		FRIABLE	NON-STICKY	12.4	75.1	8.1	4.4
SHRUB	C	009-050	10YR6/3	10YR5/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	17.8	69.7	9.4	3.1
BARE	A12	000-010	10YR6/3	10YR4/3	SMOOTH	SOFT		FRIABLE	NON-STICKY	14.7	73.8	8.4	3.1
BARE	C	010-054	10YR6/3	10YR5/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	17.3	71.6	8.4	2.7

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	HAR	HAR	HAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	52.6	19.2	16.7	13.8	7.4	7.3	12.93	17.0	24.24	17.17	42.24	36.06	62.50	0.00	0.90	2.20	
SHRUB	A12	40.4	18.5	10.5	8.5	8.0	7.4	5.56	20.0	6.82	4.86	30.36	18.24	23.80	0.00	2.31	5.50	
SHRUB	C	38.6	19.1	11.3	7.1	8.3	8.0	0.79	28.0	2.76	2.43	3.96	1.44	0.30	0.00	3.75	5.20	
BARE	A12	29.9	17.3	9.5	5.7	8.3	7.8	0.46	22.0	0.35	0.33	3.90	0.15	0.00	0.00	0.01	3.70	
BARE	C	38.3	20.6	11.7	7.1	8.2	8.0	0.37	24.0	0.45	0.67	2.64	0.74	0.00	0.00	0.08	4.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	A11	3.38	1.19	2.50	12.81	7.2	16.5	10.40	1.0	0.78	0.20	18.80	.255 WK.FINE	SUB.ANG.B
SHRUB	A12	1.25	0.60	3.00	11.40	4.0	15.0	15.60	0.6	0.70	0.10	2.30	.117 WK.FINE	SUB.ANG.B
SHRUB	C	0.50	0.83	3.31	9.36	6.1	13.5	1.60	0.2	0.60	0.10	1.30	.050 WK.FINE	SUB.ANG.B
BARE	A12	0.48	0.62	0.94	10.20	5.3	11.8	4.40	0.5	0.69	0.15	0.95	.045 WK.FINE	SUB.ANG.B
BARE	C	0.40	0.63	1.87	9.30	5.3	11.8	1.20	0.2	0.31	0.15	1.55	.043 WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
57	ROCK VALLEY	1037	4	NW	BAJADA	MODERATE	<20%	LIMESTONE	SMOOTH	WELL	SLOW

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-015	10YR5/3	10YR4/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	11.0	78.9	4.9	5.2
SHRUB	C1	015-033	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	SLTLY STICKY	13.2	66.8	11.2	8.8
BARE	C1	000-017	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	8.7	78.9	7.9	4.5
BARE	C2	017-043	10YR7/3	10YR5/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	13.3	70.7	9.5	6.5

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)			(MEQ/LITER)				
SHRUB	A1	37.9	12.5	7.8	5.8	8.0	8.6	2.13	12.2	1.00	6.04	23.76	11.34	0.20	0.00	0.10	1.70
SHRUB	C1	32.2	19.3	13.8	6.9	8.4	8.8	0.73	16.5	0.41	3.72	5.28	5.52	0.00	0.00	0.23	2.30
BARE	C1	28.4	14.5	8.8	5.5	8.4	8.8	0.36	11.0	0.21	0.35	3.96	2.79	0.00	0.00	0.08	0.00
BARE	C2	31.7	16.9	9.6	7.0	8.4	8.7	0.31	15.6	0.28	0.40	3.96	2.79	0.00	0.00	0.08	1.90

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.44	0.21	2.77	10.02	1.6	13.0	0.00	1.0	0.48	0.15	8.25	.119	WK.FINE	SUB.ANG.B
SHRUB	C1	0.51	0.24	3.76	4.75	2.7	8.8	6.60	0.2	0.87	0.20	1.95	.059	WK.MED.	SUB.ANG.B
BARE	C1	0.24	0.22	0.99	6.29	2.9	7.5	0.00	0.3	0.35	0.20	1.10	.032	WK.MED.	SUB.ANG.B
BARE	C2	0.30	0.24	1.37	11.14	1.9	12.8	0.00	0.3	1.03	0.20	1.80	.034	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
58	ROCK VALLEY	1110	2	S	BAJADA	MODERATE	<20%	LMSTN_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-004	10YR5/4	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	35.8	57.6	3.2	3.4
SHRUB	A12	004-011	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	34.4	59.3	3.7	2.6
SHRUB	C1	011-023	10YR6/3	10YR4/3	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	43.1	46.4	6.2	4.3
SHRUB	C2	023-040	10YR5/3	10YR4/3	COBBLY	SLTLY HARD	FRIABLE	NON-STICKY	48.6	38.7	5.7	7.0
SHRUB	C3	040-062	10YR6/3	10YR4/3	COBBLY	SLTLY HARD	FRIABLE	NON-STICKY	53.0	34.3	7.3	5.4
SHRUB	B2	062-099	10YR5/4	10YR4/4	SMOOTH	HARD	FRIABLE	NON-STICKY	56.0	35.6	5.4	3.0
BARE	A12	000-005	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	44.2	46.9	6.4	2.5
BARE	C1	005-014	10YR6/3	10YR4/3	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	40.4	46.9	7.4	5.3
BARE	C2	014-031	10YR6/3	10YR4/3	COBBLY	SLTLY HARD	FRIABLE	NON-STICKY	52.5	34.3	7.0	6.2
BARE	C3	031-055	10YR6/3	10YR4/3	COBBLY	SLTLY HARD	FRIABLE	NON-STICKY	55.1	38.4	4.7	1.8
BARE	B2	055-090	10YR5/4	10YR4/4	SMOOTH	HARD	FRIABLE	NON-STICKY	55.8	37.0	4.4	2.8

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON PPM	
SHRUB	A11	37.5	9.8	8.5	8.4	8.4	8.0	3.67	0.8	2.40	13.57	19.80	34.20	16.10	0.00	0.40	1.20	
SHRUB	A12	28.6	7.1	5.3	4.3	8.5	8.2	2.23	1.0	1.48	5.52	18.48	14.00	4.90	0.00	0.30	0.20	
SHRUB	C1	20.8	8.9	8.5	4.8	8.4	8.7	0.64	1.0	0.61	1.81	5.28	2.88	2.30	0.00	0.00	1.90	
SHRUB	C2	19.0	9.8	8.8	6.2	8.3	8.5	0.40	1.0	0.50	1.47	2.64	4.11	2.00	0.00	0.00	0.70	
SHRUB	C3	23.8	11.6	9.2	6.3	8.3	8.5	0.39	2.0	0.80	0.87	5.28	0.80	2.10	0.00	0.00	0.20	
SHRUB	B2	29.3	10.5	9.0	7.2	8.4	8.3	0.29	0.5	1.11	0.28	3.96	0.77	1.80	0.00	0.00	0.40	
BARE	A12	18.9	9.0	7.3	4.7	8.6	8.5	0.50	0.6	0.41	0.76	4.26	3.54	2.70	0.00	0.00	0.40	
BARE	C1	16.7	9.3	7.7	5.2	8.5	8.7	0.38	1.1	0.35	0.73	3.80	2.95	1.40	0.00	0.00	0.30	
BARE	C2	19.8	11.5	9.2	5.3	8.8	8.7	0.34	2.2	0.44	0.70	3.33	0.72	2.90	0.00	0.00	0.30	
BARE	C3	23.0	10.9	9.0	5.2	8.4	8.3	0.36	1.8	0.75	0.63	2.64	2.76	2.50	0.00	0.00	0.00	
BARE	B2	26.1	8.4	7.0	6.5	8.3	7.9	0.32	0.3	2.50	0.10	2.60	2.88	2.40	0.00	0.00	0.80	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	1.48	0.29	7.74	6.27	2.0	14.3	17.32	1.0	0.68	0.15	15.60	.107	WK.MED. SUB.ANG.8
SHRUB	A12	0.61	0.39	6.14	5.97	3.1	12.5	8.48	0.6	0.32	0.15	3.10	.061	WK.MED. PLATY
SHRUB	C1	0.17	0.42	4.14	7.44	3.5	12.0	2.36	0.5	0.49	0.15	1.70	.021	MOD.MED. SUB.ANG.8
SHRUB	C2	0.13	0.47	4.47	9.56	3.2	14.5	2.36	0.6	0.36	0.15	1.50	.013	NO STR. MASSIVE
SHRUB	C3	0.15	0.78	2.73	10.99	5.4	14.5	2.00	0.5	0.57	0.15	1.50	.016	NO STR. MASSIVE
SHRUB	B2	0.10	0.60	1.49	6.41	7.1	8.5	1.20	0.7	0.22	0.25	1.00	.013	MOD.MED. SUB.ANG.8
BARE	A12	0.11	0.37	2.19	5.94	4.4	8.5	1.36	0.5	0.49	0.20	3.20	.015	WK.MED. PLATY
BARE	C1	0.09	0.42	2.49	7.69	4.0	10.6	2.20	0.3	0.38	0.20	0.90	.013	MOD.MED. SUB.ANG.8
BARE	C2	0.14	0.64	2.87	7.79	5.7	11.3	0.52	0.5	0.38	0.20	1.20	.015	NO STR. MASSIVE
BARE	C3	0.15	0.76	2.80	10.94	5.2	14.5	0.92	0.5	0.18	0.15	0.85	.016	NO STR. MASSIVE
BARE	B2	0.05	0.73	1.38	12.39	5.0	14.5	0.56	0.7	0.97	0.20	1.05	.007	MOD.MED. SUB.ANG.8

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
59	ROCK VALLEY	1024	3	NE	BAJADA	SLIGHT	40-60%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND	FINE SAND	SILT	CLAY
									2-0.25	0.25-0.05	0.05-0.002	<0.002
SHRUB	A11	000-006	10YR5/3	10YR4/2	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	9.6	82.8	3.9	3.7
SHRUB	A12	006-012	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	8.6	84.5	4.3	2.7
SHRUB	C1	012-023	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	8.0	80.2	7.2	4.6
SHRUB	C2	023-034	10YR7/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	10.0	78.8	7.2	4.1
SHRUB	C3C	034-057	10YR6/3	10YR4/4	COBB & GRAVL	SOFT	FRIABLE	NON-STICKY	26.8	63.8	5.6	3.8

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		BORON
		SAT.	BAR	BAR	BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	(MEQ/LITER)				(MEQ/LITER)				PPM
SHRUB	A11	31.5	8.9	7.7	5.8	8.3	8.9	1.37	11.4	0.60	1.25	13.42	3.53	1.20	0.00	0.35		0.00
SHRUB	A12	28.8	8.1	6.9	5.2	8.7	8.9	0.61	5.5	0.25	0.70	8.05	1.08	0.70	0.00	0.16		0.00
SHRUB	C1	27.6	10.5	9.3	5.6	8.8	9.0	0.44	15.0	0.30	0.60	3.87	1.34	0.50	0.00	0.14		0.00
SHRUB	C2	27.5	12.2	9.3	5.4	8.8	9.0	0.42	16.0	0.40	0.73	4.02	1.19	1.50	0.00	0.14		0.00
SHRUB	C3C	27.4	12.6	9.2	5.7	8.7	8.8	0.42	36.5	0.45	1.00	2.68	1.23	1.10	0.00	0.14		0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
									PPM	PPM	PPM	PPM		
SHRUB	A11	0.87	0.83	1.34	7.33	8.7	9.5	2.36	1.7	2.75	0.20	12.00	.091	WK.FINE PLATY
SHRUB	A12	0.49	0.74	1.36	7.99	7.4	10.0	1.64	1.2	1.45	0.15	4.00	.047	WK.FINE SUB.ANG.B
SHRUB	C1	0.38	0.97	1.56	8.72	8.6	11.3	0.40	0.6	1.10	0.20	3.85	.041	WK.FINE SUB.ANG.B
SHRUB	C2	0.32	1.07	1.48	6.95	11.3	9.5	0.00	0.6	0.85	0.18	4.30	.034	WK.MED. SUB.ANG.B
SHRUB	C3C	0.30	1.29	1.67	7.04	12.9	10.0	0.00	0.7	1.70	0.18	4.10	.032	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
60	ROCK VALLEY	1024	1	NE	BAJADA	SLIGHT	60-80%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-005	10YR5/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	11.6	77.9	5.8	4.7
SHRUB	A2	005-018	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	10.0	65.6	16.5	7.9
SHRUB	A3	018-038	10YR6/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	21.0	64.1	8.6	6.2
SHRUB	C1	038-063	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	24.4	62.7	6.6	6.3

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PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A1	33.0	9.6	8.3	6.1	7.9	8.5	1.21	5.0	1.00	4.10	20.13	13.77	1.60	0.00	0.40	0.00
SHRUB	A2	17.5	12.9	11.0	7.0	8.6	8.8	0.45	13.5	0.70	0.29	4.69	1.83	0.60	0.00	0.10	0.00
SHRUB	A3	28.8	14.2	10.4	7.0	8.7	8.8	0.45	21.7	0.90	0.65	3.35	1.87	1.50	0.00	0.15	0.00
SHRUB	C1	34.5	13.2	10.9	6.4	8.6	8.9	0.62	19.0	3.00	0.13	4.02	1.26	1.40	0.00	0.16	0.00

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
SHRUB	A1	1.07	1.05	1.81	6.14	11.7	9.0	3.04	2.0	1.20	0.24	14.50	.120	WK.FINE PLATY
SHRUB	A2	0.24	1.24	0.99	9.02	11.0	11.3	0.52	0.7	0.70	0.32	2.75	.030	STR.MED. PLATY
SHRUB	A3	0.34	1.35	1.36	8.54	12.0	11.3	0.52	0.7	0.80	0.20	5.60	.032	WK.FINE SUB.ANG.B
SHRUB	C1	0.27	1.28	0.65	7.57	13.5	9.5	0.06	1.2	0.70	0.15	5.90	.030	NO STR. SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
61	ROCK VALLEY	1024	1	NE	BAJADA	SLIGHT	20-40%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR4/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	46.0	45.8	3.6	4.6
SHRUB	A2	009-019	10YR7/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	33.3	39.5	17.7	9.5
SHRUB	B	019-037	10YR6/4	7.5YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	43.6	42.5	8.3	5.6
SHRUB	C1	037-047	10YR7/3	10YR6/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	51.0	36.9	8.3	3.8

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON PPM	
SHRUB	A1	33.0	9.4	8.0	4.4	8.1	8.2	2.27	3.1	2.85	4.19	25.49	9.71	5.10	0.00	0.89	0.00	
SHRUB	A2	27.6	14.2	12.8	7.9	8.6	8.9	0.69	5.5	0.95	1.13	8.05	2.38	1.40	0.00	0.30	0.00	
SHRUB	B	28.9	13.0	11.3	8.1	8.7	9.0	0.53	3.2	0.90	0.73	4.22	4.91	1.00	0.00	0.18	0.00	
SHRUB	C1	29.3	15.2	12.7	7.3	8.7	8.8	0.53	3.6	1.20	0.25	4.02	1.20	2.30	0.00	0.09	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.95	1.36	1.54	10.35	10.3	13.3	4.36	2.0	0.90	0.20	14.00	.193	WK.FINE	SUB.ANG.B
SHRUB	A2	0.25	1.43	2.93	12.64	8.4	17.0	1.20	0.8	0.55	0.20	3.05	.030	WK.MED.	SUB.ANG.B
SHRUB	B	0.21	1.22	2.93	12.85	7.2	17.0	0.52	1.0	0.25	0.17	4.35	.023	WK.FINE	SUB.ANG.B
SHRUB	C1	0.18	1.71	1.57	9.22	13.7	12.5	0.24	0.6	0.28	0.19	2.10	.036	MOD.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
62	ROCK VALLEY	1018	2	NE	BAJADA	MODERATE	20-40%	ALLUVIUM	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR5/4	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	40.3	51.2	4.7	3.8
SHRUB	A2	009-021	10YR7/3	10YR5/4	SMOOTH	SLTLY HARD	FRIABLE	SLTLY STICKY	45.4	33.9	13.4	7.3
SHRUB	C1	021-032	10YR7/3	10YR5/4	GRAVELLY	SOFT	VERY FRIABLE	NON-STICKY	43.4	40.3	10.2	6.1
SHRUB	C2	032-050	10YR7/3	10YR6/4	COBB & GRAVL	SLTLY HARD	FRIABLE	NON-STICKY	55.4	34.7	7.5	2.4

PROFILE TYPE	HOR-IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4	BORON	PPM
SHRUB	A1	27.1	8.2	7.1	6.4	8.3	8.8	1.93	4.0	7.05	3.75	28.18	18.76	9.80	0.00	1.03	0.00	
SHRUB	A2	22.0	13.5	11.9	8.1	8.7	8.9	0.70	6.5	1.75	1.50	8.05	2.63	1.30	0.00	0.21	0.00	
SHRUB	C1	27.3	14.1	11.3	8.3	8.7	9.0	0.49	6.4	1.20	0.92	4.02	4.03	0.60	0.00	0.15	0.00	
SHRUB	C2	29.1	15.4	13.0	7.8	8.7	8.9	0.65	20.0	2.70	1.00	2.68	1.23	1.10	0.60	0.14	0.00	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.18	1.56	3.40	7.90	1.2	12.9	3.80	1.2	0.49	0.19	4.35	.081	WK.FINE	SUB.ANG.B
SHRUB	A2	0.42	1.41	4.27	10.57	8.7	16.3	1.08	1.0	0.49	0.10	2.35	.048	MOD.MED.	SUB.ANG.B
SHRUB	C1	0.36	1.22	4.27	9.51	8.1	15.0	0.80	1.5	0.57	0.13	8.10	.027	WK.FINE	SUB.ANG.B
SHRUB	C2	0.28	2.05	4.77	7.68	14.1	14.5	0.52	0.8	0.55	0.18	3.20	.048	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
63	JACKASS FLAT	1085	1	N	BAJADA	MODERATE	20-40%	BASLT_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-003	10YR5/3	10YR4/3	SMOOTH	LOOSE	FRIABLE	NON-STICKY	52.6	39.3	4.1	4.0
SHRUB	A12	003-006	10YR5/3	10YR7/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	45.3	46.4	5.3	3.0
SHRUB	A2	006-023	10YR7/3	10YR5/4	COBBLY	SLTLY HARD	FRIABLE	SLTLY STICKY	52.4	27.6	10.6	9.4
SHRUB	B1	023-033	10YR6/3	10YR4/4	COBBLY	HARD	FRIABLE	NON-STICKY	65.2	13.0	9.0	12.8
SHRUB	B21	033-068	7.5YR5/4	7.5YR4/4	GRAVELLY	HARD	LOOSE	NON-STICKY	76.8	2.0	7.4	13.8
SHRUB	B22	068-099	7.5YR5/4	7.5YR4/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	78.9	16.8	2.1	2.2
SHRUB	C C	099-130	10YR6/3	10YR4/4	SMOOTH	HARD	LOOSE	NON-STICKY	92.4	1.4	3.3	2.9
BARE	A2	000-015	10YR7/3	10YR5/4	COBBLY	SLTLY HARD	FRIABLE	SLTLY STICKY	46.8	33.1	11.6	8.5
BARE	B1	015-039	10YR6/3	10YR4/4	COBBLY	HARD	FRIABLE	NON-STICKY	59.9	19.0	9.1	12.0
BARE	B21	039-063	7.5YR5/4	7.5YR4/4	GRAVELLY	HARD	LOOSE	NON-STICKY	79.7	5.1	5.9	9.3
BARE	B22	063-091	7.5YR5/4	7.5YR4/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	85.2	7.8	3.0	4.0
BARE	C C	091-130	10YR6/3	10YR4/4	COBBLY	HARD	LOOSE	NON-STICKY	88.6	7.2	2.4	1.8

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS							SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO ₃	SO ₄	
		SAT.	BAR	BAR	BAR												
SHRUB	A11	27.9	8.2	6.6	5.6	7.9	8.2	2.22	0.6	0.08	3.15	22.44	8.61	1.44	0.00	0.70	1.12
SHRUB	A12	24.5	8.1	6.8	5.9	8.2	8.5	1.66	0.6	1.08	3.00	14.50	4.40	1.25	0.00	0.85	1.32
SHRUB	A2	20.9	11.9	11.0	8.2	8.5	8.7	1.27	1.4	2.16	3.08	9.24	0.21	0.36	20.00	0.15	0.50
SHRUB	B1	32.5	11.9	10.9	8.1	8.5	8.6	0.66	0.4	2.90	0.87	3.96	1.50	0.93	0.00	0.00	1.52
SHRUB	B21	35.1	11.2	10.2	8.6	8.5	8.6	0.42	0.6	2.25	0.45	2.64	0.06	0.50	0.00	0.06	0.56
SHRUB	B22	26.7	6.9	6.7	5.5	8.4	7.8	2.32	0.8	13.40	0.78	14.52	5.73	2.97	12.50	0.56	3.20
SHRUB	C C	27.4	6.5	5.8	4.9	8.4	7.7	3.00	0.6	20.00	0.90	26.40	26.25	3.57	0.00	0.90	4.20
BARE	A2	26.0	11.5	11.3	7.4	8.1	8.7	0.57	1.4	1.12	1.35	3.96	1.44	0.35	0.00	0.18	1.67
BARE	B1	25.1	10.3	9.9	7.1	8.0	8.6	0.36	0.2	0.77	0.67	1.32	1.38	0.43	0.00	0.08	0.20
BARE	B21	33.3	9.5	9.1	7.7	8.7	8.6	0.27	0.8	1.28	0.33	1.32	1.38	0.11	0.00	0.10	1.00
BARE	B22	23.3	6.6	6.2	5.2	8.3	8.6	0.36	0.2	2.05	0.30	0.66	0.69	0.22	0.00	0.10	0.20
BARE	C C	26.6	6.8	6.5	5.0	8.5	8.5	0.49	1.4	4.00	0.25	1.98	0.72	1.11	0.00	0.10	0.30

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	0.65	0.28	3.56	8.91	2.2	12.8	1.20	0.5	0.53	0.20	4.30	.053	WK.FINE SUB.ANG.B
SHRUB	A12	0.44	0.29	3.87	6.59	2.7	10.8	1.16	0.3	0.44	0.10	1.70	.043	WK.FINE SUB.ANG.B
SHRUB	A2	0.23	0.50	5.09	11.16	3.0	16.8	0.44	0.2	0.52	0.20	1.00	.032	WK.FINE PLATY
SHRUB	B1	0.19	0.93	3.79	13.65	5.1	18.4	0.24	0.3	0.40	0.20	0.95	.022	MOD.FINE SUB.ANG.B
SHRUB	B21	0.10	1.32	3.98	12.70	7.4	18.0	0.16	0.5	1.20	0.20	0.80	.012	STR.MED. SUB.ANG.B
SHRUB	B22	0.06	1.79	2.48	7.60	15.1	11.9	0.20	0.1	0.37	0.10	0.75	.006	NO STR. SINGLE.GR
SHRUB	C C	0.04	1.62	1.85	9.78	12.2	13.3	0.20	0.2	0.25	0.10	0.60	.005	NO STR. MASSIVE
BARE	A2	0.12	0.43	2.98	9.71	3.3	13.1	0.36	0.3	0.42	0.20	1.15	.017	WK.FINE PLATY
BARE	B1	0.13	0.38	3.48	13.64	2.2	17.5	0.24	0.3	0.32	0.20	1.10	.015	MOD.FINE SUB.ANG.B
BARE	B21	0.07	0.86	3.61	8.78	6.5	13.3	0.20	0.3	0.43	0.15	0.50	.010	STR.MED. SUB.ANG.B
BARE	B22	0.02	1.32	2.86	6.57	12.3	10.8	0.20	0.2	0.24	0.10	0.60	.004	NO STR. SINGLE.GR
BARE	C C	0.03	1.84	2.79	9.74	12.9	14.4	0.12	0.2	0.30	0.10	0.65	.003	NO STR. MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
64	JACKASS FLAT	1098	1	N	BAJADA	MODERATE	<20%	BASLT_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-016	10YR5/4	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	43.0	49.4	4.2	3.4
SHRUB	A12	016-033	10YR6/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	42.1	48.5	5.4	4.0
SHRUB	C1	033-058	10YR5/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	52.4	36.5	6.2	4.9
SHRUB	C2	058-115	7.5YR6/4	7.5YR5/6	COBBLY	VERY HARD	LOOSE	NON-STICKY	70.6	15.9	6.1	7.4
BARE	A12	000-011	10YR6/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	39.6	49.0	6.8	4.6
BARE	C1	011-048	10YR5/4	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	59.0	26.4	10.2	4.4
BARE	C2	048-100	7.5YR6/4	7.5YR5/6	COBBLY	VERY HARD	LOOSE	NON-STICKY	66.4	20.5	5.8	7.3

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME ($<2.0\text{MM}$)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)								
SHRUB	A11	29.3	10.2	7.6	5.8	8.0	8.8	2.13	0.9	1.00	6.98	21.12	8.58	17.80	0.00	0.95	4.40	
SHRUB	A12	28.7	9.9	7.1	5.4	8.3	8.6	1.98	1.0	1.70	11.71	30.36	8.79	4.40	0.04	10.12	5.00	
SHRUB	C1	31.6	12.9	8.6	6.4	7.9	8.4	4.62	1.4	12.80	8.82	58.08	20.22	13.40	0.00	10.63	9.80	
SHRUB	C2	32.4	11.7	9.9	8.0	7.9	8.2	5.04	0.9	33.00	4.77	60.72	22.98	21.20	0.00	10.38	11.80	
BARE	A12	21.3	10.6	8.0	5.7	8.3	9.0	0.66	1.2	0.48	1.68	6.60	1.50	0.20	0.00	0.10	1.80	
BARE	C1	24.3	13.0	9.6	7.0	8.4	8.8	0.45	2.3	0.48	1.86	2.64	2.76	0.00	0.00	0.13	0.50	
BARE	C2	29.1	10.8	8.8	7.8	8.3	8.7	0.68	0.6	4.70	0.85	3.96	1.44	0.30	0.00	0.10	4.40	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	0.76	0.22	4.18	9.35	1.6	13.8	5.20	0.5	0.38	0.15	4.70	.073	WK.FINE SUB.ANG.B
SHRUB	A12	0.53	0.30	7.44	4.51	2.4	12.3	3.32	0.2	0.20	0.10	0.95	.060	WK.FINE SUB.ANG.B
SHRUB	C1	0.32	0.53	3.50	11.72	3.4	15.8	1.84	0.3	0.19	0.15	1.65	.038	WK.FINE SUB.ANG.B
SHRUB	C2	0.05	0.93	1.73	12.34	6.2	15.0	1.40	0.5	0.45	0.20	0.95	.010	STR.CRSE SUB.ANG.B
BARE	A12	0.18	0.24	2.09	9.17	2.1	11.5	1.40	0.3	0.47	0.15	1.55	.025	WK.FINE SUB.ANG.B
BARE	C1	0.20	0.29	2.78	12.68	1.8	15.8	1.40	0.3	0.78	0.20	1.25	.024	WK.FINE SUB.ANG.B
BARE	C2	0.04	1.21	1.66	13.38	7.4	16.3	0.00	0.6	0.99	0.30	1.15	.009	STR.CRSE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
65	JACKASS FLAT	1037	1	N	BAJADA	MODERATE	<20%	LMSTN_TUF	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %				
									COARSE SAND	FINE SAND	SILT	CLAY	
									2-0.25	0.25-0.05	0.05- 0.002	<0.002	
SHRUB	A11	000-007	10YR6/3	10YR4/3	SMOOTH	SOFT		VERY FRIABLE	NON-STICKY	34.2	62.8	1.3	1.7
SHRUB	A12	007-020	10YR6/3	10YR4/4	SMOOTH	SOFT		VERY FRIABLE	NON-STICKY	37.6	58.8	1.7	1.9
SHRUB	C1	020-075	10YR6/3	10YR4/4	GRAVELLY	SOFT		FRIABLE	NON-STICKY	41.0	55.0	2.5	1.5
SHRUB	C2	075-125	10YR6/4	10YR4/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	67.5	26.8	2.9	2.8
SHRUB	C3	125+	10YR5/4	10YR4/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	77.8	17.1	2.4	2.7
BARE	A12	000-020	10YR6/3	10YR4/4	SMOOTH	SOFT		VERY FRIABLE	NON-STICKY	37.7	58.5	1.8	2.0
BARE	C1	020-075	10YR6/3	10YR4/4	GRAVELLY	SOFT		FRIABLE	NON-STICKY	46.5	48.8	2.4	2.3
BARE	C2	075-125	10YR6/4	10YR4/4	COBB & GRAVL	SOFT		FRIABLE	NON-STICKY	71.4	23.8	2.2	2.6
BARE	C3	125+	10YR5/4	10YR4/4	COBB & GRAVL	SOFT		VERY FRIABLE	NON-STICKY	75.7	18.2	2.4	3.7

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS						SAT. EX BORON PPM	
		0	1/3	1	15					NA	K	CA	MG	CL	NO3		SO4
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)			
SHRUB	A11	27.2	5.0	4.4	3.5	7.9	8.4	1.96	0.2	1.87	4.40	17.16	11.19	2.37	0.00	0.70	0.90
SHRUB	A12	25.1	4.9	4.0	3.4	8.3	8.6	0.88	0.6	1.37	2.30	5.28	2.82	1.09	0.00	0.25	1.20
SHRUB	C1	24.0	5.5	5.3	3.5	8.4	8.5	0.73	1.6	2.17	1.60	3.96	2.79	0.98	0.00	0.18	0.80
SHRUB	C2	25.7	5.3	4.6	3.6	8.4	8.4	1.04	0.8	5.80	0.72	5.28	2.82	2.32	0.00	0.18	1.10
SHRUB	C3	24.8	5.3	4.3	3.7	8.3	8.1	1.96	0.4	11.00	0.95	6.60	4.20	11.80	0.00	0.48	3.20
BARE	A12	22.1	5.0	4.5	2.9	7.9	8.2	0.34	0.1	0.30	0.62	2.68	2.27	0.00	0.00	0.10	0.40
BARE	C1	22.3	5.2	5.1	3.7	8.3	8.7	0.34	1.0	0.70	0.80	2.94	1.51	0.00	0.00	0.10	0.30
BARE	C2	25.5	5.1	4.7	3.9	8.5	8.4	0.49	0.6	2.55	0.54	2.64	1.41	0.38	0.00	0.18	1.10
BARE	C3	24.2	5.2	4.6	4.0	8.6	8.5	0.28	0.6	4.55	0.45	2.44	0.26	1.22	0.00	0.18	1.20

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE	ZN	CU	MN		
SHRUB	A11	0.48	0.25	3.20	4.05	3.0	7.5	1.64	0.3	0.45	0.10	2.45	.040	WK.FINE SUB.ANG.B
SHRUB	A12	0.19	0.34	2.99	3.17	5.2	6.5	0.56	0.1	0.39	0.10	1.05	.019	WK.FINE SUB.ANG.B
SHRUB	C1	0.13	0.55	2.81	3.64	7.9	7.0	0.24	0.2	0.33	0.10	0.80	.016	WK.FINE SUB.ANG.B
SHRUB	C2	0.06	0.90	1.78	4.19	13.1	6.9	0.20	0.2	0.70	0.15	0.75	.010	WK.FINE SUB.ANG.B
SHRUB	C3	0.04	1.00	1.38	3.19	18.0	5.6	0.20	0.3	0.64	0.05	0.45	.007	WK.FINE SUB.ANG.B
BARE	A12	0.09	0.18	1.59	3.88	3.2	5.7	0.32	0.5	0.48	0.10	1.05	.012	WK.FINE SUB.ANG.B
BARE	C1	0.12	0.43	2.35	4.34	6.0	7.1	0.20	0.1	0.41	0.10	0.60	.009	WK.FINE SUB.ANG.B
BARE	C2	0.10	0.83	1.79	8.83	10.5	7.9	0.16	0.2	0.48	0.10	0.60	.009	WK.FINE SUB.ANG.B
BARE	C3	0.07	1.01	1.49	5.75	12.2	8.3	0.16	0.2	0.49	0.05	0.30	.008	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
66	JACKASS FLAT	1091	2	S	BAJADA	MODERATE	20-40%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-005	10YR5/3	10YR3/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	15.8	79.2	2.6	2.4
SHRUB	A12	005-019	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	14.8	77.3	4.3	3.6
SHRUB	C1	019-067	10YR6/4	10YR4/3	COBBLY	SLTLY HARD	LOOSE	NON-STICKY	39.8	54.1	4.1	2.0
SHRUB	C2	067+	10YR6/4	10YR4/3	GRAVELLY	SLTLY HARD	LOOSE	NON-STICKY	37.5	57.1	3.5	1.9
BARE	A12	000-017	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	13.5	79.0	3.8	3.7
BARE	C1	017-068	10YR6/4	10YR4/3	COBBLY	SLTLY HARD	LOOSE	NON-STICKY	37.0	54.1	5.1	3.8
BARE	C2	068+	10YR6/4	10YR4/3	GRAVELLY	SLTLY HARD	LOOSE	NON-STICKY	48.8	48.2	1.6	1.4

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A11	31.9	8.6	7.3	5.6	8.1	8.5	1.68	0.4	1.20	1.82	15.00	13.40	0.00	0.00	0.41	0.00	
SHRUB	A12	21.7	7.6	6.2	4.9	8.5	8.6	0.55	0.6	0.60	0.93	6.22	1.60	0.00	0.00	0.18	3.50	
SHRUB	C1	20.0	10.7	8.9	6.5	8.3	8.7	0.52	6.0	0.90	0.31	4.57	1.99	0.00	0.00	0.13	3.60	
SHRUB	C2	23.1	8.8	6.9	4.7	8.6	8.6	1.27	3.0	9.50	0.38	3.00	0.92	3.20	1.25	0.38	3.40	
BARE	A12	21.2	7.3	5.8	4.3	8.2	8.6	0.42	0.2	0.30	0.48	2.40	1.57	0.00	0.00	0.10	0.00	
BARE	C1	24.2	10.8	8.8	6.7	8.3	8.6	0.41	6.0	0.50	0.25	3.08	1.64	0.00	0.00	0.13	0.00	
BARE	C2	20.2	6.5	5.7	4.7	8.2	7.9	2.61	5.0	16.50	1.40	19.96	18.44	3.30	0.62	2.45	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	0.84	0.24	1.44	8.32	2.4	10.0	1.68	0.7	0.80	0.10	5.25	.073	WK.FINE SUB.ANG.B
SHRUB	A12	0.20	0.32	1.73	8.45	3.0	10.5	0.60	0.1	0.58	0.15	1.15	.028	WK.FINE SUB.ANG.B
SHRUB	C1	0.42	0.43	0.84	10.61	3.6	11.9	0.32	0.3	2.10	0.10	1.10	.055	NO STR. MASSIVE
SHRUB	C2	0.14	1.38	0.77	8.60	12.8	10.8	0.20	0.3	1.58	0.10	1.15	.024	NO STR. MASSIVE
BARE	A12	0.20	0.27	1.27	8.46	2.7	10.0	0.32	0.2	0.52	0.10	1.50	.028	WK.FINE SUB.ANG.B
BARE	C1	0.43	0.39	0.77	11.84	3.0	13.0	0.32	0.2	1.80	0.10	1.05	.052	NO STR. MASSIVE
BARE	C2	0.15	0.85	0.97	7.31	9.3	9.1	0.24	0.2	0.70	0.10	0.60	.021	NO STR. MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
67	JACKASS FLAT	1067	3	SW	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE 2-0.25	SAND FINE 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-013	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	24.2	72.8	1.2	1.8
SHRUB	A12	013-038	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	31.0	64.6	1.9	2.5
SHRUB	C1	038-055	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	31.4	63.4	2.6	2.6
SHRUB	C2	055-080	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	35.6	61.1	2.2	1.1
SHRUB	B1	080-102	5YR5/4	5YR4/4	SMOOTH	VERY HARD	FRIABLE	NON-STICKY	46.2	46.6	3.8	3.4
SHRUB	C3	102-134	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	37.9	60.3	1.3	0.5
BARE	A12	000-018	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	24.3	71.5	1.1	3.1
BARE	C1	018-036	10YR7/3	10YR5/3	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	29.6	63.6	2.4	4.4
BARE	C2	036-084	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	33.1	61.5	2.7	2.7
BARE	B1	084-097	5YR5/4	5YR4/4	SMOOTH	VERY HARD	FRIABLE	NON-STICKY	45.5	49.2	2.8	2.5
BARE	C3	097-122	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	37.4	60.5	0.5	1.6

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	27.0	4.8	4.1	2.9	8.4	8.2	0.95	0.2	0.60	1.40	7.25	3.02	0.00	0.00	0.43	0.00	
SHRUB	A12	23.8	5.8	4.4	3.1	8.6	8.6	0.47	0.4	0.50	1.18	3.36	0.52	0.00	0.00	0.10	4.70	
SHRUB	C1	22.2	6.9	5.6	4.3	8.6	8.7	0.47	1.0	0.90	1.25	2.70	0.86	0.00	0.00	0.08	0.00	
SHRUB	C2	23.9	6.5	5.0	3.4	8.5	8.8	0.40	1.0	1.50	0.55	2.22	0.80	0.00	0.00	0.08	0.00	
SHRUB	B1	26.8	9.2	7.6	5.8	8.5	8.2	0.40	0.8	2.00	0.49	2.68	1.32	0.00	0.00	0.05	1.70	
SHRUB	C3	25.9	6.9	5.7	5.2	8.5	8.5	0.52	0.6	3.10	0.49	2.47	0.27	0.00	0.00	0.05	2.50	
BARE	A12	23.6	4.8	4.3	3.1	8.3	8.3	0.34	0.2	0.40	0.74	2.37	0.61	0.00	0.00	0.03	0.00	
BARE	C1	22.3	6.0	5.2	3.8	8.2	8.3	0.27	0.2	0.35	0.70	2.08	0.30	0.00	0.00	0.03	0.00	
BARE	C2	22.9	7.0	6.0	4.3	8.5	8.8	0.29	1.0	0.75	0.56	1.50	0.50	0.00	0.00	0.05	0.00	
BARE	B1	30.4	8.3	7.1	5.7	8.5	8.7	0.26	0.6	1.15	0.44	1.37	0.36	1.60	0.00	0.03	0.00	
BARE	C3	24.4	6.9	5.9	4.9	8.5	8.5	0.28	0.4	1.50	0.49	1.70	0.20	0.00	0.00	0.03	0.00	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.15	0.23	1.84	5.81	2.9	7.9	1.08	0.3	0.21	0.05	1.35	.251	WK.FINE	SUB.ANG.B
SHRUB	A12	0.18	0.27	2.60	5.63	3.2	8.5	0.52	0.1	0.20	0.05	0.55	.023	STR.CRSE	SUB.ANG.B
SHRUB	C1	0.12	0.43	2.25	6.70	4.6	9.4	0.20	0.1	0.24	0.10	0.50	.015	MOD.MED.	SUB.ANG.B
SHRUB	C2	0.10	0.69	1.54	7.15	7.4	9.4	0.20	0.2	0.20	0.10	0.45	.013	WK.FINE	SUB.ANG.B
SHRUB	B1	0.09	0.85	2.19	10.71	6.2	13.8	0.48	0.2	1.30	0.40	0.30	.009	STR.CRSE	SUB.ANG.B
SHRUB	C3	0.08	1.10	2.27	6.63	11.0	10.0	0.24	0.2	0.12	0.05	0.30	.008	NO STR.	SINGLE.GR
BARE	A12	0.13	0.19	1.48	5.33	2.7	7.0	0.48	0.5	0.35	0.15	0.90	.015	WK.FINE	SUB.ANG.B
BARE	C1	0.09	0.19	2.08	6.23	2.2	8.5	0.32	0.2	0.37	0.10	0.70	.012	MOD.MED.	SUB.ANG.B
BARE	C2	0.08	0.43	1.87	7.70	4.3	10.0	0.20	0.1	0.32	0.20	0.45	.013	WK.FINE	SUB.ANG.B
BARE	B1	0.08	0.60	2.27	10.38	4.5	13.3	0.20	0.6	1.40	0.30	0.25	.009	STR.CRSE	SUB.ANG.B
BARE	C3	0.06	0.69	2.19	8.37	6.1	11.3	0.00	0.2	0.17	0.20	0.15	.007	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
68	JACKASS FLAT	1052	1	S	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-010	10YR6/3	10YR4/3	SMOOTH	LOOSE	FRIABLE	NON-STICKY	23.4	73.7	0.5	2.4
SHRUB	A12	010-025	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	21.6	76.3	0.2	1.9
SHRUB	C1	025-070	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	29.2	68.5	0.3	2.0
SHRUB	C2	070+	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	33.4	63.6	1.9	1.1
BARE	A12	000-018	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	26.5	70.4	0.9	2.2
BARE	C1	018-065	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	26.6	70.6	0.7	2.1
BARE	C2	065+	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	33.0	63.0	2.7	1.3

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	27.5	5.8	4.8	4.4	8.0	8.0	1.12	0.2	0.75	2.18	10.82	3.28	0.00	0.00	0.18	1.20	
SHRUB	A12	26.4	4.2	3.9	2.7	8.4	8.2	0.84	0.2	0.75	1.50	6.33	2.47	0.00	1.25	0.05	1.10	
SHRUB	C1	23.6	4.1	3.7	2.7	8.7	8.2	0.41	0.4	0.90	0.78	2.18	1.14	1.20	0.00	0.03	0.00	
SHRUB	C2	25.9	5.8	4.4	2.9	8.6	8.5	0.63	3.0	1.20	0.65	4.30	0.78	1.10	1.56	0.05	0.50	
BARE	A12	23.3	3.7	3.6	2.7	8.4	8.2	0.24	0.2	0.35	0.70	1.60	0.08	0.00	0.00	0.03	0.00	
BARE	C1	22.7	4.0	3.7	2.5	8.6	8.7	0.26	0.4	0.35	0.88	1.72	0.30	1.00	0.00	0.05	0.00	
BARE	C2	21.4	5.5	4.8	3.4	8.9	8.7	0.29	2.0	1.10	0.44	2.00	0.57	0.80	0.00	0.08	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM		
SHRUB	A11	0.64	0.23	2.14	5.13	3.1	7.5	1.36	0.5	0.60	0.15	6.60	.037	WK.FINE SUB.ANG.B
SHRUB	A12	0.30	0.18	1.84	4.73	2.7	6.8	1.60	0.3	0.31	0.10	1.75	.032	WK.FINE SUB.ANG.B
SHRUB	C1	0.09	0.26	1.53	5.21	3.7	7.0	0.60	0.1	0.16	0.10	0.65	.009	WK.FINE SUB.ANG.B
SHRUB	C2	0.08	0.37	1.18	4.20	6.4	5.8	0.32	0.2	0.18	0.10	0.80	.010	WK.FINE SUB.ANG.B
BARE	A12	0.08	0.19	1.53	5.03	2.8	6.8	0.52	0.3	0.17	0.10	0.90	.009	WK.FINE SUB.ANG.B
BARE	C1	0.06	0.24	1.98	4.78	3.4	7.0	0.48	0.2	0.36	0.10	0.65	.007	WK.FINE SUB.ANG.B
BARE	C2	0.08	0.43	1.19	4.76	6.7	6.4	0.48	0.2	0.21	0.10	0.60	.010	WK.FINE SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
69	JACKASS FLAT	1037	1	SW	BAJADA	SLIGHT	<20%	ALLUVIUM	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-008	10YR5/3	10YR4/4	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	21.2	76.6	0.6	1.6
SHRUB	A12	008-019	10YR6/3	10YR4/4	SMOOTH	LOOSE	VERY FRIABLE	NON-STICKY	18.7	79.0	0.8	1.5
SHRUB	C1	019-053	10YR6/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	26.6	70.9	0.9	1.6
SHRUB	C2	053-096	10YR6/3	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	32.8	64.8	1.8	0.6
SHRUB	B1	096-115	10YR5/6	5YR4/8	GRAVELLY	HARD	FRIABLE	NON-STICKY	24.2	71.6	3.0	1.2
BARE	A12	000-012	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	20.2	78.0	0.6	1.2
BARE	C1	012-045	10YR6/3	10YR4/4	SMOOTH	SLTLY HARD	FRIABLE	NON-STICKY	25.5	71.6	1.4	1.5
BARE	C2	045-090	10YR6/3	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	27.7	69.8	0.6	1.9
BARE	B1	090-143	10YR5/6	5YR4/8	GRAVELLY	HARD	FRIABLE	NON-STICKY	32.1	64.5	2.5	0.9

PROFILE TYPE	HOR-IZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	SAT. EXT.	(MMHOS /CM)	LIME (<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		BORON PPM
SHRUB	A11	31.7	5.5	5.5	4.7	7.8	7.4	1.46	0.1	0.62	2.30	13.20	4.30	3.25	0.00	0.28		0.90
SHRUB	A12	28.0	5.0	3.6	3.5	8.2	7.6	0.74	0.1	0.55	1.26	3.96	2.79	0.00	0.08	0.08		1.80
SHRUB	C1	28.1	4.9	4.1	3.2	8.3	7.8	0.56	0.4	0.55	1.72	2.64	2.76	1.25	0.00	0.08		1.75
SHRUB	C2	25.0	6.5	4.3	3.7	8.5	8.2	0.42	1.7	1.07	0.63	2.60	0.10	0.25	0.00	0.03		1.30
SHRUB	B1	29.5	8.9	6.0	6.0	8.2	7.8	0.75	0.3	3.42	0.82	2.64	1.41	2.25	0.00	0.01		1.75
BARE	A12	26.2	4.3	4.6	3.0	7.8	7.7	0.45	0.5	0.25	0.63	3.96	1.44	0.00	0.00	0.08		1.40
BARE	C1	25.3	5.1	5.0	2.9	8.3	8.1	0.34	0.5	0.32	0.67	1.32	1.44	0.25	0.00	0.05		1.40
BARE	C2	26.9	6.3	4.3	3.8	8.6	8.0	0.35	1.5	0.66	0.60	2.60	0.10	0.00	0.00	0.08		1.75
BARE	B1	31.5	8.8	6.2	6.1	8.2	8.2	0.37	0.1	1.36	0.53	1.32	1.46	0.00	0.00	0.03		1.30

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.66	0.43	1.93	4.94	5.9	7.3	3.60	0.6	0.25	0.10	5.60	.058	WK.FINE	SUB.ANG.B
SHRUB	A12	0.27	0.51	1.97	4.32	7.5	6.8	1.60	0.3	0.33	0.10	1.15	.018	WK.FINE	SUB.ANG.B
SHRUB	C1	0.20	0.61	3.65	3.24	8.1	7.5	1.60	0.2	0.28	0.10	0.65	.013	WK.MED.	SUB.ANG.B
SHRUB	C2	0.16	0.87	2.38	4.25	11.6	7.5	0.80	0.1	0.25	0.10	0.75	.010	WK.FINE	SUB.ANG.B
SHRUB	B1	0.17	1.09	2.68	9.53	8.1	13.3	0.80	0.3	1.80	0.20	0.35	.009	MOD.MED.	SUB.ANG.B
BARE	A12	0.29	0.44	1.58	4.58	6.7	6.6	1.20	0.3	0.60	0.10	1.45	.019	WK.FINE	SUB.ANG.B
BARE	C1	0.11	0.48	1.98	3.84	7.6	6.3	0.80	0.3	0.29	0.05	0.60	.010	WK.MED.	SUB.ANG.B
BARE	C2	0.14	0.58	2.08	5.14	7.4	7.8	0.40	0.1	0.14	0.05	0.60	.009	WK.FINE	SUB.ANG.B
BARE	B1	0.08	0.84	2.68	9.28	6.6	12.8	0.40	0.5	3.10	0.15	0.75	.008	MOD.MED.	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
70	JACKASS FLAT	1006	1	SW	BAJADA	MODERATE	<20%	ALLUVIUM	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-015	10YR6/3	10YR4/4	SMOOTH	LOOSE	LOOSE	NON-STICKY	20.6	77.9	0.4	1.1
SHRUB	C1	015-064	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	26.4	72.0	0.6	1.0
SHRUB	C2	064-086	10YR6/3	10YR4/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	29.3	69.2	1.0	0.5
SHRUB	C3	086+	10YR6/3	10YR4/4	SMOOTH	SOFT	LOOSE	NON-STICKY	30.9	68.2	0.7	0.2

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PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH	EC 25	PER CENT	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX
		0	1/3	1	15		SAT.	(MMHOS	LIME	NA	K	CA	MG	CL	NO3	SO4		BORON
		SAT.	BAR	BAR	BAR	PASTE	EXT.	/CM)	(<2.0MM)	(MEQ/LITER)				(MEQ/LITER)				PPM
SHRUB	A1	28.8	4.0	3.7	3.5	8.2	8.4	0.61	0.4	0.35	0.93	7.62	1.98	2.50	0.00	0.03		0.50
SHRUB	C1	28.0	3.5	3.3	2.3	8.3	8.2	0.39	0.2	0.70	0.65	3.07	0.26	2.90	0.00	0.05		0.20
SHRUB	C2	24.0	4.6	4.5	3.1	8.5	8.2	2.60	0.4	5.00	1.44	2.81	1.47	6.60	0.00	1.34		2.70
SHRUB	C3	23.5	3.7	3.5	2.1	8.4	7.9	2.22	1.4	10.00	1.50	2.59	1.47	9.20	0.00	1.78		3.20

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH.	CATION EXCH. CAP.	P	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE
			NA	K	CA+MG	%	(MEQ/100GM)	PPM	FE	ZN	CU	MN		
SHRUB	A1	0.56	0.19	1.10	4.84	3.1	6.1	0.96	0.5	0.33	0.05	3.95	.023	WK.FINE SUB.ANG.B
SHRUB	C1	0.30	0.31	1.53	5.66	4.1	7.5	0.60	0.1	0.21	0.05	0.55	.015	WK.FINE SUB.ANG.B
SHRUB	C2	0.23	0.51	1.25	4.37	8.3	6.1	0.56	0.1	0.72	0.05	0.80	.016	NO STR. MASSIVE
SHRUB	C3	0.08	0.71	1.16	4.88	10.5	6.8	0.56	0.2	0.17	0.05	0.50	.016	NO STR. MASSIVE

