# ASSESSING SOIL-RELATED TERROIR FACTORS IN SUNNYSLOPE DISTRICT VINEYARDS OF SOUTHWEST IDAHO

by

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A thesis

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## BOISE STATE UNIVERSITY GRADUATE COLLEGE

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### DEDICATION

To my family, I love you. Mom, Dad, and Andrew, thank you for pushing me to pursue my passions and my happiness. Life is not spent looking in the rearview mirror; instead, it should be spent making memories and enjoying time with the ones you love.

To Daniel, I love you. I can't wait to spend more days riding bikes with you.

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#### ABSTRACT

*Terroir* is the set of factors including climate, soil, and management practices that influence the character of a wine. Of these factors, soil texture and chemistry is a major determinant in wine grape quality (van Leeuwen et al., 2009). Understanding the characteristics of the soil is key to making decisions that support the production of the highest possible quality grapes from the resources available. Few studies have been conducted in the Snake River Valley AVA (SRVAVA). This study seeks to build upon the data already available and provide analysis of vineyard-scale terroir in a leading grape growing district of the SRVAVA.

Nine vineyards from the Sunnyslope wine grape growing district of southwestern Idaho were selected for their diversity of geographic location and growing environment. Soil pit locations in each vineyard were determined using a stratified-random sampling technique and normalized difference vegetation indices (NDVI) calculated from aerial imagery. This study combines field collection, sampling and analyses of soil texture and chemistry to characterize the soils in the selected vineyards. The results show the majority of vineyards contain aeolian or colluvium-derived soils composed of coarse silts and fine sands. Only two vineyards, those located closest to the Snake River, contain basalt gravels and lithic sands not observed in the other vineyards. Geochemical data show an increase in Ca with elevation and a decrease in Fe and Mn with elevation, which may be the result of varying soil parent materials or recent deposition of sediments. The results of my study support the presence of vineyard-scale terroir and the assertion that intra- and inter-vineyard heterogeneity is inherent. Further, my results show recent sediment deposition and agricultural practices have overprinted the original soil profiles. Understanding vineyard-specific soil characteristics like those investigated in this study will allow vineyard owners to manage for specific soil traits and promote the unique terroir of their product. Management of vineyards in this way can support the growth of high-quality grapes and the production of desirable wines that reflect the unique conditions under which they were grown, their terroir.

# TABLE OF CONTENTS

DEDICATIONiv
ACKNOWLEDGMENTSv
ABSTRACT vi
LIST OF TABLES xi
LIST OF FIGURESxii
LIST OF ABBREVIATIONSxvi
1.1 Factor One: Climate2
1.2 Factor Two: Vineyard Management
1.3 Factor Three: Soil
1.4 Problem Statement5
CHAPTER TWO: LITERATURE REVIEW7
2.1 Soil Formation and Regional Geology7
2.2 Soil Chemistry
2.3 Soil Texture
2.5 Problem Statement Refined9
CHAPTER THREE: GEOLOGY AND GEOGRAPHY 11
3.1 Geologic and Geomorphic History11
3.2 Study Sites
3.2.1 Emerald Slope Vineyard

3.2.2 Kindred Vineyard	17
3.2.3 Hat Ranch Vineyard	17
3.2.4 Williamson Vineyard	17
3.2.5 Rock Spur Vineyard	18
3.2.6 Famici Vineyard	18
3.2.7 Bitner Vineyard	18
3.2.8 Scoria Vineyard	19
3.2.9 Polo Cove Vineyard	19
CHAPTER FOUR: METHODS	20
4.1 Field Methods	20
4.1.1 NDVI as a Proxy for Differences in Soil Texture	20
4.1.2 Soil Pit Locations Determined Using ArcMap 10.6 and NDVI images	21
4.1.2 Sampling Methods	24
4.2 Laboratory Methods	27
4.2.1 Geochemical Analysis using pXRF	28
4.2.2 Texture Analysis using MS2000	31
CHAPTER FIVE: RESULTS	33
5.1 Hand Texture Results	33
5.2 pXRF Results – Individual Vineyards	37
5.3 pXRF Results - Multi-vineyard Comparison	39
5.3 MS2000 Results – Individual Vineyards	43
5.3.1 Emerald Slope Vineyard	45
5.3.2 Kindred Vineyard	46

5.3.3 Hat Ranch Vineyard
5.3.4 Williamson Vineyard
5.3.5 Rock Spur Vineyard 49
5.3.6 Famici Vineyard 50
5.3.7 Bitner Vineyard
5.3.8 Scoria Vineyard
5.3.9 Polo Cove Vineyard 53
5.4 MS2000 Results - Multi-Vineyard Comparison of 50 cm D <sub>50</sub> 54
CHAPTER SIX: DISCUSSION AND SUMMARY 57
6.1 Connecting Soil Textures and Regional Geologic History
6.1.1 Reevaluating the influence of the Bonneville Flood on Sunnyslope soils
6.2 pXRF Trends Strengthen Connection Between Modern Vineyard Soils and Regional Geology and Geomorphic History
6.3 MS2000 Comparisons Support Vineyard-Scale Heterogeneity and Role of Elevation in Grain Size Distribution
6.3.1 Emerald Slope 66
6.3.2 Bitner Vineyard 69
6.4 Summary 71
REFERENCES
APPENDIX A
APPENDIX B
APPENDIX C
APPENDIX D170

# LIST OF TABLES

Table 3.1Summary of field site characteristics and sample size.15

## LIST OF FIGURES

Figure 1.1	Factors of terroir include climate, management, and soil
Figure 1.2	Boundary of the SRVAVA and the location of the Sunnyslope District displayed in red (Becker, 2020)
Figure 3.1	Bonneville Flood inundation boundaries estimated by Othberg (dark blue) and O'Connor (light blue) at different reaches of the flood path. Vineyard locations shown as white data points
Figure 3.2	Locations of the selected vineyards in Sunnyslope (Google Earth, 2021).
Figure 4.1	HR soil pit location map shown overlayed on NAIP imagery in true color.
Figure 4.2	NDVI determined soil pit locations with hand-delineated polygons. NDVI value increases from light to dark green with gray representing a value of - 1.0 to 0
Figure 4.3	Soil pit locations of RS shown in true color image
Figure 4.4	A typical meter deep excavated sampling pit from PC26
Figure 4.5	Loose gravels fill in the bottom of a 60 cm soil pit at RS27
Figure 4.6	pXRF reliably measures 27 elements (blue); 6 were chosen for this study (red). Adapted from Bigler (2021)
Figure 5.1	Ternary diagram of the common soil hand textures (outlined in red) present among the vineyards, and the top three most common textures (starred) (Natural Resources Conservation Service, 2021)
Figure 5.2	Layered sand sample pulled from the soil profile face (top) and the coarse lithic sands of the profile at 50 cm depth (bottom)
Figure 5.3	Basalt sands to boulders are visible in the soil profiles of RS. An example of a gravel dominated profile (left) and a loess-rich profile (right)

Figure 5.2	Clustered column bar graphs created using the average elemental abundances per pit, noted as pA for Pit A and pB for Pit B, with a standard deviation error bar. Abundance (ppm) is shown on the vertical axis. Vineyard shown on the horizontal axis arranged by elevation from low to high (left to right on the axes)
Figure 5.3	Box and whisker plots created using 50 cm triplicate readings for both pits in a single vineyard. Abundance (ppm) is shown on the vertical axis and vineyards are listed by increasing order of elevation (m) on the horizontal axis
Figure 5.4	Scatterplots created using pA and pB 50 cm average readings and corresponding pit elevation above the Snake River. Abundance (ppm) is shown on the vertical axis, and elevation (m) on the horizontal axis42
Figure 5.5	Example grain size distribution chart from ES pA. Percent finer (%) is displayed on the vertical axis and grain size (mm) is shown on the horizontal axis. This chart shows a decrease in the fine fraction as depth increases (light blue to dark blue)
Figure 5.6	`Average soil classifications of ES pA and pB calculated from MS2000 data. ES pA is a loamy sand and pB borders a loam and silt loam. Adapted from Natural Resources Conservation Service (2021)45
Figure 5.7	Average soil classifications of KD pA and pB calculated from MS2000 data. KD pA is considered a loam while pB is a sandy loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.8	Average soil classifications of HR pA and pB calculated from MS2000 data. HR pA and pB are both broadly classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021)47
Figure 5.9	Average soil classifications of WI pA and pB calculated from MS2000 data; pA and pB are considered a loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.10	Average soil classifications of RS pA and pB calculated from MS2000 data; both considered a loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.11	Average soil textures of FM pA and pB calculated from MS2000 data; both are considered a sandy loam. Adapted from Natural Resources Conservation Service (2021)

Figure 5.12	Average soil textures of BT pA and pB calculated from MS2000 data. Both pits are classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.13	Average soil textures of SC pA and pB calculated from MS2000 data. Both pits are classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.14	Average soil textures of PC pA and pB calculated from MS2000 data. PC pA boarders a sandy loam and loam, but pB is classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021)
Figure 5.15	Box and whisker plots for $D_{50}$ measurements from 50 cm samples of pA and pB from each vineyard. Due to their larger scale, RS and ES are removed from the bottom plot and the vertical axis is adjusted for a closer look at the remaining vineyards
Figure 5.16	Scatterplot of vineyard $D_{50}$ averages against elevation. Error bars show standard deviation. Particle size ( $\mu$ m) on the vertical axis and vineyard elevation on the horizontal axis. Grain size equivalents displayed within the chart along the vertical axis from fine sediments – silt and clay – through coarse sands
Figure 6.1	Location map of ES and RS in Sunnyslope shows the downstream location of ES in relationship to RS (Google Earth, 2021c)
Figure 6.2	Aerial view of Walters Bar depicting the flow path of the flood (blue arrows), the channel obstruction, and the resulting gravel bar (top). Perspective view of the channel obstruction, gravel bar, and current vineyard location (bottom)(Google Earth, 2021)
Figure 6.3	Foresets and rip up clasts are visible in this cross section view of the Rock Spur gravel bar
Figure 6.4	Perspective view of ES downstream block displays the low-lying basin in the center of the vineyard and the flattened surface of the upslope agricultural field (Google Earth, 2021)
Figure 6.5	Grain size distribution charts for BT pA and pB and inset map displaying the upslope location of pA and the downslope location of pB70
Figure A.1	True color site map of ES. Pits selected for pXRF and MS2000 analysis are designated (starred). Adapted from (Google Earth, 2021)
Figure A.2	NDVI (top) and true color (bottom) site maps of KD. Pits selected for pXRF and MS2000 analysis shown in true color (starred)

Figure A.3	NDVI (top) and true color (bottom) site maps of HR. Pits selected for pXRF and MS2000 analysis shown in true color (starred)83
Figure A.4	NDVI (top) and true color (bottom) site maps of WI. Pits selected for pXRF and MS2000 analysis shown in true color (starred)
Figure A.5	True color site map of RS showing the pits selected for pXRF and MS2000 analysis (starred)
Figure A.6	True color site maps of FM showing the pits selected for pXRF and MS2000 analysis (starred)
Figure A.7	NDVI (top) and true color (bottom) site maps of BT. Pits selected for pXRF and MS2000 analysis shown in true color (starred)87
Figure A.8	NDVI (left) and true color (right) site maps of SC. Pits selected for pXRF and MS2000 analysis shown in true color (starred)
Figure A.9	True color site map of PC full extent
Figure A.10	NDVI (top) and true color (bottom) site maps of PC Block 1. Pits selected for pXRF and MS2000 analysis shown in true color (starred)90

### LIST OF ABBREVIATIONS

SRVAVA	Snake River Valley American Viticulture Area		
CEC	Cation Exchange Capacity		
USDA-NRCS	United States Department of Agriculture Natural Resource		
	Conservation Service		
SOM	Soil Organic Matter		
XRF	X-Ray Fluorescence		
pXRF	Portable X-Ray Fluorescence		
MS2000	Masteriszer2000		
NDVI	Normalized Difference Vegetation Index		
NIR	Near Infrared		
RS	Rock Spur		
SC	Scoria		
KD	Kindred		
HR	Hat Ranch		
FM	Famici		
BT	Bitner		
PC	Polo Cove		
WI	Williamson		
ES	Emerald Slopes		
CaCO <sub>3</sub>	Calcium carbonate		

#### CHAPTER ONE: INTRODUCTION TO TERROIR

Terroir, as a concept in winemaking and wine grape growing, has been in place for centuries. As it has become more popularized in recent decades (e.g. Goode, 2020; MacNeil, 2015; Puckette, 2015), it has also become more debated. Goode (2014) describes terroir as a "sense of place." His definition is poetic and cannot be applied to quantitative studies, instead portraying a sense of mystique surrounding the process of grape growing and wine making. Other scholars such as Deloire et al. (2005) and van Leeuwen & Seguin (2006), insist upon a more rigorous and scientific approach when investigating the origin of a wine. By considering the practical and measurable aspects of terroir – temperature, annual precipitation, soil chemistry and texture, canopy density, etc. – its poetic veil is lifted, making it a more approachable topic for rigorous study.

While disagreements do exist, terroir is most often referred to as the set of factors including climate, soil, and management practices that influence the character of a wine (Figure 1.1). This definition focuses on the relationship between physical conditions involved in grapevine growth and the sensory attributes of the finished product (Haynes, 1999; van Leeuwen et al., 2004; Seguin, 1986). Research with the goal of collecting and cataloging climate and soil data allows for better informed decision making on the part of the vineyard owners and managers.



Figure 1.1 Factors of terroir include climate, management, and soil.