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
71	JACKASS FLAT	1000	2	S	BAJADA	MODERATE	<20%	TUFF	SMOOTH	WELL	VERY RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-007	10YR6/3	10YR4/2	SMOOTH	LOOSE	FRIABLE	LOOSE	22.8	75.5	0.4	1.3
SHRUB	A12	007-015	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	24.9	73.0	1.0	1.1
SHRUB	C1	015-041	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	29.4	68.1	1.0	1.5
SHRUB	C2	041-141	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.0	69.7	1.4	0.9
BARE	A12	000-014	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	28.5	68.9	0.8	1.8
BARE	C1	014-033	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	27.0	70.5	1.0	1.5
BARE	C2	033-133	10YR7/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	27.5	70.1	1.6	0.8

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)						(MEQ/LITER)		
SHRUB	A11	27.8	4.1	3.9	2.6	8.0	8.4	0.75	0.4	0.44	1.03	7.92	5.64	0.52	0.00	0.50	1.30	
SHRUB	A12	26.3	4.3	3.8	2.9	8.4	8.5	0.41	0.8	0.40	0.70	2.64	2.21	0.16	0.00	0.13	1.20	
SHRUB	C1	27.6	5.0	4.8	3.0	8.5	8.7	0.41	1.6	0.52	0.72	3.96	1.44	0.00	0.00	0.10	0.10	
SHRUB	C2	26.9	4.5	4.1	3.2	8.5	8.4	0.34	1.6	0.74	0.50	2.69	1.36	0.00	0.00	0.10	1.30	
BARE	A12	25.7	4.7	4.6	3.0	8.4	8.4	0.27	0.8	0.25	0.54	2.64	2.76	0.00	0.00	0.10	0.70	
BARE	C1	26.5	4.4	4.0	3.1	8.5	8.3	0.27	1.2	0.25	0.54	3.96	0.09	0.00	0.00	0.08	0.80	
BARE	C2	26.2	4.1	3.9	3.2	8.6	8.6	0.26	1.8	0.40	0.52	2.64	1.39	0.00	0.00	0.10	0.70	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A11	0.45	0.24	1.84	3.99	4.0	6.1	0.60	0.3	0.36	0.10	1.10	.043	NO STR.	SINGLE.GR
SHRUB	A12	0.15	0.29	2.28	3.93	4.5	6.5	0.36	0.2	0.25	0.10	1.35	.015	WK.FINE	SUB.ANG.B
SHRUB	C1	0.14	0.36	2.73	4.61	4.7	7.7	0.24	0.1	0.19	0.10	0.50	.011	NO STR.	SINGLE.GR
SHRUB	C2	0.12	0.53	2.36	4.41	7.3	7.3	0.16	0.2	0.18	0.10	0.45	.010	NO STR.	SINGLE.GR
BARE	A12	0.13	0.29	2.19	4.52	4.1	7.0	0.20	0.3	0.96	0.15	0.50	.010	WK.FINE	SUB.ANG.B
BARE	C1	0.11	0.29	2.36	4.10	4.3	6.8	0.24	0.2	0.83	0.10	0.50	.009	NO STR.	SINGLE.GR
BARE	C2	0.11	0.29	2.44	4.39	4.1	7.1	0.12	0.2	0.20	0.10	0.40	.009	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
72	JACKASS FLAT	988	1	S	BAJADA	MODERATE	<20%	TUFF	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	P-ASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-015	10YR5/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	20.5	77.7	0.7	1.1
SHRUB	A12	015-027	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	26.7	71.2	0.6	1.5
SHRUB	C1	027-044	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	28.6	68.8	0.3	2.3
SHRUB	C2	044-150	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	32.3	66.4	0.3	1.0
BARE	A12	000-017	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	35.8	61.2	0.8	2.2
BARE	C1	017-036	10YR6/3	10YR4/4	SMOOTH	SOFT	VERY FRIABLE	NON-STICKY	30.8	67.2	0.1	1.1
BARE	C2	036-150	10YR6/3	10YR4/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	33.2	64.9	1.0	0.9

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS (MEQ/LITER)								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR					NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A11	28.3	4.9	4.8	4.1	7.8	7.6	1.85	0.0	0.85	2.27	18.48	7.17	19.25	0.00	0.70	5.20	
SHRUB	A12	25.2	4.6	4.5	2.6	8.0	8.0	0.99	0.1	0.72	1.63	6.60	1.50	1.25	0.04	0.20	5.00	
SHRUB	C1	25.3	5.2	3.5	3.3	8.3	8.3	0.60	0.2	0.66	1.15	2.64	3.26	0.25	0.00	0.08	3.50	
SHRUB	C2	25.3	5.3	3.3	2.8	8.3	8.3	1.11	1.0	3.55	0.74	5.28	4.17	1.75	0.00	0.44	4.00	
BARE	A12	23.9	4.8	3.3	3.1	8.1	8.1	0.48	0.1	0.35	0.72	2.64	1.41	0.00	0.00	0.08	2.30	
BARE	C1	24.5	4.8	4.6	3.0	8.1	8.3	0.29	0.1	0.25	0.63	1.32	0.03	0.00	0.00	0.05	2.90	
BARE	C2	26.3	5.6	3.3	3.2	8.4	8.6	0.33	1.1	0.75	0.45	3.96	0.69	0.00	0.00	0.08	3.40	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	0.57	0.45	2.53	2.82	7.7	5.8	2.40	0.2	0.37	0.05	3.30	.036	WK.FINE	SUB.ANG.B
SHRUB	A12	0.17	0.46	2.66	3.18	7.3	6.3	0.80	0.2	0.35	0.05	1.30	.018	WK.FINE	SUB.ANG.B
SHRUB	C1	0.09	0.46	2.47	2.67	8.2	5.6	0.80	0.2	0.30	0.10	0.55	.011	WK.FINE	SUB.ANG.B
SHRUB	C2	0.10	0.86	1.58	3.96	13.4	6.4	0.40	0.2	0.42	0.05	0.40	.009	WK.FINE	SUB.ANG.B
BARE	A12	0.20	0.39	1.58	4.03	6.5	6.0	0.60	0.3	0.24	0.05	1.05	.013	WK.FINE	SUB.ANG.B
BARE	C1	0.07	0.42	2.78	3.10	6.7	6.3	0.60	0.2	0.16	0.05	0.65	.010	WK.FINE	SUB.ANG.B
BARE	C2	0.10	0.81	1.69	4.10	12.3	6.6	0.40	0.1	0.18	0.05	0.40	.009	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
73	JACKASS FLAT	988	1	S	BAJADA	NONE	NONE	TUFF	SMOOTH	WELL	RAPID

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-009	10YR6/4	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	33.2	62.3	1.6	2.9
SHRUB	A12	009-020	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	36.7	58.9	1.0	3.4
SHRUB	C1	020-036	10YR7/3	10YR5/4	SMOOTH	SOFT	FRIABLE	NON-STICKY	32.1	61.9	2.0	4.0
SHRUB	C2	036-071	10YR6/3	10YR4/3	SMOOTH	SOFT	FRIABLE	NON-STICKY	34.7	59.7	2.6	3.0

PROFILE TYPE	HOR- IZON	<u>PER CENT MOISTURE RETENTION</u>				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<u><2.0MM</u>)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	20.3	5.0	4.2	3.0	8.6	8.4	0.35	0.2	0.55	0.52	3.20	0.76	1.00	0.00	0.05	0.20	
SHRUB	A12	22.8	3.8	3.8	3.4	8.7	8.7	0.34	0.2	0.50	0.88	2.33	0.56	1.30	0.00	0.03	0.50	
SHRUB	C1	22.0	5.2	5.0	4.0	8.8	8.7	0.32	0.1	0.55	1.00	1.72	0.82	1.30	0.00	0.05	1.30	
SHRUB	C2	23.3	5.1	4.4	3.0	8.9	8.4	0.27	0.1	0.70	0.93	2.00	0.30	1.20	0.00	0.05	0.50	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
									PPM	PPM	PPM	PPM			
SHRUB	A11	0.11	0.24	1.27	5.99	3.2	7.5	0.60	0.3	0.32	0.10	0.65	.014	WK.FINE	PLATY
SHRUB	A12	0.09	0.24	1.73	5.03	3.4	7.0	0.60	0.1	0.22	0.10	0.80	.011	WK.MED.	SUB.ANG.B
SHRUB	C1	0.07	0.27	2.48	5.75	3.2	8.5	0.32	0.1	0.32	0.10	0.60	.009	WK.MED.	SUB.ANG.B
SHRUB	C2	0.08	0.36	2.38	5.39	4.4	8.1	0.40	0.1	0.42	0.10	0.45	.009	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
74	YUCCA FLAT	1268	7	E	BAJADA	SEVERE	60-80%	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-005	10YR6/3	10YR3/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	37.1	40.9	15.0	7.0
SHRUB	A12	005-013	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	29.8	48.8	14.3	7.1
SHRUB	C1	013-024	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	33.0	42.5	15.3	9.2
BARE	A2	000-007	10YR7/3	10YR5/4	GRAVELLY	SLTLY HARD	FRIABLE	NON-STICKY	20.2	51.2	18.1	10.5
BARE	C1	007-029	10YR7/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	28.2	47.0	16.5	8.3

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A11	51.7	28.5	19.5	13.1	7.8	8.2	1.34	24.0	0.65	4.15	16.20	21.51	0.33	0.00	0.35	0.20	
SHRUB	A12	36.1	20.4	19.8	8.7	8.3	8.8	0.62	25.0	0.25	0.90	5.40	4.05	0.03	0.00	0.13	0.00	
SHRUB	C1	37.9	24.1	18.4	10.9	8.1	8.5	0.45	27.0	0.49	1.08	2.76	3.99	0.00	0.00	0.13	0.50	
BARE	A2	25.0	20.5	15.8	9.6	8.1	8.7	0.40	24.0	0.47	0.80	2.64	2.76	0.00	0.00	0.10	0.50	
BARE	C1	33.1	25.2	17.6	10.1	8.0	8.8	0.53	25.0	0.38	1.12	3.96	2.79	0.43	0.00	0.10	0.30	

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A11	3.68	0.37	2.09	16.21	2.0	18.7	1.40	1.1	1.10	0.20	6.60	.224	WK.FINE	SUB.ANG.B
SHRUB	A12	1.23	0.34	1.47	14.19	2.1	16.0	0.80	0.5	1.70	0.15	1.75	.118	MOD.FINE	SUB.ANG.B
SHRUB	C1	0.79	0.33	2.06	12.36	2.2	14.8	0.32	0.3	0.48	0.20	2.90	.066	WK.FINE	SUB.ANG.B
BARE	A2	0.41	0.36	1.80	12.96	2.4	15.1	0.68	0.3	1.24	0.30	1.65	.041	WK.FINE	SUB.ANG.B
BARE	C1	0.45	0.44	2.21	13.35	2.8	16.0	0.16	0.5	0.98	0.20	2.80	.045	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
75	YUCCA FLAT	1265	7	E	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	EXCESSIVE	RAPID

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A11	000-005	10YR5/3	10YR3/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	32.7	50.9	10.2	6.2
SHRUB	A12	005-016	10YR6/3	10YR4/4	GRAVELLY	LOOSE	FRIABLE	SLTLY STICKY	28.1	44.4	18.7	8.8
SHRUB	C1	016-031	10YR6/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	SLTLY STICKY	25.1	41.5	20.0	13.4
BARE	A12	000-010	10YR6/3	10YR4/4	GRAVELLY	SOFT	FRIABLE	SLTLY STICKY	16.5	56.8	18.9	7.8
BARE	C1	010-021	10YR6/4	10YR4/4	GRAVELLY	SOFT	FRIABLE	SLTLY STICKY	25.9	44.9	18.5	10.7

PROFILE TYPE	HOR- IZON	<u>PER CENT MOISTURE RETENTION</u>				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR												(MEQ/LITER)	
SHRUB	A11	35.5	14.8	11.4	9.2	7.8	8.4	1.86	25.0	0.65	1.30	22.14	11.76	0.70	0.00	0.43	0.00	
SHRUB	A12	25.2	18.3	15.2	10.2	8.5	8.9	0.79	19.0	0.95	1.44	6.36	5.37	0.90	0.00	0.21	0.00	
SHRUB	C1	33.3	19.5	16.5	10.7	8.3	8.9	0.72	26.0	0.85	0.88	4.02	2.50	1.00	0.00	0.15	0.00	
BARE	A12	27.8	13.9	12.0	7.3	8.6	9.0	0.44	17.0	0.85	0.17	3.35	2.01	0.70	0.00	0.10	0.00	
BARE	C1	29.2	19.1	16.2	9.6	8.5	9.0	0.36	20.0	0.60	0.13	3.35	2.01	0.80	0.00	0.09	0.00	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A11	2.90	0.23	0.90	14.62	1.5	15.8	1.16	1.0	1.30	0.15	3.80	.211	WK.FINE	SUB.ANG.B
SHRUB	A12	0.85	0.18	2.26	6.56	2.0	9.0	0.00	0.2	0.98	0.20	2.20	.086	WK.FINE	SUB.ANG.B
SHRUB	C1	0.74	0.17	1.67	16.91	0.9	18.8	0.00	0.3	0.48	0.10	3.10	.074	WK.FINE	SUB.ANG.B
BARE	A12	0.31	0.26	0.88	12.11	2.0	13.3	0.00	0.3	0.70	0.20	1.10	.038	WK.FINE	SUB.ANG.B
BARE	C1	0.56	0.18	0.88	16.44	1.0	17.5	0.00	0.2	0.55	0.15	2.20	.053	WK.FINE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
76	YUCCA FLAT	1220	3	E	BAJADA	MODERATE	60-80%	LIMESTONE	SMOOTH	WELL	RAPID

PROFILE TYPE	HORIZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-009	10YR6/3	10YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	18.4	66.1	10.7	4.8
SHRUB	C1	009-057	10YR6/3	10YR5/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	26.3	64.6	7.4	1.7
SHRUB	C2	057+	10YR6/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	49.9	45.9	3.0	1.2

PROFILE TYPE	HORIZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25	PER CENT LIME	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.	(MMHOS /CM)	(<2.0MM)	NA	K	CA	MG	CL	NO3	SO4		PPM
SHRUB	A1	30.3	18.3	16.0	6.2	8.2	8.5	0.72	17.0	0.33	0.72	5.28	5.54	0.08	0.00	0.10		0.50
SHRUB	C1	31.4	15.2	10.6	6.5	8.4	8.8	0.61	12.0	1.00	1.80	5.28	2.82	0.00	0.00	0.13		0.20
SHRUB	C2	25.0	9.3	6.9	4.5	8.6	8.9	0.68	33.0	4.70	0.87	2.76	1.29	0.17	0.00	0.18		0.80

PROFILE TYPE	HORIZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	0.75	0.31	1.18	11.13	2.5	12.6	1.08	0.7	0.91	0.10	0.95	.082	WK.FINE	SUB.ANG.B
SHRUB	C1	0.36	0.34	2.44	9.34	2.9	12.1	0.24	0.2	2.40	0.10	0.80	.044	NO STR.	MASSIVE
SHRUB	C2	0.28	0.63	1.73	6.89	6.8	9.3	0.28	0.2	2.85	0.10	1.20	.029	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
77	YUCCA FLAT	1463	5	E	BAJADA	MODERATE	40-60%	LMSTN_TUF	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR-IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-015	5YR5/3	5YR3/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	44.6	37.8	11.0	6.6
SHRUB	A3	015-046	5YR6/4	5YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	48.9	34.2	10.0	6.9
SHRUB	B2	046-099	5YR5/4	5YR4/4	SMOOTH	HARD	FRIABLE	SLTLY STICKY	76.6	3.1	8.0	12.3
BARE	A3	000-036	5YR6/4	5YR4/4	GRAVELLY	SOFT	FRIABLE	NON-STICKY	54.0	31.4	9.3	5.3
BARE	B2	036-079	5YR5/4	5YR4/4	SMOOTH	HARD	FRIABLE	SLTLY STICKY	70.2	9.0	9.4	11.4

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	29.4	13.1	10.9	7.4	8.4	8.7	4.30	3.0	2.14	9.24	29.66	24.34	6.14	11.25	1.50	0.50	
SHRUB	A3	23.3	12.4	10.3	7.3	8.5	8.1	1.02	3.5	1.28	3.05	7.38	1.80	1.00	0.00	0.05	1.20	
SHRUB	B2	28.6	13.1	9.8	8.1	8.2	8.2	0.51	2.0	1.10	0.20	3.09	1.77	0.65	0.00	0.01	0.00	
BARE	A3	18.7	11.2	8.5	6.4	8.4	8.2	0.40	1.0	0.32	0.34	3.22	1.37	1.08	0.00	0.13	0.00	
BARE	B2	26.7	11.4	10.3	8.3	8.3	8.2	0.32	2.0	0.52	0.20	3.36	0.35	1.00	0.00	0.07	0.00	

PROFILE TYPE	HOR-IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A1	1.21	0.19	4.38	9.48	1.4	14.1	2.70	0.5	1.07	0.40	3.65	.134	WK.FINE	SUB.ANG.B
SHRUB	A3	0.35	0.27	2.73	9.62	2.1	12.6	0.32	0.2	0.54	0.50	1.55	.069	WK.FINE	SUB.ANG.B
SHRUB	B2	0.17	0.27	0.74	10.86	2.3	11.9	0.16	0.5	0.48	0.55	1.85	.049	STR.CRSE	SUB.ANG.B
BARE	A3	0.21	0.14	0.84	9.97	1.3	11.0	0.16	0.3	1.47	0.40	1.60	.052	WK.FINE	SUB.ANG.B
BARE	B2	0.18	0.24	0.84	11.54	1.9	12.6	0.12	0.3	0.56	0.55	2.00	.049	STR.CRSE	SUB.ANG.B

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
78	YUCCA FLAT	1402	6	E	BAJADA	MODERATE	20-40%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-005	10YR4/3	10YR3/2	GRAVELLY	SOFT	FRIABLE	NON-STICKY	67.5	18.3	8.4	5.8
SHRUB	C1	005-031	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	60.6	27.9	7.0	4.5
SHRUB	C2	031-082	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	57.5	35.5	4.6	2.4
SHRUB	C3	082-112	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	36.7	53.2	7.1	3.0
BARE	C1	000-026	10YR6/3	10YR4/3	GRAVELLY	SOFT	FRIABLE	NON-STICKY	54.9	36.4	5.8	2.9
BARE	C2	026-076	10YR7/3	10YR4/3	GRAVELLY	LOOSE	LOOSE	NON-STICKY	65.7	26.0	5.3	3.0
BARE	C3	076-109	10YR7/3	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	36.0	54.6	6.7	2.7

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PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH PASTE	PH SAT. EXT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0 MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0	1/3	1	15					NA	K	CA	MG	CL	NO3	SO4		
		SAT.	BAR	BAR	BAR					(MEQ/LITER)				(MEQ/LITER)				
SHRUB	A1	38.1	15.2	11.8	9.5	8.1	8.5	2.17	12.0	0.85	6.50	19.06	9.23	2.55	0.63	0.13	3.50	
SHRUB	C1	20.4	11.5	7.9	5.9	8.5	8.6	1.04	14.0	0.73	3.49	7.11	2.35	1.07	0.63	0.05	2.80	
SHRUB	C2	24.6	11.2	7.7	5.3	8.3	8.7	0.64	20.0	1.08	0.20	4.70	2.22	0.94	0.63	0.03	1.70	
SHRUB	C3	27.1	13.5	10.7	7.5	8.5	8.5	0.44	12.0	1.58	0.06	2.42	1.54	0.77	0.00	0.01	0.00	
BARE	C1	21.0	11.5	6.8	5.3	8.4	8.4	0.41	14.0	0.28	0.55	3.09	0.56	0.37	0.00	0.01	1.50	
BARE	C2	22.1	10.1	7.3	5.3	8.4	8.6	0.35	16.0	0.37	0.30	2.15	1.63	0.58	0.00	0.03	0.00	
BARE	C3	26.2	12.2	8.8	6.9	8.5	8.5	0.36	13.0	0.58	0.26	2.01	0.36	0.58	0.00	0.03	0.00	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DTPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE	ZN	CU	MN			
SHRUB	A1	3.80	0.29	2.55	15.23	1.6	18.1	2.96	0.8	1.75	0.40	8.95	.264	NO STR.	SINGLE.GR
SHRUB	C1	0.32	0.33	2.21	7.46	3.3	10.0	0.36	0.3	0.63	0.40	1.20	.049	WK.FINE	SUB.ANG.B
SHRUB	C2	0.30	0.36	0.50	8.26	3.9	9.1	0.08	0.2	0.67	0.30	1.55	.043	NO STR.	SINGLE.GR
SHRUB	C3	0.23	0.47	0.50	11.65	3.7	12.6	0.12	0.3	0.82	0.40	0.95	.038	NO STR.	SINGLE.GR
BARE	C1	0.23	0.24	0.94	8.82	2.4	10.0	0.32	0.3	0.72	0.30	1.05	.044	WK.FINE	SUB.ANG.B
BARE	C2	0.24	0.29	0.74	8.22	3.1	9.3	0.12	0.3	0.55	0.30	1.15	.043	NO STR.	SINGLE.GR
BARE	C3	0.23	0.28	0.94	8.28	2.9	9.5	0.04	0.3	0.46	0.35	1.05	.039	NO STR.	SINGLE.GR

SITE DESCRIPTION OF SOIL PROFILE WITH PHYSICAL AND CHEMICAL PROPERTIES OF HORIZONS BENEATH SHRUB CLUMPS AND BELOW BARE AREAS

SITE NO.	AREA	ELEVATION METERS	SLOPE %	ASPECT	PHYSIOGRAPHY	EROSION	% SURFACE STONINESS	SOIL ORIGIN	RELIEF	DRAINAGE	PERMEABILITY
79	YUCCA FLAT	1341	4	E	BAJADA	MODERATE	20-40%	LIMESTONE	SMOOTH	WELL	MODERATE

PROFILE TYPE	HOR- IZON	DEPTH CM	COLOR DRY	COLOR WET	PHASE	CONSISTENCE DRY	CONSISTENCE MOIST	CONSISTENCE WET	PARTICLE SIZE DISTRIBUTION (MM) %			
									COARSE SAND 2-0.25	FINE SAND 0.25-0.05	SILT 0.05-0.002	CLAY <0.002
SHRUB	A1	000-007	10YR5/3	10YR3/2	SMOOTH	SOFT	FRIABLE	NON-STICKY	45.8	43.6	6.6	4.0
SHRUB	C1	007-030	10YR5/4	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	42.7	47.0	5.9	4.4
SHRUB	C2	030-059	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	58.7	31.5	5.3	4.5
SHRUB	C3	059-113	10YR7/3	10YR5/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	59.9	33.3	4.4	2.4
BARE	C1	000-018	10YR5/4	10YR4/3	GRAVELLY	LOOSE	FRIABLE	NON-STICKY	57.4	33.5	5.5	3.6
BARE	C2	018-046	10YR7/3	10YR5/4	GRAVELLY	LOOSE	LOOSE	NON-STICKY	57.8	35.1	4.7	2.4
BARE	C3	046+	10YR7/3	10YR5/4	COBB & GRAVL	LOOSE	LOOSE	NON-STICKY	53.7	38.7	5.2	2.4

PROFILE TYPE	HOR- IZON	PER CENT MOISTURE RETENTION				PH	PH SAT.	EC 25 (MMHOS /CM)	PER CENT LIME (<2.0MM)	SAT. EXTRACT SOLUBLE CATIONS AND ANIONS								SAT. EX BORON PPM
		0 SAT.	1/3 BAR	1 BAR	15 BAR	PASTE	EXT.			NA	K	CA	MG	CL	NO3	SO4		
SHRUB	A1	35.8	12.8	9.5	7.0	8.3	8.4	2.68	10.0	0.44	16.70	10.86	13.44	10.30	0.00	0.63	0.60	
SHRUB	C1	22.9	10.8	8.3	5.1	8.4	8.8	0.78	10.0	0.21	3.60	3.96	2.79	2.07	0.00	0.13	0.20	
SHRUB	C2	25.0	10.4	7.8	5.6	8.4	8.3	0.57	9.0	0.29	2.25	2.64	2.82	0.81	0.00	0.13	0.50	
SHRUB	C3	21.4	9.9	7.3	4.9	8.4	8.7	0.40	19.0	0.45	1.60	2.64	2.78	0.65	0.00	0.13	0.20	
BARE	C1	18.2	9.6	7.7	5.4	8.3	8.7	0.41	8.0	0.23	0.40	2.68	2.72	0.52	0.00	0.10	0.00	
BARE	C2	22.5	9.8	8.0	5.8	8.3	8.7	0.32	13.0	0.26	0.30	2.64	1.61	0.33	0.00	0.10	0.10	
BARE	C3	24.1	12.3	7.8	5.8	8.3	8.6	0.34	17.0	0.50	0.28	2.68	2.78	0.44	0.00	0.10	0.10	

PROFILE TYPE	HOR- IZON	ORGANIC CARBON %	EXCHANGEABLE CATIONS (MEQ/100 GM)			EXCH. NA %	CATION EXCH. CAP. (MEQ/100GM)	P (NAHCO3) PPM	DIPA-EXTRACTABLE MICRONUTRIENTS				ORGANIC N %	STRUCTURE	
			NA	K	CA+MG				FE PPM	ZN PPM	CU PPM	MN PPM			
SHRUB	A1	1.28	0.35	3.77	8.25	2.8	12.4	2.84	0.5	0.49	0.25	3.75	.176	WK.FINE	PLATY
SHRUB	C1	0.30	0.35	2.47	7.93	3.3	10.8	0.56	0.3	0.53	0.15	1.25	.061	NO STR.	SINGLE.GR
SHRUB	C2	0.31	0.34	4.66	5.00	3.4	10.0	0.16	0.3	0.41	0.20	1.20	.058	NO STR.	SINGLE.GR
SHRUB	C3	0.19	0.34	1.64	6.94	3.8	8.9	0.08	0.2	0.30	0.15	0.80	.033	NO STR.	SINGLE.GR
BARE	C1	0.22	0.30	0.81	7.64	3.5	8.8	0.20	0.5	0.70	0.20	1.00	.039	NO STR.	SINGLE.GR
BARE	C2	0.25	0.34	0.71	9.20	3.3	10.3	0.08	0.3	0.38	0.25	0.95	.047	NO STR.	SINGLE.GR
BARE	C3	0.22	0.36	0.76	8.63	3.7	9.8	0.12	0.2	0.44	0.15	0.75	.034	NO STR.	SINGLE.GR

APPENDIX C

ECOLOGICAL CHARACTERISTICS OF PERENNIAL VEGETATION AT SOIL PROFILE STUDY SITES

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1	MERCURY VALLEY	6700	17.5	1426.9	1613.6	5800	1137.2	811.3	1159.1	900	609.9	615.6	454.4

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	500	7.5	2.3	39.4	6.7	18.6	500	39.4	6.7	18.6	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	2900	43.3	14.4	251.8	70.3	360.6	2700	213.9	57.9	297.2	200	37.9	12.4	63.4
EPHEDRA FUNEREA	1200	17.9	25.4	444.1	229.1	503.5	800	255.1	149.7	329.0	400	188.9	79.4	174.5
EUROTIA LANATA	100	1.5	0.0	0.2	0.0	0.0	100	0.2	0.0	0.0	0	0.0	0.0	0.0
AMBROSIA DUMOSA	100	1.5	0.3	4.9	1.0	2.2	100	4.9	1.0	2.2	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	100	1.5	0.3	5.5	0.4	1.0	100	5.5	0.4	1.0	0	0.0	0.0	0.0
LARREA TRIDENTATA	1200	17.9	31.1	544.1	448.3	704.0	1000	362.0	225.9	490.6	200	182.1	222.4	213.5
LYCIUM ANDERSONII	100	1.5	0.7	11.6	3.1	15.8	100	11.6	3.1	15.8	0	0.0	0.0	0.0
MENODORA SPINESCENS	200	3.0	0.1	2.4	0.1	1.2	200	2.4	0.1	1.2	0	0.0	0.0	0.0
YUCCA SCHIDIGERA	300	4.5	25.4	443.2	667.8	6.7	200	242.2	366.4	3.7	100	201.0	301.4	3.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
2	MERCURY VALLEY	5600	15.2	1270.5	1302.0	5300	1383.2	1187.2	1158.8	300	135.1	83.3	143.2

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	700	12.5	1.4	20.6	3.3	9.3	700	20.6	3.3	9.3	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	800	14.3	3.3	49.6	13.6	70.0	800	49.6	13.6	70.0	0	0.0	0.0	0.0
EPHEDRA FUNEREA	200	3.6	7.1	107.7	68.8	151.2	100	63.6	44.5	97.8	100	44.2	24.3	53.4
AMBROSIA DUMOSA	300	5.4	0.7	9.9	1.7	3.7	300	9.9	1.7	3.7	0	0.0	0.0	0.0
LARREA TRIDENTATA	900	16.1	37.6	570.5	513.8	634.3	800	479.8	454.8	544.5	100	90.7	59.0	89.8
LYCIUM ANDERSONII	300	5.4	10.3	156.9	71.5	156.1	300	156.9	71.5	156.1	0	0.0	0.0	0.0
MENODORA SPINESCENS	1600	28.6	13.8	208.9	33.1	271.4	1600	208.9	33.1	271.4	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	600	10.7	0.3	3.8	0.5	0.2	500	3.6	0.5	0.2	100	0.2	0.0	0.0
YUCCA SCHIDIGERA	200	3.6	25.7	390.3	564.1	5.6	200	390.3	564.1	5.6	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA	
1	3	MERCURY VALLEY	6000	20.4	1501.2	1932.7	5100	1445.9	1010.2	1476.1	900	598.9	490.9	456.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHUCKLEYI	600	10.0	0.6	11.4	1.7	4.8	600	11.4	1.7	4.8	0	0.0	0.0	0.0
EPHEDRA FUNEREA	300	5.0	6.3	129.3	84.7	186.2	300	129.3	84.7	186.2	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	100	1.7	0.0	0.2	0.0	0.0	100	0.2	0.0	0.0	0	0.0	0.0	0.0
EUROTIA LANATA	300	5.0	0.7	13.5	6.3	18.9	300	13.5	6.3	18.9	0	0.0	0.0	0.0
AMBROSIA DUMOSA	1300	21.7	8.8	179.5	58.8	130.9	1100	162.7	53.3	118.7	200	16.8	5.5	12.2
GRAYIA SPINOSA	300	5.0	3.6	73.0	41.0	81.8	300	73.0	41.0	81.8	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	300	5.0	3.6	74.5	14.3	31.0	200	43.9	9.4	20.4	100	30.7	4.9	10.6
LARREA TRIDENTATA	1600	26.7	46.0	940.7	702.7	1103.3	1300	661.0	467.0	828.9	300	279.7	235.7	274.4
LYCIUM ANDERSONII	700	11.7	15.4	314.0	180.6	367.6	500	175.0	95.0	209.8	200	139.0	85.6	157.8
YUCCA SCHIDIGERA	300	5.0	14.9	303.8	409.7	4.1	200	171.1	250.5	2.5	100	132.7	159.2	1.6
LEPIDIUM FREMONTII	200	3.3	0.2	4.9	1.3	4.1	200	4.9	1.3	4.1	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
4	MERCURY VALLEY	16200	18.9	1001.1	1806.1	13900	1219.2	520.8	1175.6	2300	675.2	480.3	630.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHUCKLEYI	5800	35.8	14.4	272.4	63.1	176.2	5300	227.9	53.5	149.3	500	44.5	9.6	26.9
EPHEDRA FUNEREA	200	1.2	2.3	43.4	22.7	49.8	200	43.4	22.7	49.8	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	100	0.6	0.0	0.4	0.0	0.0	100	0.4	0.0	0.0	0	0.0	0.0	0.0
EUROTIA LANATA	2700	16.7	8.9	168.3	70.1	211.0	2300	126.5	49.8	150.0	400	41.9	20.3	61.0
AMBROSIA DUMOSA	2100	13.0	11.1	209.6	80.3	178.8	1700	146.9	49.9	111.0	400	62.7	30.5	67.8
GRAYIA SPINOSA	1600	9.9	13.0	246.8	119.0	237.4	1200	154.6	76.1	151.9	400	92.2	42.9	85.5
LARREA TRIDENTATA	600	3.7	21.9	415.4	350.2	525.2	300	183.9	138.3	233.3	300	231.5	211.9	291.9
LYCIUM ANDERSONII	1000	6.2	19.4	368.4	157.6	412.8	800	293.6	120.0	316.7	200	74.8	37.6	96.1
ORYZOPSIS HYMENOIDES	900	5.6	0.2	4.2	1.1	6.6	900	4.2	1.1	6.6	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	600	3.7	1.3	25.0	7.0	2.9	600	25.0	7.0	2.9	0	0.0	0.0	0.0
YUCCA SCHIDIGERA	100	0.6	6.7	127.6	127.6	1.3	0	0.0	0.0	0.0	100	127.6	127.6	1.3
MACHAERA RA TORTIFOLIA	500	3.1	0.7	13.0	2.4	3.9	500	13.0	2.4	3.9	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1	7 MERCURY VALLEY	4900	15.8	1166.9	1375.8	4200	1103.2	800.6	887.8	700	480.7	366.4	487.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
DALEA FREMONTII	200	4.1	3.4	53.9	15.5	38.2	200	53.9	15.5	38.2	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	100	2.0	4.5	71.6	36.5	53.0	100	71.6	36.5	53.0	0	0.0	0.0	0.0
AMBROSIA DUMOSA	1100	22.4	12.9	203.7	73.5	163.7	1000	153.5	54.4	121.2	100	50.2	19.1	42.5
GRAYIA SPINOSA	1300	26.5	2.2	34.5	14.1	28.1	1300	34.5	14.1	28.1	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	400	8.2	5.9	93.0	16.6	35.9	300	68.8	12.2	26.5	100	24.2	4.4	9.4
LARREA TRIDENTATA	1200	24.5	42.0	665.8	575.0	789.8	900	411.1	311.1	514.2	300	254.6	263.9	275.6
LYCIUM ANDERSONII	300	6.1	15.3	242.4	135.3	264.0	100	90.7	56.2	103.6	200	151.7	79.0	160.4
SPHAERALCEA AMBIGUA	200	4.1	0.1	1.5	0.1	0.1	200	1.5	0.1	0.1	0	0.0	0.0	0.0
YUCCA SCHIDIGERA	100	2.0	13.7	217.6	300.3	3.0	100	217.6	300.3	3.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1	8 MERCURY VALLEY	12800	17.2	729.5	1463.4	11200	1324.3	499.3	1161.8	1600	391.4	230.2	301.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	2400	18.8	2.5	42.6	7.4	20.6	2200	36.4	6.4	17.9	200	6.3	1.0	2.7
COLEOGYNE RAMOSISSIMA	100	0.8	0.0	0.6	0.1	0.3	100	0.6	0.1	0.3	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	900	7.0	2.4	40.5	12.5	18.1	800	8.3	1.2	1.8	100	32.2	11.3	16.3
AMBROSIA DUMOSA	4900	38.3	34.6	593.4	170.2	378.9	4000	500.9	143.4	319.3	900	92.4	26.8	59.7
KRAMERIA PARVIFOLIA	500	3.9	10.1	173.7	39.7	85.8	500	173.7	39.7	85.8	0	0.0	0.0	0.0
LARREA TRIDENTATA	1800	14.1	46.7	800.6	481.6	887.5	1600	541.2	290.6	666.0	200	259.4	191.0	221.5
LYCIUM ANDERSONII	200	1.6	2.3	39.3	12.5	47.5	200	39.3	12.5	47.5	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	1700	13.3	0.7	12.8	2.2	13.8	1500	11.6	2.1	12.4	200	1.1	0.2	1.4
SPHAERALCEA AMBIGUA	200	1.6	0.0	0.2	0.0	0.0	200	0.2	0.0	0.0	0	0.0	0.0	0.0
LEPIDIUM FREMONTII	100	0.8	0.7	11.9	3.3	10.8	100	11.9	3.3	10.8	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 9	MERCURY VALLEY	14900	14.9	427.7	1078.1	12200	984.2	282.2	734.4	2700	502.3	145.5	343.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
AMBROSIA DUMOSA	6400	43.0	71.9	1068.3	311.2	692.7	4300	694.0	198.6	442.0	2100	374.4	112.6	250.7
KRAMERIA PARVIFOLIA	2600	17.4	16.3	242.2	46.7	101.0	2300	159.9	30.2	65.4	300	82.2	16.5	35.7
LARREA TRIDENTATA	800	5.4	9.2	136.5	55.2	235.2	700	128.2	53.0	218.0	100	8.3	2.2	17.2
LYCIUM ANDERSONII	100	0.7	2.5	37.4	14.2	40.0	0	0.0	0.0	0.0	100	37.4	14.2	40.0
ORYZOPSIS HYMENOIDES	5000	33.6	0.1	2.1	0.4	9.1	4900	2.1	0.4	9.0	100	0.0	0.0	0.1

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 10	MERCURY VALLEY	11200	17.9	724.0	1599.6	8800	1253.0	514.6	1153.6	2400	533.6	209.4	446.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	200	1.8	0.3	4.6	0.6	1.8	200	4.6	0.6	1.8	0	0.0	0.0	0.0
EPHEDRA FUNEREA	500	4.5	10.8	192.4	93.2	204.8	200	58.0	31.1	68.5	300	134.4	62.0	136.3
EUROTIA LANATA	300	2.7	0.3	5.0	1.3	3.9	200	0.8	0.1	0.4	100	4.2	1.2	3.5
AMBROSIA DUMOSA	5800	51.8	38.2	682.7	193.5	430.8	4600	514.3	148.1	329.8	1200	168.5	45.4	101.1
KRAMERIA PARVIFOLIA	400	3.6	7.4	132.0	31.1	67.3	300	76.6	16.7	36.1	100	55.4	14.4	31.1
LARREA TRIDENTATA	1600	14.3	26.7	476.5	252.5	713.8	1300	410.6	220.5	600.9	300	65.9	32.0	112.9
LYCIUM ANDERSONII	100	0.9	0.6	10.2	3.1	15.5	100	10.2	3.1	15.5	0	0.0	0.0	0.0
LYCIUM PALLIDUM	600	5.4	15.0	267.7	143.9	145.8	400	173.1	93.0	96.3	200	94.6	50.8	49.6
ORYZOPSIS HYMENOIDES	1500	13.4	0.1	2.4	0.4	4.5	1400	2.4	0.4	4.4	100	0.0	0.0	0.1
HILARIA RIGIDA	100	0.9	0.1	2.4	0.9	0.0	100	2.4	0.9	0.0	0	0.0	0.0	0.0
LEPIDIUM FREMONTII	100	0.9	0.6	10.7	3.5	11.5	0	0.0	0.0	0.0	100	10.7	3.5	11.5

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
12	MERCURY VALLEY	9700	15.6	1010.3	1589.5	8400	1131.2	777.4	1132.1	1300	430.6	232.9	457.4

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	5300	54.6	23.1	360.5	90.9	253.7	4700	239.1	54.5	152.3	600	121.4	36.3	101.4
EPHEDRA NEVADENSIS	300	3.1	0.8	12.9	3.2	4.6	300	12.9	3.2	4.6	0	0.0	0.0	0.0
EUROTIA LANATA	100	1.0	0.1	0.8	0.2	0.5	100	0.8	0.2	0.5	0	0.0	0.0	0.0
GRAYIA SPINOSA	1100	11.3	31.6	493.2	353.8	705.7	800	300.9	208.5	415.9	300	192.4	145.3	289.8
HYMENOCLEA SALSOLA	500	5.2	5.9	91.5	43.2	0.0	300	43.1	18.1	0.0	200	48.4	25.2	0.0
LARREA TRIDENTATA	400	4.1	22.5	351.9	419.8	352.5	400	351.9	419.8	352.5	0	0.0	0.0	0.0
LYCIUM ANDERSONII	700	7.2	14.9	233.5	94.0	254.2	600	176.1	71.7	200.2	100	57.4	22.4	54.1
ORYZOPSIS HYMENOIDES	1000	10.3	0.1	1.5	0.3	3.6	1000	1.5	0.3	3.6	0	0.0	0.0	0.0
LEPIDIUM FREMONTII	200	2.1	0.9	13.3	4.2	13.5	100	2.3	0.4	1.3	100	11.0	3.8	12.1
MACHAERANTHERA TORTIFOLIA	100	1.0	0.2	2.7	0.8	1.3	100	2.7	0.8	1.3	0	0.0	0.0	0.0

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SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
13	MERCURY VALLEY	8400	24.5	2195.5	2725.1	7000	1336.7	827.5	1547.2	1400	1116.2	1368.1	1177.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	2200	26.2	6.8	166.1	47.7	133.3	2100	157.0	44.9	125.4	100	9.1	2.8	7.9
AMBROSIA DUMOSA	500	6.0	3.4	83.4	31.8	70.9	500	83.4	31.8	70.9	0	0.0	0.0	0.0
GRAYIA SPINOSA	3500	41.7	40.0	982.1	609.2	1215.4	3000	636.8	401.4	800.8	500	345.3	207.8	414.6
LARREA TRIDENTATA	800	9.5	36.8	902.4	1380.7	909.8	300	173.7	237.8	214.4	500	728.7	1142.9	695.4
LYCIUM ANDERSONII	1300	15.5	12.6	310.0	122.2	383.3	1000	276.2	107.7	323.3	300	33.8	14.5	60.0
LEPIDIUM FREMONTII	100	1.2	0.4	9.6	3.8	12.4	100	9.6	3.8	12.4	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
14	MERCURY VALLEY	4700	9.0	586.5	501.4	4300	856.4	571.4	452.5	400	41.6	15.1	48.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
AMBROSIA DUMOSA	100	2.1	0.3	3.0	1.0	2.1	100	3.0	1.0	2.1	0	0.0	0.0	0.0
LYCIUM ANDERSONII	300	6.4	10.9	97.8	46.8	108.2	300	97.8	46.8	108.2	0	0.0	0.0	0.0
LEPIDIUM FREMONTII	3200	68.1	36.1	324.2	121.0	391.1	2800	282.6	105.9	342.2	400	41.6	15.1	48.9
STANLEYA PINNATA	1100	23.4	52.7	473.1	417.8	0.0	1100	473.1	417.8	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
15	MERCURY VALLEY	13900	16.6	686.1	931.9	11600	1089.7	391.7	562.4	2300	574.5	294.4	369.5

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
DALEA FREMONTII	2200	15.8	22.6	376.4	116.9	288.7	1900	280.9	73.1	180.6	300	95.5	43.8	108.1
EPHEDRA NEVADENSIS	1400	10.1	16.1	267.6	124.0	180.0	1100	193.9	86.7	125.9	300	73.6	37.3	54.1
EUROTIA LANATA	600	4.3	0.9	14.7	4.1	12.4	400	8.8	2.9	8.8	200	6.0	1.2	3.6
GRAYIA SPINOSA	300	2.2	6.0	99.3	50.3	100.4	100	21.6	12.5	25.0	200	77.6	37.8	75.3
HYMENOCLEA SALSOLA	2300	16.5	22.7	377.5	159.0	0.0	1600	224.4	90.0	0.0	700	153.0	69.0	0.0
KRAMERIA PARVIFOLIA	200	1.4	2.6	42.4	8.5	18.4	200	42.4	8.5	18.4	0	0.0	0.0	0.0
LYCIUM ANDERSONII	500	3.6	9.8	162.9	74.7	181.3	400	88.3	37.3	104.3	100	74.6	37.3	77.0
ORYZOPSIS HYMENOIDES	300	2.2	0.1	1.0	0.2	1.8	300	1.0	0.2	1.8	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	700	5.0	0.5	8.7	1.9	0.8	700	8.7	1.9	0.8	0	0.0	0.0	0.0
LEPIDIUM FREMONTII	300	2.2	3.4	56.8	33.7	108.9	200	33.0	18.3	59.0	100	23.7	15.4	49.9
MACHAERANTHERA TORTIFOLIA	3900	28.1	6.5	108.9	24.5	39.2	3700	103.5	23.6	37.8	200	5.4	0.9	1.4
MIRABILIS PUDICA	1000	7.2	3.3	54.8	10.7	0.0	900	49.9	10.0	0.0	100	4.9	0.7	0.0
STANLEYA PINNATA	200	1.4	5.6	93.3	77.6	0.0	100	33.2	26.5	0.0	100	60.1	51.1	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
16	MERCURY VALLEY	22800	19.2	765.8	1646.1	20500	1489.6	487.3	1232.6	2300	429.9	278.5	413.5

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	11100	48.7	31.6	606.1	116.9	326.3	10600	556.0	107.0	298.7	500	50.2	9.9	27.6
DALEA FREMONTII	100	0.4	0.0	0.9	0.1	0.1	100	0.9	0.1	0.1	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	1000	4.4	5.0	96.0	33.6	48.9	1000	96.0	33.6	48.9	0	0.0	0.0	0.0
EUROTIA LANATA	2000	8.8	5.3	101.3	34.7	104.4	1700	86.6	30.3	91.1	300	14.7	4.4	13.3
AMBROSIA DUMOSA	1800	7.9	1.8	33.8	8.0	17.8	1700	32.2	7.7	17.1	100	1.5	0.3	0.7
GRAYIA SPINOSA	3400	14.9	23.1	443.8	202.7	404.5	2600	327.5	149.2	297.6	800	116.3	53.6	106.9
HYMENOCLEA SALSOLA	200	0.9	2.0	39.2	18.2	0.0	100	25.1	12.5	0.0	100	14.2	5.7	0.0
LARREA TRIDENTATA	500	2.2	13.3	255.9	233.3	359.6	300	65.5	42.9	131.5	200	190.4	190.4	228.1
LYCIUM ANDERSONII	2000	8.8	15.8	302.7	101.7	383.1	1800	275.3	93.5	346.2	200	27.4	8.2	36.9
ORYZOPSIS HYMENOIDES	500	2.2	0.0	0.7	0.1	1.4	500	0.7	0.1	1.4	0	0.0	0.0	0.0
TEODADYMIA AXILLARIS	200	0.9	2.0	38.9	16.5	0.0	100	23.7	10.4	0.0	100	15.2	6.1	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
17	FRENCHMAN FLAT	15800	18.4	967.3	1532.9	13400	1220.3	583.4	1119.7	2400	623.7	383.9	413.2

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	2100	13.3	6.3	116.9	28.0	78.2	1900	101.3	24.0	66.9	200	15.6	4.0	11.2
EUROTIA LANATA	4600	29.1	8.6	159.5	53.4	160.8	3900	112.0	35.7	107.5	700	47.5	17.7	53.3
AMBROSIA DUMOSA	1100	7.0	3.4	61.8	15.8	35.1	900	49.1	11.7	25.9	200	12.6	4.1	9.1
GRAYIA SPINOSA	3100	19.6	16.8	309.4	157.4	314.0	2700	263.9	132.9	265.1	400	45.4	24.5	48.9
LARREA TRIDENTATA	600	3.8	20.3	374.8	254.1	419.9	500	271.0	186.6	323.8	100	103.8	67.5	96.1
LYCIUM ANDERSONII	900	5.7	8.5	157.6	62.1	217.3	700	132.4	52.1	176.1	200	25.2	10.0	41.2
LYCIUM PALLIDUM	1400	8.9	30.8	567.9	362.2	304.6	900	206.9	109.9	151.4	500	361.0	252.3	153.2
ORYZOPSIS HYMENOIDES	1000	6.3	0.1	1.0	0.1	2.4	1000	1.0	0.1	2.4	0	0.0	0.0	0.0
MACHAERANTHERA TORTIFOLIA	100	0.6	0.1	1.1	0.3	0.5	100	1.1	0.3	0.5	0	0.0	0.0	0.0
STIPA SPECIOSA	600	3.8	4.3	79.8	28.2	0.0	500	67.2	24.4	0.0	100	12.6	3.8	0.0
STANLEYA PINNATA	300	1.9	0.8	14.2	5.7	0.0	300	14.2	5.7	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
118	FRENCHMAN FLAT	14700	21.6	1225.0	2326.6	12800	1755.2	994.1	1888.2	1900	408.3	230.9	438.4

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	900	6.1	3.2	68.6	18.9	52.8	800	68.1	18.9	52.6	100	0.5	0.1	0.1
EUROTIA LANATA	4500	30.6	11.8	254.5	95.1	286.3	4100	222.7	83.6	251.6	400	31.8	11.5	34.6
AMBROSIA DUMOSA	1800	12.2	4.8	104.6	23.5	52.4	1800	104.6	23.5	52.4	0	0.0	0.0	0.0
GRAYIA SPINOSA	3900	26.5	25.3	548.4	288.7	575.9	2900	392.9	198.6	396.2	1000	155.5	90.1	179.8
LARREA TRIDENTATA	800	5.4	33.8	730.2	605.3	807.7	700	617.2	514.9	696.5	100	113.0	90.4	111.3
LYCIUM ANDERSONII	1600	10.9	20.9	452.5	192.6	545.2	1300	345.1	153.8	432.5	300	107.4	38.8	112.6
ORYZOPSIS HYMENOIDES	1200	8.2	0.2	4.7	0.9	6.4	1200	4.7	0.9	6.4	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
119	FRENCHMAN FLAT	14700	19.0	858.3	1771.8	11900	1233.3	487.2	919.2	2800	662.8	371.1	852.5

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	700	4.8	3.7	70.2	15.6	43.5	700	70.2	15.6	43.5	0	0.0	0.0	0.0
ATRIPLEX CANESCENS	600	4.1	18.6	352.8	247.7	725.9	100	23.7	11.9	34.8	500	329.0	235.9	691.1
EUROTIA LANATA	6000	40.8	24.2	458.6	169.9	511.3	5200	394.9	145.7	438.6	800	63.7	24.1	72.7
AMBROSIA DUMOSA	2400	16.3	15.1	286.4	74.9	166.8	2000	238.3	63.1	140.4	400	48.1	11.8	26.4
GRAYIA SPINOSA	600	4.1	4.9	93.0	40.1	80.1	400	59.4	27.0	54.0	200	33.6	13.1	26.1
HYMENOCLEA SALSOLA	900	6.1	12.9	244.4	143.6	0.0	600	135.4	89.3	0.0	300	109.0	54.3	0.0
LYCIUM ANDERSONII	200	1.4	1.9	36.3	13.3	48.4	200	36.3	13.3	48.4	0	0.0	0.0	0.0
LYCIUM PALLIDUM	900	6.1	11.7	222.1	109.7	150.0	700	183.9	91.3	124.5	200	38.2	18.4	25.4
MENODORA SPINESCENS	100	0.7	0.2	3.1	0.6	5.1	100	3.1	0.6	5.1	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	1200	8.2	0.7	13.5	1.6	10.0	1000	9.2	1.1	7.6	200	4.3	0.5	2.4
TEDRADYMIA AXILLARIS	500	3.4	3.8	71.8	33.5	0.0	400	44.5	22.6	0.0	100	27.3	10.9	0.0
ARTEMISIA SPINESCENS	600	4.1	2.3	44.1	7.7	30.8	500	34.5	5.6	22.3	100	9.6	2.1	8.5

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
22	FRENCHMAN FLAT	3000	21.2	2216.9	2370.0	2600	1916.8	2058.3	2111.9	400	205.7	158.6	258.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	700	23.3	2.3	49.3	12.2	34.1	600	32.3	7.1	19.9	100	17.0	5.1	14.2
EUROTIA LANATA	300	10.0	6.4	135.3	146.4	440.7	300	135.3	146.4	440.7	0	0.0	0.0	0.0
GRAYIA SPINOSA	200	6.7	4.9	104.3	86.4	172.4	200	104.3	86.4	172.4	0	0.0	0.0	0.0
LARREA TRIDENTATA	1400	46.7	84.3	1790.1	1946.9	1664.1	1200	1642.7	1818.2	1478.1	200	147.4	128.7	186.0
LYCIUM ANDERSONII	100	3.3	1.9	41.3	24.8	57.9	0	0.0	0.0	0.0	100	41.3	24.8	57.9
ORYZOPSIS HYMENOIDES	100	3.3	0.0	0.6	0.1	0.8	100	0.6	0.1	0.8	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	200	6.7	0.1	1.6	0.1	0.0	200	1.6	0.1	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
23	FRENCHMAN FLAT	3800	12.3	1066.5	1205.3	3200	629.6	529.3	668.3	600	598.8	537.2	537.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	300	7.9	1.8	21.8	6.1	16.9	200	9.2	2.3	6.4	100	12.6	3.8	10.5
AMBROSIA DUMOSA	200	5.3	2.3	28.0	8.1	18.1	200	28.0	8.1	18.1	0	0.0	0.0	0.0
GRAYIA SPINOSA	500	13.2	4.4	54.3	24.7	49.2	500	54.3	24.7	49.2	0	0.0	0.0	0.0
LARREA TRIDENTATA	900	23.7	81.1	996.4	970.1	1020.0	600	510.0	486.5	588.9	300	486.4	483.6	431.1
LYCIUM ANDERSONII	100	2.6	8.1	99.4	49.7	94.6	0	0.0	0.0	0.0	100	99.4	49.7	94.6
ORYZOPSIS HYMENOIDES	1600	42.1	0.3	3.4	0.6	6.6	1500	2.9	0.5	5.7	100	0.5	0.1	0.9
DALEA POLYADENIA	200	5.3	2.0	25.1	7.3	0.0	200	25.1	7.3	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
124	FRENCHMAN FLAT	14300	5.9	306.5	989.9	13600	559.3	290.9	942.9	700	32.1	15.6	47.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	1300	9.1	60.9	360.3	218.5	640.3	1200	329.6	203.2	595.4	100	30.7	15.3	44.9
ATRIPLEX CONFERTIFOLIA	100	0.7	13.3	78.5	62.8	322.2	100	78.5	62.8	322.2	0	0.0	0.0	0.0
EUROTIA LANATA	100	0.7	0.0	0.0	0.0	0.0	100	0.0	0.0	0.0	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	8900	62.2	1.7	10.0	2.0	27.4	8400	9.4	1.9	25.3	500	0.6	0.1	2.1
MIRABILIS PUDICA	3900	27.3	24.1	142.6	23.1	0.0	3800	141.8	23.0	0.0	100	0.8	0.1	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
125	FRENCHMAN FLAT	4500	15.2	1051.5	1381.2	3500	922.5	629.0	862.1	1000	595.3	422.5	519.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	400	8.9	0.8	12.1	2.1	5.7	400	12.1	2.1	5.7	0	0.0	0.0	0.0
DALEA FREMONTII	300	6.7	1.0	15.2	3.3	8.1	300	15.2	3.3	8.1	0	0.0	0.0	0.0
EUROTIA LANATA	200	4.4	0.3	3.8	0.6	1.9	200	3.8	0.6	1.9	0	0.0	0.0	0.0
AMBROSIA DUMOSA	900	20.0	3.5	53.1	12.2	27.3	600	22.8	5.2	11.5	300	30.3	7.1	15.8
GRAYIA SPINOSA	1100	24.4	7.8	118.1	60.8	121.4	1000	113.2	58.5	116.7	100	4.9	2.4	4.7
LARREA TRIDENTATA	1100	24.4	62.3	944.8	776.1	1038.9	600	512.3	445.9	587.4	500	432.5	330.2	451.5
LYCIUM ANDERSONII	200	4.4	7.0	105.6	23.7	69.9	200	105.6	23.7	69.9	0	0.0	0.0	0.0
LYCIUM PALLIDUM	300	6.7	17.5	265.0	172.7	108.0	200	137.4	89.7	60.9	100	127.6	82.9	47.1

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
26	FRENCHMAN FLAT	3400	8.0	508.8	995.0	3000	499.5	275.9	760.2	400	303.8	232.9	234.8

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	2200	64.7	61.5	494.3	286.9	840.7	1900	397.8	230.2	674.5	300	96.5	56.7	166.1
GRAYIA SPINOSA	100	2.9	0.1	0.8	0.1	0.2	100	0.8	0.1	0.2	0	0.0	0.0	0.0
LYCIUM ANDERSONII	200	5.9	4.1	33.0	11.7	43.6	200	33.0	11.7	43.6	0	0.0	0.0	0.0
LYCIUM PALLIDUM	300	8.8	33.6	270.1	209.5	108.1	200	62.8	33.3	39.5	100	207.3	176.2	68.6
ORYZOPSIS HYMENOIDES	400	11.8	0.2	1.5	0.3	2.3	400	1.5	0.3	2.3	0	0.0	0.0	0.0
MIRABILIS PUDICA	200	5.9	0.4	3.5	0.3	0.0	200	3.5	0.3	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
28	FRENCHMAN FLAT	8400	11.7	428.0	1009.5	7200	798.9	296.2	679.7	1200	366.8	131.7	329.8

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
CACTUS	500	6.0	0.6	6.8	1.0	0.0	500	6.8	1.0	0.0	0	0.0	0.0	0.0
DALEA FREMONTII	2200	26.2	43.4	505.5	184.2	455.0	1400	227.1	79.6	196.6	800	278.5	104.6	258.4
AMBROSIA DUMOSA	1200	14.3	7.4	85.8	22.6	50.4	1200	85.8	22.6	50.4	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	1400	16.7	22.3	259.9	56.9	123.1	1200	207.9	46.0	99.6	200	52.0	10.9	23.5
LARREA TRIDENTATA	700	8.3	20.4	237.9	139.5	323.8	600	202.1	123.4	276.8	100	35.8	16.1	46.9
LYCIUM ANDERSONII	300	3.6	3.0	34.4	13.5	43.5	300	34.4	13.5	43.5	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	1700	20.2	0.8	9.3	2.2	13.5	1600	8.8	2.0	12.6	100	0.5	0.1	0.9
PRUNUS FASCICULATA	100	1.2	1.9	21.6	7.6	0.0	100	21.6	7.6	0.0	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	200	2.4	0.4	4.2	0.5	0.2	200	4.2	0.5	0.2	0	0.0	0.0	0.0
MIRABILIS PUDICA	100	1.2	0.0	0.1	0.0	0.0	100	0.1	0.0	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 29	FRENCHMAN FLAT	12800	14.1	577.6	1324.0	12400	1258.6	505.0	1160.5	400	148.3	72.6	163.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	4900	38.3	5.2	73.4	10.1	28.2	4900	73.4	10.1	28.2	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	400	3.1	4.4	61.2	15.2	77.8	200	17.9	5.1	26.1	200	43.4	10.1	51.7
AMBROSIA DUMOSA	400	3.1	0.2	3.2	0.3	0.7	400	3.2	0.3	0.7	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	100	0.8	0.0	0.3	0.0	0.0	100	0.3	0.0	0.0	0	0.0	0.0	0.0
LARREA TRIDENTATA	900	7.0	37.9	533.5	390.1	626.2	700	428.6	327.6	514.4	200	104.9	62.5	111.9
ORYZOPSIS HYMENOIDES	500	3.9	0.2	3.4	0.6	3.8	500	3.4	0.6	3.8	0	0.0	0.0	0.0
MIRABILIS PUDICA	100	0.8	0.0	0.3	0.0	0.0	100	0.3	0.0	0.0	0	0.0	0.0	0.0
LYCIUM SHOCKLEYI	5500	43.0	52.0	731.5	161.3	587.4	5500	731.5	161.3	587.4	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 30	FRENCHMAN FLAT	11600	3.8	115.6	278.2	11300	350.3	101.9	238.2	300	30.2	13.8	40.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	3900	33.6	57.4	218.3	78.4	229.8	3700	189.0	64.8	189.9	200	29.3	13.6	40.0
ATRIPLEX CONFERTIFOLIA	1700	14.7	8.4	31.9	8.7	44.9	1700	31.9	8.7	44.9	0	0.0	0.0	0.0
AMBROSIA DUMOSA	100	0.9	1.8	6.8	1.6	3.5	100	6.8	1.6	3.5	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	500	4.3	0.1	0.5	0.0	0.0	500	0.5	0.0	0.0	0	0.0	0.0	0.0
STANLEYA PINNATA	5400	46.6	32.3	123.0	26.9	0.0	5300	122.1	26.7	0.0	100	0.9	0.1	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 31	FRENCHMAN FLAT	11100	10.6	284.1	1060.3	9400	777.5	191.6	780.4	1700	284.0	92.6	279.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	300	2.7	0.9	9.1	1.1	3.2	300	9.1	1.1	3.2	0	0.0	0.0	0.0
ATRIplex CONFERTIFOLIA	2300	20.7	13.8	146.3	37.7	193.5	2200	129.3	32.3	165.7	100	17.0	5.4	27.9
COLEOGYNE RAMOSISSIMA	700	6.3	11.9	126.8	57.0	298.0	600	105.1	46.6	243.6	100	21.6	10.4	54.3
DALEA FREMONTII	100	0.9	2.9	30.7	10.1	25.0	100	30.7	10.1	25.0	0	0.0	0.0	0.0
EPHEDRA FUNEREA	200	1.8	4.5	47.6	19.7	43.4	100	17.0	5.9	13.1	100	30.7	13.8	30.3
AMBROSIA DUMOSA	1400	12.6	9.7	103.1	26.5	58.9	1100	76.2	18.5	41.2	300	26.9	8.0	17.7
KRAMERIA PARVIFOLIA	500	4.5	6.3	67.2	12.4	26.8	300	33.6	6.0	13.1	200	33.6	6.4	13.8
LARREA TRIDENTATA	200	1.8	4.4	46.6	19.2	63.3	100	5.3	1.4	14.0	100	41.3	17.7	49.3
MENODORA SPINESCENS	900	8.1	5.8	61.3	8.6	70.2	800	44.4	6.0	49.4	100	17.0	2.5	20.9
ORYZOPSIS HYMENOIDES	200	1.8	0.0	0.2	0.0	0.5	200	0.2	0.0	0.5	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	500	4.5	0.1	0.9	0.1	0.0	500	0.9	0.1	0.0	0	0.0	0.0	0.0
SALAZARIA MEXICANA	100	0.9	1.7	17.7	5.3	0.0	100	17.7	5.3	0.0	0	0.0	0.0	0.0
LYCIUM SHOCKLEYI	3600	32.4	36.9	391.5	76.1	277.3	3000	308.1	58.1	211.6	600	83.5	18.0	65.7
YUCCA BREVIFOLIA	100	0.9	1.2	12.6	10.3	0.0	0	0.0	0.0	0.0	100	12.6	10.3	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 32	FRENCHMAN FLAT	4600	9.8	466.2	1174.3	4400	896.4	399.1	1061.6	200	87.6	67.1	112.7

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	200	4.3	0.4	3.9	0.6	1.8	200	3.9	0.6	1.8	0	0.0	0.0	0.0
CACTUS	100	2.2	0.3	2.5	0.4	0.0	100	2.5	0.4	0.0	0	0.0	0.0	0.0
AMBROSIA DUMOSA	1300	28.3	5.1	50.1	10.7	23.8	1300	50.1	10.7	23.8	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	600	13.0	15.3	150.9	43.4	93.8	600	150.9	43.4	93.8	0	0.0	0.0	0.0
LARREA TRIDENTATA	1800	39.1	53.9	530.8	307.1	785.8	1600	443.2	240.0	673.1	200	87.6	67.1	112.7
LYCIUM ANDERSONII	600	13.0	25.0	245.7	104.0	269.2	600	245.7	104.0	269.2	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 33	FRENCHMAN FLAT	9800	17.2	918.3	1559.1	8900	1350.2	647.9	1184.1	900	374.7	270.4	375.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	1200	12.2	2.5	43.0	5.4	15.1	1200	43.0	5.4	15.1	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	1100	11.2	7.4	127.9	37.7	193.3	800	92.7	27.8	142.7	300	35.2	9.9	50.6
LARREA TRIDENTATA	1000	10.2	53.6	925.2	757.1	919.8	700	627.2	505.0	626.1	300	298.0	252.1	293.7
ORYZOPSIS HYMENOIDES	200	2.0	0.1	2.2	0.3	2.0	200	2.2	0.3	2.0	0	0.0	0.0	0.0
LYCIUM SHOCKLEYI	6300	64.3	36.3	626.6	117.8	428.9	6000	585.1	109.3	398.2	300	41.5	8.4	30.7

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 34	FRENCHMAN FLAT	6900	3.1	95.2	277.2	6900	314.2	95.2	277.2	0	0.0	0.0	0.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	6200	89.9	98.4	309.2	94.6	277.2	6200	309.2	94.6	277.2	0	0.0	0.0	0.0
STANLEYA PINNATA	700	10.1	1.6	5.0	0.6	0.0	700	5.0	0.6	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
35	FRENCHMAN FLAT	4700	13.6	1308.3	1208.8	4300	1221.6	1219.3	1025.7	400	143.2	89.0	183.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	100	2.1	0.1	0.9	0.1	0.3	100	0.9	0.1	0.3	0	0.0	0.0	0.0
ATRIplex CONFERTIFOLIA	300	6.4	4.6	62.4	22.6	116.2	100	11.6	4.7	23.9	200	50.8	18.0	92.3
CACTUS	300	6.4	1.6	21.2	11.0	0.0	300	21.2	11.0	0.0	0	0.0	0.0	0.0
DALEA FREMONTII	900	19.1	5.3	71.8	18.6	46.0	900	71.8	18.6	46.0	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	200	4.3	5.7	77.1	38.2	55.5	200	77.1	38.2	55.5	0	0.0	0.0	0.0
AMBROSIA DUMOSA	100	2.1	2.1	28.3	10.5	23.3	100	28.3	10.5	23.3	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	200	4.3	3.3	45.4	20.3	0.0	100	23.7	9.5	0.0	100	21.6	10.8	0.0
KRAMERIA PARVIFOLIA	400	8.5	9.1	123.8	30.0	64.8	400	123.8	30.0	64.8	0	0.0	0.0	0.0
LARREA TRIDENTATA	1900	40.4	50.7	691.7	435.6	902.7	1800	620.9	375.4	811.9	100	70.8	60.2	90.8
SPHAERALCEA AMBIGUA	100	2.1	0.1	0.8	0.1	0.0	100	0.8	0.1	0.0	0	0.0	0.0	0.0
THAMNOSMA MONTANA	100	2.1	0.1	1.0	0.1	0.0	100	1.0	0.1	0.0	0	0.0	0.0	0.0
YUCCA BREVIFOLIA	100	2.1	17.6	240.4	721.2	0.0	100	240.4	721.2	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
36	FRENCHMAN FLAT	7600	12.1	743.6	1101.2	7100	909.3	561.8	791.2	500	305.5	181.8	310.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	700	9.2	2.8	34.3	6.3	17.5	700	34.3	6.3	17.5	0	0.0	0.0	0.0
EUROTIA LANATA	500	6.6	2.5	30.2	8.3	25.1	500	30.2	8.3	25.1	0	0.0	0.0	0.0
AMBROSIA DUMOSA	4500	59.2	15.5	188.8	46.2	102.8	4400	181.0	44.1	98.2	100	7.8	2.1	4.7
KRAMERIA PARVIFOLIA	100	1.3	6.9	84.1	27.8	60.0	0	0.0	0.0	0.0	100	84.1	27.8	60.0
LARREA TRIDENTATA	1000	13.2	71.7	871.3	654.0	893.0	700	657.7	502.1	647.7	300	213.6	151.9	245.4
ORYZOPSIS HYMENOIDES	300	3.9	0.2	1.9	0.4	2.6	300	1.9	0.4	2.6	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	500	6.6	0.4	4.3	0.6	0.2	500	4.3	0.6	0.2	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
137	FRENCHMAN FLAT	3700	14.2	927.6	2248.3	3300	966.9	516.7	1818.2	400	452.1	410.9	430.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	1600	43.2	39.4	559.0	281.4	1443.9	1500	540.5	275.9	1415.5	100	18.5	5.5	28.4
EUROTIA LANATA	200	5.4	1.0	13.6	5.9	17.7	200	13.6	5.9	17.7	0	0.0	0.0	0.0
AMBROSIA DUMOSA	500	13.5	0.7	9.5	1.7	3.9	500	9.5	1.7	3.9	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	200	5.4	4.6	64.9	29.2	0.0	200	64.9	29.2	0.0	0	0.0	0.0	0.0
LARREA TRIDENTATA	900	24.3	54.0	766.9	608.6	780.2	600	333.2	203.3	378.5	300	433.6	405.3	401.7
ORYZOPSIS HYMENOIDES	200	5.4	0.3	3.9	0.6	2.6	200	3.9	0.6	2.6	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	100	2.7	0.1	1.3	0.1	0.1	100	1.3	0.1	0.1	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
138	FRENCHMAN FLAT	6100	5.2	175.7	666.2	6100	524.2	175.7	666.2	0	0.0	0.0	0.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	5500	90.2	68.5	359.1	106.9	313.3	5500	359.1	106.9	313.3	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	600	9.8	31.5	165.2	68.8	352.9	600	165.2	68.8	352.9	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
139	FRENCHMAN FLAT	5000	9.0	332.1	1703.9	5000	896.2	332.1	1703.9	0	0.0	0.0	0.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	5000	100.0	100.0	896.2	332.1	1703.9	5000	896.2	332.1	1703.9	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
140	FRENCHMAN FLAT	2900	12.2	2303.8	1613.1	2400	620.1	566.4	690.2	500	1296.9	1737.3	923.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	1400	48.3	7.0	134.1	63.1	184.7	1400	134.1	63.1	184.7	0	0.0	0.0	0.0
EUROTIA LANATA	300	10.3	0.9	16.4	6.0	17.9	300	16.4	6.0	17.9	0	0.0	0.0	0.0
AMBROSIA DUMOSA	100	3.4	0.3	4.9	0.8	1.7	100	4.9	0.8	1.7	0	0.0	0.0	0.0
LARREA TRIDENTATA	900	31.0	91.3	1750.8	2230.6	1408.7	400	453.9	493.3	485.7	500	1296.9	1737.3	923.0
SPHAERALCEA AMBIGUA	100	3.4	0.1	1.2	0.2	0.1	100	1.2	0.2	0.1	0	0.0	0.0	0.0
DALEA POLYADENIA	100	3.4	0.5	9.6	3.2	0.0	100	9.6	3.2	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1	41 FRENCHMAN FLAT	4800	6.0	241.9	1007.4	4300	519.7	199.2	882.2	500	84.3	42.7	125.2

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CANESCENS	1100	22.9	22.7	136.9	65.2	191.1	700	59.6	25.0	73.3	400	77.3	40.2	117.8
ATRIPLEX CONFERTIFOLIA	2300	47.9	65.2	393.8	150.2	770.6	2300	393.8	150.2	770.6	0	0.0	0.0	0.0
EUROTIA LANATA	800	16.7	5.7	34.7	12.0	36.3	700	27.7	9.6	28.8	100	7.1	2.5	7.4
AMBROSIA DUMOSA	100	2.1	2.0	12.2	3.3	7.4	100	12.2	3.3	7.4	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	200	4.2	4.1	24.8	10.8	0.0	200	24.8	10.8	0.0	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	300	6.3	0.3	1.5	0.4	2.1	300	1.5	0.4	2.1	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1	42 FRENCHMAN FLAT	10100	14.6	473.9	1067.6	8500	1133.4	384.1	782.0	1600	329.1	89.8	285.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	1800	17.8	12.3	179.2	56.1	287.7	1200	78.8	22.8	117.1	600	100.5	33.3	170.6
EPHEDRA NEVAEENSIS	3300	32.7	47.2	689.7	278.7	404.7	3000	603.9	249.2	361.8	300	85.8	29.5	42.8
AMBROSIA DUMOSA	2200	21.8	8.9	130.4	28.7	63.8	2100	116.2	25.8	57.5	100	14.2	2.8	6.3
KRAMERIA PARVIFOLIA	2100	20.8	24.5	358.1	63.8	137.9	1600	238.5	42.3	91.4	500	119.6	21.5	46.5
LARREA TRIDENTATA	600	5.9	6.7	98.4	45.7	165.4	500	89.3	43.0	146.1	100	9.1	2.7	19.3
MENODORA SPINESCENS	100	1.0	0.5	6.6	1.0	8.1	100	6.6	1.0	8.1	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
143	FRENCHMAN FLAT	10700	13.5	740.2	1453.0	9400	780.7	338.8	764.3	1300	572.2	401.4	688.7

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	1100	10.3	1.8	23.9	5.5	15.4	1000	22.6	5.4	15.0	100	1.3	0.1	0.4
ATRIPLEX CANESCENS	700	6.5	4.4	60.0	19.1	56.1	600	55.1	17.9	52.5	100	4.9	1.2	3.6
ATRIPLEX CONFERTIFOLIA	400	3.7	3.7	50.7	24.3	124.5	400	50.7	24.3	124.5	0	0.0	0.0	0.0
EUROTIA LANATA	1500	14.0	8.6	116.3	47.0	141.4	1500	116.3	47.0	141.4	0	0.0	0.0	0.0
AMBROSIA DUMOSA	4300	40.2	13.4	180.8	36.8	81.9	4200	173.0	35.5	79.0	100	7.8	1.3	2.9
GRAYIA SPINOSA	200	1.9	3.3	44.2	25.3	50.5	100	33.2	20.9	41.7	100	11.0	4.4	8.8
LARREA TRIDENTATA	1400	13.1	64.6	874.3	581.9	979.3	500	327.2	187.6	306.3	900	547.1	394.3	673.0
ORYZOPSIS HYMENOIDES	1100	10.3	0.2	2.7	0.3	3.8	1100	2.7	0.3	3.8	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
144	FRENCHMAN FLAT	2800	5.8	229.1	671.7	2700	567.7	223.6	655.4	100	15.9	5.6	16.3

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ATRIPLEX CANESCENS	2400	85.7	99.7	581.9	228.8	670.4	2300	566.0	223.2	654.1	100	15.9	5.6	16.3
EUROTIA LANATA	100	3.6	0.2	1.2	0.3	0.9	100	1.2	0.3	0.9	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	100	3.6	0.0	0.2	0.0	0.3	100	0.2	0.0	0.3	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	200	7.1	0.0	0.3	0.0	0.0	200	0.3	0.0	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
46	FRENCHMAN FLAT	4400	8.8	287.6	1464.9	4400	881.3	287.6	1464.9	0	0.0	0.0	0.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	4200	95.5	97.6	860.3	282.5	1449.4	4200	860.3	282.5	1449.4	0	0.0	0.0	0.0
EUROTIA LANATA	200	4.5	2.4	21.0	5.2	15.5	200	21.0	5.2	15.5	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
47	FRENCHMAN FLAT	9800	15.7	752.3	1378.9	8000	761.1	274.9	554.6	1800	809.4	477.4	824.3

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
DALEA FREMONTII	300	3.1	1.7	26.8	5.0	12.3	300	26.8	5.0	12.3	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	1400	14.3	10.9	171.9	60.7	88.1	1300	160.3	57.2	83.0	100	11.6	3.5	5.1
AMBROSIA DUMOSA	4800	49.0	22.8	357.8	105.4	234.6	4300	274.3	78.5	174.7	500	83.5	26.9	59.8
GRAYIA SPINOSA	2400	24.5	34.1	534.9	277.7	553.9	1700	229.0	105.2	209.8	700	306.0	172.5	344.1
KRAMERIA PARVIFOLIA	200	2.0	1.9	30.6	5.8	12.5	200	30.6	5.8	12.5	0	0.0	0.0	0.0
LARREA TRIDENTATA	700	7.1	28.6	448.5	297.9	477.5	200	40.2	23.3	62.2	500	408.3	274.5	415.3

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
148	FRENCHMAN FLAT	10100	23.1	1349.5	2241.2	8500	1563.5	872.8	1419.7	1600	749.1	476.7	821.5

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	900	8.9	1.4	33.0	6.2	17.4	900	33.0	6.2	17.4	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	2000	19.8	11.8	272.8	94.6	137.3	1800	233.7	82.1	119.2	200	39.1	12.5	18.1
AMBROSIA DUMOSA	2600	25.7	5.9	136.1	29.7	66.1	2500	128.1	28.1	62.5	100	8.0	1.6	3.6
GRAYIA SPINOSA	1300	12.9	8.3	191.7	103.9	207.3	1000	133.1	71.6	142.9	300	58.6	32.3	64.4
LARREA TRIDENTATA	2200	21.8	57.4	1328.2	964.8	1426.1	1300	744.9	561.5	752.2	900	583.3	403.3	673.9
LYCIUM ANDERSONII	900	8.9	14.9	344.5	149.4	386.6	800	284.4	122.3	325.1	100	60.1	27.0	61.5
ORYZOPSIS HYMENOIDES	100	1.0	0.0	0.0	0.0	0.1	100	0.0	0.0	0.1	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	100	1.0	0.3	6.4	1.0	0.4	100	6.4	1.0	0.4	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
149	FRENCHMAN FLAT	14500	14.3	563.9	1662.8	13200	1178.7	453.0	1371.2	1300	247.2	110.9	291.7

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	800	5.5	1.6	22.8	3.7	10.2	800	22.8	3.7	10.2	0	0.0	0.0	0.0
ATRIPLEX CONFERTIFOLIA	300	2.1	2.2	31.1	11.3	57.7	300	31.1	11.3	57.7	0	0.0	0.0	0.0
CACTUS	100	0.7	0.2	2.5	0.4	0.0	100	2.5	0.4	0.0	0	0.0	0.0	0.0
EPHEDRA FUNEREA	100	0.7	1.4	19.6	6.9	15.1	100	19.6	6.9	15.1	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	300	2.1	0.4	5.8	0.6	0.9	300	5.8	0.6	0.9	0	0.0	0.0	0.0
EUROTIA LANATA	1100	7.6	2.9	40.9	11.5	34.7	1000	38.9	11.1	33.6	100	2.0	0.4	1.1
AMBROSIA DUMOSA	500	3.4	2.3	33.4	6.3	14.0	500	33.4	6.3	14.0	0	0.0	0.0	0.0
GRAYIA SPINOSA	300	2.1	1.0	14.7	4.4	8.8	200	3.7	0.6	1.1	100	11.0	3.9	7.7
KRAMERIA PARVIFOLIA	300	2.1	3.4	48.4	11.8	25.6	200	26.7	5.3	11.6	100	21.6	6.5	14.0
LARREA TRIDENTATA	1900	13.1	50.3	717.1	431.4	949.7	1600	594.5	350.3	790.6	300	122.7	81.1	159.2
LYCIUM ANDERSONII	400	2.8	4.6	65.0	18.0	73.9	300	41.3	8.5	43.1	100	23.7	9.5	30.9
MENODORA SPINESCENS	7700	53.1	29.6	422.4	57.3	469.2	7100	356.3	47.7	390.5	600	66.1	9.6	78.7
ORYZOPSIS HYMENOIDES	600	4.1	0.1	2.0	0.4	2.9	600	2.0	0.4	2.9	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	100	0.7	0.0	0.2	0.0	0.0	100	0.2	0.0	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
50	ROCK VALLEY	10800	20.3	682.4	1405.5	8600	1445.9	477.2	994.4	2200	585.6	205.3	411.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	1200	11.1	6.2	126.5	43.3	62.9	900	70.9	24.2	35.1	300	55.6	19.2	27.8
EUROTIA LANATA	700	6.5	2.8	57.0	21.4	64.5	400	16.7	4.5	13.5	300	40.4	16.9	51.0
AMBROSIA DUMOSA	1800	16.7	11.7	238.4	78.5	174.7	1700	214.7	71.8	159.9	100	23.7	6.6	14.8
GRAYIA SPINOSA	2400	22.2	20.3	413.3	185.0	369.0	2000	308.9	134.6	268.5	400	104.5	50.4	100.5
KRAMERIA PARVIFOLIA	2200	20.4	28.6	580.2	82.9	179.2	1700	396.0	57.2	123.8	500	184.2	25.6	55.4
LARREA TRIDENTATA	400	3.7	6.3	127.3	50.1	153.4	300	103.6	41.8	119.7	100	23.7	8.3	33.7
LYCIUM ANDERSONII	700	6.5	7.5	152.4	70.9	206.0	600	116.6	49.4	153.4	100	35.8	21.5	52.6
LYCIUM PALLIDUM	1000	9.3	16.4	333.8	149.8	192.0	600	216.0	93.1	116.8	400	117.7	56.7	75.2
ORYZOPSIS HYMENOIDES	400	3.7	0.1	2.5	0.6	3.8	400	2.5	0.6	3.8	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
51	ROCK VALLEY	10400	20.3	939.7	1903.0	8200	1263.7	541.3	1164.3	2200	763.0	398.4	738.7

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	500	4.8	7.6	154.1	61.7	316.6	300	58.2	23.4	119.9	200	95.9	38.3	196.8
EPHEDRA NEVADENSIS	300	2.9	3.3	66.1	20.3	29.5	300	66.1	20.3	29.5	0	0.0	0.0	0.0
EUROTIA LANATA	600	5.8	1.6	33.1	9.7	29.3	500	25.3	6.6	19.9	100	7.8	3.1	9.4
AMBROSIA DUMOSA	4600	44.2	31.3	634.6	212.5	473.1	3800	427.9	139.9	311.4	800	206.7	72.7	161.7
GRAYIA SPINOSA	2200	21.2	20.0	405.6	204.9	408.7	1800	332.0	175.4	350.0	400	73.6	29.4	58.7
KRAMERIA PARVIFOLIA	900	8.7	7.0	142.7	31.8	68.8	700	100.7	24.3	52.5	200	41.9	7.5	16.3
LARREA TRIDENTATA	500	4.8	11.3	229.5	157.6	304.6	200	46.0	22.8	79.0	300	183.5	134.7	225.6
LYCIUM ANDERSONII	100	1.0	5.8	117.8	88.3	145.1	100	117.8	88.3	145.1	0	0.0	0.0	0.0
LYCIUM PALLIDUM	500	4.8	11.8	238.5	151.7	125.5	300	85.0	39.2	55.3	200	153.6	112.5	70.2
MACHAERANTHERA TORTIFOLIA	200	1.9	0.2	4.8	1.0	1.6	200	4.8	1.0	1.6	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
53	ROCK VALLEY	9900	26.6	1370.8	2567.9	8500	1617.4	675.0	1498.9	1400	1039.1	695.8	1069.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	500	5.1	0.7	19.1	3.7	10.3	500	19.1	3.7	10.3	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	400	4.0	2.1	55.1	18.6	27.1	400	55.1	18.6	27.1	0	0.0	0.0	0.0
AMBROSIA DUMOSA	4200	42.4	13.6	362.0	102.6	228.5	4100	352.4	99.2	220.7	100	9.6	3.5	7.7
GRAYIA SPINOSA	100	1.0	1.1	28.3	17.0	33.8	0	0.0	0.0	0.0	100	28.3	17.0	33.8
KRAMERIA PARVIFOLIA	1100	11.1	8.5	227.1	44.4	96.0	1100	227.1	44.4	96.0	0	0.0	0.0	0.0
LARREA TRIDENTATA	2100	21.2	46.3	1229.2	809.2	1336.8	1400	589.6	337.6	713.5	700	639.6	471.7	623.3
LYCIUM ANDERSONII	1400	14.1	27.7	735.2	375.2	835.5	900	373.6	171.5	431.3	500	361.6	203.7	404.2
MIRABILIS PUDICA	100	1.0	0.0	0.5	0.1	0.0	100	0.5	0.1	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
54	ROCK VALLEY	7900	28.0	1330.2	2440.7	6300	2010.4	918.7	1664.6	1600	785.6	411.6	776.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	1300	16.5	16.8	470.8	246.9	358.5	1200	435.0	230.1	334.1	100	35.8	16.8	24.4
AMBROSIA DUMOSA	1400	17.7	12.4	345.6	127.6	284.0	1000	236.6	89.5	199.2	400	109.0	38.1	84.8
GRAYIA SPINOSA	200	2.5	1.4	39.9	16.5	32.9	200	39.9	16.5	32.9	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	2800	35.4	23.3	652.2	120.8	261.2	2400	529.3	98.6	213.2	400	122.9	22.2	48.0
LARREA TRIDENTATA	1000	12.7	15.6	437.0	312.6	541.5	800	348.3	248.3	414.9	200	88.7	64.3	126.6
LYCIUM ANDERSONII	1100	13.9	30.0	837.6	500.5	950.6	600	408.4	230.3	458.3	500	429.2	270.1	492.2
LYCIUM PALLIDUM	100	1.3	0.5	12.9	5.4	12.0	100	12.9	5.4	12.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
55	ROCK VALLEY	9000	28.4	1545.4	3024.2	7100	1904.0	972.8	1985.0	1900	934.6	572.6	1039.3

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	100	1.1	0.3	9.6	3.6	5.2	100	9.6	3.6	5.2	0	0.0	0.0	0.0
EUROTIA LANATA	500	5.6	2.2	61.1	26.4	79.3	400	51.5	23.5	70.6	100	9.6	2.9	8.7
AMBROSIA DUMOSA	2900	32.2	12.0	340.7	97.4	216.7	2300	265.2	76.2	169.6	600	75.4	21.2	47.1
GRAYIA SPINOSA	1200	13.3	14.4	409.9	257.4	513.5	1000	280.8	176.1	351.3	200	129.2	81.3	162.1
KRAMERIA PARVIFOLIA	400	4.4	4.2	120.0	40.8	88.2	400	120.0	40.8	88.2	0	0.0	0.0	0.0
LARREA TRIDENTATA	1100	12.2	21.1	599.3	420.5	733.7	700	350.9	242.2	428.6	400	248.4	178.3	305.1
LYCIUM ANDERSONII	1900	21.1	39.0	1106.6	607.0	1266.9	1400	660.6	330.2	768.7	500	446.0	276.8	498.2
LYCIUM PALLIDUM	700	7.8	6.6	186.3	91.6	120.8	600	160.3	79.4	102.8	100	26.0	12.2	18.1
MIRABILIS PUDICA	200	2.2	0.2	5.1	0.8	0.0	200	5.1	0.8	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
56	ROCK VALLEY	6100	24.6	1490.4	2590.4	4700	1791.2	1007.1	1905.6	1400	670.8	483.3	684.8

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	400	6.6	7.8	192.7	78.0	113.2	400	192.7	78.0	113.2	0	0.0	0.0	0.0
AMBROSIA DUMOSA	1200	19.7	6.6	162.2	53.6	119.3	1200	162.2	53.6	119.3	0	0.0	0.0	0.0
GRAYIA SPINOSA	300	4.9	5.4	131.9	87.4	174.3	200	103.7	71.8	143.3	100	28.3	15.5	31.0
KRAMERIA PARVIFOLIA	400	6.6	4.2	104.3	19.2	41.6	200	70.8	12.6	27.3	200	33.5	6.6	14.3
LARREA TRIDENTATA	1600	26.2	34.5	848.5	648.0	1075.0	1200	594.5	397.6	764.9	400	254.0	250.4	310.1
LYCIUM ANDERSONII	1500	24.6	31.5	775.9	451.7	936.4	1100	564.0	339.8	688.0	400	211.9	111.9	248.4
LYCIUM PALLIDUM	600	9.8	9.7	239.4	150.1	129.5	300	96.3	51.2	48.6	300	143.1	98.9	81.0
SPHAERALCEA AMBIGUA	100	1.6	0.3	7.1	2.5	1.0	100	7.1	2.5	1.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
157	ROCK VALLEY	12700	24.0	1181.8	2417.9	10300	1440.2	642.1	1234.4	2400	955.2	539.7	1183.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
COLEOGYNE RAMOSISSIMA	100	0.8	1.3	30.7	12.3	64.2	100	30.7	12.3	64.2	0	0.0	0.0	0.0
DALEA FREMONTII	300	2.4	0.7	15.6	2.7	6.6	300	15.6	2.7	6.6	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	1300	10.2	11.9	285.0	126.4	183.6	1000	203.5	88.6	128.7	300	81.5	37.8	54.9
EUROTIA LANATA	300	2.4	1.1	26.1	6.5	19.6	300	26.1	6.5	19.6	0	0.0	0.0	0.0
AMBROSIA DUMOSA	4200	33.1	22.2	530.6	155.2	345.4	3600	421.4	126.0	280.4	600	109.2	29.2	65.0
GRAYIA SPINOSA	1900	15.0	10.8	258.1	128.5	256.3	1500	162.7	75.2	150.0	400	95.4	53.3	106.3
KRAMERIA PARVIFOLIA	100	0.8	0.9	21.6	4.3	9.4	0	0.0	0.0	0.0	100	21.6	4.3	9.4
LARREA TRIDENTATA	1400	11.0	24.0	575.6	373.7	761.1	800	278.3	172.1	383.4	600	297.3	201.6	377.7
LYCIUM ANDERSONII	600	4.7	15.4	367.7	220.5	411.5	300	74.3	38.3	96.8	300	293.4	182.2	314.7
LYCIUM PALLIDUM	500	3.9	7.8	186.1	110.2	92.7	500	186.1	110.2	92.7	0	0.0	0.0	0.0
MENODORA SPINESCENS	100	0.8	2.4	56.7	31.2	255.5	0	0.0	0.0	0.0	100	56.7	31.2	255.5
ORYZOPSIS HYMENOIDES	500	3.9	0.0	1.0	0.1	1.9	500	1.0	0.1	1.9	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	200	1.6	0.6	14.8	5.0	2.0	200	14.8	5.0	2.0	0	0.0	0.0	0.0
MACHAERANTHERA TORTIFOLIA	1000	7.9	1.1	25.2	5.1	8.2	1000	25.2	5.1	8.2	0	0.0	0.0	0.0
SALAZARIA MEXICANA	200	1.6	0.0	0.5	0.0	0.0	200	0.5	0.0	0.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
158	ROCK VALLEY	13800	29.2	1662.8	3161.2	11300	2187.4	1222.4	2351.5	2500	734.0	440.5	809.7

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	600	4.3	5.6	164.9	92.2	133.8	500	86.4	41.1	59.7	100	78.5	51.0	74.1
AMBROSIA DUMOSA	5500	39.9	12.5	364.5	84.7	188.6	4700	295.3	67.2	149.5	800	69.2	17.6	39.1
GRAYIA SPINOSA	4800	34.8	59.4	1734.6	1078.8	2152.2	3700	1282.2	794.3	1584.7	1100	452.4	284.5	567.6
LARREA TRIDENTATA	500	3.6	8.6	251.5	192.0	344.6	400	164.9	125.4	249.1	100	86.5	66.6	95.5
LYCIUM ANDERSONII	100	0.7	2.1	60.1	39.1	79.6	100	60.1	39.1	79.6	0	0.0	0.0	0.0
LYCIUM PALLIDUM	1600	11.6	11.7	341.6	175.2	259.8	1400	297.2	155.0	227.2	200	44.4	20.1	32.6
ORYZOPSIS HYMENOIDES	400	2.9	0.1	1.7	0.4	2.6	300	1.2	0.3	1.8	100	0.5	0.1	0.8
STIPA SPECIOSA	300	2.2	0.1	2.4	0.5	0.0	200	0.0	0.0	0.0	100	2.4	0.5	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 63	JACKASS FLAT	9200	17.6	900.8	1661.2	8000	1361.5	649.5	1286.0	1200	400.7	251.3	375.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	300	3.3	1.7	29.4	5.8	16.2	200	20.6	3.6	10.0	100	8.8	2.2	6.1
DALEA FREMONTII	300	3.3	2.6	45.1	12.2	30.2	300	45.1	12.2	30.2	0	0.0	0.0	0.0
EPHEDRA NEVADENSIS	400	4.3	3.3	58.1	29.4	42.7	400	58.1	29.4	42.7	0	0.0	0.0	0.0
AMBROSIA DUMOSA	5200	56.5	35.9	631.9	201.8	449.2	4400	482.9	149.8	333.4	800	149.0	52.0	115.8
GRAYIA SPINOSA	1400	15.2	8.8	155.3	65.2	130.1	1300	142.7	59.3	118.3	100	12.6	5.9	11.8
KRAMERIA PARVIFOLIA	200	2.2	0.8	14.1	2.0	4.3	200	14.1	2.0	4.3	0	0.0	0.0	0.0
LARREA TRIDENTATA	800	8.7	26.0	457.6	375.0	577.5	700	325.0	242.3	442.7	100	132.7	132.7	134.8
LYCIUM ANDERSONII	600	6.5	21.0	370.7	209.4	411.1	500	273.1	150.9	304.4	100	97.6	58.6	106.7

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 64	JACKASS FLAT	1700	11.8	1638.0	1187.6	1600	1131.6	1613.7	1133.6	100	44.2	24.3	54.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
AMBROSIA DUMOSA	400	23.5	11.6	136.5	60.5	134.6	300	92.4	36.2	80.5	100	44.2	24.3	54.1
LARREA TRIDENTATA	700	41.2	84.1	988.5	1555.9	997.4	700	988.5	1555.9	997.4	0	0.0	0.0	0.0
LYCIUM ANDERSONII	100	5.9	4.0	47.1	21.2	52.2	100	47.1	21.2	52.2	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	500	29.4	0.3	3.6	0.5	3.4	500	3.6	0.5	3.4	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 65	JACKASS FLAT	14500	20.9	1172.3	1781.8	12300	1248.8	653.8	1185.3	2200	840.4	518.5	596.4

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	4200	29.0	14.6	304.6	67.8	189.2	3600	263.3	58.9	164.4	600	41.2	8.9	24.8
EUROTIA LANATA	2200	15.2	11.9	249.6	94.7	285.2	1800	170.8	61.8	185.9	400	78.7	33.0	99.3
AMBROSIA DUMOSA	4300	29.7	13.6	283.9	69.6	155.0	3900	242.9	59.2	131.8	400	40.9	10.4	23.1
GRAYIA SPINOSA	300	2.1	5.7	119.2	82.6	164.8	100	50.2	40.2	80.2	200	68.9	42.4	84.6
LARREA TRIDENTATA	1200	8.3	29.6	619.4	546.5	772.0	1000	455.3	413.1	612.5	200	164.1	133.4	159.6
LYCIUM ANDERSONII	200	1.4	5.6	116.0	51.3	101.6	100	3.0	0.4	5.3	100	113.0	50.9	96.2
LYCIUM PALLIDUM	200	1.4	14.1	295.0	222.2	108.8	0	0.0	0.0	0.0	200	295.0	222.2	108.8
ORYZOPSIS HYMENOIDES	1200	8.3	0.1	1.9	0.4	4.9	1200	1.9	0.4	4.9	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	400	2.8	0.3	5.6	0.8	0.3	400	5.6	0.8	0.3	0	0.0	0.0	0.0
HAPLOPAPPUS COOPERI	300	2.1	4.5	94.1	36.2	0.0	200	55.6	18.9	0.0	100	38.5	17.3	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

SITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 66	JACKASS FLAT	15800	18.9	978.5	2977.5	13200	1364.8	637.8	2171.6	2600	523.1	340.7	805.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
ATRIplex CONFERTIFOLIA	100	0.6	0.3	5.5	1.8	9.3	0	0.0	0.0	0.0	100	5.5	1.8	9.3
COLEOGYNE RAMOSISSIMA	14100	89.2	60.2	1135.9	380.0	1988.2	11900	864.6	282.7	1479.1	2200	271.3	97.3	509.1
AMBROSIA DUMOSA	100	0.6	0.0	0.5	0.0	0.1	100	0.5	0.0	0.1	0	0.0	0.0	0.0
LARREA TRIDENTATA	1400	8.9	39.5	745.2	596.5	977.0	1100	498.9	354.9	689.6	300	246.2	241.6	287.4
LYCIUM ANDERSONII	100	0.6	0.0	0.8	0.1	2.8	100	0.8	0.1	2.8	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 67	JACKASS FLAT	19900	20.2	796.7	2778.2	17800	1535.8	563.7	2159.2	2100	486.7	233.0	619.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	900	4.5	3.6	72.2	15.2	42.5	600	41.5	8.5	23.7	300	30.8	6.7	18.8
COLEOGYNE RAMOSISSIMA	3800	19.1	29.4	593.9	278.7	1458.0	3500	504.4	230.9	1208.3	300	89.5	47.7	249.6
EUROTIA LANATA	800	4.0	7.3	147.3	73.9	222.4	600	107.8	56.1	169.0	200	39.5	17.8	53.5
AMBROSIA DUMOSA	9300	46.7	26.5	536.9	115.5	257.1	8700	450.7	90.4	201.1	600	86.2	25.2	56.0
GRAYIA SPINOSA	400	2.0	2.2	45.0	19.5	39.0	300	38.0	16.5	32.9	100	7.1	3.0	6.1
KRAMERIA PARVIFOLIA	500	2.5	6.0	120.6	28.7	62.2	400	60.5	10.7	23.2	100	60.1	18.0	39.0
LARREA TRIDENTATA	1200	6.0	19.4	391.8	243.1	555.1	1000	257.3	138.0	397.1	200	134.5	105.1	158.0
LYCIUM ANDERSONII	100	0.5	1.5	30.7	8.3	28.3	0	0.0	0.0	0.0	100	30.7	8.3	28.3
MENODORA SPINESCENS	1500	7.5	3.9	79.7	13.0	106.2	1300	71.2	11.8	96.3	200	8.5	1.2	9.9
ORYZOPSIS HYMENOIDES	1400	7.0	0.2	4.4	0.9	7.6	1400	4.4	0.9	7.6	0	0.0	0.0	0.0

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SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 68	JACKASS FLAT	12600	25.8	1077.9	2563.7	10000	1543.5	627.6	1413.1	2600	1038.8	450.3	1150.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	700	5.6	2.2	57.2	13.3	37.0	600	33.0	6.7	18.8	100	24.2	6.5	18.2
COLEOGYNE RAMOSISSIMA	900	7.1	8.2	212.4	109.4	572.4	500	81.3	39.9	209.0	400	131.1	69.5	363.4
EPHEDRA NEVADENSIS	900	7.1	27.9	720.7	449.3	652.4	600	482.7	309.6	449.5	300	238.0	139.7	202.9
EUROTIA LANATA	100	0.8	0.0	0.8	0.1	0.2	100	0.8	0.1	0.2	0	0.0	0.0	0.0
AMBROSIA DUMOSA	5700	45.2	39.9	1029.6	368.6	820.4	4400	537.9	172.0	382.9	1300	491.7	196.6	437.6
KRAMERIA PARVIFOLIA	1300	10.3	12.8	329.5	71.2	154.1	900	206.3	40.8	88.4	400	123.3	30.4	65.7
LARREA TRIDENTATA	200	1.6	3.3	85.4	38.4	102.6	200	85.4	38.4	102.6	0	0.0	0.0	0.0
MENODORA SPINESCENS	1400	11.1	5.4	140.5	26.2	215.0	1300	109.9	18.6	152.2	100	30.7	7.7	62.8
ORYZOPSIS HYMENOIDES	1400	11.1	0.2	6.2	1.4	9.6	1400	6.2	1.4	9.6	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
69	JACKASS FLAT	16100	19.5	1264.4	1692.5	14500	1403.7	674.3	1153.9	1600	545.2	590.1	538.6

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	8500	52.8	28.7	559.6	145.1	405.1	8200	539.9	141.2	394.2	300	19.6	3.9	11.0
EPHEDRA NEVADENSIS	700	4.3	8.0	155.3	71.7	104.1	400	94.4	45.4	65.9	300	60.9	26.3	38.2
AMBROSIA DUMOSA	300	1.9	1.0	19.0	4.2	9.5	300	19.0	4.2	9.5	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	1100	6.8	16.2	314.9	73.2	158.3	900	277.6	67.6	146.1	200	37.3	5.6	12.1
LARREA TRIDENTATA	800	5.0	42.9	835.8	958.8	927.2	500	412.8	405.7	454.4	300	423.1	553.1	472.8
MENODORA SPINESCENS	400	2.5	2.6	50.4	7.9	65.0	400	50.4	7.9	65.0	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	4300	26.7	0.7	14.0	3.4	23.4	3800	9.7	2.3	18.8	500	4.3	1.2	4.5

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE NO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
70	JACKASS FLAT	9100	25.2	1734.0	4313.8	8300	2093.3	1396.7	3296.6	800	429.7	337.3	1017.2

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
CACTUS	100	1.1	0.4	9.6	3.8	0.0	100	9.6	3.8	0.0	0	0.0	0.0	0.0
COLEOGYNE RAMOSISSIMA	900	9.9	22.0	554.1	394.9	2066.4	800	400.2	271.9	1422.4	100	153.9	123.1	644.0
EPHEDRA NEVADENSIS	1200	13.2	16.6	418.8	245.5	356.5	1000	341.5	204.1	296.4	200	77.3	41.4	60.2
KRAMERIA PARVIFOLIA	800	8.8	7.0	177.6	43.8	94.7	700	163.4	41.6	90.1	100	14.2	2.1	4.6
LARREA TRIDENTATA	400	4.4	27.5	693.2	901.6	613.6	300	589.4	751.1	470.0	100	103.8	150.5	143.5
MENODORA SPINESCENS	4400	48.4	26.5	667.6	143.9	1178.8	4200	587.1	123.8	1014.0	200	80.5	20.1	164.8
ORYZOPSIS HYMENOIDES	1300	14.3	0.1	2.2	0.4	3.9	1200	2.1	0.4	3.8	100	0.0	0.0	0.1