### **1.1 Factor One: Climate**

Climate, like most environmental factors, cannot be controlled, however, an understanding of climate conditions and patterns as well as their effect on grapevine health can help guide vineyard management best practices. Additionally, this knowledge can be used to mitigate possible negative effects of current climate and climate change (Irimia et al., 2018; Mozell & Thach, 2014; Santillán et al., 2019). For example, temperature largely controls the start and end of growing season. Warming temperatures of the spring months bring grapevines out of dormancy and the start of growing season begins. Warm temperatures at the start of growing season are beneficial for flowering and shoot growth, but conversely, too warm of temperatures at the end of growing season causes the berries to produce excessive sugars resulting in wine with higher alcohol by volume – a negative effect.

The role of temperature in viticulture is also evident in the selection of cultivars. Certain cultivars prefer and prosper in distinctly different climates. Cultivars such as Pinot Gris and Gewürztraminer thrive in cool average growing season temperatures (13-15°C) while Malbec, Viognier, and Sangiovese do better in warm conditions (17-19°C) (Jones, 2018). Furthermore, climate conditions in winter, between growing seasons, can also determine the success of a cultivar. In winter, extreme low temperatures during vine dormancy can kill rootstocks and require replanting the following spring, interrupting wine production. Understanding daily, monthly, and yearly climate trends is important to vine growth, grape production, and maturation.

The importance of having a balance between extreme lows and highs is important in precipitation, as well. In more humid regions of the world, high volume and frequency of precipitation can negatively impact the quality of grapes. In semi-arid and arid regions of the world, lack of water also has a negative effect on grape production and quality especially in the absence of irrigation (Meinert, 2018). In regions that are not constrained in management practices set by law or doctrine, such as those of new world vineyards, irrigation can mitigate the effects of extreme aridity thus increasing the likelihood of producing quality grapes. The production of high-quality wine grapes relies on the balance of both precipitation – seasonality and amount – as well as temperature – annual, growing season, and diurnal ranges.

#### **1.2 Factor Two: Vineyard Management**

Well-informed vineyard management promotes the growth of quality grapes and, as a result, quality wine. The role of the vineyard manager is to make decisions based on both environmental factors and cultivar tendencies. Canopy control, fertilizing, shoot training, pruning, planting of inter-row cover crops, tilling, and harvesting are the responsibility of the vineyard manager and the introduction of a human element in terroir (Deloire et al., 2005; Gladstones, 2011; Klodd et al., 2016). Depending on the region's laws and doctrines, old world (i.e., European) vineyards do not always allow the use of irrigation in the production of grapes. As a result, the roles of climate and soil are felt more strongly in old world terroir and wines (Lanari et al., 2014). In contrast, new world vineyards like those in the United States allow the use of irrigation and other interventions, and vineyard managers have greater control on plant available water and nutrients. In both cases, though management practices are largely, if not wholly, determined by the other factors of terroir – climate and soil.

#### **1.3 Factor Three: Soil**

Soil, like climate and management practices, has a prominent effect on the quality of the fruit. For example, soil chemistry controls the macronutrients and micronutrients available to the plant affecting vine development and grape ripening (Hakimi-Rezaei, 2009; van Leeuwen et al., 2004). Soil texture, pH, salinity, depth, color, water holding capacity, and cation exchange capacity (CEC) are all crucial to understanding soil's effect on grape quality (Burns, 2012). While soil chemistry plays a vital role in the health of the plant, soil texture also works to determine the growing pattern and fruit production quality of the vine (Koundouras et al., 1999; van Leeuwen & Seguin, 2006; van Leeuwen et al., 2009). Given this, it is critical to understand how the physical and chemical properties of soil vary within a vineyard and a grape-growing region to best support the production of quality grapes and wine.

#### **1.4 Problem Statement**

Relative to other, more mature wine-grape growing regions, the Snake River Valley American Viticulture Area (SRVAVA) was established in 2007 and is growing its recognition as a wine region in the United States (Wilkins et al., 2015). The SRVAVA extends from Twin Falls, ID to Baker City, OR, but wine-grape production occurs in only a few districts including the Sunnyslope District (Sunnyslope) in Caldwell, ID (Figure 1.2). Management practices in existing Sunnyslope vineyards have provided quality grapes annually, and with increased knowledge of growing conditions and vineyard soil heterogeneity, site specific adjustments can be applied. Additionally, as the SRVAVA grows in recognition, uncovering and identifying vineyard-specific characteristics can provide growers and winemakers with a marketable history to aid in the promotion of the region and their product.

While the broad characteristics of soils in Sunnyslope have been mapped by the USDA-NRCS, multiple in-situ observations show that soils are more widely varied than the published data available suggests (United States Department of Agriculture Natural Resources Conservation Service, 2019; Wilkins et al., 2015). A gap may exist between the current broadly mapped soils data and the actual soil conditions and characteristics present in vineyards. This study seeks to improve upon existing macro-scale soil data and provide an assessment and analysis of soil chemical and physical properties within and between vineyards.



Figure 1.2 Boundary of the SRVAVA and the location of the Sunnyslope District displayed in red (Becker, 2020).

#### CHAPTER TWO: LITERATURE REVIEW

#### 2.1 Soil Formation and Regional Geology

A theoretical model introduced by Jenny (1941) states the soil is a function of its climate, organisms, relief and geomorphology of the area, parent material, and time. These factors of soil formation, or *pedogenesis*, are commonly referred to as the "ClORPT" model. Soil profiles are developed *in situ* through processes of addition, erosion, transformation, and translocation of material (Birkeland et al., 1991). Regional geologic history controls the soil composition, texture, and hydrology through the introduction of parent material for soil formation and development (Birkeland et al., 1991; Jenny, 1941). In the case of Sunnyslope, possible soil parent material sources range from flood to aeolian deposits to weathering of local bedrock.

#### 2.2 Soil Chemistry

Parent material composition influences soil nutrient concentrations, but underlying geology is not the only factor to consider when thinking about plant available nutrients. Other factors that may contribute to nutrient abundances include rainfall, physical and chemical weathering of large clasts such as cobbles and gravels, and the decomposition of soil organic matter (SOM). SOM is broken down through microbial activity and provides readily available mineral ions for plant root uptake (Haddix et al., 2020). Decaying SOM alters the pH of the soil, affecting its cation exchange capacity (CEC) by introducing negatively charged particles that attract positively charged plant macronutrient ions. (Brady & Weil, 2010; Haddix et al., 2020; Sharma et al., 2015).

Plant physiology and growth patterns are affected by available macronutrientspotassium (K), nitrogen (N), magnesium (Mg), and phosphorous (P), and micronutrientsiron (Fe), manganese (Mn), zinc (Zn), and copper (Cu) (Barlow, 2017; Goode, 2014; Hakimi-Rezaei, 2009; Sharma et al., 2015; White, 2015). For example, elevated K in soils prevent the fruit from producing acid, an important quality in red wines (Goode, 2014; Hakimi-Rezaei, 2009; Keller, 2015). Fruit quality can decrease as a result of excessive N. High concentrations of plant-available N increase vegetative growth which decreases the plant's fruit production (Hakimi-Rezaei, 2009). Mg plays a vital role in the vines processes of respiration and photosynthesis, while P is used for the production of sugar phosphates and nucleic acids (Barlow, 2017). Micronutrients are needed in smaller quantities for successful vine development, but deficiencies can be detrimental to vine health and fruit quality. Fe, Mn, and Zn deficiencies can affect leaf development and fruit set, while Cu may affect flowering (Barlow, 2017; White, 2015). Simply stated, each soil nutrient performs a unique role in the production and maturation of grapes, and a delicate balance between toxicity and deficiency must be maintained.

#### 2.3 Soil Texture

While soil chemistry determines available nutrients, it is the physical characteristics, primarily soil texture, that are most important when considering grape quality. Van Leeuwen et al. (2004) show that grape quality is quantified by the fruit's weight, sugar accumulation, anthocyanin concentration, and pH. Of these factors, van Leeuwen et al. (2004) demonstrates berry weight, sugar concentration, and anthocyanin concentration are all functions of soil texture. Changes in texture will affect the porosity or pore space where water and dissolved mineral nutrients are stored (Fayolle et al., 2019;

Hakimi-Rezaei, 2009; Hall, 2018). This influences the storage and availability of water and plant-available nutrients that affect the growth pattern of the vine and grape maturation (Koundouras et al., 1999; van Leeuwen & Seguin, 2006; van Leeuwen et al., 2009). Dry soils may have very few water soluble nutrients available for vine root uptake, while saturated soils have plenty (Brady & Weil, 2010; Keller, 2015). In saturated soils, a vine will undergo vigorous, vegetative growth. It will put energy toward growing its canopy up and out rather than spending energy on reproductive growth such as berry generation and maturation (Koundouras et al., 1999; van Leeuwen & Seguin, 2006; van Leeuwen et al., 2009). Conversely, vines grown in conditions that provide just enough water to limit vegetative growth while promoting reproductive growth will begin to produce fruit (van Leeuwen & Seguin, 2006; Leibar et al., 2017; Wilson, 1999). Therefore, the importance of soil texture lies in its ability to control the storage and movement of water near the plant root system.

Soil texture can be estimated in the field by using hand texture methods (Birkeland et al., 1991). These estimates, collected by hand with soil and water, provide the relative amounts of sand, silt, and clay sized particles.

However, hand texture estimates are prone to human error and are inherently subjective. For this reason, other methods of texture analysis need to be used including laser diffraction, hydrometer, and sieve analysis. Unlike hand texture analysis, these methods provide subjective, quantitative data.

#### **2.5 Problem Statement Refined**

Unknown characteristics in soil geochemistry and texture can have negative impacts on vine health as well as grape production and maturation through uninformed management practices (Gavioli et al., 2019). The collection of soil chemistry and texture data at this scale has not been conducted in the Sunnyslope District. This research will provide data that may help designate different management zones within individual vineyards based on soil conditions and identify micro-terroirs within a single winemaking region for well-informed cultivar selection and product promotion. Increased success in wine-grape growing, subsequent wine production, and promotion of its unique terroir may have a positive impact on Sunnyslope and the SRVAVA as a whole.

#### CHAPTER THREE: GEOLOGY AND GEOGRAPHY

#### **3.1 Geologic and Geomorphic History**

The Snake River Valley has a complex geologic and geomorphic history. The Sunnyslope District is located on the terraced interfluve between the Snake and Boise Rivers in the western Snake River Plain. This area of Idaho has a rich volcanic and geomorphic history most notably dating back to its Miocene age (18-14 Ma) silicic volcanism. The inception of this volcanism was met by extensive rifting and faulting followed by a series of basaltic eruptions and lava flows. The formation of a large lacustrine environment led to the deposition of sands, silts, and clays. The lacustrine body, known as Lake Idaho, reached its maximum extent 4 Ma (Gillerman et al., 2006). In the later regressive stages of this lake environment, basaltic volcanism returned to the region. As a result, shield volcanoes and volcanic vents are dispersed throughout the Sunnyslope District of southwestern Idaho (Othberg & Gillerman, 1994).

More recent regionally influential geomorphic activity includes the Pleistocene Bonneville Flood. First reported by G.K. Gilbert in the 1870s, Ancient Lake Bonneville, once located in the Bonneville Basin in present day Utah, burst through a natural alluvial dam near Red Rock Pass, ID ~18 ka (Abril-Hernández et al., 2018; Currey, 1982; Gilbert, 1890; O'Connor, 2016). The flood released 4,750 cubic kilometers (km<sup>3</sup>) of water downstream through the Snake River Valley at a maximum discharge of 0.85 million cubic meters per second (m<sup>3</sup>•sec<sup>-1</sup>) eroding and depositing massive clasts of bedrock and sediment along its path through the Snake River Valley (Abril-Hernández et al., 2018; O'Connor, 1993, 2016). Eroded bedrock that was transported as the bedload and suspended load of the flood was deposited as the power of the flood decreased over time and where channel constraints widened (Bierman & Montgomery, 2014). Using identifiable flood deposits and elevation contours, maximum inundation boundaries estimated by Othberg (1992) and O'Connor (1993) suggest Bonneville Flood sediment is present in select Sunnyslope vineyards (Figure 3.1).

Subsequent to the flood, regional deposition of wind-blown fine sands and silts, or loess, comprises the uppermost layer of parent material from which the agricultural soils in the area may have formed. These aeolian sediments, generally < 70 micrometers ( $\mu$ m), are transported by means of windblown suspension, soil creep, or saltation before deposition (Pierce et al., 2011; Roehner, 2018).

Cultivation of the land through tilling, planting, and the introduction of controlled irrigation practices may have altered the uppermost portion of the soil profiles (0 to 40 centimeters). Soil structure is broken down or altered by biological (plant roots) or mechanical (tilling) processes and further altered by the translocation of materials down through the soil profile through irrigation. Distinguishing characteristics of soil such as texture, hydrology, and chemistry are initially determined by parent material but can be dramatically altered by human interference. These soil forming processes, in conjunction with the CIORPT model (Jenny, 1941), should produce a soil profile unique to each vineyard in Sunnyslope.



Figure 3.1 Bonneville Flood inundation boundaries estimated by Othberg (dark blue) and O'Connor (light blue) at different reaches of the flood path. Vineyard locations shown as white data points.

### 3.2 Study Sites

This study seeks to identify differences in soil texture and chemistry due to changes in topography and possible parent material. The following vineyard sites were selected following vertical and longitudinal transects of Sunnyslope and listed here in order of elevation from lowest to highest: Emerald Slopes, Kindred, Hat Ranch, Williamson, Rock Spur, Famici, Bitner, Scoria, Polo Cove (Table 3.1). These vineyards are a part of the Sunnyslope wine district located in the Snake River Valley of southern Idaho (Figure 3.2). Sunnyslope, a small townsite roughly central to the district, is 45 km west of Boise and extends from Melba, Idaho to Adrian, Oregon.

In the following sections, I provide basic physical descriptions of the vineyard sites used in this study. Vineyard planting dates are determined through personal communication with vineyard owners as well as historic imagery. Soil descriptions are taken from USDA-NRCS data provided through the UCD SoilWeb layer in Google Earth – these are presented only as broad categorizations to provide comparisons with field observations.

The location of these vineyards allows for a look at the complex relationship between elevation, soil development, and cultivar selection due to differences in terroir. The results of this study will provide better understanding of the district's unique microterroirs. This knowledge enables vineyard owners to make evidence-based decisions regarding crop management practices and cultivar selection and produce wines that reflect their vineyard's *terroir*.

Vineyards	Abbreviation	Elevation Range (m)	Estimated Area (ha) (as of 2019)	Number of Pits	Number of Samples
Emerald Slope	ES	685-706	4.9	5	43
Kindred	KD	691-704	0.4	4	40
Hat Ranch	HR	701-708	2.4	9	93
Williamson	WI	721-749	17.0	8	76
Rock Spur	RS	741-752	6.9	9	75
Famici	FM	740-742	1.2	8	81
Bitner	BT	768-784	2.0	8	74
Scoria	SC	796-808	7.3	9	73
Polo Cove	PC	809-819	16.2	8	70
Total			58.3	69	625

Table 3.1Summary of field site characteristics and sample size.



Figure 3.2 Locations of the selected vineyards in Sunnyslope (Google Earth, 2021).

### 3.2.1 Emerald Slope Vineyard

ES is a 4.9 ha, eastward facing vineyard with elevations ranging from 685 to 706 m. Located in Adrian, OR, ES is the northwestern most site in this study and is the furthest downstream of the Snake River. At its highest point, ES is 38 m above the Snake River. For the purposes of this study, the vineyard was divided into upstream and downstream blocks. Land adjacent to the blocks had been farmed as early as 1994 (Google Earth historic imagery), though vineyard siting and grape production in the north

block did not begin until 2003, and production in the south block followed ten years later. UCD and NRCS classify the soil of ES as a silt loam with 0 to 20% slopes (University of California Davis et al., 2019).

#### 3.2.2 Kindred Vineyard

The smallest of the nine study sites, KD is a 0.4 ha vineyard that sits 0.5 km northeast of the Snake River. The vineyard is located upslope from a drainage canal and is primarily westward facing. At its highest point, with elevations ranging from 691 to 704 m, KD is 29 m above the Snake River. Siting for the vineyard began in 2016, and planting started the following year. KD is planted in fine sandy loam with 0 to 12% slopes (University of California Davis et al., 2019).

#### 3.2.3 Hat Ranch Vineyard

HR is a 2.4 ha located in Caldwell, ID 1.7 km northeast of the Snake River. Elevation ranges from 701 to 708 m, and HR has a primarily southwestward facing slope and its highest point is 33 m above the Snake River. This property has been the site of large-scale agriculture for at least the past 28 years (Google Earth historic imagery). Vineyard siting and planting began in 2011 and 2012 and continues to 2019 with the removal and replanting of the southeast corner of the vineyard. HR is planted in fine sandy loam and loamy fine sand with 0 to 7% slopes (University of California Davis et al., 2019).

#### 3.2.4 Williamson Vineyard

Covering 17 ha of land, WI is the largest of the nine vineyards. WI ranges in elevation from 721 to 749 m and is 74 m above the Snake River at its highest elevation. Historic imagery shows this primarily southward facing vineyard was planted in phases from 2002 to 2006 (Google Earth historic imagery). Vines at WI are planted in fine sandy loam with 0 to 7% slopes (University of California Davis et al., 2019).

#### 3.2.5 Rock Spur Vineyard

RS is a 6.9 ha site located in Melba, ID. It is the southeastern most site and is the furthest upstream of the Snake River in the Sunnyslope District. Elevations here range from 741 to 752 m and at its highest point, RS is 66 m above the Snake River. The vineyard is northeastward facing and is uniquely situated upon a Bonneville Flood deposited basalt gravel bar that has been mined as early as 1992 (per Google Earth historic imagery). Grape planting began in 2018. UCD and the NRCS list the soil at RS as a gravelly coarse sandy loam (University of California Davis et al., 2019).

#### 3.2.6 Famici Vineyard

The second smallest of the nine study sites, FM sits on 1.2 ha of land located 2.3 km northeast of the Snake River. Elevations range from 740 to 742 m above sea level. At its highest point, FM is 66 m above the Snake River. Historic imagery reveals the presence of established agriculture by 2002, but the land was not tilled and planted for a vineyard until 2013 with its first plantings in 2014. FM is planted in loamy fine sand with 0 to 7% slopes (University of California Davis et al., 2019).

#### 3.2.7 Bitner Vineyard

BT is a southeastward facing 2.0 ha vineyard located 2.8 km from the Snake River. The slopes of BT are among the steepest of the nine study sites and hardpans of CaCO<sub>3</sub> rich soil are common. Elevations range from 768 to 784 m, and at its highest point the vineyard is 109 m above the Snake River. Planting started in 1980 and new blocks were added in the early 2000s (Google Earth historic imagery). BT is planted in fine sandy loam and loamy fine sand with 0 to 25% slopes (University of California Davis et al., 2019).

#### 3.2.8 Scoria Vineyard

Situated on historic family land that had been previously uncultivated, SC is a 7.3 ha, primarily southwestward facing vineyard, with elevations ranging from 796 to 808 m above sea level. At 133 m above the Snake River, SC is positioned the second furthest from the channel of the river. A mafic volcanic vent that has produced layers of gravel-sized basaltic rock and flows is located to the northeast of SC. This *scoria*, for which the vineyard was named at its start in 2014, can be found peppered throughout the soil profile. SC is broadly planted in fine sandy loam with 0 to 12% slopes (University of California Davis et al., 2019).

#### 3.2.9 Polo Cove Vineyard

PC, the second largest vineyard in this study, covers an estimated 16.2 ha of land. The surface of PC is relatively flat and has no dominant aspect. PC is located at the highest elevation of the study with a range from 809 to 819 m. The vineyard is situated on a terrace surface 143 m above the Snake River. The vineyard is split into a north and south block, and both blocks of the vineyard were planted prior to 1992 (Google Earth historic imagery). PC is planted in loamy fine sand and fine sandy loam with 0 to 3% slopes (University of California Davis et al., 2019).

#### **CHAPTER FOUR: METHODS**

#### 4.1 Field Methods

#### 4.1.1 NDVI as a Proxy for Differences in Soil Texture

As discussed in section 2.3, soil texture can affect vine growth and vine health. The distribution and availability of macro- and micronutrients stored in the soil's pore space will determine the vigour of the vine and, in turn, the density of the leaf canopy. However, the distribution of available nutrients is dependent upon soil moisture (Fayolle et al., 2019; Goode, 2014; Keller, 2015; Leibar et al., 2017). Dry soils may have little or no beneficial mineral nutrients available for plant life and vine reproductive growth because nutrients are not in solution and available for root uptake by hydraulic lift (Brady & Weil, 2010; Keller, 2015). Soil moisture is dependent upon soil hydrology and soil texture (Evarts et al., 2009; Goode, 2014; Keller, 2015; van Leeuwen & Seguin, 2006; Wilson, 1999). Simply put, soil texture has an indirect effect on the density of the vine canopy and vigour.

Remote sensing and aerial imagery provide a quick and easy method for determining spatial differences in vine health and vigour (Hakimi-Rezaei, 2009; Hall, 2018; Priori et al., 2013). The Normalized Difference Vegetation Index (NDVI) is calculated using the red and near-infrared (NIR) bands in remotely sensed images. NDVI values are measured on a scale between 0 and 1.0; an NDVI value of 0 signifies no plant life, while higher NDVI values (0.8-1.0) are associated with greener, lush, dense biomass (Cifre et al., 2005; Hall, 2018; Turner & Gardner, 2015). As previously stated, soil
moisture, as controlled by soil texture, effects the vegetative and reproductive growth of a vine. It can then be hypothesized that plant vigour (measured by NDVI) is a proxy for changes in soil texture.

#### 4.1.2 Soil Pit Locations Determined Using ArcMap 10.6 and NDVI images

Pit locations were selected using a stratified random approach. This selection method allows for control over placement of pits to observe different soil conditions, allow for vineyard owner input, and ensure pit locations were not clustered (Metzger et al., 2005; Turner & Gardner, 2015; Zhou et al., 2018). Using this approach, I created categories or blocks of data that share similar NDVI values and randomize the location of the soil pit data points within each block.

Aerial images were collected from ArcGIS Online through the National Agriculture Imagery Program (NAIP) (Figure 4.1). Idaho 2017 1-meter resolution imagery was imported into ArcMap 10.6 and saved as a new map layer. NDVI was calculated from the NAIP imagery. As stated in section 4.1.1, differences in NDVI values may indicate changes in soil texture. In order to ensure the soil pits of a single vineyard were dispersed rather than clustered in a central location, four to five hand-delineated polygons were created for each vineyard based on visual differences in NDVI, and two randomly selected points were placed at least 10 m apart within each polygon (Figure 4.2). Soil pit location maps were created for each vineyards like RS, FM, and KD, NAIP imagery was not up-to-date, and the stratified random pit placement was not feasible. Instead, soil pits were positioned at the upper, middle, and lower slopes of the vineyard (Figure 4.3). In the unique case of ES, which is located in Adrian, OR, NAIP imagery



was not available for 2017 and soil pits were placed in low and high elevations of the vineyard slopes. The number of pits in this case were dictated by the area of the vineyard.

Figure 4.1 HR soil pit location map shown overlayed on NAIP imagery in true color.



Figure 4.2 NDVI determined soil pit locations with hand-delineated polygons. NDVI value increases from light to dark green with gray representing a value of -1.0 to 0.



Figure 4.3 Soil pit locations of RS shown in true color image.

# 4.1.2 Sampling Methods

Pit placement in the field was recorded using georeferencing. Personal GPS units were used in the field to save the NAD 1983 Idaho UTM coordinates for each point. Pits were excavated parallel to the orientation of the vine rows, and with a goal depth of 1 m (Figure 4.4). The depth of the pit was primarily dictated by ability to dig. The goal depth

was not attainable in all cases due to dry, hardpacked soil or the presence of a CaCO<sub>3</sub> duripan.

A soil knife was used to collect samples in 10 cm segments starting at the surface (0 cm) continuing down the soil profile and key physical features were noted in the field. Samples are labeled and bagged in quart-sized sealable plastic bags. Samples were returned to the lab where texture and chemical analysis took place.

Two vineyards provided especially unique conditions for pit excavation. At our initial vineyard, HR, we were given access to a tractor-mounted backhoe used for pits 3, 6, 7, 8, and 9. This explains the repeated maximum depths of greater than 1 m. Conversely, at RS, a 1 m depth was repeatedly not achieved as loose basalt gravels caused soil pit walls to collapse with depth (Figure 4.5).



Figure 4.4 A typical meter deep excavated sampling pit from PC.



Figure 4.5 Loose gravels fill in the bottom of a 60 cm soil pit at RS.

# 4.2 Laboratory Methods

In the lab additional soil characteristics were identified and recorded using protocols outlined in (Birkeland et al., 1991). Hand texture, ped formation and fragility, gravel content, and color were determined, and results were recorded in a spreadsheet. All samples were dried in the oven for at least 10 hours at 100°C and sieved through a 2 mm mesh to sort out coarse gravels and organic material such as root hairs. In the case of RS, a 1 mm mesh was used to separate out very coarse sands and fine gravels that could potentially cause problems during laser diffraction analysis. Two pits from each vineyard were randomly selected for Mastersizer 2000 (MS2000) laser diffraction (texture) analysis and portable x-ray fluorescence (pXRF) (chemical) analysis. These pits will be referred to as pit A (pA) and pit B (pB) from each vineyard and are assigned the designation based on their pit number in ascending order (see Appendix A).

### 4.2.1 Geochemical Analysis using pXRF

The abundance of plant nutrients and trace elements from soil parent material can be analyzed using machines such as x-ray fluorescence (XRF), pXRF, and inductively couple plasma mass spectrometry (ICP-MS) (Craig et al., 2007; Rouillon et al., 2017). pXRF is a handheld and cost-effective tool to use in the analysis of soil geochemistry and was chosen for this study based on accessibility, speed, and cost (Craig et al., 2007; Duda et al., 2017; Mejía-Piña et al., 2016; Pitcavage, 2011). With little sample preparation necessary, the pXRF can reliably analyze up to 27 different elements per sample without sample destruction in an unconventional laboratory setting. An important limitation associated with the pXRF is a result of sample storage - samples stored in and analyzed through sealed plastic bags, such as I did in this study, decreases the number of detectable elements from 27 to 21 (Mejía-Piña et al., 2016). Of the 21 detectable elements, only notable soil macronutrients and micronutrients detected above the pXRF level of detection (LOD) were considered for the purposes of this study (Figure 4.6) (Barlow, 2017; Brady & Weil, 2010; Goode, 2014; Wilson, 1999); this group included Ca, Cu, Fe, K, Mn and Zn.

pXRF analysis measures elemental abundance in parts per million (ppm). For this study, the analyses were conducted using an Olympus Handheld Spectrometer Model

4000. Analysis parameters and protocol followed Cogswell (2020) used the proprietary Olympus soil sampling mode with an added precious metals package. The instrument was calibrated daily using standards provided by the manufacturer. Individual sample analysis took 90 seconds, and triplicates were conducted on the 50 cm sample from each pit to ensure data accuracy and provide a standard data point for multi-vineyard comparisons (see Appendix C). This 50 cm sample depth was chosen as the mid-depth of the one-meter pits and a depth reached and sampled in all soil pits. It is also considered below the depth of surface vineyard practices such as disking.