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 71	JACKASS FLAT	2800	16.1	923.0	1790.7	2200	818.3	373.8	865.8	600	794.6	549.2	924.9

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
EPHEDRA NEVADENSIS	600	21.4	43.7	704.1	444.5	645.4	400	338.7	239.1	347.1	200	365.4	205.4	298.3
EUROTIA LANATA	200	7.1	3.8	60.6	36.4	109.7	200	60.6	36.4	109.7	0	0.0	0.0	0.0
KRAMERIA PARVIFOLIA	500	17.9	14.5	233.3	65.6	141.9	500	233.3	65.6	141.9	0	0.0	0.0	0.0
LARREA TRIDENTATA	300	10.7	19.0	306.6	307.0	325.2	0	0.0	0.0	0.0	300	306.6	307.0	325.2
MENODORA SPINESCENS	900	32.1	19.0	307.0	69.2	566.4	800	184.3	32.4	265.0	100	122.7	36.8	301.4
ORYZOPSIS HYMENOIDES	300	10.7	0.1	1.4	0.3	2.0	300	1.4	0.3	2.0	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
1 72	JACKASS FLAT	12100	18.2	808.4	1627.1	10700	1190.5	380.1	1114.1	1400	625.8	428.3	513.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	4500	37.2	16.4	297.3	62.0	173.0	4000	267.0	55.1	153.8	500	30.3	6.9	19.3
ATRIPLEX CANESCENS	100	0.8	0.1	1.3	0.1	0.3	100	1.3	0.1	0.3	0	0.0	0.0	0.0
EUROTIA LANATA	700	5.8	3.2	57.2	24.1	72.6	500	30.7	10.3	31.0	200	26.5	13.8	41.5
AMBROSIA DUMOSA	3300	27.3	37.3	677.8	242.3	539.3	3000	565.6	201.8	449.1	300	112.2	40.5	90.2
LARREA TRIDENTATA	800	6.6	31.3	568.3	441.3	529.7	400	111.6	74.3	167.7	400	456.8	367.1	362.0
MENODORA SPINESCENS	1200	9.9	11.3	204.9	37.1	304.2	1200	204.9	37.1	304.2	0	0.0	0.0	0.0
ORYZOPSIS HYMENOIDES	1300	10.7	0.3	5.8	1.0	7.9	1300	5.8	1.0	7.9	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	200	1.7	0.2	3.6	0.5	0.2	200	3.6	0.5	0.2	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
174	YUCCA FLAT	7800	26.7	3601.5	3281.3	6300	1508.3	698.1	2327.0	1500	1157.7	2903.4	954.3

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ATRIPLEX CONFERTIFOLIA	500	6.4	5.2	137.8	63.6	326.5	300	62.6	26.3	134.9	200	75.2	37.4	191.7
COLEOGYNE RAMOSISSIMA	4200	53.8	34.9	930.5	428.7	2243.0	3600	692.1	305.6	1598.7	600	238.4	123.2	644.4
EPHEDRA NEVADENSIS	700	9.0	13.0	347.7	200.7	291.4	600	324.0	188.8	274.2	100	23.7	11.9	17.2
EUROTIA LANATA	200	2.6	0.0	1.2	0.2	0.7	200	1.2	0.2	0.7	0	0.0	0.0	0.0
GRAYIA SPINOSA	100	1.3	1.7	44.2	26.5	52.9	100	44.2	26.5	52.9	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	200	2.6	3.3	88.7	31.6	0.0	200	88.7	31.6	0.0	0	0.0	0.0	0.0
LYCIUM ANDERSONII	800	10.3	12.3	328.9	128.7	332.2	600	224.4	92.6	241.1	200	104.5	36.0	91.1
MENODORA SPINESCENS	200	2.6	0.7	19.9	3.6	29.3	100	15.9	2.4	19.5	100	4.0	1.2	9.8
SPHAERALCEA AMBIGUA	200	2.6	0.1	1.6	0.2	0.1	200	1.6	0.2	0.1	0	0.0	0.0	0.0
TEDRADYMYIA AXILLARIS	100	1.3	1.5	41.3	20.6	0.0	100	41.3	20.6	0.0	0	0.0	0.0	0.0
MACHAERANTHERA TORTIFOLIA	400	5.1	0.5	12.9	3.2	5.2	300	12.4	3.2	5.1	100	0.5	0.1	0.1
YUCCA BREVIFOLIA	200	2.6	26.7	711.4	2693.8	0.0	0	0.0	0.0	0.0	200	711.4	2693.8	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
175	YUCCA FLAT	12200	23.9	1124.9	3928.4	10300	2031.4	947.3	3434.5	1900	359.9	177.5	494.0

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
CACTUS	100	0.8	0.1	3.1	0.4	0.0	100	3.1	0.4	0.0	0	0.0	0.0	0.0
COLEOGYNE RAMOSISSIMA	7700	63.1	62.1	1485.7	651.8	3410.2	6500	1297.0	568.8	2975.9	1200	188.7	83.0	434.3
EPHEDRA NEVADENSIS	800	6.6	6.1	145.5	71.2	103.4	700	141.1	69.8	101.3	100	4.3	1.4	2.1
EUROTIA LANATA	100	0.8	0.4	9.6	4.8	14.5	100	9.6	4.8	14.5	0	0.0	0.0	0.0
GRAYIA SPINOSA	100	0.8	1.1	26.0	14.3	28.5	100	26.0	14.3	28.5	0	0.0	0.0	0.0
HYMENOCLEA SALSOLA	500	4.1	12.1	290.4	195.6	0.0	500	290.4	195.6	0.0	0	0.0	0.0	0.0
LYCIUM ANDERSONII	1200	9.8	11.7	278.8	105.9	345.8	1000	234.5	89.0	289.0	200	44.3	16.9	56.8
MENODORA SPINESCENS	100	0.8	0.8	18.5	2.8	22.7	100	18.5	2.8	22.7	0	0.0	0.0	0.0
SPHAERALCEA AMBIGUA	700	5.7	0.1	1.5	0.1	0.1	600	1.2	0.1	0.0	100	0.3	0.0	0.0
TEDRADYMYIA AXILLARIS	200	1.6	5.0	120.3	75.7	0.0	0	0.0	0.0	0.0	200	120.3	75.7	0.0
MACHAERANTHERA TORTIFOLIA	500	4.1	0.5	11.4	2.1	3.4	400	9.4	1.6	2.6	100	2.0	0.5	0.8
STIPA SPECIOSA	200	1.6	0.0	0.6	0.2	0.0	200	0.6	0.2	0.0	0	0.0	0.0	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
176	YUCCA FLAT	21100	19.2	1159.8	2255.1	19700	1725.4	1100.6	1976.1	1400	190.3	59.3	279.1

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
ACAMPTOPAPPUS SHOCKLEYI	5000	23.7	11.5	221.2	35.7	99.6	4800	205.0	32.7	91.4	200	16.2	2.9	8.2
ATRIplex CONFERTIFOLIA	3500	16.6	41.4	792.5	306.5	1572.7	3000	669.4	261.5	1341.5	500	123.1	45.1	231.2
CACTUS	300	1.4	2.0	39.2	26.7	0.0	200	29.6	22.8	0.0	100	9.6	3.8	0.0
COLEOGYNE RAMOSISSIMA	100	0.5	0.1	1.8	0.5	2.4	100	1.8	0.5	2.4	0	0.0	0.0	0.0
EUROTIA LANATA	2000	9.5	6.8	129.6	35.5	106.8	1800	108.9	31.4	94.4	200	20.7	4.1	12.4
LYCIUM ANDERSONII	200	0.9	1.9	36.2	10.4	42.3	200	36.2	10.4	42.3	0	0.0	0.0	0.0
MENODORA SPINESCENS	4800	22.7	16.9	323.7	48.4	396.6	4500	303.3	45.1	369.8	300	20.5	3.3	26.8
ORYZOPSIS HYMENOIDES	3200	15.2	0.7	13.0	3.2	21.9	3100	12.8	3.2	21.3	100	0.2	0.0	0.5
SPHAERALCEA AMBIGUA	600	2.8	0.3	6.6	0.8	0.3	600	6.6	0.8	0.3	0	0.0	0.0	0.0
MIRABILIS PUDICA	900	4.3	3.8	72.6	12.8	0.0	900	72.6	12.8	0.0	0	0.0	0.0	0.0
YUCCA BREVIFOLIA	400	1.9	14.0	268.9	676.1	0.0	400	268.9	676.1	0.0	0	0.0	0.0	0.0
ARTEMISIA SPINESCENS	100	0.5	0.5	10.5	3.1	12.6	100	10.5	3.1	12.6	0	0.0	0.0	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
177	YUCCA FLAT	14800	31.2	1689.4	3424.9	11000	2196.0	1206.6	2442.6	3800	925.6	482.8	982.3

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMAS KG/HA
CACTUS	100	0.7	0.0	0.3	0.1	0.0	100	0.3	0.1	0.0	0	0.0	0.0	0.0
COLEOGYNE RAMOSISSIMA	1000	6.8	4.9	154.4	86.4	451.9	800	137.0	78.9	412.8	200	17.5	7.5	39.2
EPHEDRA NEVADENSIS	1700	11.5	8.8	274.4	111.0	161.2	1500	243.8	97.5	141.6	200	30.7	13.6	19.7
EUROTIA LANATA	200	1.4	0.1	4.3	1.3	3.9	100	4.0	1.3	3.8	100	0.3	0.0	0.1
GRAYIA SPINOSA	5100	34.5	57.0	1778.9	1078.6	2151.8	3500	1135.4	699.9	1396.4	1600	643.6	378.6	755.4
HYMENOCLEA SALSOLA	200	1.4	0.5	14.6	5.0	0.0	200	14.6	5.0	0.0	0	0.0	0.0	0.0
LYCIUM ANDERSONII	2000	13.5	17.8	556.7	238.7	656.1	1400	405.8	184.1	488.1	600	150.8	54.7	168.0
TEDRADYMIA AXILLARIS	100	0.7	3.3	103.8	93.4	0.0	100	103.8	93.4	0.0	0	0.0	0.0	0.0
STIPA SPECIOSA	3100	20.9	0.3	9.0	2.2	0.0	2400	6.5	1.6	0.0	700	2.4	0.7	0.0
HAPLOPAPPUS COOPERI	1300	8.8	7.2	225.3	72.7	0.0	900	144.8	44.9	0.0	400	80.4	27.8	0.0

PERENNIAL PLANT COMPOSITION OF SOIL SURVEY SITES

(QUADRAT SAMPLE SIZE = 2 X 50 METERS - VALUES ARE RECORDED BY SPECIES AND OVERALL SPECIES TOTALS)

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
178	YUCCA FLAT	19400	29.1	1848.1	4726.2	15900	2363.3	1563.7	3634.7	3500	543.5	284.5	1091.5

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
COLEOGYNE RAMOSISSIMA	4200	21.6	35.7	1037.7	518.0	2709.9	3100	721.2	360.7	1887.2	1100	316.5	157.3	822.7
EPHEDRA NEVADENSIS	2400	12.4	17.2	500.2	246.0	357.1	2000	439.7	215.8	313.4	400	60.5	30.1	43.8
EUROTIA LANATA	400	2.1	0.9	25.2	11.1	33.5	300	24.0	11.0	33.1	100	1.2	0.1	0.4
GRAYIA SPINOSA	1800	9.3	16.5	480.0	294.5	587.6	1400	383.3	222.3	443.4	400	96.7	72.3	144.2
LARREA TRIDENTATA	600	3.1	18.5	536.9	637.7	612.0	600	536.9	637.7	612.0	0	0.0	0.0	0.0
LYCIUM ANDERSONII	1500	7.7	10.8	313.6	137.5	426.2	1200	246.5	113.2	345.8	300	67.0	24.3	80.4
STIPA SPECIOSA	8500	43.8	0.5	13.4	3.4	0.0	7300	11.7	3.0	0.0	1200	1.6	0.4	0.0

SITE SUMMARY OF VEGETATIVE CHARACTERISTICS

ISITE INO.	LOCATION	DENSITY NO/HA	COVER %	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOLITARY DENSITY NO/HA	SOLITARY AREA M2/HA	SOLITARY VOLUME M3/HA	SOLITARY BIOMASS KG/HA	GROUP DENSITY NO/HA	GROUP AREA M2/HA	GROUP VOLUME M3/HA	GROUP BIOMASS KG/HA
179	YUCCA FLAT	17500	35.8	1908.7	4046.2	14500	2993.8	1605.9	3380.4	3000	583.6	302.9	665.8

SITE TOTALS BY SPECIES

SPECIES NAME	DENS. NO/HA	FREQ. %	REL. DOM.	PLANT AREA M2/HA	PLANT VOLUME M3/HA	PLANT BIOMASS KG/HA	SOL. DENS NO/HA	SOL. AREA M2/HA	SOL. VOLUME M3/HA	SOL. BIOMASS KG/HA	GRP. DENS NO/HA	GRP. AREA M2/HA	GRP. VOLUME M3/HA	GRP. BIOMASS KG/HA
COLEOGYNE RAMOSISSIMA	2000	11.4	9.5	339.1	170.1	890.2	1600	238.6	106.8	559.0	400	100.5	63.3	331.2
EPHEDRA NEVADENSIS	2800	16.0	14.8	530.6	259.0	376.1	1900	384.1	187.5	272.2	900	146.4	71.6	103.9
EUROTIA LANATA	200	1.1	0.8	27.4	12.1	36.4	200	27.4	12.1	36.4	0	0.0	0.0	0.0
GRAYIA SPINOSA	6100	34.9	38.9	1392.5	857.4	1710.5	5400	1257.7	789.0	1574.1	700	134.9	68.4	136.4
HYMENOCLEA SALSOLA	900	5.1	11.5	409.6	212.3	0.0	800	342.5	172.0	0.0	100	67.2	40.3	0.0
LYCIUM ANDERSONII	2800	16.0	23.0	823.0	372.9	1027.2	2600	735.6	336.3	933.5	200	87.4	36.7	93.7
ORYZOPSIS HYMENOIDES	1000	5.7	0.1	3.6	1.0	5.9	900	3.4	1.0	5.3	100	0.2	0.1	0.6
TEDRADYMIA AXILLARIS	100	0.6	1.2	43.0	21.5	0.0	0	0.0	0.0	0.0	100	43.0	21.5	0.0
STIPA SPECIOSA	1600	9.1	0.2	8.6	2.4	0.0	1100	4.5	1.3	0.0	500	4.1	1.1	0.0

APPENDIX D

**MINERAL ELEMENT COMPOSITION OF
VEGETATION FROM SOIL PROFILE STUDY SITES**

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 1</u>																		
<u>Acamptopappus</u>	leaf	2.28	.16	.167	3.02	1.35	.55	.38	25	2	154	29	37	191	5	T	28	5
<u>shockleyi</u>	stem		.16	.200	3.26	1.26	.31	.03	12	T	43	9	19	50	T	T	45	13
<u>Atriplex</u>	leaf	3.47	.25	4.056	6.04	1.04	.84	.05	17	2	169	44	43	84	2	1.4	27	8
<u>confertifolia</u>	stem		.45	2.773	6.51	2.48	.53	.04	38	3	92	14	45	116	5	1.6	55	17
<u>Coleogyne</u>	leaf	2.21	.32	.163	1.72	4.32	.67	.14	30	2	238	29	38	386	15	.9	64	11
<u>ramosissima</u>	stem		.17	.126	.90	2.86	.47	.09	11	T	303	11	32	265	15	T	66	13
<u>Ephedra</u>	shoot	3.16	.34	.085	3.33	.85	.32	.03	22	3	113	21	30	91	2	T	49	12
<u>funerea</u>																		
<u>Larrea</u>	leaf	2.15	.09	.045	1.66	1.40	.44	.29	13	1	667	30	79	588	17	T	47	12
<u>tridentata</u>	stem		.06	.054	1.30	.79	.71	.54	19	2	903	29	25	675	24	1.1	48	17
<u>Menodora</u>	leaf	2.63	.19	.090	3.00	.61	.34	.05	16	T	153	28	42	114	8	T	15	T
<u>spinescens</u>	stem		.17	.063	3.23	.52	.24	.05	11	T	188	11	31	149	6	T	33	5
<u>MERCURY VALLEY - SITE NO. 2</u>																		
<u>Acamptopappus</u>	leaf	3.17	.16	.164	2.87	1.27	.54	.40	43	3	248	54	57	203	9	2.0	35	5
<u>shockleyi</u>	stem		.12	.167	3.34	.99	.29	.03	12	2	50	13	20	62	T	1.3	41	10
<u>Ambrosia</u>	leaf	3.94	.32	.069	5.12	2.35	.73	.11	28	3	220	29	149	284	9	1.2	64	13
<u>dumosa</u>	stem		.20	.040	4.09	1.10	.61	.04	25	2	63	20	54	87	4	T	46	19
<u>Atriplex</u>	leaf	3.12	.27	4.373	6.20	3.36	.86	.14	33	5	302	46	44	365	19	2.3	46	15
<u>confertifolia</u>	stem		.26	2.096	7.18	2.45	.52	.08	24	3	112	15	34	162	6	1.8	62	23
<u>Ephedra</u>	shoot	3.38	.33	.014	2.46	1.22	.26	.04	24	4	104	23	26	100	3	T	81	21
<u>funerea</u>																		
<u>Larrea</u>	leaf	2.45	.14	.032	1.67	1.42	.31	.30	27	4	533	32	67	534	27	T	54	12
<u>tridentata</u>	stem		.13	.028	1.40	1.17	.51	.30	15	5	524	26	50	528	23	T	65	20
<u>Lycium</u>	leaf	4.08	.25	.022	6.19	5.84	1.23	.05	36	3	163	48	63	187	7	3.7	86	21
<u>andersonii</u>	stem		.21	.003	2.52	1.99	.59	.01	30	3	50	8	19	28	T	T	86	17

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 2 (Cont'd)</u>																		
<u>Menodora</u>	leaf	3.01	.24	.139	3.62	.72	.35	.05	13	1	171	32	41	137	6	T	22	4
<u>spinescens</u>	stem		.15	.112	2.85	.54	.21	.09	11	1	244	12	33	186	10	T	43	7
<u>MERCURY VALLEY - SITE NO. 3</u>																		
<u>Ambrosia</u>	leaf	4.66	.39	.192	5.07	2.04	.58	.12	36	7	191	23	130	272	7	1.7	57	7
<u>dumosa</u>	stem		.20	.149	4.06	1.47	.54	.03	57	3	52	18	44	72	4	T	55	14
<u>Ephedra</u>	shoot	3.35	.33	.007	2.90	.69	.27	.02	23	7	89	17	30	70	T	1.1	36	12
<u>funerea</u>																		
<u>Eurotia</u>	leaf	3.53	.20	.167	5.22	2.24	1.06	.22	39	8	473	103	62	616	18	2.1	53	10
<u>lanata</u>	stem		.08	.020	5.76	.55	.33	.05	11	6	133	23	16	143	6	T	38	8
<u>Grayia</u>	leaf	3.13	.21	.177	7.19	1.25	1.54	.03	12	12	118	73	44	58	4	5.9	20	T
<u>spinosa</u>	stem		.19	.067	7.41	1.14	.62	.01	17	6	33	9	30	26	T	T	40	7
<u>Larrea</u>	leaf	2.10	.11	.041	1.79	1.13	.22	.52	14	5	561	46	117	544	23	1.2	41	13
<u>tridentata</u>	stem		.09	.052	.96	1.34	.44	.41	25	6	810	50	36	816	37	2.1	54	16
<u>Lycium</u>	leaf	3.64	.18	.138	5.94	7.09	1.23	.04	46	8	130	35	68	141	7	4.6	89	15
<u>andersonii</u>	stem		.15	.012	2.69	1.75	.38	.01	16	5	37	7	22	26	T	T	67	7
<u>MERCURY VALLEY - SITE NO. 4</u>																		
<u>Acamptopappus</u>	leaf	2.39	.17	.192	4.11	1.31	.68	.55	29	6	160	49	78	232	10	2.5	25	T
<u>shockleyi</u>	stem		.10	.183	3.34	1.74	.25	.06	13	3	84	15	24	100	3	T	41	6
<u>Ambrosia</u>	leaf	3.92	.26	.131	4.08	2.36	.64	.22	29	7	341	28	142	407	12	T	38	8
<u>dumosa</u>	stem		.14	.103	4.40	1.12	.38	.03	18	2	67	15	38	94	3	T	40	4
<u>Ephedra</u>	shoot	2.78	.23	.006	3.14	.63	.21	.04	18	3	108	18	23	103	3	1.1	38	6
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	2.77	.15	.044	4.51	1.88	.76	.20	36	5	489	111	35	508	17	2.2	39	9
<u>lanata</u>	stem		.06	.010	3.55	.56	.21	.04	9	3	163	29	14	140	5	T	24	6

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
MERCURY VALLEY - SITE NO. 4 (Cont'd)																		
Grayia	leaf	2.23	.09	.175	10.13	4.25	2.15	.07	37	5	150	139	65	200	6	5.3	32	5
spinosa	stem		.08	.009	6.06	1.23	.51	.01	16	3	20	15	20	26	T	T	25	5
Larrea	leaf	2.34	.10	.101	2.00	1.02	.19	.14	13	3	325	22	71	333	11	1.3	26	7
tridentata	stem		.03	.109	1.50	1.13	.20	.32	12	4	604	18	44	602	36	1.9	44	13
Lycium	leaf	4.15	.11	.094	6.83	7.98	1.61	.07	38	7	179	29	70	200	10	7.5	87	16
andersonii	stem		.09	.015	2.43	1.55	.36	.01	19	4	36	5	25	33	T	1.0	58	8
MERCURY VALLEY - SITE NO. 5																		
Acamptopappus	leaf	2.98	.25	.161	4.43	1.68	.48	.47	22	8	164	51	46	195	5	1.7	29	T
shockleyi	stem		.17	.110	3.32	1.52	.20	.04	7	5	48	12	17	62	4	T	43	7
Ambrosia	leaf	4.16	.37	.114	5.48	2.98	.54	.15	28	7	256	23	100	364	13	2.8	56	9
dumosa	stem		.24	.111	4.07	1.58	.54	.07	13	4	141	19	42	160	5	1.3	50	14
Ephedra	shoot	2.94	.32	.008	2.37	1.18	.26	.03	22	2	92	18	24	82	4	T	61	11
nevadensis																		
Eurotia	leaf	3.62	.22	.037	3.69	1.42	.56	.05	21	4	110	66	41	107	3	T	45	5
lanata	stem		.09	.005	3.99	.52	.23	.02	6	3	79	28	14	53	2	T	37	6
Larrea	leaf	2.56	.16	.103	2.13	1.53	.22	.45	26	2	585	41	88	726	75	2.5	44	11
tridentata	stem		.07	.088	1.18	1.10	.21	.40	16	4	1091	33	28	909	13	T	54	16
Lycium	leaf	3.26	.12	.013	5.58	11.64	1.44	.05	41	4	162	33	65	150	9	5.6	648	18
andersonii	stem		.10	.010	2.12	2.65	.24	.04	9	3	90	5	12	107	3	1.1	77	11
Salazaria	leaf	2.92	.30	.183	3.63	1.27	.57	.30	35	9	507	69	66	724	16	T	27	7
mexicana	stem		.11	.161	1.94	1.68	.22	.07	19	3	141	14	17	170	4	T	47	8
MERCURY VALLEY - SITE NO. 6																		
Acamptopappus	leaf	3.03	.20	.172	3.36	1.09	.44	.44	22	5	147	35	43	184	6	T	26	T
shockleyi	stem		.09	.119	2.43	1.13	.16	.05	8	2	102	11	21	88	5	T	40	6

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 6 (Cont'd)</u>																		
<u>Ambrosia</u>	leaf	4.06	.36	.074	3.29	1.89	.35	.17	29	3	236	25	122	355	22	3.4	41	6
<u>dumosa</u>	stem		.16	.103	3.46	1.79	.37	.14	17	2	352	17	41	382	17	.9	53	15
<u>Atriplex</u>	leaf	3.10	.42	4.495	5.17	1.79	.41	.13	29	6	239	56	67	321	22	4.6	28	7
<u>confertifolia</u>	stem		.16	.987	2.68	3.58	.39	.07	43	2	137	24	38	238	9	1.5	63	18
<u>Ephedra</u>	shoot	3.74	.31	.035	2.99	.65	.18	.04	13	3	196	34	30	134	4	T	53	10
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	3.07	.21	.046	3.09	1.69	.58	.19	28	4	374	129	53	506	16	2.4	49	11
<u>lanata</u>	stem		.05	.019	3.41	.67	.34	.08	11	3	299	46	16	217	8	.9	37	8
<u>Larrea</u>	leaf	2.23	.13	.084	1.15	1.12	.23	.31	19	2	581	52	110	693	22	2.5	38	9
<u>tridentata</u>	stem		.07	.107	.84	1.43	.25	.51	21	3	888	32	50	870	55	1.9	54	15
<u>Lycium</u>	leaf	3.54	.12	.192	3.66	11.24	1.48	.07	51	4	172	27	109	226	12	9.4	653	20
<u>andersonii</u>	stem		.12	.052	1.60	2.30	.29	.03	22	3	68	6	24	87	2	1.1	71	9
<u>MERCURY VALLEY - SITE NO. 7</u>																		
<u>Ambrosia</u>	leaf	3.02	.48	.019	1.84	2.27	.30	.09	30	1	217	36	44	186	9	T	39	5
<u>dumosa</u>	stem		.39	.036	2.55	1.53	.37	.08	25	1	162	17	31	171	6	T	44	9
<u>Ephedra</u>	shoot	4.76	.46	.009	2.41	.88	.24	.10	23	3	215	87	50	160	7	1.0	37	6
<u>nevadensis</u>																		
<u>Larrea</u>	leaf	2.01	.15	.017	1.19	1.12	.14	.29	17	T	364	24	56	395	23	1.1	34	4
<u>tridentata</u>	stem		.12	.030	.73	1.15	.25	.37	15	2	698	40	35	600	24	T	47	15
<u>Lycium</u>	leaf	3.49	.22	.019	3.42	12.69	1.23	.08	58	2	171	59	48	178	11	5.5	749	18
<u>andersonii</u>	stem		.11	.006	.57	3.71	.16	.08	27	1	152	12	15	206	6	T	67	5
<u>MERCURY VALLEY - SITE NO. 8</u>																		
<u>Ambrosia</u>	leaf	4.11	.41	.037	4.51	1.97	.46	.17	37	6	287	30	111	431	18	2.6	47	9
<u>dumosa</u>	stem		.20	.017	4.28	1.51	.61	.09	28	4	260	18	31	279	7	1.8	45	16

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Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	ppm of dry wt.									
% of dry wt.									Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
<u>MERCURY VALLEY - SITE NO. 8 (Cont'd)</u>																		
<u>Ephedra nevadensis</u>	shoot	3.71	.44	.012	2.28	1.51	.39	.09	36	7	292	219	40	188	5	T	79	24
<u>Larrea tridentata</u>	leaf	2.11	.26	.056	1.78	.97	.36	.49	20	2	571	53	69	728	38	1.0	29	10
	stem		.14	.071	1.07	.57	.42	.68	12	3	1103	39	39	1126	57	T	30	14
<u>Lycium andersonii</u>	leaf	3.80	.23	.017	3.30	5.70	1.44	.08	35	4	208	33	49	232	11	4.0	88	12
	stem		.26	.017	2.91	1.86	.49	.06	23	4	154	10	16	184	5	T	67	9
<u>MERCURY VALLEY - SITE NO. 9</u>																		
<u>Ambrosia dumosa</u>	leaf	4.06	.45	.070	4.61	2.31	.46	.26	35	9	582	36	129	667	31	2.1	40	6
	stem		.28	.032	3.66	1.58	.41	.17	21	6	374	25	56	391	26	2.2	39	6
<u>Larrea tridentata</u>	leaf	2.06	.19	.050	1.85	.99	.20	.39	13	3	885	64	83	788	23	1.2	28	11
	stem		.56	.103	1.12	.76	.36	1.47	20	4	1532	68	41	1544	164	2.6	32	14
<u>MERCURY VALLEY - SITE NO. 10</u>																		
<u>Ambrosia dumosa</u>	leaf	4.28	.48	.041	3.63	2.94	.50	.23	27	1	464	50	117	606	21	1.4	53	5
	stem		.18	.023	3.58	1.60	.32	.12	17	1	268	31	29	319	12	T	49	8
<u>Larrea tridentata</u>	leaf	2.16	.15	.027	1.38	1.36	.14	.38	26	T	624	45	77	707	41	.9	33	8
	stem		.09	.034	1.07	1.38	.29	.61	21	2	874	25	43	713	24	1.3	45	7
<u>Lycium andersonii</u>	leaf	4.12	.19	.141	2.97	7.60	1.03	.10	37	2	184	37	60	353	11	5.2	79	5
	stem		.10	.012	1.32	2.52	.29	.07	25	2	193	13	14	215	6	T	64	T
<u>Lycium pallidum</u>	leaf	4.32	.29	.154	3.23	4.91	1.17	.10	32	2	166	54	68	274	11	6.0	68	5
	stem		.26	.185	3.24	2.14	.54	.04	24	3	86	13	31	110	4	3.1	47	T
<u>MERCURY VALLEY - SITE NO. 12</u>																		
<u>Grayia spinosa</u>	leaf	3.07	.26	.201	7.41	1.29	.93	.02	49	6	101	111	26	6	T	4.4	29	8
	stem		.20	.007	6.22	1.13	.44	.04	25	4	80	13	25	91	3	1.3	46	14
<u>Larrea tridentata</u>	leaf	2.30	.19	.016	1.36	2.10	.18	.10	34	4	166	35	96	248	7	1.5	58	9
	stem		.15	.012	1.16	1.39	.20	.08	22	8	168	12	30	207	10	T	54	12

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 12 (Cont'd)</u>																		
<u>Lycium</u>	leaf	4.13	.21	.019	4.23	6.77	.59	.06	52	6	120	18	52	164	10	4.1	92	16
<u>andersonii</u>	stem		.11	.008	1.53	2.23	.23	.06	39	6	169	12	20	160	5	T	62	9
<u>Lycium</u>	leaf	3.00	.34	.871	5.58	3.33	.95	.14	33	5	254	67	60	332	20	6.5	80	17
<u>pallidum</u>	stem		.15	.161	2.09	1.55	.28	.07	25	4	127	9	26	210	12	2.5	56	9
<u>MERCURY VALLEY - SITE NO. 13</u>																		
<u>Acamptopappus</u>	leaf	3.18	.24	.164	2.88	.85	.33	.27	15	7	81	36	36	78	T	T	18	T
<u>shockleyi</u>	stem		.18	.088	3.91	.91	.26	.03	15	6	51	13	36	48	T	T	30	7
<u>Ambrosia</u>	leaf	4.27	.33	.120	5.14	2.88	.38	.10	34	5	165	21	88	221	5	1.7	50	7
<u>dumosa</u>	stem		.31	.145	5.23	1.40	.41	.04	28	4	65	15	46	84	3	1.8	51	15
<u>Grayia</u>	leaf	3.84	.29	.008	12.25	1.49	1.58	.04	29	7	143	49	53	58	2	4.5	26	5
<u>spinosa</u>	stem		.25	.004	10.47	.88	.55	.02	23	5	47	14	34	40	T	T	34	10
<u>Larrea</u>	leaf	2.15	.13	.043	1.30	1.23	.19	.19	30	5	500	26	63	453	10	2.1	45	10
<u>tridentata</u>	stem		.11	.047	.96	1.38	.22	.24	11	6	627	20	38	545	16	1.9	56	15
<u>Lepidium</u>	leaf	3.76	.37	.162	2.75	1.59	.23	.03	52	4	100	37	72	88	3	4.9	48	6
<u>fremontii</u>	stem		.19	.054	1.99	.68	.32	.02	12	6	127	50	27	61	T	1.5	63	11
<u>Lycium</u>	leaf	4.28	.20	.051	3.62	8.64	.95	.06	35	5	129	31	79	169	8	6.3	107	25
<u>andersonii</u>	stem		.19	.011	2.30	2.13	.29	.04	24	6	84	10	25	102	3	1.2	61	11
<u>Mirabilis</u>	leaf	4.71	.42	.002	3.57	3.55	1.13	.07	79	8	135	64	81	94	4	2.2	64	17
<u>pudica</u>	stem		.27	.002	2.85	1.22	.69	T	40	7	43	8	34	13	5	T	51	14
<u>Stanleya</u>	leaf	3.67	.23	.084	2.20	1.74	.29	.04	24	3	80	41	72	73	2	8.1	54	6
<u>pinnata</u>	stem		.22	.064	3.32	.99	.30	.01	19	4	52	14	46	28	T	5.8	50	8
<u>MERCURY VALLEY - SITE NO. 14</u>																		
<u>Ambrosia</u>	leaf	5.11	.54	.030	4.92	2.92	.38	.12	74	6	202	26	90	256	6	1.3	56	9
<u>dumosa</u>	stem		.51	.026	6.93	1.70	.34	.06	39	4	110	10	36	144	4	1.2	61	16

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 14 (Cont'd)</u>																		
<u>Grayia</u>	leaf	2.85	.17	.032	6.45	.90	.90	.02	24	5	123	100	32	49	T	3.0	27	12
<u>spinosa</u>	stem		.29	.002	5.50	2.38	.46	.03	22	5	68	18	37	61	2	T	69	18
<u>Lepidium</u>	leaf	4.08	.31	.080	2.05	1.19	.21	.04	26	4	95	35	48	90	4	4.5	29	4
<u>fremontii</u>	stem		.26	.048	2.76	.65	.17	.02	25	4	47	16	19	46	T	2.3	37	6
<u>Lycium</u>	leaf	3.87	.26	.073	4.70	5.77	.61	.08	37	3	151	48	76	168	8	6.4	92	22
<u>andersonii</u>	stem		.31	.050	3.08	3.06	.34	.04	44	5	67	18	36	90	3	1.1	72	15
<u>Mirabilis</u>	leaf	5.54	.56	.009	3.72	3.56	.89	.07	59	8	168	71	84	115	6	4.8	73	18
<u>pudica</u>	stem		.35	.004	5.59	1.43	.76	.02	30	7	50	8	34	24	T	T	52	15
<u>Stanleya</u>	leaf	4.20	.48	.173	2.91	2.56	.42	.03	48	4	97	40	65	70	3	8.2	77	10
<u>pinnata</u>	stem		.36	.067	3.32	1.48	.34	.02	38	4	56	9	42	35	T	4.4	69	10
<u>MERCURY VALLEY - SITE NO. 15</u>																		
<u>Dalea</u>	leaf	3.59	.47	.024	1.44	2.01	.36	.08	27	2	232	25	22	186	4	1.8	60	T
<u>fremontii</u>	stem		.42	.037	1.94	.97	.27	.03	26	T	93	9	19	76	T	T	50	T
<u>Grayia</u>	leaf	2.66	.13	.016	8.49	2.69	1.19	.08	36	3	153	74	41	202	6	3.3	56	T
<u>spinosa</u>	stem		.10	.006	3.52	1.23	.31	.04	15	2	58	13	21	75	3	1.9	50	T
<u>Hymenoclea</u>	leaf	3.87	.29	.010	2.72	1.67	.36	.10	17	T	108	15	86	122	4	T	48	T
<u>salsola</u>	stem		.34	.028	3.20	.62	.30	.06	16	1	117	6	34	125	4	1.3	51	T
<u>Larrea</u>	leaf	2.67	.20	.037	.79	1.47	.22	.20	23	4	523	47	80	458	10	1.6	48	T
<u>tridentata</u>	stem		.15	.026	.76	1.26	.15	.16	20	4	337	19	42	325	14	1.2	56	T
<u>Lepidium</u>	leaf	3.24	.29	.109	2.28	1.45	.26	.03	36	3	82	30	78	86	3	4.0	40	T
<u>fremontii</u>	stem		.20	.071	2.77	.52	.19	.02	34	4	51	20	18	46	T	1.6	50	T
<u>Lycium</u>	leaf	3.76	.26	.018	2.55	6.32	.74	.07	37	T	119	27	78	137	6	5.9	101	T
<u>andersonii</u>	stem		.22	.015	2.99	1.93	.26	.02	22	T	33	5	22	35	T	1.4	69	T
<u>Lycium</u>	leaf	3.88	.29	.416	1.87	2.01	.66	.05	17	1	99	20	61	104	7	5.3	55	T
<u>pallidum</u>	stem		.24	.156	3.64	1.86	.46	.02	24	1	42	5	23	43	T	1.5	62	T

Mineral Composition of Vegetation from Soil Profile Study Sites

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Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>MERCURY VALLEY - SITE NO. 15 (Cont'd)</u>																		
<u>Mirabilis</u>	leaf	4.29	.37	.001	1.98	3.20	1.31	.06	58	4	124	55	97	84	3	3.4	66	T
<u>pudica</u>	stem		.23	.001	2.96	.92	.84	.01	27	3	38	6	25	16	2	T	55	T
<u>Stanleya</u>	leaf	3.44	.24	.055	2.25	1.93	.41	.07	27	2	131	40	109	160	7	6.5	59	T
<u>pinnata</u>	stem		.15	.038	2.61	1.71	.36	.03	17	T	88	9	49	92	6	5.8	78	T
<u>MERCURY VALLEY - SITE NO. 16</u>																		
<u>Acamptopappus</u>	leaf	3.25	.25	.153	3.77	1.14	.40	.49	25	3	145	54	60	174	8	2.4	26	T
<u>shockleyi</u>	stem		.07	.030	1.00	1.18	.09	.11	9	1	189	17	18	250	15	T	32	6
<u>Eurotia</u>	leaf	3.52	.21	.071	2.56	1.56	.69	.21	17	4	429	83	40	577	10	1.6	42	7
<u>lanata</u>	stem		.30	.014	3.00	.60	.26	.06	16	1	206	27	21	152	6	1.0	28	5
<u>Grayia</u>	leaf	3.55	.18	.016	9.49	1.28	1.63	.07	17	5	207	122	41	186	7	5.8	31	7
<u>spinosa</u>	stem		.18	.019	5.65	1.52	.55	.07	18	4	133	22	25	210	4	1.4	40	10
<u>Larrea</u>	leaf	2.49	.21	.041	.94	.99	.26	.15	16	5	424	35	73	396	9	1.3	32	7
<u>tridentata</u>	stem		.11	.026	.88	1.32	.28	.24	16	5	627	35	48	614	35	T	47	12
<u>FRENCHMAN FLAT - SITE NO. 17</u>																		
<u>Acamptopappus</u>	leaf	2.17	.23	.159	3.86	1.74	.51	.72	37	8	148	80	61	123	5	T	76	T
<u>shockleyi</u>	stem		.13	.119	2.42	1.29	.14	.05	20	3	20	13	23	9	T	T	100	T
<u>Ambrosia</u>	leaf	2.86	.30	.049	3.73	3.71	.43	.21	41	4	185	39	109	255	8	2.3	169	T
<u>dumosa</u>	stem		.14	.068	4.01	.98	.30	.04	12	4	26	24	35	14	T	T	109	T
<u>Eurotia</u>	leaf	2.82	.21	.025	3.39	2.21	.47	.15	29	5	145	108	67	170	5	1.2	125	4
<u>lanata</u>	stem		.11	.005	2.55	.87	.12	.05	17	4	55	40	18	41	2	T	91	T
<u>Grayia</u>	leaf	1.62	.13	.119	8.73	4.42	1.03	.08	58	4	73	123	56	56	2	2.1	133	4
<u>spinosa</u>	stem		.14	.006	2.20	1.19	.19	.02	25	3	39	42	26	3	4	T	73	T
<u>Hilaria</u>	leaf	2.07	.24	.023	2.08	1.27	.16	1.38	26	7	108	132	28	51	3	1.6	55	T
<u>rigida</u>	stem		.16	.014	2.72	.35	.11	1.09	22	7	38	111	10	13	2	1.1	40	T

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 17 (Cont'd)</u>																		
<u>Larrea</u>	leaf	2.12	.22	.032	2.05	1.42	.13	.19	30	3	184	31	72	258	6	T	71	4
<u>tridentata</u>	stem		.17	.014	.74	1.19	.09	.26	15	8	426	27	32	274	44	T	111	7
<u>Lycium</u>	leaf	2.17	.15	.182	2.83	6.01	1.09	.12	48	6	111	82	50	117	4	6.6	243	4
<u>pallidum</u>	stem		.14	.093	3.24	2.22	.20	.03	30	7	35	10	27	20	2	T	110	4
<u>Stanleya</u>	leaf	1.98	.16	.123	3.07	3.75	.39	.12	41	3	146	57	101	145	9	8.6	266	4
<u>pinnata</u>																		
<u>FRENCHMAN FLAT - SITE NO. 18</u>																		
<u>Acamptopappus</u>	leaf	2.51	.33	.151	3.78	1.40	.46	.88	34	6	143	123	65	164	7	1.3	26	T
<u>shockleyi</u>	stem		.27	.044	2.92	1.19	.18	.05	20	4	18	32	25	11	T	T	46	T
<u>Ambrosia</u>	leaf	3.03	.29	.034	3.64	4.44	.48	.27	47	7	226	58	151	372	9	2.0	109	6
<u>dumosa</u>	stem		.11	.014	3.03	1.78	.27	.04	22	3	31	43	35	17	3	T	73	8
<u>Eurotia</u>	leaf	2.93	.21	.015	2.69	1.85	.28	.15	28	5	132	66	50	189	11	1.6	36	4
<u>lanata</u>	stem		.13	.007	2.64	.82	.10	.06	16	4	46	30	16	36	2	T	32	T
<u>Larrea</u>	leaf	2.58	.26	.020	2.46	1.83	.14	.19	27	6	178	31	72	269	7	1.1	47	7
<u>tridentata</u>	stem		.19	.017	1.91	1.50	.15	.23	22	4	316	21	35	384	14	T	78	11
<u>Lycium</u>	leaf	2.72	.15	.012	3.58	10.66	.81	.09	60	6	111	42	67	66	4	10.4	184	12
<u>andersonii</u>	stem		.18	.003	1.77	1.90	.15	.02	31	5	21	11	25	22	2	1.0	53	4
<u>Mirabilis</u>	leaf	1.63	.20	.005	1.72	4.23	1.68	.11	46	5	130	83	56	44	2	6.8	110	7
<u>pudica</u>	stem		.13	.003	4.23	1.75	.52	.02	27	3	21	9	31	6	T	T	38	5
<u>Oryzopsis</u>	leaf	.99	.17	.007	1.93	.40	.10	1.52	19	5	99	85	13	49	3	2.1	19	7
<u>hymenoides</u>	stem		.15	.002	1.89	.30	.30	.72	14	3	13	22	6	4	T	1.0	23	6
<u>FRENCHMAN FLAT - SITE NO. 19</u>																		
<u>Acamptopappus</u>	leaf	2.79	.18	.926	3.15	1.40	.50	.80	33	9	176	94	72	275	6	T	14	T
<u>shockleyi</u>	stem		.12	.185	1.61	1.37	.09	.05	23	3	32	24	27	20	3	T	26	T
<u>Ambrosia</u>	leaf	3.43	.21	.154	3.93	4.30	.50	.30	46	6	320	56	149	728	17	3.0	71	8
<u>dumosa</u>	stem		.09	.147	4.47	1.81	.35	.05	25	4	50	47	35	46	3	.8	66	6

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 19 (Cont'd)</u>																		
<u>Artemisia</u>	leaf	2.75	.27	.161	3.06	1.92	.57	73	29	19	1251	127	68	2268	41	1.6	37	29
<u>spinescens</u>	stem		.18	.189	2.22	.70	.28	.38	26	9	559	42	25	504	13	T	32	16
<u>Atriplex</u>	leaf	2.35	.18	.111	5.37	2.30	.79	.16	28	7	183	70	58	304	8	1.4	24	7
<u>canescens</u>	stem		.14	.011	4.86	2.09	.32	.05	31	6	41	23	35	33	T	T	64	7
<u>Atriplex</u>	leaf	1.96	.28	7.039	1.89	2.47	.51	.33	35	6	323	98	84	842	19	2.5	25	11
<u>confertifolia</u>	stem		.12	2.543	3.82	2.14	.31	.07	26	3	75	27	45	68	2	T	68	8
<u>Eurotia</u>	leaf	3.15	.26	.080	3.68	2.81	.62	.30	38	6	361	114	64	650	17	1.3	52	11
<u>lanata</u>	stem		.16	.014	3.98	1.22	.16	.09	25	4	106	42	28	91	4	T	49	6
<u>Grayia</u>	leaf	1.89	.11	.325	7.70	2.96	1.06	.11	44	7	90	106	46	100	T	1.8	28	3
<u>spinosa</u>	stem		.10	.027	3.92	1.46	.36	.03	27	4	26	20	26	18	T	T	37	4
<u>Lycium</u>	leaf	3.75	.18	2.675	4.74	1.99	.90	.15	30	18	176	47	46	252	8	5.4	34	5
<u>pallidum</u>	stem		.10	.169	2.82	1.77	.23	.05	29	10	49	9	31	34	3	T	46	4
<u>Mirabilis</u>	leaf	3.52	.12	.010	1.70	5.78	1.91	.14	59	4	98	60	80	82	3	4.7	113	6
<u>pudica</u>	stem		.09	.033	2.83	1.35	.88	.03	25	4	25	16	41	6	T	T	39	T
<u>Oryzopsis</u>	leaf	2.40	.12	.025	3.12	.81	.29	1.67	34	13	295	130	47	207	12	5.4	25	21
<u>hymenoides</u>	stem		.15	.005	3.35	.20	.24	.70	32	11	101	106	14	13	T	2.3	18	17
<u>FRENCHMAN FLAT - SITE NO. 20</u>																		
<u>Mirabilis</u>	leaf	3.37	.17	.011	1.64	6.53	2.56	.10	55	7	86	59	56	51	2	7.1	153	6
<u>pudica</u>																		
<u>Oryzopsis</u>	leaf	1.45	.17	.005	3.05	.23	.16	.57	24	6	33	29	7	12	T	1.2	21	18
<u>hymenoides</u>	stem		.16	.017	2.59	.58	.19	1.43	23	9	180	32	55	133	6	3.2	26	24
<u>Stanleya</u>	leaf	3.52	.19	.112	3.03	6.63	.74	.13	69	5	179	76	113	185	6	11.0	215	6
<u>pinnata</u>	stem		.17	.026	2.52	1.45	.35	.03	32	7	46	14	41	18	T	1.8	58	4
<u>FRENCHMAN FLAT - SITE NO. 21</u>																		
<u>Oryzopsis</u>	leaf	1.68	.11	.023	2.21	.73	.27	1.82	22	10	193	119	46	130	4	2.3	46	29
<u>hymenoides</u>	stem		.06	.011	4.29	.40	.10	.55	13	5	59	52	9	34	T	.9	30	24

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 22</u>																		
<u>Eurotia</u>	leaf	3.56	.25	.028	3.24	2.68	.52	.14	35	7	165	113	67	197	4	T	77	7
<u>lanata</u>	stem		.14	.009	3.84	.94	.12	.04	19	5	26	31	16	17	T	T	55	4
<u>Grayia</u>	leaf	3.13	.27	.164	11.90	1.78	1.45	.07	27	8	104	153	70	48	T	1.7	40	9
<u>spinosa</u>	stem		.18	.022	4.17	1.50	.40	.03	19	5	37	38	27	9	T	T	60	10
<u>Larrea</u>	leaf	3.11	.26	.030	2.64	2.26	.19	.19	25	3	222	39	96	375	7	.8	65	10
<u>tridentata</u>	stem		.27	.049	2.88	1.49	.21	.28	25	6	354	28	38	531	8	T	86	17
<u>Lycium</u>	leaf	4.06	.15	.017	3.36	9.15	.90	.10	64	7	92	92	82	65	3	8.2	188	13
<u>andersonii</u>	stem		.19	.009	2.22	2.17	.30	.02	27	7	25	21	24	6	T	T	69	5
<u>Mirabilis</u>	leaf	2.97	.21	.010	2.27	4.95	2.38	.15	36	6	109	111	82	53	T	13.1	205	9
<u>pudica</u>	stem		.14	.006	2.39	.79	.44	.02	12	6	11	11	23	4	T	T	23	T
<u>Oryzopsis</u>	leaf	.71	.22	.018	1.94	.51	.20	1.72	21	9	260	113	23	207	9	1.1	35	28
<u>hymenoides</u>	stem		.14	.002	2.15	.21	.15	.71	10	6	19	40	9	8	T	T	27	21
<u>FRENCHMAN FLAT - SITE NO. 23</u>																		
<u>Acamptopappus</u>	leaf	2.86	.30	.182	4.86	1.79	.58	.87	36	8	145	123	62	170	5	1.0	44	4
<u>shockleyi</u>	stem	1.08	.18	.075	3.33	1.55	.18	.05	25	6	22	33	29	18	T	T	71	6
<u>Grayia</u>	leaf	3.10	.24	.148	13.26	1.87	1.28	.10	29	15	121	158	58	59	2	5.4	43	5
<u>spinosa</u>	stem	1.42	.17	.008	4.47	1.48	.28	.02	30	6	27	26	33	6	T	T	73	9
<u>Larrea</u>	leaf	2.94	.22	.019	3.27	1.96	.18	.08	28	5	104	25	74	97	4	1.3	56	5
<u>tridentata</u>	stem	2.05	.25	.020	3.44	1.54	.18	.15	32	6	192	18	39	222	7	T	98	14
<u>Lycium</u>	leaf	4.08	.26	.022	4.79	8.20	.63	.12	61	6	123	86	90	98	4	1.4	176	17
<u>andersonii</u>	stem	1.76	.23	.009	2.50	2.25	.23	.02	39	7	30	24	34	9	T	1.3	72	7
<u>Oryzopsis</u>	leaf	2.32	.16	.021	2.84	.78	.32	1.57	30	10	174	143	48	114	4	2.3	59	32
<u>hymenoides</u>	stem	1.34	.15	.006	4.61	.22	.11	.69	16	7	30	51	9	13	T	1.4	28	20
<u>FRENCHMAN FLAT - SITE NO. 24</u>																		
<u>Atriplex</u>	leaf	2.68	.19	.022	5.75	2.02	.96	.06	42	11	81	100	52	46	2	1.6	60	14
<u>canescens</u>	stem	1.61	.14	.006	4.25	1.30	.30	.02	26	6	14	31	32	4	T	T	71	16