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0	1 ±1 hydrogen 1.008	2 II A				PEF	RIODIC	TABL	E OF E	LEME	NTS				13 11 A	14 IV A	15 V A	16 VI A	17 VII A	2 He helium 4.003
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	11 +1 1 Sadium 22 00	2 +2 Mg magnesium		∎ <sup>3</sup>	4 	5 < B	6 KIB	7 VII B	8 VIII B	9 VIII B	10 VIII B	5 <u>8</u>	12 II B	3p 3	atuminum 26.08	14	15 Phosphorus	-3 16 Sulfur 32.07	-2 17 CI chlorine 35.45	-1 18 Ar argon 30 05
	19 +1 2 K potassium 39.10	0 +2 Ca calcium 40.08	3q 21	+3 2 SC icandium 44.96	22 +4,3,2 T titanium 47.87	23 +5,2,3,4 V vanadium 50.94	24 +3,2,6 Cr chromium 52.00	25 +2,3,4,6,7 Mn manganese 54.94	26 +3,2 Fe iron 55.85	27 +2,3 Co cobalt 58.93	28 +2,3 Ni nickel 58.69	29 +2,1 Cu copper 63.55	30 +2 Zn zinc 65.38	4p	<b>Ga</b> +3 ; gallium 69.72	32 +4,2 Ge germanium 72.63	33 AS AS arsenic 74.92	-3 34 Se selenium 78.97	-2 35	-1 36 Kr krypton 83.80
	37 +1 3 <b>Rb</b> rubidium 85.47	8 +2 Sr strontium 87.62	4d 39	yttrium 98.91	<b>Zr</b> zirconium 91.22	A1 A5,3 Nb nuidoium 92.91	42 +6,3,5 MO molybdenum 95,95	4.3 +7,4,5 TC technetium 98	44 +4,3,5,8 Ru ruthenium 101.1	45 +3,4,6 Rh fhodium 102.9	46 +2,4 Pd palladium 106.4	4/ +1 Ag silver 107.9	48 +2 Cd cadmium 112.4	5p	indium <b>1</b>	50 +4,2 tin 118.7	S1 +3 SD antimony 121.8	,5 52 Te tellurium 127.6	-2 53 iodine 126.9	-1 54 Xe Xenon 131.3
	55 +1 5 CS 132.9 132.9	6 +2 Ba †{ bankum 137.3	2q 71	+3 7 Lu Iutetium 175.0	72 +4 hafnium 178.5	73 +5 Ta tantalum 180.9	74 +6.4 V tungsten 183.8	75 +7,4,6 Re thenium 186.2	76 +4,6,8 OS osmium 190.2	77 +4,3,6 Ir indium 192.2	78 +4,2 Pt platinum 195.1	79 +3,1 Au 90kd 197.0	80 +2,1 Hg mercury 200.6	6p 81	thallium 204.4	82 +2,4 Pb lead 207.2	83 +3 Bi bismuth 209.0	,5 84 , PO 209	1,2 85 At astatine 210	86 Rn <sup>radon</sup>
	8/ +1 8 Fr francium 223	8 *2 Ra ‡6 radium 226	e <sup>∞</sup> 99	<b>Lr</b> Lr iwrencium 262	Rf rutherfordium 267	DD DD 268	106 Sg seaborgium 271	Dohrium 272	HS hassium 270	109 Mt <sup>meitnerium</sup> 276	DS damstadtium 281	Rg roentgentium 280	<b>Cn</b> coperticum 285	d d	284 Nh	114 Flerovium 289	MC moscovium 288	I16 LV Ivernoriun 293	TT TS tennessine 292	00 oganesso 294
	<b>lar</b> (rare ear	th metals)	. 4f 57 89	+3 5 La Inthanum 138.9 +3 9	58 +3,4 Ce centum 140.1 0 +4	59 +3,4 Pr praseodymium 140.9 91 +5,4	60 +3 Nd neodymium 144.2 92 +6,3,4,5	61 +3 Pm promethium 145 33 +5,3,4,6	62 +3,2 Sm samañum 150.4 94 +4,3,5,6	63 +3,2 Eu europium 152.0 95 +3,4,5,6	64 +3 6d gadolinium 157.3 96 +3	65 +3,4 Tb terbium 158.9 97 +3,4	66 +3 Dy dysprosium 162.5 98 +3	67 67 1 Holmium 164.9 99 4	+3 68 Er erbium 167.3 100	+3 69 Trr 1101 +3 101	+3,2 70 1 Y m ytten +3,2 102	+3,2 bium 3.1 +2,3		
		actinides ‡	្មខ	Ac actinium 227	thorium 232.0	Pa protactinium 231.0	uranium 238.0	Np neptunium 237	Pu plutonium 244	Am americium 243	Cm ourium 247	BK berkelium 247	californium 251	ES einsteinium 252	Fm fermiun 257	n mendele 258	Vium nobi	elium 59		



#### 4.2.2 Texture Analysis using MS2000

While hand texture analysis provides an estimation of grain size distribution and texture classification, laser diffraction using the MS2000 provides an objective and precise method of measuring grain size distribution and soil texture. The MS2000 uses static light scattering to determine the size of sediment particles and generate a grain size distribution curve (Chen et al., 2018), and the data obtained can be used to objectively determine soil textures for comparisons with other samples.

Results from the MS2000 analysis are skewed as two of the detectors became inoperable prior to analysis. The missing detectors cause the program to underestimate the portion of larger grain sizes and affects the fit of the data which is used by the MS2000 to create grain size distribution curves. However, all samples were analyzed using the same protocols, and the detectors were consistent through all runs, so comparisons within and between vineyards can still be made. Percent error in machineestimated sample concentration versus actual sample concentration is used as a metric for machine accuracy.

MS2000 analysis was conducted according to protocol and parameters set by Sperazza et al. (2004). Triplicates were conducted every 30 samples to analyze the machine accuracy (see Appendix D). To ensure the MS2000 measured the actual textures present in the vineyards, CaCO<sub>3</sub> was not dissolved prior to analysis. The goal of MS2000 is to understand soil textures currently present in vineyards, and I did not want to alter the appearance or textures of particles by dissolving CaCO<sub>3</sub> nodules or cemented particle aggregates. During analysis, the sample is added to 1000 milliliters (mL) of deionized water until the desired laser obscuration, a measure of suspended sample concentration, set by Sperazza et al. (2004) is achieved in the MS200. The goal obscuration range of this study is between 10-15%. MS2000 ultrasonic is then used for 1 minute to separate aggregates. Samples are read three consecutive times by the MS2000 for bouts of 30 seconds. An average of the three readings is used to estimate volumetric percentages of sand, silt, and clay for the sample.

#### CHAPTER FIVE: RESULTS

#### **5.1 Hand Texture Results**

Soil hand textures in the Sunnyslope District include sand, loamy sand, sandy loam, sandy clay loam, loam, silt loam, and silty clay loam (Figure 5.1 and Appendix B). Sandy loam is the most prevalent texture in SC, HR, FM, PC, WI. Silt loam is the second most abundant texture and can be found in RS, ES, and BT. Loam is the most common texture in a single vineyard, KD. Hydrochloric acid (HCl) reacted with the pedogenic CaCO<sub>3</sub> in all vineyards, but hardpans, nodules, and grain coatings were found in BT, KD, and RS.

Fine sands and silts are common in all vineyards, however there are two distinct outliers. The first, ES, is located furthest downstream and contained layered, lithic sand lenses at its lowest elevation soil pits closer to the current water level of the Snake River (Figure 5.2). The second, RS, is located the furthest upstream and its soil pits all contain fine to coarse basaltic gravels. RS soils pits are also capped by a 20 to 50 cm thick layer of loess (Figure 5.3).



Figure 5.1 Ternary diagram of the common soil hand textures (outlined in red) present among the vineyards, and the top three most common textures (starred) (Natural Resources Conservation Service, 2021).



Figure 5.2 coarse lithic sands of the profile at 50 cm depth (bottom).



Basalt sands to boulders are visible in the soil profiles of RS. An example of a gravel dominated profile (left) and a loess-rich profile (right). Figure 5.3

## 5.2 pXRF Results – Individual Vineyards

As stated previously, only six elements were chosen for further comparison -Ca, Cu, Fe, K, Mn, and Zn (see Appendix C). Individual vineyard results average all sample abundances per pit to compare the pA and pB within a single vineyard (Figure 5.2). Of the six elements chosen for pXRF review, Ca and Fe are present in all vineyards at the highest abundance levels upwards of 60,000 ppm. As noted by the standard deviation error bars, Ca shows the lowest confidence in data precision. Cu is the least abundant element overall, though the greatest value is observed in RS pits with maximum values between 30-40 ppm. Of all vineyards, Cu is least abundant in PC pB at 2.6 ppm. Variation exists amongst all elements in all pits. The least variation between pits is in K levels – both PC pits show identical K averages. The greatest difference between pits is in Ca levels of the two PC pits with nearly 40,000 ppm difference. Mn levels ranges from 290 ppm to 500 ppm with the highest Mn levels present in both RS pits – 508 ppm and 443 ppm in pA and pB, respectively. Zn averages are present most commonly between 40-60 ppm. The greatest difference in abundance present in ES between 45 ppm and 85 ppm in pA and pB, respectively.



Figure 5.2 Clustered column bar graphs created using the average elemental abundances per pit, noted as pA for Pit A and pB for Pit B, with a standard deviation error bar. Abundance (ppm) is shown on the vertical axis. Vineyard shown on the horizontal axis arranged by elevation from low to high (left to right on the axes).

#### 5.3 pXRF Results - Multi-vineyard Comparison

A comparison from one vineyard to the next allows me to observe elemental abundance as vineyard topography, geologic history, and elevation change. To observe these intra-vineyard trends, the average elemental abundance of the 50 cm sample is considered. As stated in 4.2.1, three data points are collected from each 50 cm sample, which provides more data for our multi-vineyard comparison. Elements at this depth vary in average abundance from 13 ppm to 65,000 ppm.

Ca is the most abundant in PC with 65,921 ppm and demonstrates the widest variability and greatest range of values of all the elements (Figure 5.3). Cu showed the most consistent elemental abundance with vineyard averages between 10 and 20 ppm; again, RS is an outlier with 36 ppm. Fe and Mn, similar to the observations observed in Cu, display consistent values between 15,000 and 20,000 ppm and 300 to 500 ppm, respectively. RS appears as an outlier again in Fe with 29,478 ppm. KD also appears as an outlier here in Mn with 506 ppm. The highest confidence of result consistency is displayed in K, and values all range from 9,900 and 13,000 ppm with low standard deviations between 316 and 1,635. Zn, for the most part, follows this trend with all values between 47 and 75 ppm. HR, WI and RS all share the highest Zn values all between 73 and 74.5 ppm.

Observing differences in elemental abundance as vineyard elevation increases or decreases can help our understanding of vineyard history and factors that influence soil formation. The 50 cm average abundance from pA and that of pB are plotted against their corresponding soil pit elevations to observe trends that exist as a result of elevation. From this analysis, Cu displays a weak positive relationship with elevation while Fe and Zn

have a weak inverse relationship with elevation. K demonstrates no increase or decrease in abundance with elevation. Ca and Mn both display stronger relationships with increasing elevations. Ca demonstrates a relatively strong positive relationship while Mn displays a strong negative relationship with increasing elevation (Figure 5.4).



Figure 5.3 Box and whisker plots created using 50 cm triplicate readings for both pits in a single vineyard. Abundance (ppm) is shown on the vertical axis and vineyards are listed by increasing order of elevation (m) on the horizontal axis.



Figure 5.4 Scatterplots created using pA and pB 50 cm average readings and corresponding pit elevation above the Snake River. Abundance (ppm) is shown on the vertical axis, and elevation (m) on the horizontal axis.

#### **5.3 MS2000 Results – Individual Vineyards**

As stated in section 4.2, the two pits randomly selected for MS2000 analysis were designated pit A (pA) and pit B (pB) based on their numerical order. The MS2000 results of pA and pB were organized by sample depth. Grain size distribution charts were created for individual pits and display the percentage of particles that pass through a sieve of a specified diameter (see Appendix D). A single distribution chart was created for each pit – this allows me to observe grain size changes with depth. Traditionally, grain size distribution charts display smooth, bell-shaped curves with a single hump or inflection point. The unique shape of my grain size distribution charts is the result of skewed data caused by the two nonfunctional detectors, and the horizontal axis of my charts terminates at 2 mm diameter because samples were sieved prior to MS2000 analysis (Figure 5.5). Grain size distribution charts are helpful tools for complex data visualization, but ternary diagrams - like that shown in Figure 5.1 – are best for communicating general findings. pA and pB commonalities and differences are briefly discussed in the following sections organized by vineyard.



Figure 5.5 Example grain size distribution chart from ES pA. Percent finer (%) is displayed on the vertical axis and grain size (mm) is shown on the horizontal axis. This chart shows a decrease in the fine fraction as depth increases (light blue to dark blue).

## 5.3.1 Emerald Slope Vineyard

The average texture ES pA is classified as a loamy sand. The soil texture coarsens with depth and the sand fraction reaches its maximum in the last 20 cm of the profile. ES pB also coarsens with depth; however, it contains more silts and clays than ES pA. The texture of ES pB borders on loam and silt loam (Figure 5.6).



Figure 5.6 `Average soil classifications of ES pA and pB calculated from MS2000 data. ES pA is a loamy sand and pB borders a loam and silt loam. Adapted from Natural Resources Conservation Service (2021).

## 5.3.2 Kindred Vineyard

KD pA is classified as a loam and its texture coarsens with depth. Clay abundance is greatest in the 60 cm sample. KD pB displays a similar pattern of coarsening downward, but it shows an increase in very fine and fine sands past 40 cm. KD pB contains more sand than pB and for that reason it is classified as a sandy loam (Figure 5.7).



Figure 5.7 Average soil classifications of KD pA and pB calculated from MS2000 data. KD pA is considered a loam while pB is a sandy loam. Adapted from Natural Resources Conservation Service (2021).

### 5.3.3 Hat Ranch Vineyard

HR pA shows a general coarsening with depth, but the abundance of sand begins to decrease at 90 cm. The texture of HR pA is consistent with a sandy loam. HR pB, which is situated downslope from pA, is also a sandy loam but displays a decrease in sand and an increase in fine sediments like silt and clay (Figure 5.8).



Figure 5.8 Average soil classifications of HR pA and pB calculated from MS2000 data. HR pA and pB are both broadly classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021).

## 5.3.4 Williamson Vineyard

WI pA shows fluctuations in texture, but an overall increase in sand with depth. Abundance of sand is greatest in the 100 cm sample, and on average WI pA is considered a loam because of its nearly equal abundance of sand and fine sediments. WI pB is also classified as a loam, but borders on a silt loam because of a slight increase in silt sized sediment (Figure 5.9).



Figure 5.9 Average soil classifications of WI pA and pB calculated from MS2000 data; pA and pB are considered a loam. Adapted from Natural Resources Conservation Service (2021).

### 5.3.5 Rock Spur Vineyard

RS pA is classified as a loam with equal parts sand and fine sediments. RS pA shows a trend of decreasing sediment size from 10 to 30 cm followed by a coarsening of texture from 40 to 80 cm. Clay reaches a maximum abundance in the 20 cm sample before decreasing in the bottom of the soil profile. RS pB follows a similar trend as pA and is also considered a loam though it contains more sand than silt and clay. Both RS pA and pB textures listed above do not take into account the gravel fraction of the whole sample. If the gravel fraction were to be considered, pA and pB would be classified as a gravelly loam (Figure 5.10).



Figure 5.10 Average soil classifications of RS pA and pB calculated from MS2000 data; both considered a loam. Adapted from Natural Resources Conservation Service (2021).

## 5.3.6 Famici Vineyard

FM pA is classified as a sandy loam and shows an increase in silts and clays through 60 cm after which their abundances decrease from 70 to 100 cm. Silt and clay are most abundant in the 60 cm sample, and sand is most abundant in the 100 cm. FM pB is also considered a sandy loam though it contains more sand than FM pA. Unlike pA, pB demonstrates a clearer trend of fining with depth (Figure 5.11).



Figure 5.11 Average soil textures of FM pA and pB calculated from MS2000 data; both are considered a sandy loam. Adapted from Natural Resources Conservation Service (2021).

## 5.3.7 Bitner Vineyard

BT pA is classified as a sandy loam though it reaches a fraction of a percent of clay at 80 and 90 cm. Sand reaches its maximum abundance at 80 cm. BT pB shows no definitive pattern of fining or coarsening with depth. Instead, clay abundance is consistent in the 50, 80, and 90 cm samples. On average, pB is also classified as a sandy loam (Figure 5.12).



Figure 5.12 Average soil textures of BT pA and pB calculated from MS2000 data. Both pits are classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021).

## 5.3.8 Scoria Vineyard

SC pA is classified as a sandy loam because it has near equal abundances of sand and fine sediments. Silt abundance in SC pA increases with depth from 10 cm to 90 cm, but sand increases in the last 10 cm of the soil profile. SC pB is also classified as a sandy loam. There is a similar increase in fine sediments, primarily silt, as depth increases. Similar to SC pA, sand increases at 90 cm in pB before dropping again at 100 cm (Figure 5.13).



Figure 5.13 Average soil textures of SC pA and pB calculated from MS2000 data. Both pits are classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021).

### 5.3.9 Polo Cove Vineyard

On average, PC pA is classified as a sandy loam bordering on loam as it contains near equal amounts of sand and fine sediments. PC pA shows two distinct texture grouping in the soil profile. The first 40 cm are predominantly composed of sand, while the last 30 cm are dominated by fine sediments. PC pB is also classified as a SL, but it contains greater than double the amount of sand than silt and clay. PC pB does not show texture groupings like those observed in pA. There is instead a fluctuation of decreasing and increasing sand abundance with depth (Figure 5.14).



Figure 5.14 Average soil textures of PC pA and pB calculated from MS2000 data. PC pA boarders a sandy loam and loam, but pB is classified as a sandy loam. Adapted from Natural Resources Conservation Service (2021).

### 5.4 MS2000 Results - Multi-Vineyard Comparison of 50 cm D<sub>50</sub>

The results presented support the assertion that soil heterogeneity exists within a vineyard landscape. To understand similarities and differences between all nine vineyards in this study, I compared the median grain size,  $D_{50}$ , from the 50 cm sample in the pA and pB of each vineyard. The 50 cm sample was selected to maintain a consistent depth for both pXRF and MS2000 multi-vineyard comparisons. As stated in 4.2.2, MS2000 analysis of a sample generates three separate readings and an average. Box and whisker plots were created using the pA and pB 50 cm MS2000 data to display the range and the average  $D_{50}$  value for each vineyard (Figure 5.15).

Among all vineyards,  $D_{50}$  particle sizes range from 27 µm to 737 µm, with the greatest range at ES and RS. SC shows the most consistency in  $D_{50}$  measurements with a range of only 12.70 µm and a standard deviation of 4.7 µm.

In addition to the box and whisker plots, I tested for any relationship between soil texture and vineyard elevation. I generated a scatterplot of vineyard average  $D_{50}$  values against elevation. Results show that average  $D_{50}$  has a weak inverse relationship with elevation (Figure 5.16). With the exception of ES and RS, the average  $D_{50}$  for all vineyards remains less than 150  $\mu$ m – a very fine sand – for all vineyards. This is consistent with the soil hand textures taken for each vineyard.



Figure 5.15 Box and whisker plots for D<sub>50</sub> measurements from 50 cm samples of pA and pB from each vineyard. Due to their larger scale, RS and ES are removed from the bottom plot and the vertical axis is adjusted for a closer look at the remaining vineyards.



Figure 5.16 Scatterplot of vineyard D<sub>50</sub> averages against elevation. Error bars show standard deviation. Particle size (μm) on the vertical axis and vineyard elevation on the horizontal axis. Grain size equivalents displayed within the chart along the vertical axis from fine sediments – silt and clay – through coarse sands.
#### CHAPTER SIX: DISCUSSION AND SUMMARY

#### 6.1 Connecting Soil Textures and Regional Geologic History

The goal of this study is to identify and assess the similarities and differences of soil characteristics within and among vineyards in Sunnyslope. Field observations, hand texture, and MS2000 indicate the dominant grain size of the vineyard soils ranges from coarse silts to fine sands.

Two major outliers include the soils of the furthest downstream and upstream sites, ES and RS. These two vineyard sites are closest to the main channel of the Snake River and would have been in the direct flow path of the Bonneville Flood's maximum velocity at that site. The marked differences in soil characteristics at these two sites compared to those of sites farther away from the main flood path leads to an evaluation of the varied influences of the flood on soils in this study. (Figure 6.1)



Figure 6.1 Location map of ES and RS in Sunnyslope shows the downstream location of ES in relationship to RS (Google Earth, 2021c).

#### 6.1.1 Reevaluating the influence of the Bonneville Flood on Sunnyslope soils

The Bonneville Flood, which originated in what is now modern northwestern Utah, burst through Red Rock Pass and flowed north into Idaho where it intercepted the Snake River at Pocatello. This Pleistocene megaflood, with a maximum discharge of 0.85 million m<sup>3</sup>•sec<sup>-1</sup>, eroded bedrock and transported clays, silts, sands, and boulders. The waters of the flood followed the path of the Snake River westward through southern Idaho and north into Hells Canyon. The stream power and transport-competence of the flood varied with channel constrictions along the canyon of the Snake River. Where the canyon was deep and narrow, the flow's power increased to erode and transport the larger, boulder-sized clasts. Where the canyon widened, the power diminished, and the flow was no longer able to carry the gravels, sands, and silts of its bedload and suspended load (O'Connor, 1993). Sediment size decreases with distance from the main channel and flow. Subsequent to the flood, sediment available for reworking and colluvial (i.e., downslope) and aeolian transport and deposition. These processes may explain the presence of Bonneville Flood sediment at elevations further away from the main channel.

Sunnyslope, both as a whole and in the selected vineyards, may help refine the influence of Bonneville Flood deposits on soil development. The maximum inundation elevation estimates set by Othberg (1992) and O'Connor (1993) (refer to Figure 3.1) and the presence of silts and fine sands suggest that ES, KD, HR, WI, RS, FM and BT are likely derived from either direct or reworked flood sediment identified at a few locations. Observations in this study show a distinct change in composition between sites near and distant from the channel.

The ES soil profile is comprised of fine to coarse lithic sands in locations of the vineyard nearest the Snake River. RS contains loose basalt sands, gravels, and boulders in nearly all of its soil profiles. The lithic sand lenses visible in ES can be explained by the vineyard's proximity to the Snake River and its location in the direct, high energy flow path of the Bonneville Flood. ES is located at the western distal edge of the Sunnyslope District in the Snake River Valley. The wide valley configuration at this site would have diminished the power of the flood, and the eventual calming of the waters would lead to the deposition of more silts and fine sands compared to RS, but the textures are still coarser than other vineyard sites farther away from the main flow.

Unlike ES, the presence of basaltic boulders, gravels, and sands at RS cannot be explained by channel widening. Instead, the unique profile is the direct result of the geographic location of vineyard. RS is located within a narrower, deeper reach of the flood's path on what is now referred to as *Walters Bar*. The waters in this reach were faster with more power to carry larger sediment such as coarse gravels, cobbles, and boulders eroded from upstream. Upon encountering a mid-channel obstruction, the volcanic neck remnant located southeast of vineyards current location, the flood waters lost power as they flowed around the obstruction and the larger sediment feel out of suspension or bedload. This mid-channel obstruction, a reminder of the regions' volcanic history, resulted in the formation of the Bonneville Flood-scale gravel bar that the vines are RS are rooted in (Figure 6.2 and 6.3).



Figure 6.2 Aerial view of Walters Bar depicting the flow path of the flood (blue arrows), the channel obstruction, and the resulting gravel bar (top). Perspective view of the channel obstruction, gravel bar, and current vineyard location (bottom)(Google Earth, 2021).



Foresets and rip up clasts are visible in this cross section view of the Rock Spur gravel bar. Figure 6.3

# 6.2 pXRF Trends Strengthen Connection Between Modern Vineyard Soils and Regional Geology and Geomorphic History

I selected Ca, Cu, Fe, K, Mn and Zn for focused examination and discussion because these nutrients are important to the development of the grapevine and maturation of the berries (Barlow, 2017; Goode, 2014; Hakimi-Rezaei, 2009; Sharma et al., 2015; White, 2015). In addition to their function as soil nutrients, these elements are also key components of a number of potential regional parent materials.

In all vineyards, Ca is the most abundant of the six elements. These high levels of Ca may be linked to Quaternary loess deposition in this arid terrain of the Western Snake River Valley. This silt-sized, windblown sediment is naturally rich in Ca and hand textures indicate the presence of this particle size in the vineyards' soil profiles (Pierce et al., 2011; Roehner, 2018). While elevated Ca levels can be attributed to the present loess, Ca abundances can also be tied to the pedogenic CaCO<sub>3</sub> encountered in a number of vineyards. The CaCO<sub>3</sub> found in these profiles is present in early and late stages of its formation.

Ca abundance is greatest at PC, the vineyard at the highest elevation, with a value of 65,921 ppm. With an elevation of 814 m, PC is located well above the bounds of the Bonneville Flood as reported by Othberg (1992). The vineyard is situated on a flat lying terrace surface which decreases the likelihood of erosion by seasonal flooding or colluvial transport. The average texture of the vineyard is a sandy loam which also indicates the presence of silt sized particles. Additionally, an impenetrable CaCO<sub>3</sub> layer was encountered in three soil pits of PC during field excavation. Therefore, the abundance of Ca at this site is consistent with undisrupted loess deposition and ongoing formation of pedogenic CaCO<sub>3</sub> as demonstrated by its geomorphic location and soil characteristics.

Fe is the second most abundant among all vineyards. The high levels of Fe are likely related to both the region's volcanic history and the Bonneville Flood. Basalt, an Fe-rich volcanic rock is present in two forms. The first form is seen in the soils of RS where profile faces are dominated by basaltic gravels. RS also has the greatest average abundance of Fe at 29,478 ppm. The second form is visible in the soils of SC where oxidized basaltic rock is strewn across the vineyard's surface and peppers select soil profile faces. The source of Fe in the remaining vineyards is less clear. One explanation is that the silts and sands of these remaining vineyards is composed of weathered basalt transported by fluvial or aeolian means.