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 24 (Cont'd)</u>																		
<u>Mirabilis</u>	leaf	3.38	.22	.008	2.89	4.90	2.04	.13	43	9	124	153	64	47	2	8.3	220	9
<u>pudica</u>	stem	2.80	.18	.008	2.21	6.96	2.32	.12	61	8	80	101	80	42	2	14.5	289	14
<u>Oryzopsis</u>	leaf	1.60	.17	.010	2.40	.54	.20	1.90	23	7	148	128	35	71	3	2.9	37	26
<u>hymenoides</u>	stem	.92	.15	.002	4.11	.21	.14	.69	17	6	27	53	7	9	T	1.0	28	27
<u>FRENCHMAN FLAT - SITE NO. 25</u>																		
<u>Acamptopappus</u>	leaf	2.61	.23	.142	4.18	1.75	.62	.90	28	7	162	123	60	176	3	T	100	8
<u>shockleyi</u>	stem	.81	.15	.066	2.51	1.53	.23	.05	23	5	21	36	29	18	7	T	139	13
<u>Ambrosia</u>	leaf	2.95	.23	.048	3.11	5.83	.75	.19	44	7	189	130	85	357	7	1.4	336	21
<u>dumosa</u>	stem	.73	.11	.041	4.56	1.31	.39	.03	13	5	19	81	28	14	T	T	158	27
<u>Dalea</u>	leaf	4.24	.33	.054	2.17	2.96	.53	.11	39	6	200	50	40	153	2	2.2	199	24
<u>fremontii</u>	stem	1.47	.21	.013	2.51	.88	.30	.02	16	4	30	12	20	9	T	T	122	21
<u>Eurotia</u>	leaf	3.29	.21	.043	4.15	2.00	.53	.17	28	6	198	93	58	304	5	1.1	160	12
<u>lanata</u>	stem	1.42	.15	.007	2.83	.73	.11	.04	13	4	50	41	12	33	T	T	95	10
<u>Grayia</u>	leaf	2.36	.19	.038	8.72	2.53	1.52	.11	36	10	99	156	64	89	2	2.2	38	5
<u>spinosa</u>	stem	1.06	.12	.002	3.37	1.17	.31	.02	22	4	20	37	21	5	T	T	38	6
<u>Grayia</u>	leaf	2.97	.18	.141	9.14	2.90	1.32	.11	29	5	146	118	82	177	3	2.9	103	16
<u>spinosa</u>	stem	1.10	.15	.006	3.69	1.03	.30	.02	21	4	14	27	19	7	T	T	98	17
<u>Larrea</u>	leaf	2.94	.33	.020	3.35	1.80	.20	.12	24	6	175	47	67	120	4	T	122	12
<u>tridentata</u>	stem	2.09	.24	.012	3.39	1.47	.22	.09	21	5	91	18	29	104	2	T	147	19
<u>Lycium</u>	leaf	3.55	.11	.020	4.99	10.85	.22	.15	69	5	160	80	83	215	5	9.8	541	29
<u>andersonii</u>	stem	1.40	.15	.008	1.97	2.03	.24	.03	18	4	27	13	26	11	T	T	152	8
<u>FRENCHMAN FLAT - SITE NO. 26</u>																		
<u>Atriplex</u>	leaf	2.47	.16	.052	10.11	2.06	.91	.09	39	11	97	104	52	83	2	1.8	102	16
<u>canescens</u>	stem	1.85	.15	.008	8.10	2.01	.35	.03	37	7	23	31	28	12	T	T	156	24

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.										
<u>FRENCHMAN FLAT - SITE NO. 26 (Cont'd)</u>																			
<u>Eurotia</u>	leaf	3.05	.23	.030	4.03	3.11	.49	.23		37	10	282	121	63	476	6	2.1	187	14
<u>lanata</u>	stem	1.70	.16	.009	4.45	1.48	.18	.05		31	7	66	50	18	55	T	T	134	13
<u>Grayia</u>	leaf	2.72	.15	.013	11.04	.76	1.05	.02		26	11	111	161	33	4	T	1.7	34	11
<u>spinosa</u>	stem	1.56	.27	.003	6.32	1.05	.31	.03		28	7	21	27	28	5	T	T	72	14
<u>Lycium</u>	leaf	4.29	.21	.093	6.19	8.29	.85	.10		59	9	106	96	76	87	3	7.2	382	25
<u>andersonii</u>	stem	1.60	.25	.010	2.72	1.52	.23	.02		30	8	23	18	20	6	T	T	100	13
<u>Lycium</u>	leaf	3.20	.08	.169	7.27	1.86	1.05	.06		20	7	122	81	47	41	T	2.0	95	12
<u>pallidum</u>	stem	2.13	.19	.084	4.46	1.77	.30	.03		22	11	25	9	24	20	T	T	109	8
<u>Mirabilis</u>	leaf	3.21	.18	.009	4.68	2.58	1.24	.06		30	11	45	72	59	12	2	9.3	92	12
<u>pudica</u>	stem	1.54	.15	.005	5.04	1.85	.52	.03		23	10	19	9	33	10	T	T	72	10
<u>Oryzopsis</u>	leaf	1.64	.20	.035	2.44	.58	.21	1.40		29	11	189	144	58	127	5	2.8	65	43
<u>hymenoides</u>	stem	1.09	.16	.006	3.26	.22	.14	.29		13	10	21	75	5	4	T	1.1	31	20
<u>FRENCHMAN FLAT - SITE NO. 27</u>																			
<u>Oryzopsis</u>	leaf	1.38	.14	.029	2.72	.72	.22	1.74		19	8	253	151	62	239	5	.9	69	39
<u>hymenoides</u>	stem	3.55	.09	.006	5.66	.21	.08	.70		14	5	47	62	10	36	T	1.0	46	38
<u>Sphaeralcea</u>	leaf	2.23	.41	.051	3.27	4.01	.56	.35		39	12	412	117	166	915	12	2.3	234	34
<u>ambigua</u>																			
<u>FRENCHMAN FLAT - SITE NO. 28</u>																			
<u>Acamptopappus</u>	leaf	2.32	.18	.182	3.87	1.25	.79	.77		36	4	203	76	105	224	6	T	135	22
<u>shockleyi</u>	stem		.13	.076	1.71	1.35	.31	.04		21	3	34	16	32	21	T	T	223	50
<u>Ambrosia</u>	leaf	2.70	.22	.092	3.56	3.55	.83	.32		46	4	282	63	155	371	6	1.9	415	37
<u>dumosa</u>	stem		.20	.087	4.21	1.46	.52	.03		25	3	31	64	31	17	T	1.2	268	53
<u>Dalea</u>	leaf	2.61	.18	.007	1.11	2.72	.57	.13		40	5	172	55	60	123	T	1.2	251	63
<u>fremontii</u>	stem		.13	.003	1.49	1.39	.37	.04		25	2	50	14	22	20	T	T	217	59
<u>Krameria</u>	leaf	3.00	.29	.016	2.08	1.54	.52	.55		34	3	173	52	62	108	4	2.0	173	27
<u>parvifolia</u>	stem		.21	.001	1.20	.57	.27	.06		28	5	207	22	33	15	T	T	139	30

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 28 (Cont'd)</u>																		
<u>Larrea</u>	leaf	2.46	.25	.046	3.48	1.82	.34	.27	40	3	229	44	66	265	3	1.3	237	29
<u>tridentata</u>	stem		.11	.048	2.34	1.29	.45	.41	26	3	869	34	32	865	10	T	228	47
<u>Lycium</u>	leaf	3.11	.07	.020	3.87	7.18	1.88	.12	57	2	96	63	127	84	3	14.7	645	56
<u>andersonii</u>	stem		.11	.006	1.58	1.73	.24	.04	30	2	33	12	39	23	T	2.1	327	38
<u>Oryzopsis</u>	leaf	1.47	.11	.012	2.63	.55	.37	1.52	18	6	175	167	62	178	5	1.9	96	35
<u>hymenoides</u>	stem		.05	.001	3.40	.30	.12	.60	8	3	21	42	14	13	T	1.0	51	27
<u>FRENCHMAN FLAT - SITE NO. 29</u>																		
<u>Acamptopappus</u>	leaf	3.87	.28	.179	4.36	1.55	.49	.48	39	5	267	65	49	326	5	T	114	12
<u>shockleyi</u>	stem		.29	.104	4.64	1.48	.35	.21	35	5	216	32	41	234	7	T	193	24
<u>Atriplex</u>	leaf	3.86	.42	6.425	3.76	1.50	.81	.18	32	5	286	100	51	347	7	.9	83	21
<u>confertifolia</u>	stem		.41	2.690	2.40	2.50	.51	.21	43	5	251	48	44	524	12	1.0	245	49
<u>Larrea</u>	leaf	2.39	.23	.032	1.05	1.20	.33	.40	24	5	546	63	66	897	10	T	111	19
<u>tridentata</u>	stem		.24	.048	.96	1.00	.35	.55	22	7	870	40	42	1404	37	1.0	154	41
<u>Lycium</u>	leaf	4.87	.38	6.546	1.94	1.02	.59	.31	23	5	464	46	58	780	16	1.3	78	19
<u>shockleyi</u>	stem		.23	.182	1.15	2.58	.27	.41	38	3	654	32	34	1175	19	1.5	232	32
<u>FRENCHMAN FLAT - SITE NO. 30</u>																		
<u>Atriplex</u>	leaf	1.86	.09	.095	5.72	1.48	.48	.05	21	3	52	24	27	46	2	T	242	81
<u>canescens</u>	stem		.12	.169	10.95	1.92	1.33	.13	32	4	168	65	49	172	3	2.4	180	59
<u>Atriplex</u>	leaf	3.43	.44	.169	8.00	1.52	.79	.37	34	4	575	89	65	881	26	1.2	115	40
<u>canescens</u>	stem		.09	.033	2.32	.90	.34	.13	19	3	324	61	19	304	5	T	149	41
<u>Atriplex</u>	leaf	3.37	.41	3.535	6.05	1.24	.59	.16	38	5	206	99	45	247	5	1.3	110	27
<u>confertifolia</u>	stem		.30	.212	5.23	2.69	.47	.23	43	5	278	45	41	483	12	T	366	60
<u>Atriplex</u>	leaf	1.66	.18	5.821	5.94	2.13	.80	.21	44	7	208	73	66	478	9	4.3	113	35
<u>confertifolia</u>	stem		.07	1.480	4.59	1.99	.46	.07	38	3	56	28	40	69	T	1.0	255	61
<u>Sphaeralcea</u>	leaf	2.82	.68	.085	4.00	2.34	.53	.48	37	6	671	122	117	1572	36	3.4	248	71
<u>ambigua</u>																		

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 30 (Cont'd)</u>																		
<u>Stanleya</u>	leaf	2.78	.39	.057	4.57	1.93	.61	.19	36	6	229	83	59	376	17	5.7	282	32
<u>pinnata</u>	stem		.39	.012	5.05	.79	.34	.07	43	10	97	30	25	97	3	1.0	191	31
<u>Stanleya</u>	leaf	3.73	.20	.118	4.42	1.45	.80	.09	36	5	148	98	65	93	3	7.0	168	20
<u>pinnata</u>																		
<u>FRENCHMAN FLAT - SITE NO. 31</u>																		
<u>Acamptopappus</u>	leaf	1.66	.15	.212	3.14	1.98	.67	.58	25	2	170	52	73	191	9	T	133	13
<u>shockleyi</u>	stem		.07	.081	1.11	1.40	.22	.04	15	1	34	14	19	19	T	T	120	16
<u>Ambrosia</u>	leaf	2.46	.22	.093	2.52	4.85	.76	.22	43	2	250	59	96	335	7	1.8	256	14
<u>dumosa</u>	stem		.08	.065	2.84	2.36	.39	.04	22	T	49	45	30	26	2	T	141	20
<u>Atriplex</u>	leaf	1.49	.14	8.105	6.16	4.53	.77	.16	43	3	150	104	54	176	3	1.8	163	21
<u>confertifolia</u>	stem		.06	1.672	2.65	3.06	.39	.04	33	1	36	33	33	22	T	T	200	32
<u>Coleogyne</u>	leaf	1.46	.12	.011	1.12	4.69	.42	.19	40	2	202	36	28	259	6	1.3	226	17
<u>ramosissima</u>	stem		.15	.004	1.26	1.62	.21	.05	22	2	65	11	17	37	T	T	99	16
<u>Dalea</u>	leaf	2.53	.16	.010	1.86	2.80	.27	.11	31	1	126	53	48	102	2	T	105	17
<u>fremontii</u>	stem		.15	.005	1.62	1.92	.27	.03	25	1	47	15	20	20	T	T	134	19
<u>Ephedra</u>	shoot	1.79	.20	.020	2.17	1.66	.18	.07	25	4	162	17	20	106	3	T	260	26
<u>funerea</u>																		
<u>Larrea</u>	leaf	2.17	.35	.043	2.16	2.13	.31	.47	31	4	516	64	59	841	31	1.4	158	23
<u>tridentata</u>	stem		.25	.028	1.45	1.63	.23	.54	19	3	776	31	36	975	36	T	214	40
<u>Lycium</u>	leaf	2.24	.13	6.687	.48	.84	1.11	.14	13	3	179	31	64	242	6	2.1	45	14
<u>shockleyi</u>	stem		.09	.841	1.51	.92	.50	.03	17	2	41	8	18	27	T	T	95	29
<u>Menodora</u>	leaf	1.82	.15	.172	4.46	1.09	.36	.15	16	1	137	69	52	148	5	T	36	6
<u>spinescens</u>	stem		.15	.031	2.32	.48	.17	.05	14	2	112	24	31	77	2	T	42	7
<u>Mirabilis</u>	leaf	1.42	.11	.036	3.24	3.08	1.21	.15	26	2	173	83	66	136	5	1.3	199	16
<u>pudica</u>	stem		.06	.040	4.85	2.24	.70	.08	34	3	68	22	41	90	2	.9	115	27

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 31 (Cont'd)</u>																		
<u>Oryzopsis</u>	leaf	.78	.10	.006	1.99	.55	.17	1.56	21	2	143	72	35	82	4	1.0	43	6
<u>hymenoides</u>	stem		.06	.001	2.38	.11	.04	.55	T	T	17	26	7	7	T	T	16	T
<u>Sphaeralcea</u>	leaf	2.19	.41	.039	3.35	3.48	.52	.36	34	2	418	136	142	841	26	2.5	234	37
<u>ambigua</u>																		
<u>FRENCHMAN FLAT - SITE NO. 32</u>																		
<u>Ambrosia</u>	leaf	2.95	.32	.081	4.32	4.11	.57	.26	38	4	196	54	113	269	9	2.2	265	10
<u>dumosa</u>	stem		.30	.079	4.16	1.79	.36	.04	24	3	25	39	30	16	T	1.1	146	13
<u>Atriplex</u>	leaf	2.03	.14	6.771	6.23	2.79	.43	.11	32	2	132	46	57	154	4	2.1	78	15
<u>confertifolia</u>	stem		.07	.880	3.28	2.06	.21	.03	27	1	39	32	29	17	T	T	130	32
<u>Ephedra</u>	shoot	1.95	.23	.014	1.73	1.78	.17	.14	26	2	283	22	21	259	7	T	277	26
<u>nevadensis</u>																		
<u>Krameria</u>	leaf	2.58	.34	.073	1.71	1.78	.28	.10	14	3	79	35	57	41	T	1.2	134	10
<u>parvifolia</u>	stem		.26	.008	.98	.99	.16	.04	16	3	39	10	38	19	T	T	122	13
<u>Larrea</u>	leaf	2.42	.16	.070	2.00	1.95	.21	.23	22	3	275	45	69	372	10	1.0	145	11
<u>tridentata</u>	stem		.19	.054	1.97	1.27	.18	.19	20	4	371	30	26	369	5	T	156	19
<u>Lycium</u>	leaf	2.70	.16	.167	4.56	9.96	1.26	.15	54	3	162	61	95	181	5	9.7	778	37
<u>andersonii</u>	stem		.15	.011	1.67	1.97	.37	.03	16	3	34	12	22	13	T	T	209	9
<u>FRENCHMAN FLAT - SITE NO. 33</u>																		
<u>Acamptopappus</u>	leaf	2.22	.30	.126	3.28	1.05	.58	.77	20	4	367	90	60	461	14	T	61	10
<u>shockleyi</u>	stem		.16	.023	2.11	1.58	.25	.11	23	2	97	34	25	86	T	T	147	13
<u>Ambrosia</u>	leaf	2.95	.34	.169	3.82	3.92	.73	.31	39	4	317	69	128	559	8	1.9	318	22
<u>dumosa</u>	stem		.15	.140	3.28	1.72	.37	.06	23	3	44	54	30	43	T	1.0	214	33
<u>Atriplex</u>	leaf	1.72	.17	6.770	4.39	3.97	.73	.22	35	5	249	93	63	393	11	1.9	109	18
<u>confertifolia</u>	stem		.08	.770	3.16	2.51	.31	.06	33	3	61	38	27	50	T	T	166	27
<u>Krameria</u>	leaf	2.10	.40	.134	1.51	1.45	.32	.12	25	5	133	45	53	79	2	T	85	10
<u>parvifolia</u>	stem		.31	.023	.94	1.20	.27	.07	18	6	115	15	25	71	T	T	99	13

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 33 (Cont'd)</u>																		
<u>Larrea</u>	leaf	2.34	.28	.047	2.44	2.08	.24	.45	30	3	533	61	65	958	11	T	166	22
<u>tridentata</u>	stem		.21	.038	2.14	1.38	.32	.53	22	3	507	36	31	1003	24	T	162	35
<u>Lycium</u>	leaf	3.29	.08	.023	4.64	9.45	1.82	.15	56	2	147	43	82	163	5	6.3	657	48
<u>andersonii</u>	stem		.16	.009	2.00	2.78	.37	.03	26	1	49	12	22	19	T	T	301	25
<u>Lycium</u>	leaf	2.16	.26	6.147	.72	1.58	.71	.22	13	5	274	82	50	366	18	2.5	57	16
<u>shockleyi</u>	stem		.19	.380	2.12	1.97	.52	.12	22	4	96	31	26	136	3	T	146	28
<u>Oryzopsis</u>	leaf	1.25	.08	.008	2.28	.72	.19	1.25	14	3	164	166	25	127	6	.9	83	17
<u>hymenoides</u>	stem		.07	.001	3.42	.21	.09	.60	6	3	23	43	7	7	T	T	58	13
<u>FRENCHMAN FLAT - SITE NO. 34</u>																		
<u>Atriplex</u>	leaf	2.24	.29	.114	11.88	2.31	.73	.19	33	5	214	64	40	255	9	2.4	79	16
<u>canescens</u>	stem		.15	.015	6.54	2.95	.26	.08	28	4	85	15	23	86	4	1.1	174	26
<u>Stanleya</u>	leaf	2.88	.22	.063	4.87	3.83	.51	.13	37	4	156	77	57	137	5	11.2	214	16
<u>pinnata</u>																		
<u>FRENCHMAN FLAT - SITE NO. 35</u>																		
<u>Ambrosia</u>	leaf	3.05	.30	.093	2.84	3.36	1.05	.23	31	2	215	48	189	321	6	1.8	219	19
<u>dumosa</u>	stem		.21	.066	2.81	1.63	.65	.05	22	2	35	51	49	37	T	1.1	153	33
<u>Atriplex</u>	leaf	1.94	.18	7.337	6.00	2.26	.65	.09	21	1	185	52	67	73	3	1.8	54	14
<u>confertifolia</u>	stem		.08	.923	2.58	1.19	.23	.02	18	1	20	32	23	6	T	T	58	14
<u>Dalea</u>	leaf	2.02	.14	.013	1.08	3.29	.79	.13	24	2	164	43	61	144	3	1.0	158	29
<u>fremontii</u>	stem		.18	.015	1.46	1.10	.55	.02	14	1	34	14	23	11	T	T	75	18
<u>Ephedra</u>	shoot	1.81	.15	.010	1.84	1.30	.28	.12	20	2	211	20	29	195	5	T	185	35
<u>nevadensis</u>																		
<u>Krameria</u>	leaf	2.09	.33	.024	1.39	1.59	.50	.35	25	3	185	58	67	173	4	1.6	97	17
<u>parvifolia</u>	stem		.18	.005	.97	.69	.22	.04	18	2	32	12	51	24	T	T	73	16

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 35 (Cont'd)</u>																		
<u>Larrea</u>	leaf	2.55	.22	.020	3.18	1.73	.39	.18	26	3	239	50	98	233	5	2.0	123	14
<u>tridentata</u>	stem		.14	.022	1.69	.98	.33	.25	16	2	339	26	40	331	10	T	135	25
<u>Lycium</u>	leaf	2.92	.38	.013	3.81	6.80	2.12	.13	49	2	136	69	104	111	3	6.2	567	35
<u>andersonii</u>	stem		.19	.008	1.98	1.14	.52	.02	16	2	27	11	26	9	T	T	104	16
<u>FRENCHMAN FLAT - SITE NO. 36</u>																		
<u>Acamptopappus</u>	leaf	1.95	.46	.152	3.09	2.15	.94	.67	28	3	241	80	68	310	6	T	126	13
<u>shockleyi</u>	stem		.16	.035	1.77	1.68	.29	.10	19	1	67	20	27	60	2	T	156	24
<u>Ambrosia</u>	leaf	2.99	.58	.031	3.13	2.94	.71	.24	29	3	239	51	119	340	8	1.4	214	17
<u>dumosa</u>	stem		.34	.025	4.40	1.80	.45	.06	17	3	57	54	30	41	T	T	202	39
<u>Eurotia</u>	leaf	2.67	.38	.019	3.22	2.13	.98	.24	25	3	246	155	79	401	7	1.7	209	16
<u>lanata</u>	stem		.15	.005	2.97	.87	.30	.08	10	2	147	50	18	106	2	T	154	15
<u>Larrea</u>	leaf	2.73	.25	.027	2.73	1.49	.28	.26	23	3	209	38	68	476	8	1.1	129	17
<u>tridentata</u>	stem		.21	.028	2.59	.99	.23	.27	17	3	258	25	26	470	7	T	110	23
<u>Oryzopsis</u>	leaf	1.19	.12	.006	2.41	.67	.27	1.22	14	5	173	183	52	116	4	T	75	15
<u>hymenoides</u>	stem		.11	.001	3.67	.15	.07	.27	13	2	19	29	10	2	T	T	40	11
<u>Sphaeralcea</u>	leaf	3.27	.61	.050	4.38	3.83	.64	.32	38	4	377	140	162	714	12	1.7	308	53
<u>ambigua</u>																		
<u>FRENCHMAN FLAT - SITE NO. 37</u>																		
<u>Ambrosia</u>	leaf	2.83	.63	.112	3.33	4.20	.92	.30	34	5	293	69	121	471	13	2.3	324	48
<u>dumosa</u>	stem		.25	.116	4.12	1.78	.45	.06	26	3	66	52	31	59	T	T	220	76
<u>Atriplex</u>	leaf	1.67	.15	6.492	9.04	4.62	1.04	.27	45	4	290	74	69	610	7	2.3	181	33
<u>confertifolia</u>	stem		.06	1.202	4.28	2.82	.47	.08	31	2	74	21	36	106	3	.7	231	60
<u>Larrea</u>	leaf	2.35	.23	.072	2.87	1.78	.31	.65	35	2	418	51	83	1089	12	1.4	158	34
<u>tridentata</u>	stem		.17	.073	1.92	1.17	.32	.70	20	3	1249	42	36	1849	25	T	154	58
<u>Oryzopsis</u>	leaf	1.09	.09	.017	1.32	.65	.27	1.46	18	5	223	186	81	234	5	2.6	96	29
<u>hymenoides</u>	stem		.12	.004	2.63	.22	.11	.61	17	3	47	57	14	42	3	T	90	22

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 38</u>																		
<u>Atriplex</u>	leaf	2.16	.20	.159	7.14	1.76	1.02	.15	33	12	238	69	50	186	5	3.2	88	22
<u>canescens</u>	stem		.07	.054	4.52	2.91	.34	.08	29	6	69	20	31	91	3	2.2	232	41
<u>Atriplex</u>	leaf	2.21	.26	5.061	4.50	3.14	.63	.24	30	10	262	62	56	536	12	4.5	134	27
<u>confertifolia</u>	stem		.09	.149	3.64	1.90	.30	.10	26	4	88	29	32	123	3	T	162	32
<u>Stanleya</u>	leaf	2.06	.13	.119	3.08	2.86	.46	.11	29	6	131	64	94	164	5	18.7	177	9
<u>pinnata</u>																		
<u>FRENCHMAN FLAT - SITE NO. 39</u>																		
<u>Atriplex</u>	leaf	1.90	.17	2.632	2.23	6.20	.73	.27	45	5	313	110	64	713	16	2.3	206	21
<u>confertifolia</u>	stem		.06	1.083	2.16	3.70	.29	.10	32	3	71	39	34	115	4	T	242	26
<u>Oryzopsis</u>	leaf	1.34	.20	.023	1.89	.57	.18	1.41	16	6	312	90	45	358	10	2.3	71	23
<u>hymenoides</u>	stem		.17	.009	3.01	.36	.12	.94	11	4	56	44	12	37	T	1.1	62	23
<u>Sphaeralcea</u>	leaf	2.71	.81	.118	2.96	2.66	.49	.59	26	7	746	142	126	1701	34	2.9	165	43
<u>ambigua</u>	stem		.24	.033	2.22	1.80	.24	.22	12	3	250	39	23	397	5	T	217	55
<u>FRENCHMAN FLAT - SITE NO. 40</u>																		
<u>Ambrosia</u>	leaf	3.67	.46	.064	4.68	3.81	.47	.35	52	4	411	82	94	800	8	1.4	197	12
<u>dumosa</u>	stem	.98	.17	.033	4.18	1.90	.34	.12	30	4	125	43	34	165	6	T	196	15
<u>Atriplex</u>	leaf	2.09	.14	.041	8.59	3.66	1.06	.19	50	5	289	86	51	394	10	2.3	163	17
<u>canescens</u>	stem	1.54	.09	.014	5.34	2.48	.43	.10	35	4	80	31	28	119	4	T	237	27
<u>Eurotia</u>	leaf	3.45	.21	.076	5.59	2.95	.74	.38	46	6	552	119	51	974	10	1.1	172	16
<u>lanata</u>	stem	1.53	.11	.011	4.18	.81	.13	.14	24	4	155	40	23	194	11	T	87	9
<u>Larrea</u>	leaf	2.91	.28	.032	2.36	1.99	.23	.46	34	5	472	52	93	870	20	1.9	107	23
<u>tridentata</u>	stem	1.92	.19	.058	2.08	1.26	.16	.53	26	4	446	29	37	1442	20	1.0	130	21
<u>Mirabilis</u>	leaf	3.49	.33	.044	3.76	3.98	1.92	.31	48	8	372	106	67	776	17	7.1	268	16
<u>pudica</u>	stem	1.99	.19	.039	3.74	1.50	.83	.13	28	9	136	13	29	162	3	T	98	11

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 41</u>																		
<u>Atriplex</u>	leaf	2.46	.27	.092	7.12	2.46	1.13	.34	35	5	468	125	49	771	18	1.7	109	16
<u>canescens</u>	stem	2.08	.13	.025	7.38	3.77	.41	.17	56	4	147	38	29	310	6	T	260	26
<u>Atriplex</u>	leaf	2.19	.25	4.343	3.71	3.31	.63	.35	43	5	412	107	63	935	19	2.4	111	15
<u>confertifolia</u>	stem	2.00	.19	1.649	4.90	3.39	.38	.17	51	5	215	43	42	351	7	.9	268	28
<u>Eurotia</u>	leaf	4.12	.40	.073	5.96	2.86	.49	.43	53	6	539	141	54	1138	28	1.7	155	23
<u>lanata</u>	stem	2.30	.17	.012	4.25	.81	.10	.17	24	4	220	42	24	230	12	T	91	12
<u>Mirabilis</u>	leaf	3.33	.53	.149	3.50	3.03	1.34	.82	41	7	862	140	63	2765	43	4.2	231	34
<u>pudica</u>	stem	1.78	.17	.018	4.27	1.57	.47	.13	46	6	113	15	32	173	7	1.2	113	16
<u>FRENCHMAN FLAT - SITE NO. 42</u>																		
<u>Ambrosia</u>	leaf	2.77	.49	.134	6.15	3.79	.72	.44	55	6	482	102	129	821	12	2.0	351	15
<u>dumosa</u>	stem	.67	.11	.109	3.49	2.80	.36	.07	35	3	72	59	41	77	4	1.0	389	28
<u>Atriplex</u>	leaf	1.62	.22	6.634	3.71	3.24	.64	.33	43	12	363	108	55	819	15	1.4	134	16
<u>confertifolia</u>	stem	1.25	.11	2.119	3.84	3.09	.34	.14	41	2	123	49	41	255	6	T	310	34
<u>Ephedra</u>	shoot	1.89	.28	.018	2.42	1.22	.17	.16	31	1	290	24	23	298	7	T	223	18
<u>nevadensis</u>																		
<u>Krameria</u>	leaf	2.37	.47	.196	2.53	1.28	.33	.17	34	2	213	45	31	182	T	T	115	9
<u>parvifolia</u>	stem	1.47	.38	.117	2.11	.93	.24	.19	35	4	247	24	39	305	4	T	148	14
<u>Larrea</u>	leaf	2.75	.25	.092	2.05	1.93	.24	.44	44	3	534	59	84	1076	8	1.2	195	17
<u>tridentata</u>	stem	1.70	.22	.072	2.11	1.19	.21	.40	27	4	539	35	29	950	10	T	176	25
<u>FRENCHMAN FLAT - SITE NO. 43</u>																		
<u>Acamptopappus</u>	leaf	2.26	.23	.185	5.13	1.73	.73	1.05	28	5	406	159	75	468	10	1.4	145	12
<u>shockleyi</u>	stem		.16	.121	3.79	1.84	.17	.10	34	3	77	28	29	106	2	T	305	33
<u>Ambrosia</u>	leaf	3.68	.44	.081	5.63	3.38	.53	.46	48	6	664	88	130	1337	43	2.6	343	31
<u>dumosa</u>	stem		.14	.028	4.40	1.63	.29	.08	29	3	99	61	31	96	4	T	258	33

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.										
<u>FRENCHMAN FLAT - SITE NO. 43 (Cont'd)</u>																			
<u>Atriplex</u>	leaf	2.44	.15	.045	8.03	3.80	1.14	.25		56	6	327	125	60	713	14	1.4	217	26
<u>canescens</u>	stem		.11	.006	4.81	1.90	.36	.05		38	4	41	46	32	34	T	T	221	29
<u>Eurotia</u>	leaf	2.79	.19	.100	3.38	1.67	.43	.34		32	4	740	101	49	879	21	1.2	163	18
<u>lanata</u>	stem		.19	.014	3.03	.94	.17	.14		32	5	204	72	18	210	2	T	194	23
<u>Larrea</u>	leaf	2.37	.29	.027	2.53	1.64	.19	.30		40	4	451	44	76	691	16	1.0	150	20
<u>tridentata</u>	stem		.21	.048	2.32	1.56	.19	.44		36	6	824	37	45	1184	19	T	237	37
<u>Lycium</u>	leaf	2.32	.04	.028	6.30	9.92	.91	.19		79	3	281	71	75	445	12	9.9	656	27
<u>andersonii</u>	stem		.16	.010	1.74	2.18	.17	.08		32	5	69	14	25	98	2	1.4	250	12
<u>Oryzopsis</u>	leaf	1.48	.19	.009	2.07	.44	.15	1.73		27	7	327	138	42	283	8	2.7	74	26
<u>hymenoides</u>	stem		.16	.001	3.01	.32	.10	.91		13	5	63	80	10	36	T	T	56	19
<u>Sphaeralcea</u>	leaf	2.12	.72	.128	3.35	2.98	.53	.84		41	7	1412	251	160	2976	44	2.1	252	50
<u>ambigua</u>	stem		.15	.018	2.14	2.54	.45	.14		35	3	146	45	28	286	7	1.8	280	32
<u>FRENCHMAN FLAT - SITE NO. 44</u>																			
<u>Atriplex</u>	leaf	2.55	.15	.028	6.41	2.69	.88	.15		46	5	200	79	49	387	6	1.4	144	17
<u>canescens</u>	stem		.11	.012	5.95	2.01	.43	.08		41	4	75	35	36	103	3	1.1	206	22
<u>Mirabilis</u>	leaf	3.12	.29	.013	4.17	5.17	2.32	.22		63	8	232	190	85	235	3	14.0	396	21
<u>pudica</u>																			
<u>Oryzopsis</u>	leaf	2.03	.19	.019	2.12	.59	.21	1.68		26	10	470	186	37	453	10	2.5	68	41
<u>hymenoides</u>	stem		.16	.002	2.71	.21	.15	.84		20	6	64	70	11	18	2	2.8	57	35
<u>Sphaeralcea</u>	leaf	3.01	.51	.118	3.62	3.44	.60	.67		46	7	1098	159	129	2684	35	2.2	283	56
<u>ambigua</u>																			
<u>FRENCHMAN FLAT - SITE NO. 46</u>																			
<u>Atriplex</u>	leaf	2.56	.68	5.626	8.02	2.49	.70	.73		45	17	1177	147	63	2637	51	2.1	140	39
<u>confertifolia</u>	stem		.17	.226	5.34	2.83	.40	.24		40	8	293	59	41	636	12	1.0	343	54

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
FRENCHMAN FLAT - SITE NO. 46 (Cont'd)																		
Kochia	leaf	4.14	.32	2.737	4.35	1.99	.67	.40	45	9	711	149	53	1341	27	1.1	88	22
americana	stem		.13	3.052	4.98	.64	.60	.40	38	9	880	75	33	1381	34	.9	114	40
Sphaeralcea	leaf	2.67	.26	.074	2.18	5.33	.48	.97	55	9	2052	136	110	5348	79	2.7	406	72
ambigua																		
FRENCHMAN FLAT - SITE NO. 47																		
Acamptopappus	leaf	1.64	.26	.193	3.95	1.27	.56	1.06	21	5	316	113	119	416	12	1.0	108	16
shockleyi	stem		.09	.158	2.20	1.25	.16	.09	15	3	88	18	18	108	3	T	168	28
Ambrosia	leaf	2.14	.25	.149	5.67	5.79	.93	.41	44	6	591	75	170	1668	18	2.6	479	44
dumosa	stem		.07	.167	3.85	1.96	.42	.09	20	3	105	40	46	167	12	.9	276	51
Dalea	leaf	2.22	.14	.042	1.38	3.10	.28	.26	30	6	402	55	55	492	7	1.2	283	50
fremontii	stem		.14	.042	1.59	1.76	.23	.07	22	3	99	16	19	97	2	T	227	39
Ephedra	shoot	1.37	.15	.034	1.47	2.08	.24	.33	31	4	915	35	20	912	14	T	320	47
nevadensis																		
Eurotia	leaf	2.33	.15	.043	2.13	2.12	.36	.37	26	3	676	69	69	885	14	T	216	24
lanata	stem		.10	.017	1.92	1.34	.21	.11	22	4	210	41	16	179	4	T	176	20
Grayia	leaf	2.43	.16	.143	13.25	1.43	1.27	.12	20	6	119	109	78	127	2	3.4	100	17
spinosa	stem		.11	.005	2.53	.82	.35	.03	16	4	40	26	18	22	T	T	93	23
Krameria	leaf	2.77	.25	.080	2.78	1.44	.39	.15	19	6	207	46	40	261	4	.8	135	30
parvifolia	stem		.18	.017	1.43	.86	.21	.08	17	6	186	12	27	158	2	T	102	23
Larrea	leaf	2.16	.22	.110	2.75	1.64	.23	.42	27	4	495	37	86	1222	11	1.2	163	30
tridentata	stem		.17	.050	2.00	1.08	.21	.24	12	4	318	19	33	700	6	T	150	33
Lycium	leaf	1.65	.02	.100	4.38	12.57	1.06	.13	76	6	141	68	79	151	7	15.2	715	58
andersonii	stem		.07	.010	1.47	1.60	.25	.04	19	4	56	8	18	59	T	T	220	13
FRENCHMAN FLAT - SITE NO. 48																		
Acamptopappus	leaf	1.54	.14	.161	3.37	1.46	.62	.90	27	6	276	105	78	353	15	1.8	91	11
shockleyi	stem		.10	.073	1.47	1.47	.16	.06	20	4	45	19	17	40	2	T	121	15

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr.	Ba
% of dry wt.									ppm of dry wt.									
FRENCHMAN FLAT - SITE NO. 48 (Cont'd)																		
Ambrosia	leaf	2.21	.15	.164	3.47	5.09	.76	.33	48	4	288	78	166	633	15	3.1	402	21
dumosa	stem		.07	.147	3.22	2.25	.45	.06	22	4	59	60	42	69	2	.8	197	26
Ephedra	shoot	1.41	.12	.018	1.43	1.50	.16	.21	20	3	300	18	22	446	11	T	194	31
nevadensis																		
Grayia	leaf	1.93	.11	.068	9.73	1.77	1.41	.14	25	7	169	162	64	168	5	4.1	73	13
spinosa	stem		.11	.003	2.46	.81	.23	.03	20	5	42	26	19	17	T	T	68	12
Larrea	leaf	2.09	.19	.035	2.34	2.25	.23	.25	28	3	263	38	111	512	14	2.4	171	18
tridentata	stem		.14	.025	2.12	1.39	.20	.30	22	4	360	21	45	401	11	T	158	26
Lycium	leaf	2.24	.02	.040	2.81	9.15	.93	.17	55	4	132	35	105	162	6	12.4	611	30
andersonii	stem		.09	.015	1.54	1.44	.20	.02	14	5	23	10	25	10	T	T	137	11
Oryzopsis	leaf	.48	.06	.010	1.38	.61	.11	1.58	21	3	168	86	55	173	9	.9	70	14
hymenoides	stem		.07	.001	2.42	.23	.04	.66	5	2	18	13	9	13	4	T	38	10
FRENCHMAN FLAT - SITE NO. 49																		
Acamptopappus	leaf	1.90	.52	.200	3.42	1.89	1.04	.88	29	4	347	141	91	694	9	T	106	17
shockleyi	stem		.14	.045	1.32	1.35	.19	.05	20	2	34	27	19	23	4	T	120	14
Ambrosia	leaf	1.75	.23	.108	3.27	2.91	1.01	.45	38	3	491	73	179	1479	21	2.0	139	17
dumosa	stem		.09	.038	3.63	1.95	.58	.10	22	2	97	75	48	187	5	.9	114	19
Atriplex	leaf	1.89	.09	4.031	4.24	3.62	.81	.16	31	2	171	67	67	463	11	2.1	117	17
confertifolia	stem		.04	.161	2.49	2.14	.20	.04	18	1	47	18	28	37	2	T	141	26
Dalea	leaf	2.32	.13	.032	1.55	2.05	.43	.21	51	3	212	28	78	422	10	3.5	128	15
fremontii	stem		.14	.047	1.99	1.12	.31	.05	19	2	50	11	35	57	4	2.1	100	15
Ephedra	shoot	2.00	.16	.017	2.40	.88	.28	.18	19	3	208	20	36	328	7	T	122	22
nevadensis																		
Eurotia	leaf	2.39	.14	.035	4.85	1.39	.74	.21	25	2	191	58	97	425	13	1.7	105	17
lanata	stem		.09	.011	2.60	.71	.28	.07	19	2	77	32	29	80	5	1.1	100	15
Grayia	leaf	2.23	.18	.139	10.98	1.85	1.11	.10	28	3	90	96	77	127	3	3.7	54	8
spinosa	stem		.14	.005	2.56	1.60	.30	.05	26	2	44	17	33	40	3	T	72	14

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>FRENCHMAN FLAT - SITE NO. 49 (Cont'd)</u>																		
<u>Krameria</u>	leaf	2.41	.30	.200	2.53	1.44	.40	.21	25	2	169	34	59	236	6	1.2	87	11
<u>parvifolia</u>	stem		.24	.048	1.25	.79	.27	.44	21	4	461	19	52	570	10	T	101	18
<u>Larrea</u>	leaf	2.28	.21	.048	2.00	1.55	.23	.25	24	2	281	37	86	441	15	1.4	146	15
<u>tridentata</u>	stem		.19	.060	1.96	1.20	.29	.42	27	3	406	33	41	850	18	T	166	25
<u>Lycium</u>	leaf	2.27	.10	.029	6.99	9.16	1.93	.20	68	3	240	81	83	309	5	13.2	710	31
<u>andersonii</u>	stem		.15	.006	1.40	1.71	.24	.05	21	2	50	10	22	46	2	.8	185	10
<u>Menodora</u>	leaf	1.88	.56	.079	3.10	1.12	.42	.28	22	2	201	82	40	288	13	T	57	12
<u>spinescens</u>	stem		.23	.017	1.94	.40	.17	.09	14	2	75	30	32	76	4	T	42	5
<u>Oryzopsis</u>	leaf	.74	.13	.009	1.32	.58	.17	1.62	16	1	174	77	73	226	13	1.1	48	10
<u>hymenoides</u>	stem		.06	.002	1.93	.25	.09	.72	8	2	30	30	11	21	2	.8	52	7
<u>ROCK VALLEY - SITE NO. 50</u>																		
<u>Ambrosia</u>	leaf	4.00	.41	.123	6.71	3.44	.49	.31	49	5	513	50	139	634	42	3.5	70	12
<u>dumosa</u>	stem		.12	.070	3.73	1.63	.28	.09	18	T	311	27	23	298	7	T	57	16
<u>Ephedra</u>	shoot	2.82	.28	.009	3.11	1.11	.20	.05	19	3	126	34	34	111	4	T	79	21
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	2.80	.21	.106	3.53	2.14	.60	.33	27	4	720	112	57	811	44	T	54	12
<u>lanata</u>	stem		.14	.025	4.71	.81	.20	.12	16	5	343	45	23	315	23	.9	45	11
<u>Grayia</u>	leaf	5.29	.25	.169	11.16	3.09	1.43	.14	36	6	305	207	59	403	18	3.3	44	10
<u>spinosa</u>	stem		.26	.012	8.78	3.17	.66	.06	35	5	135	35	29	159	6	T	67	17
<u>Larrea</u>	leaf	2.56	.19	.126	1.49	1.32	.21	.49	21	3	720	38	97	867	85	3.7	43	13
<u>tridentata</u>	stem		.20	.169	1.47	.86	.27	.95	21	6	1484	35	48	1210	62	2.6	48	24
<u>Lycium</u>	leaf	2.83	.14	.147	3.37	8.86	.63	.12	35	3	213	45	72	437	23	8.0	714	21
<u>andersonii</u>	stem		.18	.154	2.88	3.27	.27	.04	27	4	90	9	29	131	5	1.7	83	14
<u>ROCK VALLEY - SITE NO. 51</u>																		
<u>Ambrosia</u>	leaf	2.37	.30	.089	4.82	3.71	.76	.34	41	2	402	44	242	677	32	3.4	66	9
<u>dumosa</u>	stem	.54	.06	.105	3.95	1.56	.51	.04	17	1	60	24	40	95	3	1.8	57	14

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>ROCK VALLEY - SITE NO. 51 (Cont'd)</u>																		
<u>Atriplex</u>	leaf	1.34	.13	3.844	7.34	4.32	.79	.14	29	4	271	80	100	424	19	4.8	52	12
<u>confertifolia</u>	stem	.75	.04	.556	3.17	2.10	.30	.02	11	T	45	19	21	62	T	T	52	11
<u>Ephedra</u>	shoot	1.81	.16	.021	1.72	1.17	.22	.17	21	3	420	27	31	390	20	1.1	67	12
<u>nevadensis</u>																		
<u>Grayia</u>	leaf	2.17	.12	1.652	7.96	2.30	1.17	.04	35	2	81	133	84	85	3	5.0	36	7
<u>spinosa</u>	stem	1.15	.17	.130	5.44	.58	.31	T	55	1	12	12	21	8	T	1.0	26	6
<u>Krameria</u>	leaf	2.10	.35	.161	3.01	1.94	.51	.05	39	5	107	45	40	91	2	1.4	47	8
<u>parvifolia</u>	stem	1.15	.28	.056	1.68	.59	.23	.01	18	4	28	7	29	26	T	T	33	6
<u>Larrea</u>	leaf	2.28	.21	.030	2.43	1.30	.18	.13	19	1	202	21	119	308	14	2.6	42	7
<u>tridentata</u>	stem	1.88	.12	.024	2.47	.89	.20	.13	18	1	254	14	32	294	9	T	44	9
<u>Lycium</u>	leaf	2.51	.13	.164	4.09	9.63	.97	.10	46	3	172	48	134	221	10	13.4	695	13
<u>andersonii</u>	stem	1.01	.14	.114	1.60	1.39	.22	T	9	3	21	3	16	16	T	1.5	50	T
<u>Lycium</u>	leaf	1.76	.11	1.074	3.18	4.12	1.76	.14	31	3	297	137	72	289	13	9.1	85	10
<u>pallidum</u>	stem	1.29	.07	.175	4.21	3.45	.79	.06	28	2	122	10	46	167	10	5.8	82	10
<u>ROCK VALLEY - SITE NO. 53</u>																		
<u>Acamptopappus</u>	leaf	1.80	.11	.165	4.18	1.32	.77	.78	19	1	137	78	104	152	4	T	37	4
<u>shockleyi</u>	stem	.57	.04	.018	1.69	.93	.19	.02	4	T	27	10	11	24	T	T	38	7
<u>Ambrosia</u>	leaf	2.23	.16	.098	5.62	2.82	.87	.20	22	3	209	37	222	347	11	2.8	50	10
<u>dumosa</u>	stem	.65	.09	.057	3.99	1.49	.50	.03	13	2	50	45	38	69	T	1.8	52	17
<u>Ephedra</u>	shoot	2.23	.16	.012	1.91	1.44	.31	.07	14	2	312	32	15	261	5	T	88	23
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	3.15	.20	.033	3.76	2.26	1.07	.10	27	2	187	142	143	256	4	3.3	72	8
<u>lanata</u>	stem	1.59	.08	.003	2.56	.80	.42	.03	9	1	78	37	27	64	T	T	56	11
<u>Grayia</u>	leaf	2.56	.09	.375	15.06	.85	1.55	.04	20	10	80	107	78	68	T	9.8	21	5
<u>spinosa</u>	stem	1.37	.09	.001	3.08	.49	.30	T	8	3	9	12	11	4	T	T	21	5

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
ROCK VALLEY - SITE NO. 53 (Cont'd)																		
<u>Krameria</u>	leaf	2.05	.29	.184	2.91	1.40	.54	.05	15	5	161	55	38	127	3	2.4	34	8
<u>parvifolia</u>	stem	1.10	.20	.015	1.35	.58	.20	.01	11	5	47	8	34	29	T	T	25	7
<u>Larrea</u>	leaf	2.39	.16	.066	3.31	.97	.30	.20	22	2	295	24	136	490	19	3.8	45	23
<u>tridentata</u>	stem	1.83	.13	.034	3.46	.55	.37	.18	7	2	287	13	33	362	11	2.3	40	16
<u>Lycium</u>	leaf	3.35	.11	1.229	7.80	4.50	1.33	.06	35	2	129	25	110	129	4	8.6	93	20
<u>andersonii</u>	stem	.96	.07	.161	2.02	.62	.31	T	5	1	12	3	15	8	T	T	34	8
<u>Lycium</u>	leaf	2.61	.03	1.405	4.07	.85	1.04	.02	9	1	115	47	67	49	2	3.8	35	5
<u>pallidum</u>	stem	.45	.07	.082	1.91	1.41	.27	.01	4	T	35	8	24	30	2	T	60	8
ROCK VALLEY - SITE NO. 54																		
<u>Acamptopappus</u>	leaf	2.32	.36	.192	5.74	1.93	.85	.80	27	3	286	66	86	400	14	T	62	11
<u>shockleyi</u>	stem	.84	.14	.081	2.84	1.60	.22	.03	6	1	47	6	13	63	T	T	68	23
<u>Ambrosia</u>	leaf	2.29	.25	.076	4.23	3.40	.81	.22	28	5	242	33	168	365	13	3.6	73	12
<u>dumosa</u>	stem	.70	.14	.058	3.25	1.24	.43	.01	14	3	24	20	35	29	T	T	50	17
<u>Ephedra</u>	shoot	1.72	.16	.008	1.72	1.56	.23	.09	10	1	289	28	17	262	8	T	98	25
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	2.12	.17	.012	2.70	2.45	.76	.11	22	3	166	125	67	269	4	T	74	12
<u>lanata</u>	stem	.98	.11	.001	2.04	.56	.14	.01	8	3	28	21	11	27	2	T	38	8
<u>Krameria</u>	leaf	2.22	.28	.127	2.54	.85	.33	.13	14	4	212	16	35	174	3	1.5	38	8
<u>parvifolia</u>	stem	1.01	.23	.010	1.24	.58	.20	.02	5	4	70	7	27	54	2	T	33	7
<u>Larrea</u>	leaf	2.49	.19	.028	2.70	1.96	.33	.20	28	2	338	27	80	397	15	2.1	55	12
<u>tridentata</u>	stem	1.64	.12	.019	2.63	.77	.22	.18	5	2	237	14	39	393	32	T	46	13
<u>Lycium</u>	leaf	3.18	.13	1.597	4.80	3.32	1.36	.08	24	6	174	50	98	172	8	9.8	84	18
<u>andersonii</u>	stem	1.05	.11	.073	1.28	.81	.22	T	9	4	13	3	13	8	T	T	37	7
<u>Lycium</u>	leaf	3.53	.16	1.389	4.84	.84	1.02	.04	51	13	143	35	41	74	4	7.8	50	10
<u>pallidum</u>	stem	1.14	.13	.073	2.30	.67	.27	T	7	5	11	3	12	12	T	1.1	46	11