Trends in elemental abundance with elevation can provide clues about parent material and soil development over time. Results suggest Ca has a positive correlation with elevation while Fe and Mn display a negative correlation with elevation. The increase of Ca with elevation may be attributed to the Bonneville Flood and post-Bonneville Flood reworking of sediment. The flood waters may have washed away older Ca-rich loess at lower elevations. Post-flood reworking of Bonneville Flood sediment and pre-Bonneville Flood loess are caused by regional winds and human land use. Particles that are too large to be carried by aeolian processes may instead be transported, generally downslope, as colluvium. Sediments on hillsides or locations upslope from vineyards can be transported downslope through surface flow and human activities such as tilling. Recent loess deposition may be washed away from surfaces where overland flow is more prevalent, as well as flooding occurring along the Snake River. In locations like PC, out of reach of the Flood and lying on a flat, terrace surface, pre-Bonneville Flood loess deposition may be better preserved. Therefore, as distance from the Snake River and elevation increase, Ca becomes more abundant.

While Ca abundance increases with elevation, Fe and Mn abundance generally decrease with elevation. As elevation and distance from the Snake River increase, the presence of this basaltic, flood deposited sediment becomes rapidly less pronounced. Regional basaltic volcanic activity and Bonneville Flood erosion and deposition have been overprinted by loess and modern agriculture. Therefore, as elevation and distance from the Snake River increase, loess and other sediment deposition (e.g., human reworking for agriculture) may hide traces of Fe and Mn abundance. For example, Ferich volcanic clasts produced by regional volcanism pepper the soil profiles of SC, but the deposition of silts and very fine sands has covered the volcanic bedrock below. Even in the case of RS, basaltic gravels are capped by at least 30 cm of loess deposition; it is only by observing the deeper soil profile that we see the increased Fe and Mn. Through our observations of vertical trends in pXRF data we can begin to tie together the modern chemical characteristics of the vineyards' soils with the previous and current geomorphology of the Snake River Valley.

# 6.3 MS2000 Comparisons Support Vineyard-Scale Heterogeneity and Role of Elevation in Grain Size Distribution

Multi-vineyard comparisons of  $D_{50}$  measurements help us understand the role of regional geomorphic events and elevation in textural differences.  $D_{50}$  averages (i.e., the average of  $D_{50}$  measurements in pits A and B) of ES and RS, which indicate the common particle size is consistent with a medium sand, are greater than the remaining seven vineyards. Bonneville Flood deposition of basalt gravels and lithic sands in RS and ES, respectively, is most likely responsible for the increase in medium and coarse sand-size particles in these two vineyards.

In the remaining seven vineyards, there is no discernible change in grain size with an increase or decrease in elevation. The  $D_{50}$  average grain sizes in these seven vineyards can be classified as either a coarse silt or very fine sand, and those textures can likely be explained by the recent regional deposition of loess. This is also consistent with pXRF Ca readings in these vineyards, a characteristic attributed to the prevalence of Ca-rich loess.

MS2000 texture analysis of individual vineyards provides a quantifiable assessment of sand, silt, and clay abundance of a sample; this objective measure makes comparing hand textures between and within vineyards less rigorous. Based on these results, we can conclude that soil profile textural heterogeneity is present within an individual vineyard as well as between vineyards, and can be exemplified by the results from ES and BT.

#### 6.3.1 Emerald Slope

As noted earlier, ES pA is defined as a loamy sand while ES pB may be defined either as a loam or a silt loam. While both soil profiles coarsen with depth, pA contains 92% sand in the last 20 cm depth, while pB reaches a maximum of just 60% sand in its profile. pA is in the upstream block and only 285 m upslope from the Snake River, while pB is located in the downstream block, 375 m from the current surface of the Snake River.

The downstream block of ES has a low-lying area resembling a drainage basin near its center that extends east to west with areas of higher elevation north and south, and pB lies north of this low elevation basin (Figure 6.4). Topography of the surrounding area suggests there is a connection between the downstream block and the drainage basin including the hillside located upslope from the vineyard. This drainage network has since been overprinted by more recent agricultural activity that has left an abandoned drainage channel in the downstream block. The upstream block slopes to the southeast toward the river.

With its proximity to the main channel of the Snake River (38 m away), the sites at ES would certainly have been in the direct flow of the Flood. The layered lithic sands visible in one of the five pits at the time of sample collection and the coarsening of texture with depth strengthen this assertion. Flood deposited sediment may have been washed away in the downstream block by the drainage that was once there.



Figure 6.4 Perspective view of ES downstream block displays the low-lying basin in the center of the vineyard and the flattened surface of the upslope agricultural field (Google Earth, 2021).

#### 6.3.2 Bitner Vineyard

Soils of both pits at BT are classified as a sandy loam. BT pA shows a clear pattern of coarsening with depth and a declining trend in clay abundance approaching 0%, while BT pB remains consistent in size distribution at all depths (Figure 6.5). BT, unlike ES, is located on a single block of land with a southwest facing slope. Unlike pB, CaCO<sub>3</sub> nodules were observed in the top 50 cm of pA. The presence of CaCO<sub>3</sub> nodules, since not dissolved prior to MS2000 analysis (see section 4.2.2), could bias the texture and grain size of the sample, making sand-sized particles appear more abundant. This could explain the 12% difference in sand abundance between pA and pB. Additionally, pB is located at the bottom and confluence of two slope faces in the vineyard - through colluvial transport, material is likely being added to the soil profile of pB from upslope. With frequent to slow but continuous deposition, horizon development may be absent, and may also explain why pB maintains a consistent texture and exhibits no evidence of development from the surface to its maximum depth.



Figure 6.5 Grain size distribution charts for BT pA and pB and inset map displaying the upslope location of pA and the downslope location of pB.

#### 6.4 Summary

The purpose of this study was to assess and summarize trends in soil chemistry and texture, expanding on the limited existing terroir research of vineyards in the Sunnyslope District in the SRVAVA. This study provides a more refined understanding of soil derivation and vineyard geologic history. Its relevance relies on the desire of current vineyard owners and potential vineyard developers to understand the geologic and historic contexts of their soil as part of the story of their vineyard and its unique terroir.

From the analyses, I show that the fingerprint of the Bonneville Flood is most visible in the chemical and textural data of ES and RS. I also show that post-flood sediment deposition and, most recently, agricultural reworking of the land has altered the soil profiles. The findings strengthen the assertion that heterogeneity exists in geochemical characteristics, soil parent and added material, and grain size distribution within and between vineyard landscapes. The knowledge of unique conditions that lie underfoot at each vineyard can be used in management practices and product promotion to help improve wine-grape quality and grow the region's recognition in the country's wine sphere.

Should terroir research continue in the Sunnyslope vineyards and greater SRVAVA, I suggest a finer resolution investigation of the soil's direct impact on vine water status and canopy density be considered. This could be coupled with research relating to vineyard soil organic chemistry, macronutrient availability, and irrigation practices that may be beneficial in the ongoing goal to produce the highest quality wine grapes.

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### APPENDIX A

# Soil Pit Location Maps

# A.1 Emerald Slope



Figure A.1 True color site map of ES. Pits selected for pXRF and MS2000 analysis are designated (starred). Adapted from (Google Earth, 2021).

# A.2 Kindred



Figure A.2 NDVI (top) and true color (bottom) site maps of KD. Pits selected for pXRF and MS2000 analysis shown in true color (starred).

# A.3 Hat Ranch



Figure A.3 NDVI (top) and true color (bottom) site maps of HR. Pits selected for pXRF and MS2000 analysis shown in true color (starred).

### A.4 Williamson



Figure A.4 NDVI (top) and true color (bottom) site maps of WI. Pits selected for pXRF and MS2000 analysis shown in true color (starred).



Figure A.5 True color site map of RS showing the pits selected for pXRF and MS2000 analysis (starred).

# A.6 Famici



Figure A.6 True color site maps of FM showing the pits selected for pXRF and MS2000 analysis (starred).

# A.7 Bitner



Figure A.7 NDVI (top) and true color (bottom) site maps of BT. Pits selected for pXRF and MS2000 analysis shown in true color (starred).

# A.8 Scoria



Figure A.8 NDVI (left) and true color (right) site maps of SC. Pits selected for pXRF and MS2000 analysis shown in true color (starred).

# A.9 Polo Cove



Figure A.9 True color site map of PC full extent.



Figure A.10 NDVI (top) and true color (bottom) site maps of PC Block 1. Pits selected for pXRF and MS2000 analysis shown in true color (starred).

### APPENDIX B

#### Hand Texture Data

The following USDA hand texture charts include soil sample pit number, depth, color measured before and after oven drying, soil ped structure, sample consistence when wet and before and after oven drying, and a final estimation of soil hand texture. An indepth explanation of the USDA hand texture chart abbreviations and the protocol followed in this study can be found in Birkeland et al. (1991).
# B.1 Emerald Slope

	Depth (cm)	Co	lor	<u>د</u>	tructur	<b>P</b>		Consi	stence		Tex	ture
	(cm)	Moist	Dry			C	W	<b>e</b> t	Moist	Dry	103	une
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	<b>SS</b>	ps	vfr	so	LS	SiL
	10	10YI	R4/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
				2	С	срг	vs	vp	fi	h	SCL	SiC
				3	vc	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YI	R4/3	1	m	pr	S	р	fr	sh	SL	Si
	20			2	С	срг	VS	vp	fi	h	SCL	SiC
				3	vc	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YI	R4/3	1	m	pr	S	р	fr	sh	SL	Si
				2	С	срг	VS	vp	fi	h	SCL	SiC
it 1				3	VC	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SīL
	40	10YI	R4/3	1	m	pr	s	р	fr	sh	SL	Si
ሲ	40			2	С	срг	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R6/2			sbk			efi	eh	CL	SC
				m	vf	gr	SO	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YI	R4/3	1	m	pr	S	Р	fr	sh	SL	Si
				2	С	срг	VS	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	SO	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YI	R4/3	1	m	pr	S	р	fr	sh	SL	Si
				2	С	срг	VS	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R6/2			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YI	R4/3	1	m	pr	S	р	fr	sh	SL	Si
				2	С	срг	vs	vp	fi	h	SCL	SiC
				3	vc	abk			vfi	vh	L	С
		10YI	R6/2			sbk			efi	eh	CL	SC

			т	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/2	1	ш	pr	S	р	fr	sh	SL	Si
	40		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
t 2	50	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
Ρi	50		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	70	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	21	so	po	lo	lo	S	SiCL
			82	f	bl	SS	DS	vfr	so	LS	SiL
		10YR4/2	1	m	DE	s	r- D	fr	sh	SL	Si
	20		2	c	CDT	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		·P	vfi	vh	L	C
		10YR5/3			shk			efi	eh	CL.	SC
		10112/5	m	vf	PT	80	no	lo	lo	S	SiCL
			60	f	nl	88	ns	vfr	50	IS	SiL
		10VP4/3	1	m	pa nr	- 33 C	ps n	fr	eh	SI	Si
	30	1011(4/3	2	c m	pr. cor	10	P VD	<u>н</u> б	ы	SCT	SiC
			2	ve	abk	¥0	٩v	11 1/15	n vh	I	C
		10705/2	3	VC	abk			ofi	oh		SC SC
		101 10/3	-	T	SUL					CL e	ос е:ст
			ш св	vi f	gi al	50	po	10	10	0 10	SICL
		103/04/0	- Sg - 1	1	р	SS	ps 	VII E.	- 50	Lo	SIL
	40	10 Y K4/2		m	рг	S	Р	II C	SII L	SL OCT	51
			2	С	cpr	VS	vp			SCL	SIC
		10100 5/2	3	VC	abk			vn c	VII	L	C
		10YR5/3		0	SDK			en	eh		SC
			m	VÍ	gr	SO	ро	10	10	8	SICL
			sg	t	pl	SS	ps	vir	so	LS	SiL
'it 3	50	10YR4/2	1	m	pr	S	р	fr	sh -	SL	Si
д			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/2	1	m	рг	S	р	fr	sh	SL	Si
	00		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	ī	m	pr	S	р	fr	sh	SL	Si
	90		2	c	СОГ	vs	r VD	fi	h	SCL	SiC
			3	vc	abk	_	r	vfi	vh	L	C
		10YR6/2	-		sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			т	vf	धा	so	po	lo	lo	S	SiCL
			<b>S</b> 2	f	b	SS	DS	vfr	so	LS	SiL
		10YR4/2	1	m	DE	s	D	fr	sh	SL	Si
	30		2	с	-r- cnr	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		·P	vfi	vh	L	C
		10YR6/3			sbk			efi	eh	CL.	SC
		1011005	m	vf	or	\$0		lo	lo	S	SiCI
			80 111	f	5 <sup>1</sup>	90 90	ns	vfr	50	15	SiL
		10VP4/2	а <u></u> 1	1	pa na	- 00 - 0	po n	fr	ch	SI	SIL Gi
	40	101 K4/2	2	ш с	pr cor		Ч улл	<u>п</u> б	<u>ы</u> ь	SCI	SI
			2	L.	obk	vð	٧P	u vfi	u vh	J	
		10370 (2)	3	VC	able			<u>vп</u>	vii ah		
		101 Ko/3		<b>f</b>	SUK			еп 1-	en 1-		<u>эс</u>
Pit 4			ш	VI	gr 1	so	ро	0	10	3	SICL
		10177 4/2	sg	1	р	SS	ps	VIF	so	LS	<u>SIL</u>
	50	10 Y K4/2	1	m	pr	S	р	ľ	sn	SL	51
			2	C	срг	VS	vp	11 ~	n ,	SCL	SIC
			3	VC	abk			vh	vh		C
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/2	1	ш	рг	S	р	fr	sh	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	νр	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/2	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	er	so	po	lo	10	s	SiCL
			SE	f	bl	SS	DS	vfr	so	LS	SiL
ŝ		10YR4/3	1	m	DT	s	D	fr	sh	SL	Si
Ρİ	50		2	с	СОГ	vs	VD	fi	h	SCL	SiC
			3	vc	abk		.1	vfi	vh	L	C
		10YR5/3	_		sbk			efi	eh	CL	SC
			m	vf	er	so	po	lo	lo	S	SiCL
			SE	f	bl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	D	fr	sh	SL	Si
	60		2	С	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	po	lo	lo	S	SiCL
			SE	f	bl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	p	fr	$^{\rm sh}$	SL	Si
	70		2	С	срг	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			SE	f	о- рі	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	p	fr	sh	SL	Si
	80		2	c	CDT	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		· <b>r</b>	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
		1011010	m	vf	gr	80	po	<u>lo</u>	lo	S	SiCL
			so	f	nl	88	ns	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	n	fr	sh	SI.	Si
	90	101107	2	c	CDF	vs	vn	fi	h	SCT	SiC
			3	vc	abk		••	vfi	vh	L	C
		10YR5/3			shk			efi	eh	CT CT	SC
		1 10110/0	1		JUL						00

# B.2 Kindred

(m)     Moist     Dry     Structure     Wet     Moist     Dry       10     Moist     Dry     m     vf     gr     so     po     lo     lo     S     SiCL       10     M     vf     gr     so     po     lo     lo     S     SiCL     SiCL       10     M     r     ss     p     fr     so     LS     SiL     Si       10     PK/3     1     m     pr     s<     p     fr     so     LS     SiL     Si       20     IOYR4/3     1     m     pr     ss     ps     vfi     vh     L     C       20     IOYR4/3     1     m     pr     s     p     fr     sh     SL     Si       20     IOYR5/3     1     sk     sk     i     writ     writ     sh     SL     Si       30     IOYR5/3     i     skk     i     efi     eh		Depth	Color					Consi	istence		_	
$ \frac{ V }{ 1 } =		(cm)		- 5	Structur	e					Tex	ture
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		. ,	Moist Dry				W	/et	Moist	Dry		
$ = \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$				m	vt	gr	so	ро	lo	lo	S	SICL
$ = 10  \begin{array}{ c c c c c c c c c c c c c c c c c c c$			10110 4/2	sg	I	pl	SS	ps	vir	so	LS	SiL
$ = \left[ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		10	10 Y K4/3	1	m	pr	s	p	II C	sn 1	SL	S1 0:0
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				2	c	cpr able	vs	vp		II The second second	SCL	SIC
$ = \begin{array}{c ccccccccccccccccccccccccccccccccccc$			10VD5/2	3	vc	abk			vn	vn	CT	С 80
$ = \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$			101 K5/5	m	vf	SOK	80	10	10	lo 10	CL S	SC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				80	f	n1	80	po	vfr	80	15	्राटा
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			10VR4/3	- 3g 1	m	nr		ps n	fr	sh	SI.	Si
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		20	1011(4/5	2	C C	onr	vs	P VD	fi	h	SCL	SiC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				3	vc.	abk	*5	۰P	vfi	vh	L	C
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			10YR5/3			shk			efi	eh	CL	SC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			10110,5	m	vf	or	50	00	10	10	S	SiCL
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				sg	f	pl	SS	ps	vfr	so	LS	SiL
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			10YR4/3	1	m	pr	s	p	fr	sh	SL	Si
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		30		2	с	cpr	vs	vp	fi	h	SCL	SiC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				3	vc	abk		-	vfi	vh	L	С
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			10YR5/3			sbk			efi	eh	CL	SC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				m	vf	gr	so	ро	lo	lo	S	SiCL
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				sg	f	pl	SS	ps	vfr	so	LS	SiL
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		40		2	с	cpr	VS	vp	fi	h	SCL	SiC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				3	vc	abk			vfi	vh	L	С
$ \begin{array}{c} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$			10YR6/3			sbk			efi	eh	CL	SC
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				m	vf	gr	so	ро	lo	lo	S	SiCL
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				sg	f	pl	SS	ps	vfr	so	LS	SiL
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t 1	50	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
3 vc abk vfi vh L C   10YR6/3 sbk efi eh CL SC	Pi			2	с	cpr	vs	vp	fi	h	SCL	SiC
10YR6/3 sbk efi eh CL SC				3	vc	abk			vfi	vh	L	С
m vf gr so no lo lo S SiCL			10YR6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
sg f pl ss ps vfr so LS SiL				sg	f	pl	SS	ps	vfr	so	LS	SiL
60 10YR5/3 1 m pr s p fr sh SL Si		60	10YR5/3	1	m	pr	s	р	fr	sh	SL	Si
2 c cpr vs vp fi h SCL SiC				2	с	cpr	VS	vp	fi	h	SCL	SiC
3 vc abk vfi vh L C				3	vc	abk			vfi	vh	L	C
10YR6/3 sbk efi eh CL SC			10YR6/3			sbk			efi	eh	CL	SC
m vf gr so po lo lo S SiCL				m	vf	gr	SO	ро	lo	lo	S	SiCL
sg i pl ss ps vir so LS SiL			10110 4/2	sg	I	pl	SS	ps	vir	so	LS	SiL
70 $10YR4/3$ 1 m pr s p fr sh SL Si		70	10YR4/3	1	m	pr	s	p	fr	sh	SL	S1 C'C
2 c c c c c c c c c c c c c c c c c c c				2	c	cpr	vs	vp	11	n	SCL	SIC
$\frac{3 \text{ VC } \text{abk}}{10\text{ VD } \text{C}} = \frac{11}{10\text{ VD } \text{C}} = \frac{11}{10 VD $			10370 6/2	5	vc	abk			vn	vn	L	0
10YR0/3 SOK en en en CL SC			101 K0/3		6	SDK			en 1-	en 1-	CL	SC
m VI gr so po lo lo S SICL				m	VI c	gr 1	so	ро	10	10	5	SICL
10VD4/2 1 m m s f f st Si			10VD 4/2	sg	1	pi	ss	ps	VII fr	so	LS	51L 01
$80 \qquad 101R4/5 \qquad 1 \qquad \text{m} \qquad \text{pr} \qquad \text{s} \qquad \text{p} \qquad \text{ir} \qquad \text{sn} \qquad \text{sL} \qquad \text{si}$		80	10 I K4/5	2	m	pr	S	p	fi	5fi 1h	SL	51 SiC
$\frac{2}{2}  \frac{1}{2}  \frac{1}$				2	U UO	able	vs	vp	II vfi	II Th	T	SIC C
10VP5/3 shk off oh CL SC			10VR5/3		ve	shk			ofi	oh	CI	50
m vf cr so no lo lo s cirt			101 KJ/3	m	vf	OT.	80	10	10	10	CL CL	SICT
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				- III 80	f	gi pl	50	po	vfr	10	LS	Sit
10VR4/3 1 m pr c p fr ch et c;			10VP//2	3g 1	m	pr		ps n	fr	sh	SI	Si
90 $2$ c or vs vn fi h sct si		90	1011(4/3	2		pr opr	ve	P VD	fi	511 h	SCL	SiC
$\frac{2}{3}$ vc abk vi vi vi vi vi C				3	ve	abk	, 3	14	vfi	vh	L	C
10YR6/3 sbk efi eh CL SC			10YR6/3	<u> </u>		sbk		L	efi	eh	CL	SC

			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			shk			efi	eh	CI.	SC
10 10Y   10 10Y   20 10Y   20 10Y   30 10Y   30 10Y   40 10Y   10Y 10Y   50 10Y   10Y 10Y   60 10Y   10Y 10Y   70 10Y		101105	-	vf	or	80		la	la	e e	SiCT
			f.	-61 -1	30	po	10	10	10	OKL CT	
		103702/2	sg	1	P	88	ps	VII Gu	-1		<u>оп</u> .
	20	101 K3/3	1	ш	pr	8	P	П	SD 1	SL	51
			2	C	срг	VS	vp	n a	n	SCL	SIC
			- 3	VC	abk			vh	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR3/3	1	m	pr	S	р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	Dr	s	p	fr	sh	SL	Si
	40		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		·r	vfi	vh	L	C
		10786/2			ehk			efi	eh	CT	SC
		1011002	m	vf	OT	\$0			lo	S	SiCT
				f	- 61 - 10		po	10	80	TC	SICL
		107774/2	3g 1	1	pr pr	33	ps n	fr	ab	SI	c;
	50	101 K4/3	1	ш	pr ana	ð 	P	 	811 b	SL CUI	51 8:0
			2	L	- cpi	vs	vp	C	ш т	JOL	
		10377 4/2	3	vc	abk			VII	Vn	L	
1. 1.		10 Y K4/3			SDK			en	en	CL	SC
д			ш	vf	gr	SO	ро	lo	lo	8	SICL
	60		sg	f	pl	SS	ps	vir	SO	LS	SiL
		10YR4/3	1	m	pr	S	Р	fr	sh	SL	Si
			2	C	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	/0		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	p	fr	sh	SL	Si
	80		2	с	СОГ	vs	VD	fi	h	SCL	SiC
			3	vc	abk		1	vfi	vh	I.	С
		10YR5/3	-		shk			efi	eh	с П	SC
		10110/0	m	vf	9T	80	no	10	10	S	SICT
			60	f	nl nl	20	ne	vfr	60	IS	Sil
		10724/2	*6 1	T	P <sup>1</sup>	000 0	P <sup>o</sup>	fr	au ah	SI	e;
	90	1011(4)3	1	- m - c	pr /mr	170	۲ ۲	- H - F	ац h	SCT	SI SIC
			2	100	ւրո թեր	49	٩v	11 176	и ъ	T	
		10205/2	, ,	VC.	atra.			~H 	<u>үн</u> ар		е <u>с</u>
		101109/2	-	<b>.</b>	SUK	0.2		10	10	L C	<u>ос</u> 1759
			ш	1V	gr	so	ро	10	10	5	SILL
		10375 4/2	sg	Ι	pi	SS	ps	VIT	SO		SIL
	100	10 Y R4/3	1	m	pr	S	р	fr	sh •	SL	SI CIC
			2	С	срг	VS	vp	n ~	h	SCL	SIC
			3	VC	abk.			vti	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	10	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	ш	рг	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	$\mathbf{ps}$	vfr	so	LS	SiL
	50	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	50		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
t3		10YR5/3			sbk			efi	eh	CL	SC
Ρi			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	,0		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	00		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gг	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	100		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
t 4	40 -	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
Ā			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	50		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	, , , , , , , , , , , , , , , , , , , ,		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/1			sbk			efi	eh	CL	SC

# B.3 Hat Ranch

	Depth	Color	Structure				Consi	stence		Tor	turo
	(cm)	Moist Dry	3	uclui	e	w	let .	Moist	Drv	Tex	lure
		Moist Diy	m	vf	gr	so	100	10150	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/2	1	m	pr	s	p	fr	sh	SL	Si
	10		2	с	cpr	VS	vp	fi	h	SCL	SiC
Pit 1			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	20	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	20		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	2.5Y4/4	1	m	pr	S	р	fr	sh	SL	Si
			2	с	cpr	vs	vp	tı	h	SCL	S1C
		0.577.6/0	3	vc	abk			vn	vh	L	C
		2.5Y 6/3		6	sbk			efi	eh 1	CL	SC
			m	vi	gr	SO	ро	lo	lo	S	SICL
		0.777.4/4	sg	I	pI	SS	ps	vir	so	LS	SiL
	40	2.5Y 4/4	1	m	pr	S	р	fr	sh	SL	S1
			2	с	cpr	vs	vp	fi C	h 1	SCL	SIC
		2 57 6/2	3	vc	abk			vn	vn	L	<u> </u>
		2.51 0/3		f	SDK			eri 1-	en 1-	CL	SC
Pit 1			m	v1 £	gr n1	so	ро	10	10	5	SICL
		2.537.4/4	- Sg	1	pi		ps	VII fr	-1-	LS	51L C:
	50	2.514/4	2	m	pr	s	p	II E	sn h	SCI	51
			2	U.C.	abl	vs	vp		11 121h	T	SIC C
		2 5V 6/3		vc	shk			efi	eh	CI	SC
		2.510/5	m	vf	JUK OT	50	20	10	10	S	SICI
			50	f	 	55	ns	vfr	50	LS	SiL
		2 5V 5/3	1	m	pr pr	55	n	fr	sh	SL	Si
	60	2.51 5/5	2	 C	CDT	vs	vn vn	fi	h	SCL	SiC
			3	vc	abk		·P	vfi	vh	L	C
		2.5Y6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	70	2.5Y4/3	1	m	pr	s	p	fr	sh	SL	Si
	70		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		2.5Y 6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	2.5Y4/4	1	m	pr	s	р	fr	sh	SL	Si
	80		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	2.5Y4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		2.5Y6/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	100	2.5Y4/4	1	m	pr	S	р	fr	sh	SL	Si
			2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		2.5Y7/2			sbk			efi	eh	CL	SC