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>ROCK VALLEY - SITE NO. 54 (Cont'd)</u>																		
<u>Oryzopsis</u>	leaf	.60	.09	.002	.97	.21	.12	1.27	3	1	28	29	14	17	3	T	21	6
<u>hymenoides</u>	stem	.59	.08	.004	1.60	.32	.14	1.66	7	3	87	53	32	85	4	2.6	25	6
<u>ROCK VALLEY - SITE NO. 55</u>																		
<u>Ambrosia</u>	leaf	2.11	.19	.079	4.69	3.82	.94	.22	17	2	222	48	227	378	12	2.5	73	12
<u>dumosa</u>	stem	.51	.04	.029	2.75	.88	.26	.01	T	T	16	18	28	20	T	T	40	11
<u>Ephedra</u>	shoot	1.96	.18	.006	1.94	.86	.18	.05	17	1	189	25	30	150	4	T	78	17
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	2.56	.15	.028	3.01	1.50	.66	.08	17	2	137	66	89	169	6	T	55	7
<u>lanata</u>	stem	1.03	.06	.002	2.05	.46	.18	.02	5	1	40	26	14	32	T	T	34	6
<u>Grayia</u>	leaf	1.81	.07	.152	12.56	1.92	1.00	.01	19	3	54	64	80	36	2	5.9	26	7
<u>spinosa</u>	stem	.98	.14	.002	2.86	.56	.31	T	11	1	17	6	11	5	T	T	19	5
<u>Krameria</u>	leaf	1.47	.30	.159	2.50	1.36	.52	.04	22	3	89	49	45	68	T	2.0	32	7
<u>parvifolia</u>	stem	.98	.18	.008	.90	.64	.18	.01	12	3	24	6	41	18	2	T	27	7
<u>Larrea</u>	leaf	2.13	.15	.068	2.83	1.55	.42	.32	22	T	371	35	93	583	14	1.5	59	13
<u>tridentata</u>	stem	1.43	.13	.099	1.83	.71	.34	.64	14	3	813	26	34	1108	48	2.1	41	16
<u>Lycium</u>	leaf	2.13	.08	.175	3.44	6.29	1.60	.07	32	T	112	37	124	156	7	9.8	100	21
<u>andersonii</u>	stem	.91	.09	.047	1.44	.64	.23	T	5	1	12	3	13	6	T	1.1	36	7
<u>Lycium</u>	leaf	2.72	.09	1.326	7.31	1.45	1.53	.06	22	5	134	38	82	121	4	5.4	50	11
<u>pallidum</u>	stem	1.17	.08	.062	2.22	.58	.27	T	11	2	11	3	17	12	T	1.4	44	10
<u>Mirabilis</u>	leaf	2.28	.09	.167	3.93	2.40	1.59	.06	21	3	149	60	98	92	7	3.6	77	16
<u>bigelovii</u>	stem	.84	.03	.189	5.24	1.09	.42	.02	8	2	33	3	23	32	3	T	37	7
<u>Oryzopsis</u>	leaf	.37	.03	.001	.96	.21	.14	1.48	T	T	21	58	33	10	T	T	31	7
<u>hymenoides</u>	stem	.58	.02	.003	1.54	.37	.21	1.81	13	2	171	77	87	123	5	3.0	40	13
<u>ROCK VALLEY - SITE NO. 56</u>																		
<u>Acamptopappus</u>	leaf	1.60	.15	.169	3.51	1.53	.58	1.04	16	1	225	105	76	207	5	T	33	5
<u>shockleyi</u>	stem	.75	.11	.133	2.16	1.12	.26	.03	6	T	55	10	12	51	T	T	39	7

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
ROCK VALLEY - SITE NO. 56 (Cont'd)																		
Ambrosia	leaf	2.23	.24	.175	5.54	3.15	.72	.22	39	2	261	37	242	432	20	4.3	62	9
dumosa	stem	.52	.07	.186	3.41	1.37	.37	.02	4	T	32	34	32	38	T	T	44	12
Ephedra	shoot	2.26	.21	.010	2.05	1.25	.27	.12	22	2	362	20	23	250	10	T	80	22
nevadensis																		
Grayia	leaf	1.45	.07	.175	8.02	2.57	1.11	.03	18	1	79	80	61	81	3	4.2	29	5
spinosa	stem	.76	.12	.001	1.78	.85	.22	T	5	T	19	9	8	7	T	T	24	4
Krameria	leaf	2.00	.36	.147	1.93	1.40	.46	.06	24	4	94	45	49	58	T	1.5	36	7
parvifolia	stem	1.11	.19	.033	.77	.44	.17	.01	5	3	35	6	32	21	T	T	21	4
Lycium	leaf	1.89	.11	2.437	4.69	3.05	1.03	.06	25	1	141	38	88	147	7	6.5	62	12
andersonii	stem	.97	.14	.078	1.66	1.20	.30	T	10	2	25	5	16	13	T	T	47	9
Lycium	leaf	1.12	.06	1.363	1.35	5.89	1.69	.09	21	1	169	104	83	198	8	7.2	97	16
pallidum	stem	.83	.06	.164	1.45	3.45	1.14	.04	15	1	80	8	45	105	7	4.5	70	14
Oryzopsis	leaf	.80	.04	.200	1.57	.22	.23	1.89	9	4	200	131	21	137	4	2.5	31	7
hymenoides	stem	.42	.05	.001	1.98	.35	.11	.80	9	1	24	36	6	21	T	T	26	5
ROCK VALLEY - SITE NO. 57																		
Ambrosia	leaf	2.14	.25	.041	5.68	4.02	.59	.25	31	3	297	41	200	460	18	3.3	65	7
dumosa	stem	.68	.10	.018	3.01	1.12	.25	.02	T	1	34	28	28	35	T	T	33	7
Coleogyne	leaf	1.35	.13	.008	1.26	3.19	.37	.19	25	2	261	33	26	342	11	1.3	48	8
ramosissima	stem	.74	.09	.002	.93	1.63	.19	.04	7	1	101	10	33	101	3	T	41	8
Dalea	leaf	2.74	.20	.004	1.08	4.01	.51	.09	30	3	175	35	43	211	6	4.0	55	15
fremontii	stem	1.34	.14	.001	1.25	1.31	.26	.01	12	2	41	7	16	32	T	2.7	40	9
Ephedra	shoot	1.85	.24	.009	1.62	1.26	.23	.13	23	3	443	30	25	311	13	5.6	75	19
nevadensis																		
Eurotia	leaf	2.44	.17	.013	2.59	2.22	.50	.13	19	2	266	73	66	345	10	2.7	50	6
lanata	stem	1.31	.09	.002	2.10	.69	.16	.03	8	1	103	22	12	84	2	1.2	37	5

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
ROCK VALLEY - SITE NO. 57 (Cont'd)																		
Grayia	leaf	1.87	.27	.032	9.82	3.98	1.44	.19	31	4	338	113	90	432	20	10.1	47	10
spinosa	stem	.93	.13	.003	2.23	1.23	.24	.03	14	5	84	23	11	96	3	1.5	30	5
Larrea	leaf	1.69	.14	.023	2.42	2.36	.29	.26	22	1	458	47	109	557	15	2.9	49	9
tridentata	stem	1.32	.11	.042	1.86	1.14	.26	.40	14	2	643	36	31	748	22	1.6	46	18
Lycium	leaf	2.61	.10	.582	4.35	4.16	1.21	.08	19	2	187	85	121	145	8	11.2	83	15
andersonii	stem	1.32	.10	.048	1.54	1.55	.27	T	12	1	29	6	22	15	T	T	50	6
Lycium	leaf	1.56	.07	.485	2.47	5.80	1.93	.12	31	3	222	121	64	237	11	11.1	90	14
pallidum	stem	1.21	.07	.167	2.41	3.32	.77	.05	20	T	101	9	39	121	8	4.6	79	12
Oryzopsis	leaf	.91	.03	.013	2.47	.47	.13	2.07	10	3	317	64	30	310	21	6.0	31	7
hymenoides	stem	.42	.03	.001	1.80	.22	.07	.86	7	1	81	22	9	35	T	.8	20	4
ROCK VALLEY - SITE NO. 58																		
Ambrosia	leaf	2.25	.35	.055	3.08	3.78	.50	.23	21	4	307	56	170	429	15	3.1	52	5
dumosa	stem	1.05	.11	.019	2.67	1.21	.22	.01	8	1	33	32	17	29	T	T	35	6
Ephedra	shoot	1.67	.19	.013	1.71	.91	.14	.15	8	1	340	14	22	308	18	2.1	40	6
nevadensis																		
Eurotia	leaf	1.40	.09	.016	2.28	1.39	.25	.21	11	T	532	45	39	449	24	T	31	6
lanata	stem	.71	.11	.004	1.79	.72	.10	.04	11	T	155	23	10	114	2	T	32	T
Grayia	leaf	1.43	.12	.010	13.19	1.26	.88	.04	16	2	101	117	56	77	4	7.8	21	4
spinosa	stem	.95	.10	.001	2.20	.97	.26	.02	11	2	47	31	15	36	T	T	29	5
Krameria	leaf	1.90	.36	.039	4.32	1.03	.40	.06	46	7	76	28	131	98	3	3.8	29	5
parvifolia	stem	1.18	.24	.002	2.01	.81	.14	.02	16	5	49	6	26	51	T	T	32	5
Lycium	leaf	1.71	.17	2.325	5.48	.21	1.22	.03	30	9	184	158	64	37	T	8.5	13	T
pallidum	stem	1.05	.15	.075	1.53	.89	.24	T	28	4	26	7	15	18	T	T	26	3
Oryzopsis	leaf	.75	.09	.006	1.99	.22	.14	2.37	33	3	164	37	21	122	6	4.1	20	6
hymenoides	stem	.41	.07	.003	2.01	.32	.07	.73	23	2	123	16	5	78	T	2.6	16	6

Mineral Composition of Vegetation from Soil Profile Study Sites

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Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.										ppm of dry wt.									
<u>JACKASS FLATS - SITE NO. 63</u>																			
<u>Acamptopappus shockleyi</u>	leaf	3.05	.28	.154	4.85	3.22	.53	.59		54	5	369	122	52	512	12	1.0	190	14
	stem		.16	.049	2.62	2.13	.16	.10		36	3	140	33	21	167	4	T	190	17
<u>Ambrosia dumosa</u>	leaf	3.94	.49	.062	4.72	4.05	.43	.33		57	6	444	102	85	890	15	1.2	279	26
	stem		.31	.064	5.08	3.14	.35	.23		46	5	376	72	39	590	10	T	299	40
<u>Ephedra nevadensis</u>	shoot	3.22	.38	.012	3.05	1.42	.24	.10		36	5	163	33	32	149	3	T	190	17
<u>Grayia spinosa</u>	leaf	2.62	.38	.090	7.40	2.24	.90	.18		37	7	272	148	49	417	10	2.0	133	16
	stem		.27	.018	5.71	2.55	.54	.13		42	6	203	58	30	219	3	T	286	28
<u>Larrea tridentata</u>	leaf	2.51	.23	.038	1.47	1.62	.17	.25		26	4	433	35	50	357	6	T	130	13
	stem		.17	.030	1.14	1.99	.20	.29		31	5	472	25	41	582	13	.9	206	20
<u>Lycium andersonii</u>	leaf	3.57	.24	.015	3.45	6.48	.70	.14		58	4	204	108	51	288	8	2.4	364	27
	stem		.28	.008	3.39	2.87	.31	.11		47	5	136	41	27	152	3	T	270	21
<u>JACKASS FLATS - SITE NO. 64</u>																			
<u>Acamptopappus shockleyi</u>	leaf	3.00	.37	.172	4.19	1.87	.37	.57		38	5	329	106	52	337	10	1.1	112	11
	stem	1.04	.18	.038	2.23	2.53	.12	.17		32	3	161	43	23	177	6	T	220	21
<u>Ambrosia dumosa</u>	leaf	4.38	.51	.097	4.99	3.89	.33	.41		59	5	541	58	80	1022	22	1.8	312	27
	stem	1.77	.35	.071	5.47	2.40	.34	.21		39	4	292	37	40	423	8	1.2	244	29
<u>Hymenoclea salsola</u>	leaf	4.52	.56	.043	5.91	3.45	.38	.29		59	9	424	60	99	840	11	T	236	21
	stem	3.76	.32	.034	4.88	1.41	.39	.22		33	6	433	19	34	498	13	T	337	38
<u>Larrea tridentata</u>	leaf	2.43	.26	.027	1.39	2.33	.10	.24		39	4	329	44	65	451	5	T	182	15
	stem	1.87	.20	.032	1.64	2.93	.17	.31		46	5	560	50	52	731	13	T	344	38
<u>Lycium andersonii</u>	leaf	5.34	.26	.034	3.24	9.87	.66	.16		71	5	217	81	66	381	7	6.4	735	27
	stem	2.50	.26	.051	3.71	4.34	.28	.09		53	5	100	19	34	120	2	1.3	490	21
<u>JACKASS FLATS - SITE NO. 65</u>																			
<u>Acamptopappus shockleyi</u>	leaf	3.32	.35	.105	4.46	2.17	.45	.63		47	6	258	118	53	336	8	1.0	94	8
	stem		.26	.039	4.21	1.93	.23	.13		38	4	96	46	42	124	7	T	162	12

Mineral Composition of Vegetation from Soil Profile Study Sites

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Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
JACKASS FLATS - SITE NO. 65 (Cont'd)																		
Ambrosia	leaf	4.55	.47	.069	5.00	4.07	.41	.32	54	7	456	86	85	896	11	1.5	216	20
dumosa	stem		.27	.043	3.93	2.17	.34	.18	35	5	220	67	39	373	7	.9	207	25
Eurotia	leaf	3.37	.19	.054	2.90	3.18	.58	.40	42	5	758	116	56	1099	18	1.1	232	21
lanata	stem		.14	.025	3.70	1.26	.24	.17	29	5	492	55	24	448	7	T	139	21
Grayia	leaf	3.29	.34	.069	5.69	2.18	.89	.16	46	8	165	121	51	277	7	2.0	89	8
spinosa	stem		.23	.014	5.36	1.57	.36	.09	33	7	80	41	27	97	3	T	154	15
Haplopappus	leaf	2.34	.23	.106	2.61	2.38	.30	.72	37	3	598	140	68	1452	12	T	154	30
cooperi	stem		.27	.123	2.15	1.86	.16	.61	35	4	581	72	49	1843	20	T	140	24
Larrea	leaf	2.20	.23	.035	1.54	1.92	.18	.29	33	3	481	48	52	657	8	T	126	15
tridentata	stem		.20	.029	1.38	2.21	.21	.38	48	4	472	38	51	815	22	T	197	22
Lycium	leaf	3.89	.52	1.364	4.14	4.78	1.21	.21	51	8	238	118	56	430	10	4.9	285	19
pallidum	stem		.21	.113	1.76	2.92	.31	.12	33	6	203	23	23	255	4	T	183	15
Oryzopsis	leaf	1.12	.14	.010	1.80	.63	.15	1.70	22	5	146	59	61	92	3	1.2	78	20
hymenoides	stem		.14	.002	2.05	.30	.09	.55	16	3	24	25	9	9	T	T	54	12
JACKASS FLATS - SITE NO. 66																		
Coleogyne	leaf	1.68	.25	.023	1.22	3.60	.42	.21	34	3	224	56	27	311	4	T	235	21
ramosissima	stem		.18	.005	1.13	1.32	.17	.05	17	2	47	13	36	36	T	T	126	23
Larrea	leaf	2.64	.28	.058	3.08	1.90	.23	.18	27	3	169	35	74	361	4	T	159	12
tridentata	stem		.20	.037	2.63	2.04	.27	.25	29	4	279	25	40	570	8	T	251	30
Lycium	leaf	3.19	.17	.055	3.34	8.85	1.11	.13	46	3	109	148	112	89	3	10.4	889	30
andersonii	stem		.15	.006	1.49	2.00	.24	.02	22	3	29	12	28	7	T	T	255	12
JACKASS FLATS - SITE NO. 67																		
Acamptopappus	leaf	1.68	.20	.182	3.39	2.84	.62	1.01	45	5	180	141	85	513	7	T	147	9
shockleyi	stem		.13	.072	2.28	1.44	.20	.05	27	3	27	25	17	22	T	T	119	11

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba	
		% of dry wt.									ppm of dry wt.									
JACKASS FLATS - SITE NO. 67 (Cont'd)																				
Ambrosia	leaf	1.93	.22	.052	3.21	5.01	.49	.35		48	7	353	74	110	772	7	1.6	316	15	
dumosa	stem		.11	.051	4.02	2.37	.32	.07		28	3	72	70	30	95	T	T	236	29	
Coleogyne	leaf	1.59	.22	.018	1.61	4.61	.40	.30		39	2	247	57	32	478	7	T	289	22	
ramosissima	stem		.17	.010	1.40	1.82	.17	.09		20	3	134	19	27	123	3	T	145	19	
Ephedra	shoot	1.83	.20	.017	1.91	1.65	.16	.19		30	4	263	22	29	360	9	.9	193	15	
nevadensis																				
Eurotia	leaf	2.07	.18	.037	2.68	2.42	.38	.23		34	3	281	82	62	453	8	T	167	12	
lanata	stem		.14	.011	2.16	1.11	.14	.06		32	5	118	37	16	67	3	T	134	12	
Krameria	leaf	2.04	.37	.020	3.05	1.46	.26	.14		36	6	178	64	38	138	3	T	89	9	
parvifolia	stem		.20	.006	1.22	.89	.14	.04		16	5	67	16	29	36	T	T	79	8	
260 Larrea	leaf	2.07	.23	.086	2.67	2.19	.19	.25		32	3	267	37	67	510	4	1.0	173	14	
	stem		.15	.056	1.89	1.98	.19	.31		23	3	413	25	36	758	12	T	221	22	
tridentata																				
Menodora	leaf	1.84	.26	.069	3.65	1.32	.32	.14		20	3	111	74	43	107	3	T	31	T	
spinescens	stem		.23	.025	2.63	.69	.17	.11		17	3	108	22	36	101	3	T	51	5	
Oryzopsis	leaf	.90	.21	.020	1.45	.56	.18	1.93		22	7	399	51	66	190	6	2.1	83	25	
hymenoides	stem		.14	.003	2.10	.32	.08	.77		9	4	43	22	11	25	2	T	45	15	
JACKASS FLATS - SITE NO. 68																				
Acamptopappus	leaf	1.95	.21	.105	3.62	1.95	.63	.88		22	4	199	107	71	273	5	1.0	91	6	
shockleyi	stem		.12	.021	1.86	1.59	.18	.05		17	2	39	21	19	26	2	T	130	9	
Ambrosia	leaf	2.82	.28	.084	4.36	4.79	.59	.37		50	4	255	76	145	443	8	2.1	311	13	
dumosa	stem		.14	.053	3.66	2.16	.35	.05		28	3	37	56	34	27	T	T	215	23	
Coleogyne	leaf	1.74	.29	.020	1.50	3.65	.38	.20		33	4	220	48	26	275	4	1.1	219	16	
ramosissima	stem		.21	.004	1.28	1.40	.21	.05		22	3	51	10	42	33	T	T	129	14	
Ephedra	shoot	1.87	.26	.015	2.13	2.00	.19	.13		37	4	316	28	22	256	3	T	277	22	
nevadensis																				

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.										
JACKASS FLATS - SITE NO. 68 (Cont'd)																			
<u>Krameria</u>	leaf	1.70	.34	.023	1.70	1.42	.24	.26		24	4	168	43	39	186	7	T	83	9
<u>parvifolia</u>	stem		.29	.009	1.54	1.15	.14	.06		27	5	58	17	34	38	T	T	121	13
<u>Larrea</u>	leaf	2.29	.13	.020	2.03	.74	.09	.14		25	2	291	32	43	256	3	T	46	11
<u>tridentata</u>	stem		.16	.018	2.13	1.44	.24	.24		36	3	257	28	41	352	14	T	148	16
<u>Menodora</u>	leaf	2.09	.34	.036	3.24	1.28	.33	.11		22	3	145	70	46	110	2	T	32	4
<u>spinescens</u>	stem		.25	.015	2.84	.81	.19	.09		24	3	116	31	36	81	2	T	55	4
<u>Oryzopsis</u>	leaf	1.13	.17	.049	1.71	.59	.13	1.30		17	5	85	40	81	36	3	1.6	66	9
<u>hymenoides</u>	stem		.16	.001	1.79	.23	.10	1.14		11	4	24	22	12	6	3	T	32	5
JACKASS FLATS - SITE NO. 69																			
<u>Acamptopappus</u>	leaf	2.06	.33	.115	3.66	2.49	.57	.65		29	4	137	112	60	105	3	.8	120	6
<u>shockleyi</u>	stem	.73	.16	.050	2.03	1.24	.15	.04		20	3	21	19	17	11	2	T	97	8
<u>Coleogyne</u>	leaf	1.94	.36	.011	1.71	3.33	.39	.14		38	3	127	54	26	186	3	.9	204	13
<u>ramosissima</u>	stem	.97	.20	.004	1.13	2.14	.18	.04		22	2	45	14	39	30	2	T	178	17
<u>Ephedra</u>	shoot	1.60	.22	.009	1.78	1.73	.13	.13		26	2	187	21	21	191	5	T	184	16
<u>nevadensis</u>																			
<u>Krameria</u>	leaf	1.84	.43	.015	1.81	1.60	.23	.28		24	5	145	45	34	76	T	T	93	9
<u>parvifolia</u>	stem	1.18	.29	.007	1.19	1.13	.14	.07		19	5	75	14	26	45	2	T	96	9
<u>Larrea</u>	leaf	2.15	.21	.038	2.47	1.86	.19	.18		31	3	255	35	56	336	4	T	120	12
<u>tridentata</u>	stem	1.83	.15	.015	2.22	2.22	.16	.18		29	4	266	27	29	349	6	T	219	18
<u>Menodora</u>	leaf	2.28	.47	.068	3.86	.93	.28	.32		26	4	279	78	69	344	10	T	15	17
<u>spinescens</u>	stem	1.68	.36	.011	3.25	.49	.15	.10		20	4	113	35	50	110	5	T	6	T
<u>Oryzopsis</u>	leaf	1.25	.23	.012	1.79	1.02	.18	1.82		22	7	208	61	65	120	4	1.4	98	18
<u>hymenoides</u>	stem	.56	.16	.002	2.40	.33	.08	.93		9	4	81	25	11	37	2	T	47	11
JACKASS FLATS - SITE NO. 70																			
<u>Coleogyne</u>	leaf	1.85	.22	.018	1.65	4.95	.48	.20		36	2	198	44	40	273	6	1.2	285	14
<u>ramosissima</u>	stem		.20	.004	1.10	1.80	.23	.05		20	1	61	12	35	44	T	T	146	12

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>JACKASS FLATS - SITE NO. 70 (Cont'd)</u>																		
<u>Ephedra nevadensis</u>	shoot	1.72	.24	.023	2.66	2.34	.29	.18	31	4	409	46	32	364	7	.9	404	27
<u>Krameria parvifolia</u>	leaf	1.89	.36	.011	2.12	1.92	.30	.11	25	4	108	36	42	78	3	T	112	8
	stem		.29	.003	1.28	1.37	.21	.05	20	4	50	15	46	34	T	T	135	11
<u>Larrea tridentata</u>	leaf	2.04	.22	.053	2.57	2.19	.29	.36	30	2	273	44	86	819	6	T	160	34
	stem		.14	.099	2.39	1.43	.32	.65	30	3	500	34	40	1089	14	T	187	37
<u>Menodora spinescens</u>	leaf	2.50	.34	.065	3.44	.67	.31	.14	21	7	155	32	70	282	3	T	19	5
	stem		.25	.011	2.91	.50	.19	.10	16	3	76	22	44	69	3	T	23	T
<u>Oryzopsis spinescens</u>	leaf	.87	.16	.008	1.78	.51	.15	1.67	17	6	148	37	32	112	10	1.6	55	12
	stem		.18	.002	2.42	.23	.13	.55	16	4	58	16	19	35	T	T	52	11
<u>JACKASS FLATS - SITE NO. 71</u>																		
<u>Coleogyne ramosissima</u>	leaf	2.09	.39	.027	1.24	3.50	.41	.27	36	5	432	50	28	724	8	.9	202	18
	stem		.14	.011	1.01	1.09	.14	.11	20	2	244	13	21	232	5	T	75	11
<u>Ephedra nevadensis</u>	shoot	3.13	.41	.011	2.64	1.63	.24	.17	34	6	270	28	51	265	4	T	178	18
<u>Krameria parvifolia</u>	leaf	2.49	.37	.022	2.00	1.07	.25	.17	32	3	129	27	44	84	2	T	62	8
	stem		.26	.011	1.51	.78	.16	.04	15	4	67	14	34	30	3	T	59	8
<u>Larrea tridentata</u>	leaf	2.27	.18	.033	2.28	1.84	.31	.22	31	2	328	41	54	473	6	T	95	14
	stem		.13	.031	1.16	1.83	.26	.23	27	4	408	26	42	551	6	T	177	22
<u>Menodora spinescens</u>	leaf	2.95	.41	.045	3.10	.91	.30	.21	22	5	411	49	41	449	7	T	24	10
	stem		.24	.021	2.39	.64	.16	.16	17	4	277	20	26	285	5	T	55	10
<u>JACKASS FLATS - SITE NO. 72</u>																		
<u>Acamptopappus shockleyi</u>	leaf	2.80	.34	.092	4.45	1.70	.46	.56	30	3	245	76	63	338	10	.9	95	8
	stem	.91	.14	.024	1.81	2.35	.15	.16	34	2	178	38	25	222	5	T	194	14

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
JACKASS FLATS - SITE NO. 72 (Cont'd)																		
<u>Acamptopappus shockleyi</u>	leaf	1.48	.18	.097	2.99	2.20	.64	.94	41	3	199	106	100	418	9	T	128	8
	stem	.59	.14	.058	2.56	2.27	.26	.11	34	45	110	34	26	131	2	T	175	14
<u>Ambrosia dumosa</u>	leaf	3.98	.45	.126	4.54	3.11	.50	.54	46	5	588	73	93	1559	8	1.2	235	25
	stem	1.29	.25	.045	3.42	1.27	.27	.22	30	3	239	39	31	352	5	T	127	18
<u>Ambrosia dumosa</u>	leaf	2.50	.29	.068	3.79	4.66	.63	.41	55	5	364	70	156	841	15	2.3	325	19
	stem	.74	.12	.035	3.06	1.97	.31	.06	30	3	61	55	40	66	2	T	193	18
<u>Atriplex canescens</u>	leaf	3.00	.38	.055	6.70	2.30	.85	.23	44	4	304	81	58	595	13	1.3	163	25
	stem	1.40	.14	.017	3.21	2.25	.40	.15	36	4	262	63	25	387	5	T	229	29
<u>Atriplex canescens</u>	leaf	2.42	.23	.023	6.45	2.37	.64	.12	43	8	118	95	62	171	3	1.6	81	16
	stem	1.33	.14	.004	4.00	1.55	.23	.02	42	4	23	17	36	9	T	T	106	16
<u>Eurotia lanata</u>	leaf	3.04	.15	.040	1.94	3.29	.54	.50	40	4	862	77	51	1715	25	T	256	24
	stem	2.00	.16	.032	4.07	.93	.22	.28	30	5	392	41	25	675	17	T	128	20
<u>Eurotia lanata</u>	leaf	2.11	.20	.041	2.64	1.89	.33	.32	38	3	432	56	93	814	16	1.3	111	12
	stem	1.06	.10	.013	2.68	1.10	.18	.10	28	4	164	32	22	203	3	T	121	9
<u>Hymenoclea salsola</u>	leaf	4.11	.47	.038	4.06	2.45	.39	.41	45	9	415	40	88	896	13	1.1	159	14
	stem	2.39	.28	.025	3.44	1.31	.28	.25	30	4	298	19	40	484	8	T	234	24
<u>Larrea tridentata</u>	leaf	2.20	.21	.031	3.41	1.53	.19	.19	36	3	316	32	72	433	5	T	108	11
	stem	1.59	.19	.018	2.79	1.62	.15	.21	31	2	266	25	40	460	11	T	157	22
<u>Larrea tridentata</u>	leaf	1.88	.20	.037	1.83	2.21	.20	.38	40	3	461	43	71	999	10	T	156	22
	stem	1.52	.19	.033	1.53	1.39	.32	.29	39	4	481	32	43	688	16	T	134	20
<u>Menodora spinescens</u>	leaf	2.98	.35	.042	3.50	.97	.28	.34	30	6	488	49	52	672	16	T	48	15
	stem	1.65	.22	.021	2.80	.84	.15	.34	31	3	419	20	60	542	8	T	154	16
<u>Menodora spinescens</u>	leaf	2.10	.30	.033	3.99	1.28	.45	.15	38	30	212	58	59	195	5	T	39	5
	stem	1.44	.24	.017	2.47	.53	.21	.06	23	4	97	29	27	82	T	T	34	T
<u>Oryzopsis hymenoides</u>	leaf	1.19	.12	.013	2.07	.71	.13	1.39	26	8	161	49	53	141	5	T	73	12
	stem	.62	.09	.001	2.19	.40	.09	.45	20	3	20	14	19	8	T	T	91	10

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>JACKASS FLATS - SITE NO. 73</u>																		
<u>Oryzopsis</u>	leaf	1.20	.20	.028	1.89	.75	.19	1.89	24	9	247	117	59	260	8	2.0	102	37
<u>hymenoides</u>	stem		.13	.008	2.69	.37	.12	.89	18	5	44	70	11	29	11	1.8	72	34
<u>Sphaeralcea</u>	leaf	1.60	.48	.096	2.68	6.80	.60	.58	49	5	887	172	154	2695	32	2.4	422	39
<u>ambigua</u>																		
<u>YUCCA FLAT - SITE NO. 74</u>																		
<u>Atriplex</u>	leaf	3.64	.44	3.497	7.52	2.00	.81	.10	35	10	115	53	55	117	2	2.0	67	23
<u>confertifolia</u>	stem		.30	.613	5.75	2.36	.51	.08	34	7	64	18	40	95	4	T	172	45
<u>Coleogyne</u>	leaf	1.71	.13	.015	1.02	2.81	.39	.17	30	4	172	28	42	286	6	T	128	26
<u>ramosissima</u>	stem		.06	.017	1.04	1.12	.12	.20	13	3	293	10	27	422	13	T	71	25
<u>Eurotia</u>	leaf	3.61	.22	.014	3.08	2.51	.43	.13	32	5	104	103	39	99	5	1.2	57	12
<u>lanata</u>	stem		.17	.006	4.52	1.21	.26	.06	18	4	55	45	22	35	2	T	59	15
<u>Lepidium</u>	leaf	1.83	.25	.025	2.91	3.27	.28	.05	32	5	51	59	39	26	2	3.2	58	8
<u>fremontii</u>	stem		.18	.027	3.23	.81	.11	.02	26	6	16	22	16	4	2	T	33	7
<u>Lycium</u>	leaf	3.24	.13	.022	2.97	6.31	.82	.09	41	3	64	32	40	64	4	4.6	171	23
<u>andersonii</u>	stem		.13	.003	1.63	2.04	.20	.05	25	4	28	12	17	18	T	T	89	15
<u>YUCCA FLAT - SITE NO. 75</u>																		
<u>Coleogyne</u>	leaf	1.48	.07	.008	.98	3.85	.51	.25	40	4	192	31	38	327	10	T	191	32
<u>ramosissima</u>	stem		.08	.007	1.30	1.59	.24	.13	16	3	193	12	50	227	13	T	102	29
<u>Dalea</u>	leaf	2.29	.09	.036	.98	2.34	.53	.13	28	5	190	40	86	231	5	1.5	189	35
<u>fremontii</u>	stem		.09	.056	1.48	1.14	.36	.04	21	4	38	12	34	28	T	1.9	147	35
<u>Ephedra</u>	shoot	1.88	.13	.108	1.59	1.67	.39	.07	26	5	87	26	24	83	2	T	268	32
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	3.33	.17	.092	3.20	2.05	1.14	.22	33	6	276	102	116	451	5	1.3	164	18
<u>lanata</u>	stem		.10	.008	2.27	.71	.30	.07	19	4	73	27	29	66	2	T	112	18
<u>Grayia</u>	leaf	3.21	.28	.091	8.67	1.92	1.34	.07	31	5	77	36	98	42	T	2.7	59	13
<u>spinosa</u>	stem		.13	.004	2.08	.48	.29	.02	13	3	32	12	28	16	T	T	32	10

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>YUCCA FLAT - SITE NO. 75 (Cont'd)</u>																		
<u>Lycium</u>	leaf	3.01	.17	.054	7.02	2.74	1.58	.32	28	7	348	35	80	819	28	5.2	211	33
<u>andersonii</u>	stem		.07	.003	1.94	.98	.28	.06	17	4	74	9	21	65	2	T	118	18
<u>Menodora</u>	leaf	2.11	.14	.149	3.69	1.07	.53	.20	15	5	174	61	19	356	T	T	31	6
<u>spinescens</u>	stem		.12	.015	2.14	.22	.20	.16	15	5	167	28	45	145	4	T	22	7
<u>Tetradymia</u>	leaf	1.42	.05	.175	5.40	5.04	1.06	.25	36	4	239	99	113	541	9	2.0	296	28
<u>glabrata</u>	stem		.12	.019	1.53	.81	.21	.07	17	5	128	19	24	117	3	T	60	11
<u>YUCCA FLAT - SITE NO. 76</u>																		
<u>Acamptopappus</u>	leaf	3.12	.28	.182	3.11	1.17	.56	.45	22	2	273	54	60	420	11	T	42	12
<u>shockleyi</u>	stem		.20	.175	4.08	1.97	.44	.27	27	3	515	35	35	541	9	T	134	35
<u>Artemisia</u>	leaf	2.69	.35	.152	3.40	.95	.64	.73	21	7	1425	136	37	2488	35	.9	40	50
<u>spinescens</u>	stem		.22	.185	3.42	.74	.49	.64	14	6	1227	73	34	1689	41	T	63	55
<u>Atriplex</u>	leaf	3.90	.43	3.480	4.94	3.24	1.08	.26	38	5	350	78	57	765	17	2.0	73	35
<u>confertifolia</u>	stem		.38	2.240	5.77	2.22	.83	.20	39	5	214	35	43	384	4	T	194	92
<u>Eurotia</u>	leaf	3.66	.25	.093	3.38	1.13	1.10	.46	27	3	788	103	59	1238	19	1.5	59	28
<u>lanata</u>	stem		.20	.051	5.02	.51	.56	.27	20	3	480	51	26	684	11	T	53	30
<u>Lycium</u>	leaf	2.75	.16	.020	4.79	4.98	1.85	.13	35	2	169	71	62	290	5	3.7	318	60
<u>andersonii</u>	stem		.10	.019	2.29	1.17	.52	.13	19	2	261	21	20	274	4	T	113	29
<u>Menodora</u>	leaf	3.21	.31	.169	3.23	.64	.45	.21	15	4	360	63	40	444	9	T	32	17
<u>spinescens</u>	stem		.14	.137	1.80	.59	.32	.37	12	4	460	37	36	509	6	T	75	21
<u>YUCCA FLAT - SITE NO. 77</u>																		
<u>Coleogyne</u>	leaf	2.09	.28	.021	1.81	4.77	.48	.23	55	8	253	31	33	520	9	.8	234	180
<u>ramosissima</u>	stem		.20	.017	1.63	1.55	.22	.15	27	7	194	11	34	205	7	T	109	142
<u>Ephedra</u>	shoot	3.16	.29	.013	3.16	1.01	.28	.11	32	7	154	19	29	143	4	T	123	83
<u>nevadensis</u>																		
<u>Eurotia</u>	leaf	3.54	.23	.042	2.49	1.95	.76	.37	44	11	534	130	71	909	18	1.7	86	76
<u>lanata</u>	stem		.16	.017	5.06	.82	.26	.25	25	8	282	36	31	405	8	T	86	92

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si		Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.										
<u>YUCCA FLAT - SITE NO. 77 (Cont'd)</u>																			
<u>Grayia</u>	leaf	3.03	.26	.032	7.70	2.38	1.51	.14		54	12	210	117	60	270	6	4.0	97	66
<u>spinosa</u>	stem		.17	.005	4.99	1.29	.45	.05		26	8	57	28	35	52	2	T	136	95
<u>Haplopappus</u>	leaf	2.51	.28	.083	3.29	1.53	.30	.42		43	18	545	86	70	937	27	T	68	101
<u>cooperi</u>	stem		.11	.037	1.68	1.05	.16	.41		21	10	629	35	39	820	23	T	71	124
<u>Lycium</u>	leaf	3.45	.15	.018	3.13	6.60	1.21	.14		55	15	192	54	74	311	6	6.6	349	98
<u>andersonii</u>	stem		.18	.007	2.64	2.30	.40	.05		42	11	51	12	32	40	T	T	190	94
<u>YUCCA FLAT - SITE NO. 78</u>																			
<u>Coleogyne</u>	leaf	2.16	.19	.013	1.36	4.05	.54	.20		52	8	243	32	39	343	7	T	170	174
<u>ramosissima</u>	stem		.16	.007	1.51	1.83	.25	.13		28	7	155	13	42	177	7	T	100	180
<u>Ephedra</u>	shoot	2.97	.26	.005	1.38	.89	.22	.10		21	4	139	20	39	63	T	T	116	138
<u>nevadensis</u>																			
<u>Eurotia</u>	leaf	3.52	.24	.047	3.32	1.58	.75	.29		37	8	356	108	51	587	15	1.1	91	63
<u>lanata</u>	stem		.15	.019	4.85	.68	.27	.14		20	7	159	29	26	227	8	T	84	78
<u>Grayia</u>	leaf	3.29	.20	.042	9.36	2.56	1.80	.13		39	10	200	120	49	155	3	3.3	78	59
<u>spinosa</u>	stem		.15	.007	5.29	1.95	.64	.07		30	7	75	22	35	72	2	T	142	112
<u>Haplopappus</u>	leaf	3.55	.28	.057	3.29	1.33	.29	.25		42	14	398	71	44	439	7	T	45	65
<u>cooperi</u>	stem		.25	.103	4.47	1.84	.31	.24		36	11	444	46	50	478	9	T	111	149
<u>Larrea</u>	leaf	2.19	.19	.016	1.88	.94	.16	.16		21	12	176	41	62	264	9	1.0	36	35
<u>tridentata</u>	stem		.15	.013	1.52	1.03	.22	.21		22	15	216	26	45	284	11	T	77	74
<u>Lycium</u>	leaf	4.30	.26	.014	4.64	4.06	1.32	.12		52	11	152	54	61	177	3	5.7	237	72
<u>andersonii</u>	stem		.21	.005	3.18	2.02	.45	.04		38	11	53	11	30	30	T	T	183	83
<u>YUCCA FLAT - SITE NO. 79</u>																			
<u>Coleogyne</u>	leaf	1.96	.16	.027	1.03	4.10	.50	.36		46	8	665	55	38	1002	14	T	168	235
<u>ramosissima</u>	stem		.07	.024	.99	1.89	.29	.24		21	6	728	21	28	703	15	T	107	204
<u>Ephedra</u>	shoot	2.90	.26	.015	3.46	.86	.29	.13		26	4	216	16	34	163	4	T	132	103
<u>nevadensis</u>																			

Mineral Composition of Vegetation from Soil Profile Study Sites

Species	Plant Part	N	P	Na	K	Ca	Mg	Si	Zn	Cu	Fe	Mn	B	Al	Ti	Mo	Sr	Ba
% of dry wt.									ppm of dry wt.									
<u>YUCCA FLAT - SITE NO. 79 (Cont'd)</u>																		
<u>Grayia</u>	leaf	3.25	.26	.018	9.53	2.28	1.65	.12	41	15	175	161	49	191	4	2.4	69	66
<u>spinosa</u>	stem		.22	.006	5.94	1.54	.59	.06	34	10	57	30	37	44	2	T	130	151
<u>Lycium</u>	leaf	3.96	.26	.026	4.81	4.61	1.46	.12	54	17	164	49	79	216	5	5.4	291	112
<u>andersonii</u>	stem		.13	.006	1.45	2.82	.42	.05	26	12	50	11	39	43	3	T	271	130

APPENDIX E

RAINFALL, AIR AND SOIL TEMPERATURES, AND SOIL MOISTURE DATA FROM ABIOTIC SAMPLING STATIONS

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
	Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
MERCURY VALLEY									
16 May 67		.05							
15 Jun 67		.23							
13 Jul 67		2.82							
16 Aug 67		1.65							
1 Sep 67		1.77							
2 Oct 67		.76							
1 Nov 67		.00							
2 Dec 67		4.98							
2 Jan 68		.81							
1 Feb 68		.41							
13 Feb 68		2.59	19.4	0.0					
27 Feb 68		.00	25.7	2.3					
1 Mar 68								7.5	7.1
8 Mar 68		.30	26.1	0.6					
15 Mar 68		.00	21.1	0.6					
29 Mar 68		.00	28.9	0.6					
31 Mar 68								6.6	7.6
4 Apr 68		.30	28.9	1.1					
15 Apr 68		.00	29.6	3.9					
29 Apr 68		.00	28.9	0.6				4.2	6.8
8 May 68		.00	33.9	5.0					
15 May 68		.00	30.0	4.6					
24 May 68		.00	36.7	8.3					
31 May 68								1.5	3.3
3 Jun 68		.00	40.0	10.0					
11 Jun 68		1.17	33.3	10.0					
18 Jun 68		.00	42.2	15.6					
2 Jul 68		.00	38.9	12.9				1.9	3.4
11 Jul 68		1.57	41.1	17.2					
18 Jul 68		.00	41.1	17.8					
1 Aug 68								4.0	5.3
2 Aug 68		2.84	40.0	17.8					
16 Aug 68		.48							
28 Aug 68		.00	39.4	11.1					
29 Aug 68								3.0	4.1
11 Sep 68	1130	.00	38.9	15.6					
30 Sep 68	1325	.00	35.6	5.6				2.6	4.7
11 Oct 68	1440	.00	31.1	7.2					
25 Oct 68	1530	.69	30.0	7.2					
31 Oct 68								3.5	5.5
1 Nov 68	1500	.00	31.1	4.6					
8 Nov 68	1540	.00	24.4	2.9					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
MERCURY VALLEY (CONTINUED)									
22 Nov 68	1320	.18	25.7	1.1					
30 Nov 68								3.0	4.0
4 Dec 68	1200	.00	21.1	-4.6					
2 Jan 69	1400	.58	19.4	-11.1				3.7	4.4
17 Jan 69	0825	3.07	21.7	-5.0					
29 Jan 69		3.40							
3 Feb 69								10.5	12.0
4 Feb 69	1050	.00	17.8	-7.8					
22 Feb 69	1540	2.26	17.8	-1.1					
27 Feb 69								14.2	13.3
28 Feb 69	1525	3.91	14.4	-7.8					
14 Mar 69	1500	1.75	13.9	-7.8					
2 Apr 69	1445	.00	28.9	3.9				9.9	11.4
14 Apr 69	1015	.15	28.3	2.9					
17 Apr 69	1525	.00	26.1	3.3					
25 Apr 69	1510	.00	31.1	8.9					
2 May 69	1450	.00	28.9	5.0				6.9	10.4
9 May 69	1440	1.02	32.2	6.7					
19 May 69	1810	.00	35.6	10.6					
26 May 69	1500	.00	37.2	10.0					
2 Jun 69	1435	.00	40.0	13.9					
3 Jun 69								5.0	8.9
9 Jun 69	1045	.00	44.4	13.9					
17 Jun 69	1445	3.63	35.0	9.4					
23 Jun 69	1420	.00	36.7	15.6					
1 Jul 69	1510	.00	40.6	15.6				4.8	5.8
7 Jul 69	1445	.00	42.2	15.6					
14 Jul 69	1420	.05	39.4	16.7					
22 Jul 69	1410	1.47	41.7	20.1					
28 Jul 69	1420	.00	42.2	20.6					
11 Aug 69	1430		43.3	15.6					
18 Aug 69	1430	.00	41.1	18.3					
19 Aug 69								1.9	2.3
25 Aug 69	1435		43.3	18.3					
29 Aug 69								2.0	2.1
8 Sep 69	1440	.00	42.2	17.8					
1 Oct 69	0930	.20	37.2	13.3				2.2	3.5
6 Oct 69	1430	.00	35.0	5.0					
20 Oct 69	1800	1.37	25.1	1.1					
4 Nov 69	1500	.00	27.3	3.9				5.1	3.8
17 Nov 69	1540	1.07	24.4	1.1	12.2	13.7	16.3		
24 Nov 69	0935		18.9	-0.6	5.9	12.2	14.5		

Abiotic Data Collected in the vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
MERCURY VALLEY (CONTINUED)									
1 Dec 69	1535	.00	22.2	2.3	13.7	12.6	13.7	5.7	4.6
18 Dec 69	0830	.00	20.1	-2.9	7.2	11.0	12.2		
1 Jan 70								3.4	4.3
5 Jan 70	1520	.00	18.9	-11.7	6.8	8.1	10.6		
19 Jan 70	1535	.10	17.2	-11.1	9.8	9.0	10.2		
1 Feb 70								2.6	4.0
2 Feb 70	1525	.00	20.1	-6.7	9.8	9.3	10.6		
16 Feb 70	1530	.13	22.2	0.0	11.8	9.8	11.0		
2 Mar 70	1555	1.75	22.2	-1.1	10.6	11.0	12.2	8.6	4.7
16 Mar 70	1540	1.24	24.4	-1.1	15.9	13.8	13.8		
30 Mar 70	1125	.00	27.8	0.6	17.9	13.7	14.9		
1 Apr 70								7.3	5.8
7 Apr 70	1550	.00	27.3	-0.6	18.9	15.2	15.2		
20 Apr 70	1530	.05	29.6	0.6	19.6	15.6	15.9		
29 Apr 70	1020	.33	27.3	-2.3					
5 May 70	1530	.00	32.2	3.9	22.6	18.7	17.9		
6 May 70								4.2	5.1
11 May 70	1605	.00	30.6	6.7	22.6	19.6	19.3		
18 May 70	1530	.00	37.2	8.3	24.7	21.8	21.0		
1 Jun 70								2.1	4.6
2 Jun 70	0840	.00	36.7	12.9	22.9	25.2	23.9		
8 Jun 70	1500	.00	40.0	15.0	27.0	25.6	24.9		
15 Jun 70	1505	.00	31.7	8.3	26.1	22.9	23.2		
22 Jun 70	1445	.00	43.3	13.3	32.0	27.6	26.1		
30 Jun 70	0850	.00	45.0	13.9	28.5	27.2	26.8		
1 Jul 70								1.8	3.5
6 Jul 70	1450	.00	43.9	12.9	32.2	29.4	27.9		
13 Jul 70	1500	.15	42.2	18.3	32.7	28.8	27.9		
20 Jul 70	1515		44.4	22.8	32.4	30.6	29.4		
2 Aug 70								1.2	3.1
1 Sep 70								2.0	3.0
3 Sep 70	1515	1.27	42.8	14.4	28.9	27.4	28.3		
14 Sep 70	1450	.00	38.9	9.4	25.6	25.6	26.8		
28 Sep 70	1455	.00	39.4	7.2	28.2	24.7	24.2		
1 Oct 70								4.0	2.7
12 Oct 70	1450	.00	32.8	6.1	20.7	21.0	28.4		
2 Nov 70								2.2	3.2
24 Nov 70	1500	.00	27.3	-1.1					
5 Dec 70								9.4	3.5
9 Dec 70		1.52							
10 Dec 70	0840	.28	21.7	-7.2	4.1	10.6	12.9		
29 Dec 70	1510	.30	15.0	-5.0	6.3	6.3	8.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
	Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
MERCURY VALLEY (CONTINUED)									
11 Jan 71								7.8	4.8
18 Jan 71	1505	.00	24.4	-10.6	13.4	8.5	8.5		
1 Feb 71	1530	.00	24.4	-2.9	8.7	11.4	12.2	5.5	5.1
26 Feb 71	1550	1.22	26.7	-2.9	8.5	5.9	7.7		
5 Mar 71								8.1	4.9
15 Mar 71	1530	.30	22.8	-7.2	15.9	10.6	11.8		
22 Mar 71	1500	.00	26.7	-1.1	17.9	13.0	13.0		
26 Mar 71								5.4	5.0
9 Apr 71			29.6	2.9					
19 Apr 71	1325	T	30.6	-0.6	15.2	14.1	15.9		
30 Apr 71	1500	.00	30.6	1.1	21.5	17.3	17.3		
5 May 71								3.7	3.3
10 May 71	1515	2.13	31.1	5.0	21.3	15.5	15.2		
17 May 71	1515	.00	34.4	6.1	23.9	21.0	21.3		
24 May 71	1610	.00	31.7	4.6	26.1	19.9	19.6		
1 Jun 71	1515	.00	33.3	4.6	21.6	17.9	19.3		
2 Jun 71								3.3	3.2
7 Jun 71	1530	.00	35.6	5.6	26.5	21.5	21.0		
14 Jun 71	1015	.00	35.6	11.7	21.0	24.2	23.4		
22 Jun 71	1610	.00	41.7	15.6	31.7	26.1	25.2		
30 Jun 71	1520	.00	40.6	11.7	30.2	25.4	25.2		
7 Jul 71	1515	.00	38.9	13.9	29.4	26.1	25.6		
14 Jul 71	1515	.00	44.4	15.0	32.9	27.9	26.8		
27 Jul 71	1545	.38	43.9	17.8	34.9	29.8	28.5		
2 Aug 71								2.4	3.8
11 Aug 71	1450	.41	44.4	20.6	34.5	30.8	30.0		
26 Aug 71	1020	.00	41.7	18.3	26.2	30.4	29.7		
1 Sep 71								2.2	3.7
14 Sep 71	1530	.00	44.4	13.9	32.7	28.8	28.5		
28 Sep 71	1505	.00	40.0	9.4	20.7	21.6	23.7		
2 Oct 71								1.6	3.1
20 Oct 71	1500	.00	36.1	-0.6	16.3	17.7	19.9		
5 Nov 71								2.2	3.1
9 Nov 71	1340	T	26.7	-5.0	14.2	14.9	16.7		
30 Nov 71	1340	.10	25.1	-2.3	9.8	11.8	13.4		
6 Dec 71								2.8	2.7
20 Dec 71	1335	.05	13.9	-8.3					
11 Jan 72	1510	3.94	17.2	-9.4	6.3	5.0	6.3		
27 Jan 72	1335	.00	18.3	-6.1	5.0	5.4	6.8		
11 Feb 72	1520	.00	17.2	-7.8	8.9	6.8	7.7		
24 Feb 72	1350	.00	25.0	-3.3	8.9	9.8	11.0		
3 Mar 72	1340	.00	27.2	0.6	14.5	12.2	12.6		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
MERCURY VALLEY (CONTINUED)									
10 Mar 72	1350	.00	30.6	5.7	17.9	16.3	15.9		
17 Mar 72	1415	.00	31.2	5.0	19.9	16.3	16.3		
27 Mar 72	1410	.00	30.0	1.7	14.5	14.9	16.6		
3 Apr 72	1330	.00	28.3	-2.8	18.9	16.3	16.3	2.9	6.1
12 Apr 72	1345	.03	28.9	5.0	16.3	15.6	16.3		
21 Apr 72	1345	.56	26.1	-3.9	18.9	15.2	15.9		
28 Apr 72	1310	.00	30.6	2.8	21.0	17.9	18.3		
3 May 72								2.2	4.5
5 May 72	1340	.00	35.0	6.1	22.7	20.4	20.2		
19 May 72	1110	.00	37.2	8.3	18.9	21.5	21.9		
2 Jun 72	1410	.25	40.0	4.4	27.6	24.9	24.2	2.7	4.5
9 Jun 72	1350	2.11	38.3	15.0	25.6	22.6	23.2		
23 Jun 72	1320	.30	41.1	13.9	25.6	25.4	25.7		
7 Jul 72	1445	.00	45.6	15.6	31.8	28.5	28.3		
21 Jul 72	1320	.00	45.6	15.6	27.4	27.6	28.8		
4 Aug 72	1355	.00	42.8	17.2	30.2	28.8	28.8		
15 Aug 72	1305				25.8	26.0	27.5		
25 Aug 72	1335				30.0	28.0	28.0		
8 Sep 72	1340				26.5	26.3	26.8		
22 Sep 72	1325				23.6	23.3	24.6		
6 Oct 72	1400				20.8	21.3	22.8		
1 Nov 72	1330				13.0	12.5	15.3		
21 Nov 72	1405				7.3	7.5	10.8		
13 Dec 72	1305				1.0	3.5	4.5		
12 Jan 73	1340				6.0	5.5	6.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE (In <u>L. tridentata</u>)									
27 Apr 67								7.2	5.6
18 May 67		.00						4.5	5.4
16 Jun 67		.05							
17 Jun 67								2.2	4.4
13 Jul 67		.20						1.2	2.9
16 Aug 67		.07							
30 Aug 67		.00						1.4	3.3
2 Oct 67		.59						3.5	4.1
1 Nov 67		.00						1.9	2.7
13 Nov 67			29.6	0.0					
20 Nov 67			30.0	1.1					
1 Dec 67								9.0	5.2
2 Dec 67		4.47	18.9	-6.1					
7 Dec 67			15.0	-6.7					
15 Dec 67			17.2	-11.1					
2 Jan 68		1.02	17.8	-15.6				8.2	6.5
6 Jan 68			13.9	-15.6					
13 Jan 68			16.7	-8.9					
15 Jan 68			16.7	-8.9					
1 Feb 68		.64	23.4	-11.1				8.2	5.6
13 Feb 68	1435	1.63	21.1	-6.1					
25 Feb 68	0855	.03	25.1	-0.6					
28 Feb 68	1440	.00	27.3	0.0					
1 Mar 68								7.7	8.2
8 Mar 68	0840		27.3	-3.9					
15 Mar 68	1020	.00	22.2	-4.6					
29 Mar 68	1530	.00	31.1	-5.6					
31 Mar 68								6.6	6.2
4 Apr 68	0910	1.32	30.0	-1.1					
16 Apr 68	0915	.00	30.0	-1.1					
29 Apr 68	1100	.00	32.2	-3.3				4.3	5.5
6 May 68		.00	35.6	2.3					
16 May 68		.00	32.8	-0.6					
24 May 68	1530	.00	37.8	3.3					
31 May 68								1.0	3.6
3 Jun 68	1555	.00	41.1	5.6					
11 Jun 68	1155	.79	40.0	8.3					
18 Jun 68	1601	.00	43.3	11.1					
2 Jul 68	1535	.00	45.6	8.9				1.1	2.9
10 Jul 68	1700	.48	43.3	12.3					
18 Jul 68	1550	.00	43.9	8.3					
1 Aug 68								2.2	3.2

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
2 Aug 68	0910	.91	43.3	15.0					
16 Aug 68	1545	.15	41.1	9.4					
28 Aug 68	1102	.00	40.6	5.6					
29 Aug 68								1.9	3.1
11 Sep 68	1445	.00	41.7	11.1					
30 Sep 68	1145	.00	37.8	0.6				1.3	2.6
11 Oct 68	1115	.05	32.2	2.3					
25 Oct 68	1115	.58	30.6	-1.1					
31 Oct 68	1110		32.2	0.6				2.3	2.7
8 Nov 68	1510	.00	24.4	-4.6					
22 Nov 68		.26	27.8	-6.7					
30 Nov 68								2.2	2.8
4 Dec 68	1615		22.8	-12.3					
2 Jan 69	0910		18.3	-18.3				2.4	2.9
17 Jan 69	1635	2.92	22.2	-13.3					
23 Jan 69	1100	1.22	18.3	-5.6					
29 Jan 69		2.64							
3 Feb 69								8.8	9.8
4 Feb 69	1600	.00	14.4	-11.1					
22 Feb 69	1100	2.95	17.8	-7.2					
27 Feb 69								9.7	13.8
28 Feb 69	1200	6.25	14.4	-5.6					
14 Mar 69	1300		17.2	-17.8					
2 Apr 69	1130	.00	32.2	-6.1				7.4	10.0
11 Apr 69	1130	.10	28.9	-4.6					
17 Apr 69	1110	.00	30.6	1.7					
25 Apr 69	1150	.00	33.3	-2.9					
2 May 69	1135	.00	30.6	-1.1				6.7	8.7
9 May 69	1100	.41	31.7	3.9					
19 May 69	1100	.00	37.2	5.6					
26 May 69	1330	.00	37.8	5.6					
2 Jun 69	1140	.00	42.2	8.9					
3 Jun 69								2.3	4.7
9 Jun 69	1420	.00	41.1	10.6					
17 Jun 69	1030	1.12	38.3	7.2					
23 Jun 69	1140	.00	38.9	10.0					
1 Jul 69	1115	.00	41.7	7.2				2.6	3.3
7 Jul 69	1115	.00	38.9	11.1					
14 Jul 69	1115	.23	36.1	11.1					
22 Jul 69	1100	1.40	42.8	13.9					
28 Jul 69	1040	.05	43.3	17.2					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
	Hrs	cm							
WEST FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
1 Aug 69								5.8	2.4
11 Aug 69	1035	.46	45.6	13.9					
18 Aug 69	0950	.00	45.0	16.1					
25 Aug 69	1120	.00	45.0	10.0					
29 Aug 69	1050	.00	42.2	10.6				2.4	4.4
8 Sep 69	1120	.00	43.9	12.3					
1 Oct 69	1500	1.47	39.4	6.7				5.5	4.8
6 Oct 69	1100	.00	35.6	-2.3					
20 Oct 69	1135	1.04	30.0	-8.3					
4 Nov 69								5.0	4.1
5 Nov 69	0915	.00	27.3	-2.3	12.2	15.9	18.0		
17 Nov 69	1210	1.07	25.1	-2.9	8.5	12.2	14.5		
1 Dec 69	1215	.00	21.1	-9.4	6.4	8.5	10.2	5.3	3.5
17 Dec 69	1520	.00	20.1	-10.6	5.5	5.9	7.2		
1 Jan 70								4.2	3.2
5 Jan 70	0940	.03	18.3	-18.9	0.0	3.2	5.5		
19 Jan 70	1215	.08	17.2	-16.7	4.1	5.9	7.2		
1 Feb 70								3.8	2.3
3 Feb 70	1420	.00	21.1	-13.9	5.4	6.3	7.7		
16 Feb 70	1205	.23	24.0	-6.1	6.8	9.0	9.8		
2 Mar 70	0910	2.50	24.0	-5.6	8.6	10.2	10.6	9.4	3.4
16 Mar 70	1150	.89	25.7	-3.9	11.0	11.4	11.4		
30 Mar 70	1035	.00	29.6	-6.1	10.6	13.0	13.0		
1 Apr 70								7.3	5.9
7 Apr 70	1105	.00	29.6	-7.2	13.0	13.7	13.7		
13 Apr 70	1140	.00	31.1	0.0	15.6	15.9	15.9		
20 Apr 70	1105	.08	26.1	-4.6	13.0	14.9	15.2		
27 Apr 70	1110	.30	28.9	-5.0	15.2	17.3	17.0		
5 May 70	1150	.38	33.3	-3.9					
6 May 70								5.9	5.5
11 May 70	1150	.00	32.8	4.6	18.9	20.1	19.6		
18 May 70	1115	.00	38.9	2.9	22.2	22.4	21.0		
1 Jun 70								2.2	3.6
3 Jun 70	1215	.00	39.4	7.8	24.2	24.7	23.7		
8 Jun 70	0850	.03	43.3	7.8	26.1	26.7	25.1		
15 Jun 70	1210	.13	32.8	6.1	22.6	23.9	23.7		
22 Jun 70	1110	.00	45.6	7.8	28.7	28.3	26.1		
29 Jun 70	1145	.00	47.2	9.4	27.4	28.1	27.2		
1 Jul 70								1.4	3.6
6 Jul 70	1125	.00	46.1	7.2	31.2	30.2	28.1		
13 Jul 70	1145	.25	43.9	15.0	29.6	29.8	28.3		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
20 Jul 70	1155	.00	46.1	15.0	32.6	31.4	29.2		
2 Aug 70								1.3	2.9
3 Aug 70	1105	.00	43.3	10.6					
1 Sep 70								2.8	2.8
3 Sep 70	0915	1.65	45.0	8.3	25.4	28.7	29.0		
14 Sep 70	1120	.00	40.0	4.6	32.2	26.5	27.2		
28 Sep 70	1100	.00	35.0	0.6	19.3	22.7	23.8		
1 Oct 70								1.9	3.2
12 Oct 70	1115	.00	34.4	-1.7	17.6	21.0	22.0		
2 Nov 70								2.1	3.2
24 Nov 70	1220	.00	29.6	-8.9					
5 Dec 70								6.0	3.2
9 Dec 70	1125	1.60	22.2	-7.2	9.0	9.0	9.8		
29 Dec 70	1115	1.01	18.3	-12.3	1.1	4.5	6.5		
11 Jan 71								8.9	3.7
18 Jan 71	0825	.00	19.4	-18.3	3.8	4.3	4.3		
1 Feb 71								6.2	3.6
2 Feb 71	1125	.00	25.1	-8.9	6.3	8.3	8.3		
26 Feb 71	1200	.36	26.7	-10.6	6.3	8.3	9.0		
5 Mar 71								6.0	4.4
15 Mar 71	0835	.36	25.1	-16.1	6.8	9.8	9.8		
22 Mar 71	0950		27.3	-8.9	10.2	11.7	11.0		
26 Mar 71								4.6	3.9
9 Apr 71	1135		31.1	-6.1					
19 Apr 71	1125	.05	32.8	-5.0	11.5	14.5	16.0		
30 Apr 71	0850	.03	30.0	-5.0	16.0	17.3	16.3		
5 May 71								3.8	4.1
10 May 71	1140	3.33	32.8	3.3	16.0	16.3	16.0		
17 May 71	0845	.00	36.1	3.3	19.8	22.7	21.8		
24 May 71	1140	T	31.0	0.0	19.3	19.8	19.6		
1 Jun 71	1125	.00	35.0	0.0	16.9	19.3	19.8		
2 Jun 71								4.0	5.7
7 Jun 71	0835	.00	36.1	2.9	21.0	22.3	21.5		
14 Jun 71	1555	.00	40.0	8.9	28.3	25.3	24.0		
22 Jun 71	1140	.00	42.8	9.4	26.8	27.4	26.2		
30 Jun 71	0910	.00	37.8	10.0	26.3	27.8	26.5		
7 Jul 71	1145	.00	40.0	10.6	27.0	28.0	26.7		
14 Jul 71	0845	.00	43.9	9.4	29.4	29.6	27.8		
27 Jul 71	1120	.00	46.1	16.7	30.5	31.5	29.6		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
2 Aug 71								1.8	3.6
11 Aug 71	0845	.53	46.1	18.3	31.7	32.2	30.8		
27 Aug 71	0840	.51	45.0	14.4	27.8	30.0	29.8		
1 Sep 71								2.1	3.9
14 Sep 71	1125	.00	43.9	9.4	27.2	28.6	27.8		
28 Sep 71	0900	.00	43.9	-2.3	17.6	22.7	24.2		
2 Oct 71								1.4	2.9
20 Oct 71	1120	.00	37.2	-6.1	12.3	17.3	19.7		
5 Nov 71								2.1	3.1
9 Nov 71	0845	.00	26.7	-10.0	10.2	11.0	14.9		
30 Nov 71	1140	.10	25.1	-10.0	7.7	10.2	11.4		
6 Dec 71								2.2	3.5
20 Dec 71	0845	T	16.1	-13.3	2.0	5.4	7.3		
11 Jan 72	1100	3.81	16.7	-14.4	1.8	2.7	4.1		
27 Jan 72	0830	.00	19.4	-11.1	2.7	4.6	5.4		
11 Feb 72	1155	.00	19.4	-15.0	2.3	4.6	5.0		
24 Feb 72	0825	.00	26.7	-11.1	6.4	8.6	8.6		
3 Mar 72	1100	.00	28.9	-5.0	9.3	10.2	9.3		
10 Mar 72	0840	.00	32.8	-1.7	12.9	14.1	12.9		
17 Mar 72	1330	.00	32.2	0.0	14.8	14.5	14.1		
27 Mar 72	1330	.00	32.8	-3.3	13.7	14.9	15.2		
3 Apr 72	0850	.00	30.6	-10.6	14.1	15.6	14.5	5.2	6.3
12 Apr 72	1110	.13	30.6	0.6	13.7	15.2	15.6		
21 Apr 72	0835	.38	28.9	-5.0	12.6	15.6	15.2		
28 Apr 72	1135	.00	32.8	-2.2	16.6	17.6	16.9		
3 May 72								3.0	4.4
5 May 72	0830	.00	37.2	0.0	20.1	20.7	19.3		
19 May 72	1450	.00	39.4	3.3	21.6	21.6	21.3		
2 Jun 72	0840	.05	42.2	0.0	26.7	26.3	24.2	3.1	4.4
9 Jun 72	0835	2.08	40.6	11.7	20.1	23.7	23.7		
30 Jun 72	1025	1.98	46.1	10.0	28.5	29.4	27.9		
7 Jul 72	0820	.00	47.2	15.0	28.5	30.2	29.4		
21 Jul 72	1110	.00	48.3	14.4	27.4	29.6	29.8		
4 Aug 72	0825	.00	44.0	10.0	28.5	30.2	29.6		
15 Aug 72	1120	2.16	46.1	15.0	23.8	23.6	28.0		
25 Aug 72	0840	.00	42.2	10.6	27.5	29.8	29.0		
8 Nov 72	1120	.33	39.4	11.7	25.3	27.5	27.5		
22 Sep 72	0855	2.03	37.2	4.4	19.0	23.0	23.3		
6 Oct 72	0840	1.35	35.0	5.0	17.3	21.0	22.0		
1 Nov 72	0830	1.30	31.2	-6.1	7.3	11.8	14.0		
21 Nov 72	0835	3.53	24.4	-6.1	5.0	7.5	10.0		
13 Dec 72	0830	.00	20.7	-16.1	1.0	3.3	5.0		
12 Jan 73	0845	.53	19.4	-17.2	2.2	3.3	3.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE (Out of <u>L. tridentata</u>)									
27 Apr 67								8.9	6.8
18 May 67								6.2	7.4
16 Jun 67								3.3	5.3
13 Jul 67								1.6	4.2
30 Aug 67								1.9	4.0
2 Oct 67								4.0	5.0
1 Nov 67								2.8	4.2
13 Nov 67			27.8	0.0					
20 Nov 67			27.8	1.1					
1 Dec 67								11.3	4.4
2 Dec 67			18.9	-6.1					
7 Dec 67			14.4	-6.7					
15 Dec 67			16.1	-11.1					
2 Jan 68			16.7	-17.8				11.7	7.0
6 Jan 68			12.3	-16.7					
13 Jan 68			15.6	-10.0					
15 Jan 68			15.0	-10.0					
1 Feb 68			21.1	-11.1				9.8	5.2
13 Feb 68	1415	1.76	21.1	-6.7					
25 Feb 68	0840	.02	25.1	-0.6					
28 Feb 68	1400	.00	27.8	0.0					
1 Mar 68								10.9	7.3
8 Mar 68	0835	.20	26.1	-3.9					
15 Mar 68	1005	.00	22.2	-5.6					
29 Mar 68	1520	.00	31.1	-5.6					
31 Mar 68								6.4	6.4
4 Apr 68	0900	1.30	30.6	-1.1					
16 Apr 68	0900	.00	30.0	-1.1					
29 Apr 68	1050	.00	27.3	-4.6				5.0	5.9
6 May 68		.00	36.1	2.3					
16 May 68		.00	33.3	-1.1					
24 May 68	1540	.00	38.3	2.9					
31 May 68								1.4	2.0
3 Jun 68	1545	.00	42.2	5.0					
11 Jun 68	1145	.81	40.0	7.8					
18 Jun 68	1555	.00	43.9	10.6					
2 Jul 68	1530	.00	46.7	7.2				1.6	2.9
10 Jul 68	1645	.38	45.0	11.7					
18 Jul 68	1535	.00	43.9	13.9					
1 Aug 68								2.5	4.0
2 Aug 68	0845	.93	43.9	15.6					
16 Aug 68	1535	.17	41.1	8.3					
28 Aug 68	1105	.00	41.7	5.0					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
WEST FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]									
29 Aug 68								2.2	3.7
11 Sep 68	1435	.00	41.7	10.0					
30 Sep 68	1130	.00	37.8	0.6				2.1	3.3
11 Oct 68	1105	.04	32.2	1.7					
25 Oct 68	1105	.62	31.1	-1.1					
31 Oct 68	1115	.00	32.8	0.6				1.9	2.9
8 Nov 68	1500	.00	25.1	-3.9					
22 Nov 68	1500	.26	27.8	-7.2					
30 Nov 68								2.5	3.7
4 Dec 68	1600	.00	22.8	-12.3					
2 Jan 69	0855		18.3	-17.8				2.5	3.5
17 Jan 69	1615	2.86	22.8	-13.3					
23 Jan 69	1045	1.49	17.8	-5.0					
29 Jan 69		2.72							
3 Feb 69								10.0	12.8
4 Feb 69	1535	.00	14.4	-10.6					
22 Feb 69	1100	2.96	17.8	-7.2					
27 Feb 69								12.5	19.0
28 Feb 69	1150	6.40	14.4	-5.0					
14 Mar 69	1245	1.35	16.7	-8.3					
2 Apr 69	1130	.00	32.2	-6.7				9.6	10.6
11 Apr 69	1125	.12	30.6	-5.0					
17 Apr 69	1100	.00	31.1	0.6					
25 Apr 69	1145	.00	33.9	2.9					
2 May 69	1115	.00	30.6	-1.7				7.5	10.1
9 May 69	1045	.41	32.2	3.9					
19 May 69	1045	.00	37.8	4.6					
26 May 69	1115	.00	38.3	5.6					
2 Jun 69	1120	.00	41.7	8.9					
3 Jun 69								3.8	6.3
9 Jun 69	1410	.00	41.7	10.6					
17 Jun 69	1020	1.27	38.9	6.7					
23 Jun 69	1125	.00	40.6	10.0					
1 Jul 69	1100	.00	41.7	6.7				2.9	3.8
7 Jul 69	1100	.00	38.3	10.0					
14 Jul 69	1110	.25	36.7	11.1					
22 Jul 69	1100	1.38	42.8	15.6					
28 Jul 69	1035	.07	44.4	16.7					
1 Aug 69								2.8	2.5
11 Aug 69	1030	.71	45.6	13.3					
18 Aug 69	0940	.00	46.1	15.0					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
WEST FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]											
25	Aug	69	1110	.00	45.6	9.4					
29	Aug	69	1035	.00	42.2	10.0				2.3	4.8
8	Sep	69	1110	.00	44.4	11.7					
1	Oct	69	1520	1.52	40.0	7.2				7.5	4.7
6	Oct	69	1045	.00	33.9	-2.3					
20	Oct	69	1130	1.02	29.6	-7.8					
4	Nov	69								6.7	5.3
5	Nov	69	0850	.00	27.3	-2.3	10.6	12.9	14.5		
17	Nov	69	1200	1.02	25.1	-3.3	7.3	10.2	12.2		
1	Dec	69	1155	.00	21.1	-9.4	4.6	6.4	8.1	6.7	4.6
17	Dec	69	1510	.00	19.4	-10.0	4.1	4.1	5.4		
1	Jan	70								6.0	3.8
5	Jan	70	0925		18.3	-18.3	-1.1	1.8	3.7		
19	Jan	70	1200	.11	17.2	-16.1	3.7	5.0	5.9		
1	Feb	70								4.3	4.5
3	Feb	70	1415	.00	20.6	-12.9	4.1	5.0	6.3		
16	Feb	70	1155	.25	23.4	-5.0	9.0	7.7	8.1		
2	Mar	70	0850	2.61	24.0	-4.6	8.1	8.9	8.9	10.8	5.2
16	Mar	70	1140	.98	25.1	-3.3	9.3	9.8	10.2		
30	Mar	70	1020	.00	28.3	-5.0	9.3	11.0	11.4		
1	Apr	70								5.8	7.8
7	Apr	70	1050	.00	29.6	-7.2	11.0	11.8	11.4		
13	Apr	70	1125	.00	30.6	0.6	14.5	14.9	14.1		
20	Apr	70	1045	.21	25.1	-3.9	11.4	12.9	12.9		
27	Apr	70	1100	.35	28.3	-3.9	13.7	15.2	14.5		
5	May	70	1140	.58	33.9	-2.9					
6	May	70								5.8	5.2
11	May	70	1140	.00	32.8	3.9	17.0	18.0	17.0		
18	May	70	1050	.00	38.3	3.3	19.9	20.4	17.0		
1	Jun	70								3.2	5.0
3	Jun	70	1200	.00	40.0	8.3	22.7	22.9	21.6		
8	Jun	70	0840	.03	43.9	8.3	25.1	25.1	23.9		
15	Jun	70	1150	.13	32.2	6.7	21.0	22.2	21.6		
22	Jun	70	1100	.00	46.1	8.9	26.9	26.5	24.2		
29	Jun	70	1135	.00	47.8	9.4	26.2	26.0	25.4		
1	Jul	70								2.1	4.6
6	Jul	70	1115	.00	47.8	8.3	29.9	28.5	26.3		
13	Jul	70	1135	.31	45.0	13.9	27.9	27.9	26.3		
20	Jul	70	1140	.00	47.8	16.1	31.0	30.2	28.2		
2	Aug	70								1.5	3.9
3	Aug	70	1100	.00	43.9	11.1					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
WEST FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]											
1	Sep	70								2.5	3.7
3	Sep	70	0900	2.26	50.0	7.2	23.5	26.3	26.3		
14	Sep	70	1110	.00	40.6	5.6	22.2	24.7	24.9		
28	Sep	70	1045	.00	35.0	2.3	17.3	20.1	20.7		
1	Oct	70								2.2	4.8
12	Oct	70	1105	.00	35.0	-2.9	16.0	19.2	19.9		
2	Nov	70								2.1	4.1
24	Nov	70	1215	.00	29.6	-9.4					
5	Dec	70								6.6	3.8
9	Dec	70	1105	1.61	21.7	-6.1	8.1	7.3	8.1		
29	Dec	70	1105	.99	17.2	-11.7	1.7	3.7	5.0		
11	Jan	71								8.6	4.0
18	Jan	71	0825	.00	20.1	-18.3	3.8	4.5	4.5		
1	Feb	71								7.7	4.6
2	Feb	71	1110	.00	25.7	-8.9	5.5	6.8	6.8		
26	Feb	71	1145	.36	26.7	-10.6	4.5	6.0	7.0		
5	Mar	71								5.0	3.7
15	Mar	71	0820	.38	24.4	-16.1	5.5	8.0	8.0		
22	Mar	71	0940	.00	26.7	-7.8	9.0	9.8	9.3		
26	Mar	71								3.8	3.8
7	Apr	71	1125		31.7	-6.7					
19	Apr	71	1110	.10	32.8	-5.0	10.7	12.5	13.5		
30	Apr	71	0835	.03	30.6	-4.6	14.5	15.3	13.8		
10	May	71	1130	3.64	32.2	2.9	14.0	14.5	13.5		
17	May	71	0830	.00	36.1	2.9	18.8	21.0	20.0		
24	May	71	1120	.01	31.1	-0.6	16.8	17.3	17.0		
1	Jun	71	1105	.00	35.6	-0.6	14.8	17.3	17.5		
7	Jun	71	0820	.00	36.7	2.9	19.3	20.3	19.0		
14	Jun	71	1540	.00	40.0	8.9	25.0	22.7	21.3		
22	Jun	71	1125	.00	42.8	9.4	24.9	25.0	23.4		
30	Jun	71	0900	.00	37.2	9.4	24.8	25.5	24.0		
7	Jul	71	1130	.00	41.1	9.4	25.2	25.5	24.5		
14	Jul	71	0830	.00	43.9	10.0	27.3	27.1	25.0		
27	Jul	71	1110	T	46.1	16.1	29.0	29.2	27.3		
11	Aug	71	0830	.66	45.6	17.8	30.2	30.3	28.8		
27	Aug	71	0825	.52	43.9	15.0	26.5	27.8	26.5		
14	Sep	71	1110	T	45.0	9.4	25.3	26.2	25.3		
28	Sep	71	0850	.00	42.8	-2.3	16.0	20.0	21.3		
9	Nov	71	0830				8.5	11.4	12.6		
30	Nov	71	1130				6.8	8.5	9.3		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE (In <u>L. tridentata</u>)									
18 May 67		.03							
15 Jun 67		.38							
16 Aug 67		.25							
30 Aug 67		.00							
2 Oct 67		3.43							
1 Nov 67		.00							
2 Dec 67		2.84							
2 Jan 68		.77						7.2	5.7
1 Feb 68		.25						6.1	5.7
13 Feb 68	1550	1.27	21.7	-6.1					
25 Feb 68	1025	.00	25.0	0.6					
28 Feb 68	1545	.00	27.2	0.0					
1 Mar 68								6.5	5.4
8 Mar 68	1005	.03	25.6	-2.8					
15 Mar 68	1110	.03	21.7	-3.9					
29 Mar 68	1550	.00	31.1	-3.9					
31 Mar 68								5.9	5.8
4 Apr 68	1045	1.63	29.4	-1.7					
16 Apr 68	1005	.00	30.0	-1.1					
29 Apr 68	1410	.00	30.6	-2.2				5.3	5.8
6 May 68	1330	.00	33.9	1.7					
16 May 68	1355	.00	32.8	-0.6					
24 May 68	1340	.00	37.2	2.8					
31 May 68								1.1	2.5
3 Jun 68	1400	.00	41.1	5.0					
11 Jun 68	0920	.71	39.4	7.2					
18 Jun 68	1640	.00	45.0	10.0					
2 Jul 68	1400	.00	45.6	8.9				1.1	3.1
10 Jul 68	1430	.71	43.9	11.7					
18 Jul 68	1345	.00	41.7	10.0					
1 Aug 68								2.9	3.8
2 Aug 68	1145	.51	43.3	15.0					
16 Aug 68	1330	.23	38.9	8.3					
28 Aug 68	0920	.00	41.1	3.9					
29 Aug 68								3.6	2.0
11 Sep 68	1410	.00	40.6	10.6				1.7	2.8
30 Sep 68	0920	.00	36.1	3.3					
11 Oct 68	0905	.00	30.0	2.8					
25 Oct 68	0935	.41	31.1	-1.1					
31 Oct 68	1200	.00	31.1	-0.6				2.1	2.7
8 Nov 68	1340	.00	25.0	-5.0					
22 Nov 68	1550	.33	26.7	-3.9					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
30 Nov 68								2.3	2.7
4 Dec 68	1425	.00	22.8	-13.3					
2 Jan 69	1115		18.3	-18.3				2.7	3.1
17 Jan 69	1535	2.24	21.7	-14.4					
29 Jan 69	1445	2.49	17.2	-6.1					
3 Feb 69								8.4	7.4
4 Feb 69	1500	.00	15.6	-11.1					
22 Feb 69	0900	3.28	17.2	-7.2					
27 Feb 69								10.2	16.1
28 Feb 69	0845	4.67	13.3	-6.1					
14 Mar 69	0830	1.32	15.6	-7.2					
2 Apr 69	0940	.00	31.1	-3.9				6.9	9.6
11 Apr 69	0850	.25	30.0	-4.4					
17 Apr 69	0950	.00	30.0	0.0					
25 Apr 69	0900	.00	31.7	-0.6					
2 May 69	0900	.00	30.0	-1.7				5.7	8.3
9 May 69	0850	.33	31.1	3.9					
19 May 69	0855	.00	36.1	3.3					
26 May 69	0910	.00	37.2	4.4					
2 Jun 69	0915	.00	40.6	7.8					
3 Jun 69								3.0	5.9
9 Jun 69	1620	.00	39.4	8.3					
17 Jun 69	0845	1.19	36.7	6.1					
23 Jun 69	0900	.00	38.3	10.0					
1 Jul 69	0915	.00	40.6	6.1				4.1	3.7
7 Jul 69	0900	.00	42.2	8.9					
14 Jul 69	0850	.25	41.1	8.9					
22 Jul 69	0835	.58	42.8	12.2					
28 Jul 69	0845	.13	43.3	15.6					
1 Aug 69								1.5	2.0
11 Aug 69	0900		44.4	11.7					
18 Aug 69	0900	.00	45.6	14.4					
25 Aug 69	0905	.00	44.4	8.9					
29 Aug 69	1000	.00	41.1	7.8				1.1	2.8
8 Sep 69	0945	.00	42.2	11.1					
1 Oct 69	1410	.20	38.9	5.6				1.5	3.3
6 Oct 69	0915	.00	35.0	-4.4					
20 Oct 69	0905		29.4	-5.0					
4 Nov 69								3.2	2.9
5 Nov 69	1010	.00	27.2	-3.9	10.6	14.5	16.0		
17 Nov 69	0930	1.50	25.6	-3.3	8.2	11.4	14.1		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
1 Dec 69	0930	.00	25.6	-7.2	5.9	8.9	10.6	3.6	3.6
17 Dec 69	1430	.00	21.1	-13.3	2.7	4.6	6.3		
1 Jan 70								3.1	3.3
5 Jan 70	1425	.03	19.4	-22.2	0.0	1.2	8.7		
19 Jan 70	0905		18.9	-21.7	8.7	6.3	7.2		
1 Feb 70								4.2	3.1
3 Feb 70	0910	.00	21.7	-15.1	3.6	6.3	7.2		
16 Feb 70	0910	.18	24.4	-8.3	6.8	8.9	9.8		
2 Mar 70	1505	2.44	24.4	-5.0	10.0	9.8	10.2	9.9	3.5
16 Mar 70	0855	.76	25.0	-5.0	10.2	12.6	12.2		
30 Mar 70	0940	.00	28.9	-7.2	11.0	13.3	13.7	4.9	5.1
7 Apr 70	0850	.00	28.9	-8.3	11.4	14.1	14.1		
13 Apr 70	0900	.00	31.1	-2.2	14.5	16.7	16.7		
20 Apr 70	0850	.10	24.4	-3.9	12.2	14.9	18.4		
27 Apr 70	0840	.13	27.8	-5.6	15.2	17.3	16.6		
5 May 70	0915	.53	32.8	-3.9					
6 May 70								5.4	4.7
11 May 70	0845	.00	32.8	3.9	19.2	21.0	20.4		
18 May 70	0850	.00	37.8	0.6	21.3	28.2	22.2		
1 Jun 70								3.6	4.7
3 Jun 70	0915	.00	38.3	6.1	24.4	26.2	24.9		
8 Jun 70	1050	.00	42.8	6.7	27.0	27.4	26.6		
15 Jun 70	0900	.10	32.8	6.1	22.2	24.7	24.4		
22 Jun 70	0905	.00	45.0	6.1	28.8	29.4	27.4		
29 Jun 70	0910	.00	46.7	8.3	27.4	29.2	28.3		
1 Jul 70								2.1	3.8
6 Jul 70	0905	.00	45.0	6.7	31.6	31.4	29.4		
13 Jul 70	0900	.36	42.2	13.9	29.4	30.8	29.7		
20 Jul 70	0915	.00	46.1	13.8	32.9	33.3	31.8		
2 Aug 70								1.8	2.9
3 Aug 70	0855	.00	43.9	8.3					
1 Sep 70								6.5	4.6
2 Sep 70	1515	4.06	43.3	6.7	29.8	28.3	29.2		
14 Sep 70	0845	.00	39.4	4.4	23.2	26.6	27.2		
28 Sep 70	0840	.00	33.3	0.6	19.3	22.1	23.2		
1 Oct 70								2.9	4.4
12 Oct 70	0850	.00	33.9	-1.7	17.3	20.7	21.6		
2 Nov 70								3.1	3.9
24 Nov 70	0855	.00	29.4	-10.6					
5 Dec 70								6.9	3.7
9 Dec 70	0835	1.91	22.2	-7.2	6.3	7.3	8.2		
29 Dec 70	0845	.79	16.1	-11.3	1.8	4.1	5.0		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
11 Jan 71								6.9	4.6
18 Jan 71	1045	.00	20.0	-15.0	2.7	3.7	4.6		
1 Feb 71								6.0	5.1
2 Feb 71	0850		24.4	-9.4	2.7	8.1	8.1		
26 Feb 71	0915	.48	26.1	-10.6	5.4	8.1	9.0		
5 Mar 71								6.0	4.8
15 Mar 71	1115	.05	23.9	-16.1	7.2	9.0	9.6		
22 Mar 71	0845	.00	26.7	-10.0	10.7	11.4	11.4		
26 Mar 71								4.2	5.2
9 Apr 71	0845		31.1	-7.2					
19 Apr 71	0840	.10	31.7	-5.0	9.8	14.1	15.9		
30 Apr 71	1115	.03	28.3	-4.0	15.6	17.8	17.6		
5 May 71								2.0	4.4
10 May 71	0850	2.06	32.8	1.7	13.3	15.6	15.6		
17 May 71	1130	.08	35.0	3.9	20.2	21.8	22.2		
24 May 71	0845	.00	30.1	-0.6	17.6	19.9	19.7		
1 Jun 71	0850	.00	35.0	-0.6	15.6	18.9	19.9		
2 Jun 71								2.7	4.9
7 Jun 71	1105	.00	35.6	2.2	21.3	22.1	21.6		
14 Jun 71	1340		37.8	6.7	24.9	21.2	23.4		
22 Jun 71	0845	.00	42.2	7.2	26.5	28.1	26.9		
30 Jun 71	1050	.00	39.4	7.8	25.6	27.4	27.0		
7 Jul 71	0855	.00	40.0	8.3	26.3	28.3	27.4		
14 Jul 71	1115	.00	42.8	7.8	28.7	29.4	27.9		
27 Jul 71	0850	.43	45.6	14.4	29.9	31.6	30.2		
2 Aug 71								1.0	3.0
11 Aug 71	1105	.33	44.4	15.6	31.6	35.2	31.8		
26 Aug 71	0855	.00	46.1	12.3	30.0	31.4	30.4		
1 Sep 71								1.2	3.2
14 Sep 71	0850	.00	45.0	6.7	27.6	29.4	28.5		
28 Sep 71	1125	.00	42.8	-5.0	15.2	20.4	22.7		
2 Oct 71								1.4	2.8
20 Oct 71	0900		36.1	-8.9	11.0	15.6	18.0		
5 Nov 71								1.7	2.6
9 Nov 71	1055	.00	26.1	-11.7	8.1	11.0	13.0		
30 Nov 71	1000	.05	24.4	-9.4	7.2	9.0	10.2		
6 Dec 71								1.6	2.7
20 Dec 71	1045	.00	15.6	-16.7	0.0	3.6	5.5		
11 Jan 72	0850		15.6	-14.4	0.8	2.0	3.2		
27 Jan 72	1100	.00	16.7	-13.3	1.7	3.7	4.6		
11 Feb 72	0840	.00	18.3	-16.7	2.3	4.9	5.4		
24 Feb 72	1055	.00	23.3	-13.3	5.0	12.2	13.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE [In <u>L. tridentata</u> (CONTINUED)]									
3 Mar 72	0850	.00	27.2	-8.3	8.9	10.6	10.6		
10 Mar 72	1100	.00	31.7	-3.3	12.6	13.7	13.7		
17 Mar 72	0850	.00	30.6	-2.8	13.3	15.6	15.2		
3 Apr 72	1115	.00	28.9	-13.3	13.8	14.9	14.5	3.8	5.1
12 Apr 72	0905	.03	30.0	-2.2	13.0	14.9	14.9		
21 Apr 72	1100		27.8	-7.2	12.6	14.5	15.0		
28 Apr 72	0855	.00	32.2	-5.0	15.6	17.9	17.6		
3 May 72								1.8	3.8
5 May 72	1100	.00	35.6	-2.8	18.9	20.1	19.6		
19 May 72	1245	.00	37.2	0.6	21.0	22.2	21.9		
2 Jun 72	1120	.13	40.6	-1.1	27.4	27.0	25.6	2.4	4.1
9 Jun 72	1110	1.78	38.9	11.7	22.1	28.7	29.2		
23 Jun 72	0910	1.47	38.9	8.3	21.6	25.4	26.5		
7 Jul 72	1345	.00	46.1	9.0	31.9	30.0	29.8		
21 Jul 72	0845	.00	46.7	9.5	27.9	31.2	31.4		
4 Aug 72	1055	.00	40.6	11.7	28.5	30.8	30.6		
15 Aug 72	0845	.89	45.6	11.1	24.9	28.2	28.9		
25 Aug 72	1125	.00	41.1	8.3	27.3	29.0	28.8		
8 Sep 72	0900	.18	37.2	9.0	25.0	27.5	27.3		
22 Sep 72	1135	2.31	35.0	0.0	17.0	20.5	21.5		
6 Oct 72	1110	.86	33.9	2.8	18.5	20.3	21.5		
1 Nov 72	1115	1.65	28.3	-4.4	7.3	9.5	12.2		
21 Nov 72	1120	2.82	23.3	-5.0	3.5	6.0	8.0		
13 Dec 72	1045	.00	18.9	-16.1	0.0	1.7	3.5		
12 Jan 73	1100	.38	17.8	-17.8	1.3	2.2	1.8		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
NORTH FRENCHMAN FLAT ECOTONAL LINE (Out of <u>L. tridentata</u>)									
27 Apr 67								8.6	6.5
18 May 67								6.5	6.3
16 Jun 67								3.6	5.2
13 Jul 67								1.4	3.4
30 Aug 67								1.6	3.6
2 Oct 67								8.3	6.4
1 Nov 67								4.9	4.6
1 Dec 67								11.5	4.3
2 Jan 68								7.2	6.3
1 Feb 68								7.7	5.3
13 Feb 68	1600	1.47	21.7	-8.3					
25 Feb 68	1020	.00	25.7	-1.7					
28 Feb 68	1515	.00	27.3	-1.1					
1 Mar 68								7.8	7.5
8 Mar 68	1000	.04	26.1	-5.0					
15 Mar 68	1055	.00	22.8	-6.1					
29 Mar 68	1550	.00	31.1	-6.1					
31 Mar 68								6.6	5.3
4 Apr 68	1040	1.62	30.6	-2.9					
16 Apr 68	0945	.00	30.0	-3.3					
29 Apr 68	1400	.00	30.6	-4.6				6.4	5.5
6 May 68	1315	.00	35.6	-1.1					
16 May 68	1335	.00	32.8	-2.9					
24 May 68	1330	.00	37.8	0.6					
31 May 68								1.1	2.6
3 Jun 68	1345	.00	41.7	2.0					
11 Jun 68	0915	.78	39.4	5.6					
18 Jun 68	1635	.00	45.0	7.8					
2 Jul 68	1345	.00	45.6	6.7				1.6	3.2
10 Jul 68	1415	1.00	43.9	8.9					
18 Jul 68	1345	.00	41.7	12.9					
1 Aug 68								2.7	3.9
2 Aug 68	1135	.78	43.3	13.3					
16 Aug 68	1325	.29	38.9	6.7					
28 Aug 68	0900	.00	41.1	3.9					
29 Aug 68								2.1	3.4
11 Sep 68	1400	.00	40.6	8.3					
30 Sep 68	0905	.00	36.1	1.7				1.5	3.2
11 Oct 68	0900	.00	31.1	1.1					
25 Oct 68	0930	.37	31.1	-3.9					
31 Oct 68	1150	.00	31.7	-3.3				2.0	2.8
8 Nov 68	1335	.00	25.1	-7.8					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
NORTH FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]											
22	Nov	68	1540	.34	26.7	-6.7					
30	Nov	68								2.5	4.2
4	Dec	68	1400	.00	22.8	-15.6					
2	Jan	69	1105		16.7	-21.1				2.4	3.1
17	Jan	69	1530	2.18	21.1	-16.1					
29	Jan	69	1435	2.34	16.1	-7.8					
3	Feb	69	1445		13.9	-7.2				10.0	3.5
4	Feb	69		.00							
22	Feb	69	0845	3.36	16.7	-8.3					
27	Feb	69								12.7	17.1
28	Feb	69	0900	5.00	13.3	-7.8					
14	Mar	69	0850	1.22	15.0	-8.9					
2	Apr	69	0935	.00	31.1	-4.6				8.8	12.0
11	Apr	69	0845	.21	30.6	-5.0					
17	Apr	69	0945	.00	28.3	-1.1					
25	Apr	69	0850	.00	31.7	-3.3					
2	May	69	0845	.00	29.6	-3.3				7.9	10.3
9	May	69	0845	.38	31.1	2.3					
19	May	69	0830	.00	35.6	2.9					
26	May	69	0855	.00	37.2	4.6					
2	Jun	69	0900	.00	39.4	6.7					
3	Jun	69								3.6	16.9
9	Jun	69	1630	.00	39.4	6.7					
17	Jun	69	0900	1.24	37.8	7.2					
23	Jun	69	0845	.00	38.3	10.0					
1	Jul	69	0850	.00	40.0	4.6				3.9	4.6
7	Jul	69	0900	.00	41.1	7.2					
14	Jul	69	0840		39.4	8.3					
22	Jul	69	0830		41.1	12.9					
28	Jul	69	0840		42.8	13.9					
1	Aug	69								1.3	2.0
11	Aug	69	0900		43.3	10.0					
18	Aug	69	0855	.00	44.4	12.9					
25	Aug	69	0900	.00	43.3	7.2					
29	Aug	69	0945	.00	40.0	6.1				1.6	3.7
8	Sep	69	0940	.00	41.1	10.0					
1	Oct	69	1400	.22	38.9	4.6				2.1	4.0
6	Oct	69	0910	.00	34.4	-6.7					
20	Oct	69	0900		29.6	-7.8					
4	Nov	69								4.0	3.4
5	Nov	69	1000	.00	27.3	-6.1	10.5	13.5	15.0		
17	Nov	69	0915	.48	24.0	-5.6	9.0	11.5	13.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
NORTH FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]											
1	Dec	69	0915	.00	21.7	-9.4	6.0	9.0	10.0	3.3	3.2
17	Dec	69	1440	.00	20.1	-15.0	2.0	4.5	6.0		
1	Jan	70								2.6	2.7
5	Jan	70	1415	.05	18.3	-25.7	-0.5	1.5	3.5		
19	Jan	70	0855		17.2	-21.1	3.5	5.5	6.0		
1	Feb	70								1.9	2.9
3	Feb	70	0900	.00	20.6	-18.3	3.5	6.0	9.0		
16	Feb	70	0900	.12	24.0	-10.6	6.0	8.5	9.0		
2	Mar	70	1450	2.50	24.0	-6.7	9.0	9.0	9.5	11.2	3.1
16	Mar	70	0845	.64	24.4	-6.1	9.5	11.0	10.5		
30	Mar	70	0930	.00	28.3	-9.4	10.5	11.5	11.5		
1	Apr	70								6.4	4.1
7	Apr	70	0845	.00	28.3	-11.7	10.5	13.0	11.5		
13	Apr	70	0855	.00	30.0	-3.9	13.5	15.0	14.0		
20	Apr	70	0840	.05	24.0	-6.1	11.5	14.0	13.5		
27	Apr	70	0830	.10	27.3	-7.8	14.0	15.5	14.0		
5	May	70	0900	.62	32.8	-5.0					
6	May	70								6.7	4.6
11	May	70	0835	.00	31.7	2.3	18.5	20.0	18.5		
18	May	70	0840	.00	37.2	-1.1	20.5	21.5	20.0		
1	Jun	70								1.9	4.6
3	Jun	70	0905	.00	37.2	3.9	23.5	24.5	23.0		
8	Jun	70	1100	.00	42.2	5.0	25.5	26.0	24.5		
15	Jun	70	0900	.08	32.2	4.6	21.5	23.5	23.0		
22	Jun	70	0855	.00	45.0	5.0	28.0	27.0	25.5		
29	Jun	70	0900	.00	46.7	6.1	26.5	27.0	26.5		
1	Jul	70								1.7	4.1
6	Jul	70	0855	.00	43.9	5.0	30.5	30.0	27.0		
13	Jul	70	0850	.37	41.7	13.9	29.0	29.5	28.0		
20	Jul	70	0905	.00	40.0	13.3	31.5	31.0	31.5		
2	Aug	70								1.8	3.3
3	Aug	70	0845	.00	41.7	6.7					
1	Sep	70								6.9	5.4
2	Sep	70	1500	4.85	39.4	5.6	26.5	26.5	27.0		
14	Sep	70	0835	.00	39.4	2.9	2.3	25.5	26.0		
28	Sep	70	0830	.00	33.3	-2.9	18.3	21.2	21.5		
1	Oct	70								3.2	4.9
12	Oct	70	0840	.00	32.8	-3.9	16.2	18.3	18.8		
2	Nov	70								3.6	4.2
24	Nov	70	0845	.00	31.1	-12.3					
5	Dec	70								8.8	4.5

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
NORTH FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]											
9	Dec	70	0825	1.83	22.8	-7.8	5.7	6.3	7.2		
29	Dec	70	0835	.76	16.1	-12.9	1.8	3.7	4.5		
11	Jan	71								8.3	4.4
18	Jan	71	1050	.00	18.9	-17.2	2.2	3.1	3.8		
1	Feb	71								8.8	5.0
2	Feb	71	0840	.00	25.1	-11.1	6.3	7.6	7.2		
26	Feb	71	0905	.49	27.3	-12.3	4.5	7.2	7.6		
5	Mar	71								7.1	5.0
15	Mar	71	1125	.05	22.8	-18.9	5.4	7.6	8.4		
22	Mar	71	0835	.00	26.1	-12.3	9.0	9.8	9.8		
26	Mar	71								3.5	5.0
9	Apr	71	0840		31.1	-10.0					
19	Apr	71	0830	.13	32.8	-6.7	9.2	12.9	14.5		
30	Apr	71	1130	.02	28.3	-6.1	13.7	15.2	14.5		
5	May	71								1.9	5.3
10	May	71	0840	2.05	33.9	-0.6	12.9	14.5	14.5		
17	May	71	1140	.02	35.0	3.9	18.3	20.3	20.2		
24	May	71	0835	.00	30.0	-2.3	16.6	18.6	18.0		
1	Jun	71	0845	.00	36.7	-2.3	14.5	18.0	18.3		
2	Jun	71								4.4	5.2
7	Jun	71	1115	.00	35.6	0.6	19.6	20.3	19.8		
14	Jun	71	1300	.00	37.2	6.7	24.7	23.4	22.6		
22	Jun	71	0840	.00	43.3	5.6	24.9	26.3	24.9		
30	Jun	71	1105	.00	40.6	6.7	24.1	25.8	25.2		
7	Jul	71	0845	.00	41.1	6.7	24.9	26.5	25.7		
14	Jul	71	1125	.00	42.2	5.0	26.5	27.2	26.1		
27	Jul	71	0840	.83	50.0	12.9	28.8	30.0	28.6		
2	Aug	71								1.4	3.9
11	Aug	71	1115	.54	47.2	13.9	30.2	31.2	30.2		
26	Aug	71	0845	.00	50.0	11.1	29.2	30.0	29.2		
1	Sep	71								1.8	3.9
14	Sep	71	0845	.00	50.0	4.6	26.5	27.6	26.5		
28	Sep	71	1135	.00			14.5	19.8	21.6		
2	Oct	71								1.3	2.5
20	Oct	71	0845	T	36.7	-10.6	10.2	14.5	16.9		
5	Nov	71								1.6	3.5
9	Nov	71	1105	.00	25.6	-13.9	7.3	11.2	12.2		
30	Nov	71	0950	.03	25.6	-13.3	6.3	8.5	9.3		
6	Dec	71								1.7	2.8
20	Dec	71	1055	.01	15.6	-16.7	0.0	3.7	5.4		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
NORTH FRENCHMAN FLAT ECOTONAL LINE [Out of <u>L. tridentata</u> (CONTINUED)]									
11 Jan 72	0840	3.13	16.2	-16.1	0.3	1.8	3.2		
27 Jan 72	1135	.00	16.1	-15.0	1.8	3.2	4.2		
11 Feb 72	0820	.00	19.4	-15.6	1.3	3.2	3.7		
24 Feb 72	1105	.00	26.7	-15.6	4.2	6.4	7.3		
3 Mar 72	0840	.00	28.3	-9.0	8.1	9.8	9.0		
10 Mar 72	1115	.00	30.6	-5.7	11.0	12.6	11.8		
17 Mar 72	0840	.00	31.7	-5.7	12.2	14.1	14.1		
27 Mar 72	1100	.00	32.2	-6.7	11.8	13.7	13.7		
3 Apr 72	1125	.00	29.4	-15.0	12.2	13.3	12.6	4.7	5.0
12 Apr 72	0905	.01	30.0	-2.2	13.0	14.9	14.9		
21 Apr 72	1110	.03	27.8	-9.5	11.4	13.3	13.7		
28 Apr 72	0845	.00	32.8	-6.7	14.1	16.3	15.6		
3 May 72								3.3	4.1
5 May 72	1115	.00	36.1	-3.9	16.7	18.6	17.6		
19 May 72	1240	.00	38.3	-0.6	19.6	20.4	19.9		
2 Jun 72	1135	.15	40.6	-2.8	25.6	25.2	23.7	2.3	3.9
9 Jun 72	1125	.94	38.9	10.6	21.0	22.7	22.7		
23 Jun 72	0900	2.32	39.4	7.2	21.0	24.7	25.1		
7 Jul 72	1330	.00	45.0	7.8	28.7	28.5	28.1		
21 Jul 72	0835	.00	46.7	9.0	27.0	29.6	29.4		
4 Aug 72	1105	.00	40.6	6.7	27.0		28.5		
15 Aug 72	0840	.50	46.7	10.0	23.8	27.5	27.6		
25 Aug 72	1120	.00	41.1	7.2	26.0	27.5	27.0		
8 Sep 72	0850	.23	38.3	8.3	24.6	26.3	26.0		
22 Sep 72	1115	2.06	35.0	1.7	18.5	20.5	22.8		
6 Oct 72	1125	.47	34.4	1.7	17.0	19.3	20.3		
1 Nov 72	1135	.74	28.3	-5.7	6.5	9.6	11.8		
21 Nov 72	1140	1.53	23.3	-6.1	3.5	6.0	8.5		
13 Dec 72	1100	.00	19.4	-15.6	0.5	2.2	4.0		
12 Jan 73	1115	.12	18.3	-19.4	1.0	1.7	1.8		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
					Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
FRENCHMAN FLAT PLAYA											
13	Feb	68	1535	1.71	21.1	-6.1					
25	Feb	68	1000		25.1	0.0					
28	Feb	68	1505	.00	27.3	-0.6					
8	Mar	68	0945	.06	26.1	-3.9					
15	Mar	68	1045	.00	22.2	-7.2					
29	Mar	68	1540	.00	31.1	-5.0					
4	Apr	68	1020	.94	29.6	-1.1					
16	Apr	68	0930	.00	29.6	-1.7					
29	Apr	68	1330	.00	31.1	-2.3					
6	May	68	1330	.00	34.4	1.1					
16	May	68	1300	.00	32.2	-1.1					
24	May	68	1320	.00	37.2	2.3					
3	Jun	68	1335	.00	40.6	5.0					
11	Jun	68	0902	.23	38.9	7.2					
18	Jun	68	1625	.00	44.4	10.0					
2	Jul	68	1335	.00	44.4	7.8					
10	Jul	68	1350	1.40	42.8	11.1					
18	Jul	68	1335	.00	42.2	12.9					
2	Aug	68	1130	2.50	41.7	14.4					
16	Aug	68	1310	.00	39.4	8.3					
28	Aug	68	0845	.00	40.6	5.6					
11	Sep	68	1335	.00	40.0	10.0					
30	Sep	68	0845	.00	37.2	1.7					
11	Oct	68	0855	.00	32.2	2.9					
25	Oct	68	0920	.42	31.1	-1.7					
31	Oct	68	1145		31.7	-1.1					
8	Nov	68	1330	.00	25.1	-5.0					
22	Nov	68	1530	.40	28.3	-4.6					
4	Dec	68	1350	.00	22.8	-13.3					
2	Jan	69	1100		17.2	-18.3					
17	Jan	69	1400	2.48	26.1	-13.9					
29	Jan	69	1415	2.96	16.7	-6.7					
4	Feb	69	1430	.00	14.4	-8.9					
22	Feb	69	0830	2.71	17.8	-5.6					
14	Mar	69	0900	5.53	14.4	-6.7					
2	Apr	69	0930	.00	31.7	-3.3					
11	Apr	69	0830	.10	31.1	-4.6					
17	Apr	69	0935	.00	31.1	1.1					
25	Apr	69	0845	.00	33.3	-2.9					
2	May	69	0835	.00	30.6	-2.3					
9	May	69	0830	.35	31.1	5.0					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture		
			Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %	
FRENCHMAN FLAT PLAYA (CONTINUED)										
19 May 69	0820	.00	36.7	5.0						
26 May 69	0845	.00	37.8	5.6						
2 Jun 69	0850	.00	40.0	9.4						
9 Jun 69	1635	.00	37.8	9.4						
17 Jun 69	0830	2.59	36.1	8.9						
23 Jun 69	0835	.00	37.2	11.1						
1 Jul 69	0845	.00	37.8	7.2						
7 Jul 69	0850	.00	41.1	9.4						
14 Jul 69	0830	.08	40.6	10.6						
22 Jul 69	0825	.60	41.1	14.4						
28 Jul 69	0830	.09	43.3	15.0						
11 Aug 69	0850		43.3	13.9						
18 Aug 69	0835	.00	45.0	15.0						
25 Aug 69	0850	.00	43.3	10.0						
29 Aug 69	0935	.00	40.0	8.3						
8 Sep 69	0930	.00	39.4	12.3						
1 Oct 69	1345	.54	38.9	5.6						
6 Oct 69	0900	.00	33.3	-4.6						
20 Oct 69	0850	1.10	30.6	-4.6						
5 Nov 69	0950	.00	26.1	-2.9	9.9	12.6	13.7			
17 Nov 69	0900	.61	24.4	-3.9	13.1	11.4	12.2			
1 Dec 69	0900	.00	23.4	-7.2	5.4	7.2	8.5			
17 Dec 69	1450	.00	20.6	-13.3	2.2	3.6	5.4			
5 Jan 70	1400	.28	18.9	-22.2	-0.8	0.8	2.7			
19 Jan 70	0845		17.8	-19.4	3.2	5.0	5.4			
3 Feb 70	0850	.00	21.7	-15.0	3.2	5.4	5.9			
16 Feb 70	0845	.22	25.1	-8.3	5.9	7.2	7.2			
2 Mar 70	1435	2.59	26.7	-3.9	8.1	8.1	8.5			
16 Mar 70	0835	.78	26.1	-4.6	8.9	10.2	9.8			
30 Mar 70	0920	.00	28.9	-6.1	9.0	11.0	10.6			
7 Apr 70	0830	.00	29.6	-8.3	9.0	11.0	10.6			
11 Apr 70	0845	.00	30.6	-2.9	12.2	13.8	12.9			
20 Apr 70	0830	.07	24.0	-3.3	11.0	12.9	12.2			
27 Apr 70	0825	.11	27.3	-4.6	13.3	14.1	12.9			
5 May 70	0850	.59	34.4	-2.9						
11 May 70	0825		32.8	3.9	17.4	18.0	16.6			
18 May 70	0830	.00	38.3	1.7	19.2	19.9	18.3			
3 Jun 70	0850	.00	37.8	6.7	22.1	23.2	21.6			
8 Jun 70	1110	.00	41.7	6.7	24.4	24.7	22.9			
15 Jun 70	0845	.08	33.9	6.1	20.4	22.2	21.6			
22 Jun 70	0845	.00	45.0	7.2	26.7	26.3	28.7			
29 Jun 70	0845	.00	45.6	8.3	25.8	26.3	25.4			

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
FRENCHMAN FLAT PLAYA (CONTINUED)									
6 Jul 70	0845	.00	44.4	6.1	29.4	28.4	26.1		
13 Jul 70	0840	.23	42.8	13.9	27.9	28.1	26.6		
20 Jul 70	0850	.00	45.6	13.9	31.0	30.4	28.3		
3 Aug 70	0840	.00	40.6	8.3					
2 Sep 70	1400	2.00	46.1	6.1	23.9	26.3	26.6		
14 Sep 70	0825	.00	40.0	3.3	22.1	24.2	24.2		
28 Sep 70	0825	.00	32.2	-1.1	17.4	19.6	20.4		
12 Oct 70	0820	.00	33.3	-1.7	15.9	18.7	18.9		
24 Nov 70	0830	.00	31.1	-11.7					
9 Dec 70	0815	2.14	21.1	-6.1	5.4	6.3	7.3		
29 Dec 70	0830	.75	16.1	-11.1	0.8	3.2	4.5		
18 Jan 71	1105	.00	20.1	-15.0	1.8	3.2	3.6		
2 Feb 71	0830	.00	25.7	-8.9	4.5	5.9	5.9		
26 Feb 71	0855	.35	27.3	-10.6	4.1	6.4	6.8		
15 Mar 71	1140	.04	25.1	-17.8	3.2	5.4	5.9		
22 Mar 71	0830	.00	26.1	-9.4	7.2	8.2	8.2		
9 Apr 71	0835		31.1	-7.2					
19 Apr 71	0820	.10	32.2	-3.9	9.4	12.6	12.9		
30 Apr 71	1145	.01	30.6	-3.3	12.9	13.7	12.9		
10 May 71	0825	2.23	32.8	1.7	12.2	13.7	12.9		
17 May 71	1150	.08	35.6	5.6	16.9	18.9	17.9		
24 May 71	0830	.00	30.6	-0.6	15.2	17.0	16.0		
1 Jun 71	0835	.00	35.6	0.6	17.6	15.2	15.2		
7 Jun 71	1130	.00	35.6	2.3	18.3	19.2	17.9		
14 Jun 71	1250	.00	37.8	8.9	21.8	21.8	20.4		
22 Jun 71	0830	.00	41.7	7.8	23.7	24.4	22.7		
30 Jun 71	1115	.00	40.6	8.3	22.9	24.4	23.4		
7 Jul 71	0835	.00	40.6	8.3	23.9	24.9	23.4		
14 Jul 71	1140	.00	42.8	7.2	25.1	25.4	23.9		
27 Jul 71	0830	.88	44.4	15.0	27.2	27.6	26.3		
11 Aug 71	1125	1.18	45.6	15.0	27.9	28.7	27.4		
26 Aug 71	0835	.03	44.4	12.9	27.6	27.9	27.2		
14 Sep 71	0830	.03	43.9	6.7	25.4	25.9	24.9		
28 Sep 71	1145	.00	43.3	-5.0	8.3	18.3	19.9		
20 Oct 71	0835	T	37.2	-8.3	9.9	13.7	15.9		
9 Nov 71	1125	T	26.7	-11.1	6.3	9.0	10.6		
30 Nov 71	0940	.05	26.7	-8.9	5.9	7.7	8.5		
20 Dec 71	1105	T	15.6	-15.6	0.0	3.2	4.6		
11 Jan 72	0830	3.45	16.1	-13.9	0.0	0.8	2.7		
27 Jan 72	1155	.00	17.8	-11.7	1.3	2.7	3.7		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
FRENCHMAN FLAT PLAYA (CONTINUED)									
11 Feb 72	0820	.00	19.4	-15.6	1.3	3.2	3.7		
24 Feb 72	1120	.00	26.7	-12.2	3.2	5.5	5.9		
3 Mar 72	0830	.00	27.2	-7.2	7.2	8.5	7.7		
10 Mar 72	1125	.00	32.2	-2.8	9.8	11.1	10.2		
17 Mar 72	0830	.00	32.8	-2.8	10.7	11.8	12.6		
27 Mar 72	1110	.00	33.3	-5.0	10.6	12.2	12.2		
3 Apr 72	1135	.00	29.4	-12.2	11.0	12.2	11.4		
12 Apr 72	0845	.05	31.7	-1.7	12.2	13.8	13.1		
21 Apr 72	1125	.01	28.3	-6.7	10.6	12.6	12.9		
28 Apr 72	0830	.00	32.2	-4.4	13.4	15.2	14.5		
5 May 72	1130	.00	35.6	-1.7	16.0	17.0	16.0		
19 May 72	1230	.00	37.8	1.7	18.3	19.2	18.6		
2 Jun 72	1150	T	41.1	-1.1	24.9	24.2	22.2		
9 Jun 72	1145	1.15	38.9	11.7	20.4	21.8	22.5		
23 Jun 72	0845	.96	40.0	7.2	22.7	24.4	23.4		
7 Jul 72	1320	.00	46.1	7.8	25.6	25.8	24.7		
21 Jul 72	0825	.00	46.7	11.1	25.8	27.2	26.8		
4 Aug 72	1115	.00	44.0	8.3	25.4	26.6	25.6		
15 Aug 72	0820	.39	46.7	11.7	23.8		25.8		
25 Aug 72	1110	.00	41.1	7.2	25.0	25.3	25.0		
8 Sep 72	0835	.00	40.0	9.5	23.8	25.0	24.6		
22 Sep 72	1150	1.26	36.7	1.7	17.8	20.5	21.0		
6 Oct 72	1140	.35	35.0	2.8	17.0	19.0	19.8		
1 Nov 72	1150	.33	29.4	-3.9	6.0	10.0	12.3		
21 Nov 72	1155	1.39	25.6	-4.4	3.3	6.8	9.0		
13 Dec 72	1115	.00	19.4	-15.6	-2.0	1.3	4.0		
12 Jan 73	1135	.16	18.9	-19.4	1.0	1.7	1.8		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
	Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
ROCK VALLEY									
27 Apr 67								7.7	6.3
18 May 67		.64						5.6	5.3
15 Jun 67		.15							
16 Jun 67								1.4	3.1
13 Jul 67		1.62						1.0	2.7
16 Aug 67		2.59							
18 Aug 67		4.17							
1 Sep 67		3.98						7.6	2.6
2 Oct 67		2.00						6.4	5.0
1 Nov 67		.00						2.5	3.4
1 Dec 67								8.5	3.4
2 Dec 67		4.04							
2 Jan 68		.79						7.4	6.2
1 Feb 68		.23						5.2	4.9
13 Feb 68	1705	3.15	21.0	-2.2					
24 Feb 68	1000		25.6	2.8					
28 Feb 68	1000	.00	27.8	2.2					
1 Mar 68								7.6	8.3
8 Mar 68	1510	.00	25.6	1.1					
15 Mar 68	1400	.76	22.2	-2.8					
29 Mar 68	1310	.00	31.1	-1.7					
31 Mar 68								5.5	6.6
4 Apr 68	1030	.51	30.6	2.2					
15 Apr 68	1315	.00	30.6	-0.6					
29 Apr 68	1000	.00	30.0	-1.7				2.9	4.0
6 May 68	0900	.00	36.1	5.6					
16 May 68	1040	.00	33.9	3.3					
24 May 68	0940	.00	37.8	7.2					
31 May 68								0.8	1.9
3 Jun 68	0950	.00	41.1	7.2					
11 Jun 68	1505	.53	42.2	7.8					
18 Jun 68	1325	.00	43.9	11.1					
2 Jul 68	0920	.00	46.1	13.3				0.8	1.9
11 Jul 68	0955	3.91	39.4	16.7					
18 Jul 68	0935	.00	42.8	16.1					
1 Aug 68								5.0	5.2
2 Aug 68	1420	1.32	43.3	18.9					
16 Aug 68	0845	.43	43.3	8.9					
28 Aug 68	1555	.00	41.7	7.2					
29 Aug 68								2.7	3.8
11 Sep 68	1015	.00	37.2	15.0					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
ROCK VALLEY (CONTINUED)									
30 Sep 68	1430	.00	38.9	7.8				1.7	2.7
11 Oct 68	1335	.00	32.8	7.2					
25 Oct 68	1415	1.04	32.8	4.4					
31 Oct 68								3.0	2.6
1 Nov 68	1035	.00	28.3	6.1					
8 Nov 68	1000	.00	26.7	2.8					
22 Nov 68	1100	.25	27.8	-1.1					
30 Nov 68								1.9	2.4
5 Dec 68	1050	.00	24.4	-6.7					
2 Jan 69	1530	.41	20.6	-15.0				3.2	2.9
17 Jan 69	1030	3.15	23.9	-5.6					
29 Jan 69		3.68							
3 Feb 69								8.8	9.9
4 Feb 69	1110	.00	16.7	-9.4					
22 Feb 69	1445	4.06	18.9	-5.0					
27 Feb 69								9.1	10.8
28 Feb 69	1400	7.24	16.7	-6.7					
14 Mar 69	1400	2.16	17.8	-5.6					
2 Apr 69								7.1	9.2
3 Apr 69	0950	.13	31.1	-0.6					
14 Apr 69	0910	.03	30.6	-0.6					
17 Apr 69	1330	.00	28.3	1.1					
25 Apr 69	1330	.00	33.3	4.4					
2 May 69	1345	.00	30.6	-2.8				5.2	8.5
9 May 69	1330	.28	34.4	5.6					
19 May 69	1410	.00	37.2	6.1					
26 May 69	1355	.00	37.8	10.0					
2 Jun 69	1345	.00	41.7	10.0					
3 Jun 69								1.3	3.7
9 Jun 69	1000	.00	39.4	12.2					
17 Jun 69	1400	1.78	37.2	6.1					
23 Jun 69	1330	.00	40.0	11.1					
1 Jul 69								3.6	3.7
2 Jul 69	1030	.00	41.7	8.3					
7 Jul 69	1410	.00	44.0	10.0					
14 Jul 69	1340	.00	40.6	14.4					
22 Jul 69	1330	.51	42.2	17.8					
28 Jul 69	1345	.00	42.2	17.2					
1 Aug 69								<1.0	2.1
11 Aug 69	1330	3.56	46.7	13.9					
18 Aug 69	1345	.00	43.9	18.3					
25 Aug 69	1345	.00	44.4	13.9					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
ROCK VALLEY (CONTINUED)											
29	Aug	69	1520	.00	41.7	11.7				1.1	2.4
8	Sep	69	1440	.00	43.3	15.0					
1	Oct	69	1150	.00	38.3	7.8				1.2	2.2
6	Oct	69	1350	.00	34.4	3.9					
20	Oct	69		.71							
4	Nov	69	1120	.00	28.9	-1.1	14.5	17.3	19.2	2.4	2.2
17	Nov	69	1400	1.93	26.7	-3.3	9.4	11.8	14.4		
1	Dec	69	1430	.00	21.7	-2.9	9.8	10.2	11.8	4.8	2.8
18	Dec	69	1510	.00	21.1	-5.6	8.1	8.5	9.8		
1	Jan	70								3.7	2.7
6	Jan	70	1115	.00	20.6	-12.9	1.0	3.7	6.0		
19	Jan	70	1410	.08	18.3	-3.3	6.4	7.2	8.5		
1	Feb	70								2.2	2.7
2	Feb	70	1030	.00	22.2	-8.9	4.5	7.2	8.2		
16	Feb	70	1420	.46	24.0	-1.7	8.5	10.2	11.0		
2	Mar	70								9.3	8.2
3	Mar	70	0930	4.32	17.2	-2.9	6.8	9.0	10.6		
16	Mar	70	1400	1.40	26.1	-3.3	9.6	11.4	11.8		
31	Mar	70		.00	28.9	-4.6	9.8	12.2	13.7		
1	Apr	70								5.4	6.9
7	Apr	70	1325	.00	28.9	-3.9	15.2	14.5	14.5		
20	Apr	70	1340	.08	30.6	-1.1	16.0	15.2	16.0		
27	Apr	70	1500	.15	28.9	-3.3	15.5	17.3	17.9		
5	May	70	1350	.00	33.9	-6.1	20.2	18.7	18.7		
6	May	70								3.4	5.2
11	May	70	1345	.00	33.9	5.6					
18	May	70	1350	.00	38.9	2.9	21.6	23.4	22.7		
1	Jun	70								1.2	3.8
3	Jun	70	1500	.00	39.4	10.0	27.0	25.8	25.4		
8	Jun	70	1340	.00	43.3	13.9	28.1	27.8	27.2		
15	Jun	70	1340	.08	32.8	6.7	24.7	24.7	25.2		
22	Jun	70	1335	.00	43.9	11.1	31.4	30.0	28.7		
29	Jun	70	1515	.00	47.2	10.0	30.0	29.2	29.2		
1	Jul	70								1.0	3.5
6	Jul	70	1345	.03	46.1	15.6	32.4	31.2	30.2		
13	Jul	70	1415	.74	43.9	16.1	32.2	30.8	30.0		
20	Jul	70	1400	.00	47.2	21.7	34.1	33.6	32.4		
30	Jul	70	1440	.00	43.9	17.2	32.7	31.6	31.2		
2	Aug	70								1.1	2.3
1	Sep	70								2.0	2.5
2	Sep	70	1100	1.47	47.2	12.3	27.2	30.0	30.8		
14	Sep	70	1345	.00	41.1	6.1	24.9	27.0	28.4		
28	Sep	70	1355	.00	39.4		22.2	23.2	24.7		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall cm	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs		°C	°C	°C	°C	°C	%	%
ROCK VALLEY (CONTINUED)									
1 Oct 70									
12 Oct 70	1345	.00	36.1	3.9	19.6	21.3	22.7	1.6	2.7
2 Nov 70									
24 Nov 70	1355	.00	35.0	-2.9				2.1	1.2
5 Dec 70									
9 Dec 70		2.54						7.4	2.2
10 Dec 70	1410	.08	23.4	-5.6	6.3	8.2	10.2		
29 Dec 70	1330	1.96	16.1	-9.4	2.7	3.7	5.5		
11 Jan 71								8.3	7.0
18 Jan 71	1330	.00	26.1	-12.3	6.5	6.0	6.0		
1 Feb 71								5.7	6.7
2 Feb 71	1345	.00	28.3	-3.9	9.0	9.5	9.8		
26 Feb 71	1345	.79	27.8	-6.1	6.5	7.7	9.0		
5 Mar 71								6.2	6.6
15 Mar 71	1325	.25	25.1	-10.6	9.0	9.0	10.0		
22 Mar 71	1330	.00	27.8	-1.7	12.5	11.8	12.3		
26 Mar 71								5.5	5.6
9 Apr 71	1335	.02	32.8	0.6					
19 Apr 71	1400	.02	32.8	-1.7	14.5	14.5	16.0		
30 Apr 71	1330	.13	31.7	2.9	17.3	17.3	17.0		
5 May 71								3.7	4.6
10 May 71	1345	.02	32.8	2.9	18.0	17.0	17.3		
17 May 71	1330	.00	36.7	5.6	21.5	22.0	22.5		
24 May 71	1400	.05	35.0	3.9	21.0	19.9	19.9		
1 Jun 71	1345	.00	35.0	0.6	19.3	19.9	20.3		
2 Jun 71								2.5	3.3
7 Jun 71	1345	.00	37.2	4.6	23.2	22.5	22.5		
14 Jun 71	0900	.00	38.3	8.9	25.8	26.8	25.3		
22 Jun 71	1435	.00	43.3	9.4	29.3	28.2	27.3		
30 Jun 71	1350	.00	43.9	7.2	28.0	28.2	28.0		
7 Jul 71	1400	.00	40.6	10.0	29.3	28.8	28.3		
14 Jul 71	1345	.00	45.6	10.6	31.0	30.3	29.0		
27 Jul 71	1340	.00	46.7	17.2	32.3	32.1	31.7		
2 Aug 71								1.1	2.1
11 Aug 71	1335	.89	47.2	19.4	32.5	32.5	32.0		
26 Aug 71	1325	.15	45.6	15.0	31.0	31.5	31.0		
2 Sep 71								8.3	3.5
14 Sep 71	1345	4.87	44.4	12.9	29.6	29.0	29.2		
28 Sep 71	1330	.00	44.4	2.3	18.5	20.4	22.6		
1 Oct 71								4.5	4.1

New remote temperature recording instruments and soil moisture psychrometers were installed at this time. Recording time for the following air and soil temperature data is 1200 hrs.

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
ROCK VALLEY (CONTINUED)											
20	Oct	71		.00	36.1	-1.7	12.0	16.5	18.5	4.3	3.6
26	Oct	71		.00	29.4	1.1	14.2	15.7	18.3	4.1	3.7
5	Nov	71		.00	25.0	-5.6	10.8	14.5	15.7	4.2	3.5
15	Nov	71		.10	26.8	-3.3	11.0	12.8	15.5	3.9	3.4
22	Nov	71		.05	17.2	-3.3	6.0	10.1	12.8	3.3	2.9
29	Nov	71		.00	19.4	-1.2	8.3	11.0	12.8	3.6	3.1
6	Dec	71		.00	16.7	-7.8	4.5	9.0	11.0	3.3	3.0
14	Dec	71		.10	14.4	-12.2	1.2	5.5	9.0	2.9	2.2
20	Dec	71		.00	13.3	-8.9	2.0	5.9	8.5	3.3	2.6
28	Dec	71		5.33	13.9	-3.3	2.2	4.4	6.9	9.6	9.6
11	Jan	72		.00	16.0	-3.0	4.1	4.1	5.6	12.0	12.0
18	Jan	72		.00	18.0	-3.0	5.6	6.3	7.7	12.0	9.6
25	Jan	72		.00	17.0	-7.0	4.1	5.6	7.7	8.9	8.8
1	Feb	72		.00	14.0	-10.0	2.5	4.8	6.3	9.5	8.4
8	Feb	72		.00	17.0	-8.0	8.4	7.7	8.4	7.9	7.7
15	Feb	72		.00	21.0	-5.0	10.6	9.2	9.2	8.3	7.8
22	Feb	72		.00	26.0	-1.0	12.6	11.9	11.9	8.1	7.6
29	Feb	72		.00	28.0	-2.0	15.2	13.3	13.3	7.6	7.2
8	Mar	72		.00	32.0	0.0	18.4	16.5	15.9	7.6	7.2
14	Mar	72		.00	31.0	7.0	18.4	16.5	16.5	6.8	6.5
21	Mar	72		.00	32.0	5.0	16.5	15.9	16.5	6.1	6.1
28	Mar	72		.00	30.0	-6.0	9.9	11.9	13.9	5.5	5.9
4	Apr	72		<.01	29.0	-7.0	15.2	15.2	15.2	5.2	5.5
12	Apr	72		.19	29.0	1.0	15.9	15.2	16.5	4.6	5.0
18	Apr	72		.00	28.0	-4.0	15.2	16.5	17.2	4.4	4.7
26	Apr	72		.00	31.0	-1.0	17.8	17.2	17.8	4.3	4.4
3	May	72		.00	34.0	6.0	22.5	20.8	20.2	3.9	4.3
9	May	72		.00	36.0	6.0	20.2	20.8	20.8	4.0	3.9
16	May	72		.00	38.0	13.0	23.6	22.5	21.9	4.4	3.9
23	May	72		.00	36.0	1.0	20.2	20.2	20.2	4.5	3.8
30	May	72		.00	41.0	8.0	24.7	24.7	23.6	4.5	3.7
6	Jun	72		.00	40.0	17.0	26.8	26.3	25.8	4.3	3.4
13	Jun	72		1.02	38.0	10.0	28.3	26.8	26.3	4.4	3.4
20	Jun	72		.00	40.0	12.0	29.8	29.3	28.8	4.4	3.5

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
	Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
ROCK VALLEY (CONTINUED)									
27 Jun 72		.84	40.0	9.0	28.8	27.8	27.8	4.2	3.5
5 Jul 72		.00	47.0	7.0	33.4	32.5	31.6	4.5	3.7
11 Jul 72		.00	44.0	15.0	32.5	31.6	31.2	4.5	3.7
18 Jul 72		.00	48.0	19.0	34.2	33.8	32.9	4.4	3.8
25 Jul 72		.00	41.0	13.0	32.1	31.2	31.2	4.7	3.6
1 Aug 72		.00	44.0	17.0	35.0	32.9	32.1	3.8	3.8
8 Aug 72		.00	47.0	16.0	34.6	32.9	32.5	4.2	3.9
15 Aug 72		1.87	44.0	17.0	27.3	28.3	29.8	4.5	4.4
22 Aug 72		.00	41.0	12.0	28.8	29.3	29.8	4.9	4.3
29 Aug 72		.50	41.0	17.0	26.8	27.3	28.3	4.5	4.0
5 Sep 72		.03	38.0	17.0	26.3	27.8	28.8	4.6	4.1
12 Sep 72		.00	36.0	12.0	22.5	24.7	26.8	4.5	3.9
19 Sep 72		.43	37.0	10.0	19.0	22.5	24.7	4.3	3.7
26 Sep 72		.00	34.0	6.0	20.8	22.5	24.2	4.5	3.7
3 Oct 72		.00	34.0	8.0	21.9	23.6	24.2	4.7	3.8
10 Oct 72		1.47	32.0	7.0	17.8	21.4	23.1	4.4	3.8
18 Oct 72		.05	28.0	4.0	14.6	17.2	17.2	4.3	3.7
24 Oct 72		1.85	26.0	3.0	13.9	15.9	17.8	3.6	3.5
31 Oct 72		.00	22.0	-7.0	8.4	11.9	15.2	4.6	3.2
9 Nov 72		.20	23.0	0.0	10.6	11.9	14.6	5.0	3.3
16 Nov 72		2.24	17.0	-2.0	9.2	9.9	11.9	12.0	12.0
23 Nov 72		1.07	12.0	-3.0	7.0	7.7	9.9	12.0	12.0
30 Nov 72		.00	23.0	-2.0	8.4	9.2	10.6	12.0	12.0
7 Dec 72		.00	22.0	-9.0	5.6	9.0	10.2	12.0	12.0
14 Dec 72		.00	8.0	-18.0	instrument malfunction			9.0	8.2
21 Dec 72		.00	18.0	-5.0				8.6	7.8
28 Dec 72		.00	66.0	29.0				8.0	7.7

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE (In <u>Yucca brevifolia</u>)									
4 Apr 68	1230								
12 Apr 68	1500	.02	27.3	2.3					
29 Apr 68	1500	.00	28.9	0.0					
6 May 68	1415	.00	32.2	7.2					
17 May 68	0940	.00	28.9	4.6					
23 May 68	1415	.00	33.9	7.2					
3 Jun 68	1455	.00	37.8	10.0					
11 Jun 68	1015	.59	37.2	8.3					
2 Jul 68	1435	.00	42.2	12.3					
10 Jul 68	1525	1.65	40.0	15.6					
18 Jul 68	1400	.00	41.1	17.8					
2 Aug 68	1030	.15	39.4	18.3					
16 Aug 68	1420	.55	37.8	11.7					
31 Aug 68	0955	.00	36.7	9.4					
11 Sep 68	1000	.00	37.2	16.7					
1 Oct 68	0955	.00	34.4	5.0					
10 Oct 68	0945	.00	29.6	6.7					
25 Oct 68	1010	.36	26.7	3.3					
8 Nov 68	1410	.00	28.9	1.7					
26 Nov 68	1430	.60	24.0	-2.9					
2 Jan 69	0950	.03	18.3	-10.6					
23 Jan 69	0935	6.55	20.6	-6.7					
29 Jan 69	1605	6.55	9.4	-6.1					
7 Feb 69	1500	.05	12.3	-7.2					
21 Feb 69	0945	2.21	14.4	-2.9					
28 Feb 69	1000	6.54	10.6	-5.6					
14 Mar 69	1000		13.3	-6.7					
2 Apr 69	1045	.00	27.3	-1.1					
10 Apr 69	1010	.57	25.7	0.0					
17 Apr 69	0935	.00	27.3	3.3					
25 Apr 69	0955	.00	30.0	0.6					
2 May 69	0945	.00	27.8	3.3					
9 May 69	0940	.19	30.0	5.0					
19 May 69	0955	.00	34.4	10.0					
26 May 69	1010	.00	34.4	12.3					
2 Jun 69	1000	.00	38.3	14.4					
9 Jun 69	1510	.00	38.3	14.4					
17 Jun 69	0945	2.04	35.0	10.0					
23 Jun 69	0950	1.11	36.7	11.7					
1 Jul 69	1015	.00	37.2	11.1					
7 Jul 69	0945	.00	41.1	16.1					
14 Jul 69	0930	.31	39.4	16.1					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date			Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
YUCCA FLAT ECOTONAL LINE [In <u>Yucca brevifolia</u> (CONTINUED)]											
22	Jul	69	0920	3.52	40.0	16.7					
28	Jul	69	0930	.11	41.1	20.1					
11	Aug	69	0955	.00	42.8	19.4					
18	Aug	69	1035	.00	41.1	20.6					
25	Aug	69	1000	.00	41.1	17.2					
8	Sep	69	1030	.09	40.0	16.7					
2	Oct	69	1330	5.06	36.7	10.0					
7	Oct	69	1005	.00	29.6	2.3					
20	Oct	69	1000	1.16	27.3	0.0					
5	Nov	69	1115	.00	25.1	3.3					
17	Nov	69	1020	1.68	22.2	-1.7					
1	Dec	69	1030	.00	19.4	-3.9					
17	Dec	69	1330	.00	18.3	-3.9					
5	Jan	70	1045		18.3	-11.1					
19	Jan	70	0945	.24	16.1	-6.1					
3	Feb	70	1000	.00	18.3	-6.7					
16	Feb	70	0955	.59	21.7	1.1					
2	Mar	70	1010	3.64	21.7	-2.9					
16	Mar	70	0940	1.14	22.2	-1.7					
30	Mar	70	1420	.00	25.7	-3.9	10.2	10.2	10.6		
7	Apr	70	0940	.00	26.1	-1.1	12.2	11.4	12.2		
13	Apr	70	0950	.00	28.3	0.6	13.7	12.6	13.7		
20	Apr	70	0945	.10	22.2	-0.6	12.6	10.2	13.0		
27	Apr	70	1030	.44	25.1	-1.1	14.5	12.6	14.5		
5	May	70	1015	.27	30.0	-1.1					
11	May	70	0950	.00	30.6	7.2	17.9	16.6	17.3		
18	May	70	0940	.00	35.6	6.7	20.4	20.2	19.2		
3	Jun	70	1025	.00	36.7	10.6	22.1	21.3	21.6		
8	Jun	70	0940	.00	38.9	14.4	24.2	23.7	23.2		
15	Jun	70	0945	.33	30.0	6.1	21.6	19.3	21.0		
22	Jun	70	0955	.00	42.2	11.7	26.1	26.6	24.4		
29	Jun	70	1000	.00	43.3	12.9	25.6	23.7	25.2		
6	Jul	70	0945	.00	42.8	11.7	27.6	28.3	26.1		
13	Jul	70	0945	.27	41.7	16.7	26.8	26.8	25.6		
20	Jul	70	1020	.00	43.9	15.6	29.2	30.4	27.6		
3	Aug	70	0930	.00	40.0	15.6					
3	Sep	70	1030	2.63	42.8	14.4	25.6	27.7	25.7		
14	Sep	70	0925	.00	37.2	7.8	24.4	20.4	24.9		
28	Sep	70	0945	.00	32.8	5.0	20.4	17.9	21.0		
12	Oct	70	0935	.00	32.2	3.9	19.3	15.2	19.9		
24	Nov	70	1010	.00	27.3	-2.3					
9	Dec	70	0930	3.83	21.7	-1.7	7.7	6.8	8.6		
29	Dec	70	0930	1.70	13.3	-10.0	3.6	2.3	5.4		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE [In <u>Yucca brevifolia</u> (CONTINUED)]									
18 Jan 71	0915	T	18.3	-13.3	3.7	3.7	3.7		
2 Feb 71	0945	.00	23.4	-1.7	8.5	6.8	8.5		
26 Feb 71	1010	.51	24.0	-5.0	7.2	5.4	8.1		
15 Mar 71	0950	.30	21.7	-11.1	7.2	5.0	8.1		
22 Mar 71	1045	.00	24.4	-3.9	10.6	10.2	9.8		
7 Apr 71	0935		27.3	0.0					
19 Apr 71	0935	.03	28.9	-0.6	10.2	12.6	13.7		
30 Apr 71	0945	.24	26.1	-0.6	13.0	14.1	13.7		
10 May 71	0955	3.97	28.9	3.9	11.8	12.6	13.0		
17 May 71	0950		32.8	2.9	15.2	18.6	18.6		
24 May 71	0945	.07	27.8	5.0	16.3	16.6	16.6		
1 Jun 71	0940	.00	31.7	2.9	12.2	15.6	16.6		
7 Jun 71	0935	.00	33.9	6.1	19.2	19.9	19.2		
14 Jun 71	1310	.00	37.8	8.3	26.1	25.1	24.4		
22 Jun 71	0945	.00	39.4	15.6	24.7	25.1	24.2		
30 Jun 71	1015	.00	40.6	12.9	23.9	24.9	24.2		
7 Jul 71	0955	.00	37.2	15.6	25.1	25.6	24.9		
14 Jul 71	0945	.00	41.1	15.0	27.2	26.9	25.6		
27 Jul 71	0945	1.68	43.3	18.3	27.4	28.1	27.0		
11 Aug 71	0945	.24	43.3	18.9	28.1	29.2	28.1		
27 Aug 71	0940	T	41.7	17.2	24.9	26.6	26.3		
14 Sep 71	0945	1.05	41.7	13.3	24.7	25.8	25.1		
28 Sep 71	1000	.00	40.6	3.9	12.2	18.6	20.4		
20 Oct 71	0945	.17	33.3	-1.7	7.7	14.1	15.9		
9 Nov 71	0940	.00	24.0	-6.1	7.2	11.4	12.6		
30 Nov 71	1050	.04	22.8	-3.9	5.8	8.9	9.8		
20 Dec 71	0930	.03	13.9	-10.0	0.0	4.5	6.4		
11 Jan 72	0940	5.87	12.3	-12.9	0.8	2.2	3.6		
27 Jan 72	0945	.00	16.7	-8.3	0.8	2.9	4.5		
11 Feb 72	0930	.00	16.1	-10.0	1.2	4.6	5.4		
24 Feb 72	0930	.00	22.8	-3.3	5.0	7.7	8.6		
3 Mar 72	0930	.00	25.0	-0.6	9.4	10.2	10.2		
10 Mar 72	0935	.00	28.3	6.7	12.2	13.4	12.9		
17 Mar 72	0945	.00	28.3	5.7	13.4	14.2	14.2		
27 Mar 72	0955	.00	29.4	-1.7	10.2	13.4	14.5		
3 Apr 72	0955	.00	26.1	-5.0	13.7	14.1	13.7		
12 Apr 72	0950	.10	27.2	3.3	10.6	12.9	13.7		
21 Apr 72	0935	.00	24.4	-2.8	11.8	13.4	13.4		
28 Apr 72	1000	.00	28.9	3.9	15.9	15.6	15.6		
5 May 72	0935	.00	32.8	2.8	17.6	18.9	18.0		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE [In <u>Yucca brevifolia</u> (CONTINUED)]									
19 May 72	1330	.00	35.0	6.1	21.0	19.9	19.9		
2 Jun 72	0950	.42	38.9	2.8	21.0	22.4	22.1		
9 Jun 72	0935		36.1	11.7	17.4	19.9	20.4		
23 Jun 72	1010		37.8	10.6	21.0	23.6	23.9		
7 Jul 72	1000	.00	44.4	13.3	26.8	27.9	27.0		
21 Jul 72	0925	.00	44.4	12.8	23.7	27.2	27.2		
4 Aug 72	0935	.00	41.1	15.6	25.8	28.1	27.6		
15 Aug 72	0935	.88	42.8	14.4	18.8	24.0	25.0		
25 Aug 72	0945	.00	38.9	12.8	23.6	26.0	26.3		
8 Sep 72	0955	<.01	35.6	12.8	20.8	23.5	23.6		
22 Sep 72	0950	1.00	33.9	8.3		20.5	21.3		
6 Oct 72	0945	.37	31.7	6.1	14.5	18.5	19.3		
1 Nov 72	0945	1.01	26.1	-2.8	9.0	5.5	11.3		
21 Nov 72	0955	3.40	20.7	-2.8	1.8	5.5	7.3		
13 Dec 72	0925	.00	19.4	-13.9	-1.0	3.3	3.5		
12 Jan 73	0940	.29	17.2	-12.2	1.7	1.8	3.5		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE (Out of <u>Yucca brevifolia</u>)									
4 Apr 68	1240								
12 Apr 68	1530	T	28.3	-1.1					
29 Apr 68	1445	.00	28.3	-3.9					
6 May 68	1400	.00	32.8	-0.6					
17 May 68	0930	.00	30.6	-2.9					
23 May 68	1410	.00	35.0	2.3					
3 Jun 68	1440	.00	38.9	4.6					
11 Jun 68	0955	.61	37.8	6.7					
2 Jul 68	1425	.00	42.2	7.2					
10 Jul 68	1515	.73	40.6	10.0					
18 Jul 68	1415	.00	42.2	10.6					
2 Aug 68	1015	.14	40.6	13.9					
16 Aug 68	1405	.55	39.4	7.8					
31 Aug 68	0945	.00	37.8	3.9					
11 Sep 68	1000	.00	38.9	9.4					
1 Oct 68	0945	.00	33.9	2.9					
10 Oct 68	0935	.00	30.6	0.6					
25 Oct 68	1000	.30	27.8	-2.3					
8 Nov 68	1400	.00	30.6	-6.7					
26 Nov 68	1415	.35	25.1	-7.8					
2 Jan 69	0940	T	18.9	-18.9					
23 Jan 69	0915	5.97	21.1	-15.0					
29 Jan 69	1530	5.16	10.6	-6.1					
7 Feb 69	1430	1.04	12.9	-10.0					
21 Feb 69	0930	2.46	15.6	-6.7					
28 Feb 69	0930	6.61	11.7	-10.0					
14 Mar 69	0930	1.82	15.6	-13.3					
2 Apr 69	1025	.00	28.9	-4.6					
10 Apr 69	0930	.28	28.3	-5.6					
17 Apr 69	0915	.00	27.8	0.0					
25 Apr 69	0930	.00	31.1	-3.9					
2 May 69	0930	.00	27.8	-2.9					
9 May 69	0915	.17	30.6	2.3					
19 May 69	0935	.00	34.4	2.3					
26 May 69	0935	.00	35.6	5.0					
2 Jun 69	0945	.00	38.9	8.9					
9 Jun 69	1450	.00	38.3	7.8					
17 Jun 69	0925	2.35	36.7	6.7					
23 Jun 69	0925	1.18	36.7	7.8					
1 Jul 69	0950	.00	37.8	6.1					

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE [Out of <u>Yucca brevifolia</u> (CONTINUED)]									
7 Jul 69	0930	.00	41.7	7.2					
14 Jul 69	0915	.32	40.6	7.8					
22 Jul 69	0900	4.03	40.6	16.1					
28 Jul 69	0910	.03	42.2	14.4					
11 Aug 69	0935	.00	45.0	11.1					
18 Aug 69	1015	.02	44.4	13.3					
25 Aug 69	0930	.00	43.9	12.3					
8 Sep 69	1010	.77	41.1	11.1					
2 Oct 69	1000	6.61	37.2	6.1					
7 Oct 69	0935	.00	31.7	-3.9					
20 Oct 69	0935	1.49	29.6	-5.0					
5 Nov 69	1045	.00	26.7	-5.0					
17 Nov 69	1000	1.98	23.4	-3.9					
1 Dec 69	1000	.00	23.4	-10.0					
17 Dec 69	1340	.00	19.4	-11.1					
5 Jan 70	1030		17.8	-20.1					
19 Jan 70	0930	.55	16.7	-16.1					
3 Feb 70	0940	.00	19.4	-13.3					
16 Feb 70	0935	.55	23.4	-7.8					
2 Mar 70	0950	2.97	22.8	-6.1					
16 Mar 70	0925	.92	24.0	-5.0					
30 Mar 70	1400	.00	27.8	-7.2	10.2	10.2	11.4		
7 Apr 70	0920	.00	27.3	-8.3	9.3	11.4	12.2		
13 Apr 70	0930	.00	30.6	-2.9	12.2	13.7	14.5		
20 Apr 70	0920	.05	24.0	-4.6	10.7	12.6	13.7		
27 Apr 70	0905	.41	27.3	-5.6	13.3	14.8	15.2		
5 May 70	0945	.26	31.7	-5.0					
11 May 70	0915	.00	31.7	2.9	17.3	19.3	18.9		
18 May 70	0920	.00	36.7	0.6	19.9	21.0	20.4		
3 Jun 70	1000	.00	37.2	5.6	22.6	23.9	23.9		
8 Jun 70	0920	T	41.7	5.0					
15 Jun 70	0925	.35	31.7	4.6	20.1	22.4	23.2		
22 Jun 70	0930	.00	43.9	5.0	21.9	27.8	26.6		
29 Jun 70	0940	.00	43.9	6.1	25.1	27.2	27.2		
6 Jul 70	0930	.00	45.0	5.0	29.2	29.4	28.1		
13 Jul 70	0930	.36	42.8	11.7	27.2	28.8	27.9		
20 Jul 70	0950	.00	45.0	12.9	30.6	31.2	29.6		
3 Aug 70	0920	.00	41.7	7.2					
3 Sep 70	1000	1.10	43.9	4.6	22.9	26.3	27.2		
14 Sep 70	0915	.00	39.4	2.3	21.6	24.7	25.3		
28 Sep 70	1025	.00	33.9	-1.7	16.6	19.9	21.0		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
			Max	Min	15 cm	30 cm	45 cm	15 cm	35 cm
	Hrs	cm	°C	°C	°C	°C	°C	%	%
YUCCA FLAT ECOTONAL LINE [Out of <u>Yucca brevifolia</u> (CONTINUED)]									
12 Oct 70	0915	.00	33.3	-2.9	15.2	18.6	19.9		
24 Nov 70	0930	.00	28.3	-10.6					
9 Dec 70	0900	3.29	22.2	-6.7	5.4	5.4	6.3		
29 Dec 70	0910	2.37	13.9	-16.7	0.8	1.2	3.6		
18 Jan 71	0905	.05	16.1	-13.3	0.8	1.2	1.8		
2 Feb 71	0920	.00	23.4	-6.7	5.4	7.3	7.3		
26 Feb 71	0945	.65	24.0	-9.4	3.2	5.9	7.3		
15 Mar 71	0915	.12	22.8	-15.6	6.3	9.3	10.6		
22 Mar 71	1025	.00	25.7	-10.0	8.9	9.8	10.2		
7 Apr 71	0910		28.9	-7.2					
19 Apr 71	0915	.02	30.0	-3.3	8.9	12.2	15.2		
30 Apr 71	0925	.36	27.3	-5.0	12.2	14.5	14.5		
10 May 71	0915	3.13	30.6	0.6	11.4	12.9	14.1		
17 May 71	0925	.13	33.9	1.1	15.5	19.6	20.4		
24 May 71	0920	.00	28.9	-0.6	15.5	17.6	18.3		
1 Jun 71	0925	.00	32.8	-2.9	12.2	15.9	17.9		
7 Jun 71	0910	.00	35.0	2.3	18.7	20.7	20.4		
14 Jun 71	1340	.00	37.8	6.7	24.9	23.7	23.2		
22 Jun 71	0920	.00	41.1	6.7	24.2	26.3	25.8		
30 Jun 71	0955	.00	41.1	7.2	24.2	26.6	26.3		
7 Jul 71	0935	.00	40.0	7.2	25.6	27.4	26.8		
14 Jul 71	0925	.00	41.7	6.1	26.9	28.3	26.9		
27 Jul 71	0920	2.39	44.4	14.4	27.2	29.4	29.2		
11 Aug 71	0920	.41	44.4	17.2	28.7	30.8	30.6		
27 Aug 71	0915	T	43.3	11.7	26.9	28.5	29.2		
14 Sep 71	0915	1.31	43.9	7.2	23.9	26.3	26.6		
28 Sep 71	0935	.00	42.8	-5.0	12.6	17.9	21.0		
20 Oct 71	0920	.20	35.0	-7.2	7.2	11.4	14.2		
9 Nov 71	0920	T	25.7	-11.7	5.4	18.1	10.6		
30 Nov 71	1030	.03	23.4	-17.8	4.5	5.9	7.7		
20 Dec 71	0910	.03	15.0	-15.0	-0.5	0.8	3.6		
11 Jan 72	0915	5.59	12.9	-17.8	0.3	0.8	1.8		
27 Jan 72	0915	.07	16.1	-10.0	1.3	1.7	3.2		
11 Feb 72	0910	.00	17.8	-13.3	1.3	3.2	4.1		
24 Feb 72	0900	.00	23.9	-9.5	4.1	6.4	8.1		
3 Mar 72	0915	.00	26.1	-5.0	7.7	9.4	9.8		
10 Mar 72	0915	.00	30.0	-1.7	10.6	12.6	13.0		

Abiotic Data Collected in the Vicinity of Soil Profile Study Areas

Date	Time	Rainfall	Air Temperature		Soil Temperature			Soil Moisture	
	Hrs	cm	Max °C	Min °C	15 cm °C	30 cm °C	45 cm °C	15 cm %	35 cm %
YUCCA FLAT ECOTONAL LINE [Out of <u>Yucca brevifolia</u> (CONTINUED)]									
17 Mar 72	0920	.00	30.0	-0.6	11.8	14.1	14.9		
27 Mar 72	1015	.00	30.6	-2.8	10.6	13.7	14.8		
3 Apr 72	0930	.00	28.9	-11.1	12.8	14.1	14.5		
12 Apr 72	0930	.14	28.9	-1.1	10.6	12.6	14.8		
21 Apr 72	0915	T	26.1	-5.7	10.6	13.3	14.1		
28 Apr 72	0925	.00	30.0	-2.8	13.7	15.9	16.7		
5 May 72	0910	.00	36.1	-1.7	17.6	19.6	19.3		
19 May 72	1315	.00	37.2	2.2	20.1	20.7	21.3		
2 Jun 72	0920	.31	40.6	0.6	22.1	23.9	24.2		
9 Jun 72	0915	3.57	37.2	11.1	17.6	20.4	22.7		
23 Jun 72	0940	.82	38.9	8.3	21.6	24.7	26.3		
7 Jul 72	0930	.00	46.1	8.3	26.8	29.2	29.2		
21 Jul 72	0915	.00	46.7	10.6	25.8	28.9	30.0		
4 Aug 72	0915	.00	43.3	11.1	26.6	28.9	28.9		
15 Aug 72	0915	.70	44.4	10.6	20.5	25.2	27.5		
25 Aug 72	0930	.00	40.6	8.3	25.0	27.0	27.3		
8 Sep 72	0930	.03	37.2	8.3	21.0	23.8	25.0		
22 Sep 72	0930	1.97	35.6	1.7	15.0	19.0	21.3		
6 Oct 72	0920	.41	32.8	3.9	15.3	18.0	20.3		
1 Nov 72	0910	.96	27.8	-3.9	4.5	7.3	10.8		
21 Nov 72	0925	2.67	22.2	-3.9	1.8	4.0	6.5		
13 Dec 72	0910	.00	20.7	-16.1	-1.0	1.0	1.8		
12 Jan 73	0920	.24	17.2	-21.1	1.0	1.0	1.7		