							_				
			m	vf	gr	so	po	10	lo	S	SICL
			59	f	nl	SS	DS	vfr	so	LS	SiL
		10705/2		-	P <sup>-</sup>			fe	ch	ST	e:
	10	101K3/3	1	-111	pr	2	р	n a		SL	010
			2	С	срг	vs	vp	11	h	sci	SIC
			3	vc	abk			vfi	vh	L	C
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	<u>9</u> T	so	DO	10	10	S	SICL
				f	nl		ne	vfr	50	1.6	- Sil
		10170 42	≥g 1	L	Ът		ps		30		010
	20	101 K4/3	1	m	pr	S	р	n	sn	SL	<b>S</b> 1
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	OT.	80	no	10	10	c	SICT
				¢1	1	30	po		IU.	Ta	OICL 0.T
			sg	L	рі	SS	ps	VII	so	LS	511
	30	10YR4/3	1	m	pr	S	р	fr	sh	SL	<b>S</b> 1
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR 5/2			sbk			efi	eh	CI.	SC
		10110.2		<b>f</b>				10	10	c	C-CT
			- 101	VI	gi	so	po	10	10	3	SILL
			sg	İ	pl	SS	ps	vir	so		SiL
	40	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10VR5/3	-		shk			efi	eh	CT	SC
		10110.3/3			JUK			1-	1-		00
			L TUD	VI	gr	so	po	- 01	01	5	SILL
			sg	f	pl	SS	ps	vfr	SO		SiL
	50	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10005/2			able			-6		CT CT	80
		10110.95		6	SUK			1	1		0.01
			m	VI	gr	so	ро	10	10	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	60	10YR5/3	1	m	pr	s	р	fr	sh	SL	Si
	00		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	Т	C
~		1037062		ve	abk			-6			80
H		101 K0/3			SOK			en	en		SU
е			m	vf	gr	so	ро	10	lo	S	S1CL
	70		sg	f	pl	SS	ps	vfr	SO	LS	SiL
		10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	с	сог	vs	VD	fi	h	SCL	SiC
			2	-	abk		·	νfi	ruh	T	C
		LOVDCD		ve	11			vII C	1		00
		10YR6/2			sbk			efi	eh		SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	пг	s	n	fr	sh	SL.	Si
	80		2	c	CTVT	ve	r vn	6	h	E SCT	SiC
			2		-11	¥3	νP			1 June	
			3	vc	aok			vn	vh	L	C
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	10	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	ĩ	TIP	рг	s	D	fr	sh	SI.	Si
	90		2	 C	CDT	ve	2 1/11	6	h	SCT	Sin
			2	• -	-11	*3	۸ħ			1000	
			3	vc	aok			VII	vn		C
		10YR6/2			sbk			efi	eh		SC
			ш	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	l	10YR4/3	Ĭ	TD	рг	s	p	fr	sh	ST.	Si
	100		2	 C	CDT	170	<u>г</u> 1711	6	h	SCT	Sin
			2		օրո	*3	م. م	- <u>-</u>		1	
			<b></b>	vc	ADK			vn	VII -		U n
	L	10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	TIP	рг	s	D	fr	sh	ST.	Si
	110		2	 	CDT	ve	27 3075	fi	 h	SCT	Sin
			2	C	- cpi	VS	vp		ш	-	or.
			3	vc	abk			vh	vh		C
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1 I	m	рг	s	p	fr	sh	SL.	Si
	115		2		CDT	100	17 171	6	 h	SCT	Sin
			2		cpi al-l-	42	٩v		<u>и</u>	1002	
			L 3	vc	aok			vn	vn		C .
		10YR6/3			sbk			efi	eh	CL	SC

			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	so	LS	SiL
	10	2.5Y3/3	1	ш	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	20	10YR4/2	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	30	10YR4/3	1	m	pr	s	Р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			cfi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	40	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	h a	h	SCL	SIC
			3	vc	abk			vfi	vh	L	C
		10YR5/3			sbk			en	eh ·	CL	SC
			ш	vt	gr	SO	ро	l lo	lo	S	SICL
		10177.4/2	sg	I	pl	SS	ps	vfr	SO		SiL
	50	10YR4/3		m	pr	S	Р	ir G	sh	SL	SI
			2	С	cpr	VS	vp	n 	h	SCL	SIC
		10370 5/2	.5	vc	abk			vn c	Vn 1	L	C
		10185/3	-	f	SDK	~~~			CII.		SC EGT
			111	VI	gi 1	so	po	10	10		SICL
~		103/0 4/2	sg	1	pi 	SS	ps		so	LS	SIL C:
E.	60	101K4/5	2	ш	pi	S	P Im	<u>п</u> б	SII b	SCT	31
-			2		abk	vs	vp	 	n vih	J J	SIC C
		10786/3	5	ve	sbk			efi	eh		SC SC
		101100.5	m	vf	OT	50	no	lo lo	lo Io	S S	SiCT
			- CO	f	- 5ª	50	pe DS	vfr	so	IS	Sil
		2 5 8 4/2	1	m	pr pr	5	р~/ П	fr	sh	SL	Si
	70	2.01.02	2	c	CDT	vs	P VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			cfi	ch	CL	SC
			ш	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	SO	LS	SiL
	80	2.5Y4/3	1	m	pr	s	p	fr	sh	SL	Si
	80		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	ch	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	2.5Y4/3	1	m	рг	s	Р	fr	sh	SL	Si
	10		2	С	фг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	l lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	100	2.5Y4/3	1	т	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi ~	vh	L	C
		10YR6/3			sbk			eti	ch ·		SC
			m	vf	gr	SO	ро	lo c	lo	S	SICL
		0.000	sg	t	pl	SS	ps		SO		SIL
	110	2.5 ¥ 4/4	1	m	pr	S	Р	IT E	Sh 1	SL	SI Dict
			2	C	cpr	vs	vp	II xrf	Ո	SCL	SIC
		10797/2	3	vc	dUK cbk			411 af:	ut 1.		C C
	1	1016//2			SUK			լալ	<b>1</b>	1 01	00

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/5	1	m	рг	s	р	fr	$^{\rm sh}$	SL	Si
	10		2	С	CDT	vs	VD	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	I.	С
		10VR6/3	-		shk			efi	eh	- CT	SC
		1011000	m	vf	OT	80	100		lo	S S	SICT
				f vi	gi pl	50	po	10	10	10	SICL CT
		103204.7	sg	1	PI	88	ps	VII Gu	50	LS	<u>ы</u> .
	20	10 Y K4/3	1	m	pr	S	р	n	sn	SL	51
			2	C	срг	VS	vp	h	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/2	1	ш	рг	s	р	fr	$\mathbf{sh}$	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	9T	80	po	lo	ю	S	SICL
			89	f	nl	SS	DS	vfr	80	LS	SiL
		107840	1	m	р	e	n	fr	sh	SI	Si
	40	101104/2	2	- m - c	pa cont	10	P VD	<u>п</u> б	h	SCT	Si Si
			2	L.	- cpi	vs	vp		11 	J	SR
		103706	3	VC	abk			VII C	VII	L	
		10 Y K6/2			SDK			en	en	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	50	10YR4/2	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
4		10YR6/2			sbk			efi	eh	CL	SC
Ρi			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	1	ш	DE	s	p	fr	sh	SL	Si
	60		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		· r	vfi	vh	I.	C
		107760		•••	shk			efi	eh	л П	SC
		101 K0/2		νf	OT.	80	200		lo lo	CL C	SCI
			ш со	f vi	gi nl	50	po	10	10		SICL 07
		103204.0	sg	1	pi	88	ps	VII fu	so	LS	<u>SIL</u>
	70	10 Y K4/2	1	m	рг	S	р	Ir	sn	SL	SI
			2	C	срг	VS	vp	h	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/2	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	धा	so	ро	lo	lo	S	SiCL
			SP	f	ol Dl	SS	DS	vfr	so	LS	SĩL
		10YR4/2	1	m	nr-	s	n	fr	sh	SI	Si
	90	101102	2	- -	174 (THE	ve	P VP	fi	h	SCT	SiC
			2	10 100	able	49	чР	- 11 - 12	и •љ	T	C
		103/06/2	,	VL	aUK			VII 	VШ аЪ		0
		10 Y K6/2			SOK.			еп	en		50
			m	vf	gr	so	ро	lo	ю	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SīL
	100	2.5Y4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	C	cpr	vs	vp	fi	h	SCL	SiC
	1		3	VC	abk			vfi	vh	L	C
			-								

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	10	10YR3/2	1	ш	pr	S	р	fr	$\mathbf{sh}$	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	20	10YR3/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vtr	so	LS	SiL
	30	10YR3/2	1	m	pr	S	р	fr	sh	SL	Si a'a
			2	С	cpr	VS	vp	n	h	SCL	SIC
		103705 0	3	VC	abk			VII C	Vn 	L	0
		10 1 10/3		<b>.</b>	SOK			en la	en	CL c	SC SCT
			ш ав	f VI	gi ni	50	po	10	10	0 10	SICL
		107740	- sg - 1	1	pi pr	88	ps	fr	ab	L3 SI	SIL Ci
	40	1011(4/2	2	uu c	pa. com	3	ир И	п б	ъп h	SCT	SiC SiC
			2	L VC	գո əhb	və	۷Þ	u vfi	и vh	J	C
		10VR5/3	5	VC.	shk			efi	eh	л СТ	SC
		101103/3	m	vf	OT	\$0	no	lo	lo	S	SiCI
			50	f	nl	50	ns	vfr	50	LS	SiL
		10YR4/3	1	m	DT	s	p5 D	fr	sh	SL	Si
	50	1011013	2	c	CDT	vs	P VD	fi	h	SCL	SiC
			3	vc	abk		·	vfi	vh	L	C
S		10YR5/3			sbk			efi	eh	CL	SC
Βï			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	60	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	00		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3		-	sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	t	pl	SS	ps	vir	so	LS	SiL
	80	10 Y R4/3	1	m	pr	S	р	fr	sh	SL	Si C
			2	С	cpr	VS	vp	n 	n	SCL	SIC
		1037067	3	VC	abk			vn .ef	vn		0
		101 K0/3		<b>f</b>	SUK		-		en la	CL e	SC
			ш со	۷۱ f	gi nl	80	po	10 Vfr	10	5 19	SICL
		10774/2	- sg - 1	1	pi pr	88	ps	vii fr	so	LS SI	SIL Ci
	90	101 14/3	2	LILL C	pa (mr	3	VD VD	fi	511 h	SCT	SiC
			2	vr	abk	Vð	Чv	vfi	vh	I	C
		10776/3	.,	10	shk			efi	eh	л СТ	SC
		1011003	m	vf	9T	80	DO.		lo	S	SICI
			59	f	pl	SS	ps	vfr	so	LS	SiL.
		10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	100		2	c	CDT	vs	r VD	fi	h	SCL	SiC
			3	VC	abk		- <b>r</b>	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

		1									
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	$^{\rm sh}$	SL	Si
	10		2	С	- CIDIT	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			shk			efi	eh	CL.	SC
		10110.00		vf	OT	80	na	10	lo	S	SICT
				f	- Br D		po	vfr	80	TS	SICL
		103/04/2	sg	1	pi 	88	ps	vii fu	50 ab	LS	<u>ы</u> . с:
	20	10 Y K4/3	1	m	pr	S	р	n	sn	SL	51
			2	С	cpr	VS	vp	n	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	30		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	9T	80	DO	lo	ю	S	SICL
			50	f	nl	88	ns	vfr	50	LS	SiL
		10774/3	1	m	P <sup>1</sup>	00	ps n	fr	sh	SI	Si
	40	101 14/3	1	ш с	pa ann	3	<u>ч</u>	<u>п</u> б	ы	SCI	e:c
			2	C	-ця -LL	vs	vp	<u>п</u>	n	SCL	SR.
		10105.0	3	VC	aok.			vn	vn		C
		10YK5/3			sbk			en	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	$\mathbf{ps}$	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
6		10YR6/3			sbk			efi	eh	CL	SC
Pi			m	vf	gr	so	ро	lo	lo	S	SiCL
			se	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	DE	S	n	fr	sh	SL.	Si
	60	101100	2		P-	vs	r VD	fi	h	SCL	SiC
			3	w	abk	10	•P	vfi	vh	I	C
		INVDCD		VC.	abk			ofi	vii ab		С 8С
		101 K0/2			SUK.			<u>en</u>	en L-		SC GIGI
				VI	gr	so	ро	10	10	3	SICL
			sg	I	рі	SS	ps	VIT	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	S1
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	$\mathbf{ps}$	vfr	so	LS	SiL
	00	10YR4/3	1	ш	рг	s	р	fr	$\mathbf{sh}$	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf		80	ро	lo	lo	S	SICL
			50	f	nl	22	r- ns	vfr	50	LS	SiL
		10774/3	1	m	P <sup>1</sup>	00	pb n	fr	sh	SI	si
	90	101104/J	2		Pa (me	10	14 1200	6	511 h	SCI	9:0
			2	L.	պո	VS	чv	н с	ш уль	JOCL	SIC C
		1037075	3	VC	aDK.			vn r	VII 1		
	<u> </u>	10YK//2		~	sbk			en	en		SC
			ш	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	100	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	1	ш	DT	s	p	fr	sh	SL	Si
	10		2	с	CDT	VS	VD	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR4/3	-		sbk			efi	eh	CL.	SC
		1011115	m	vf	PT	80	no	10	lo	S	SiCL
			50	f	nl	50	ns	vfr	50	LS	SiL
		10774/3	1	m	pr pr	00	ps n	fr	ch	SI	Si
	20	10110475	1	ш с	pa. com	3	ч Тр	п б	ы Ъ	SCT	Si SiC
			2	1/0	oble	Va	۷P	- 11 - 126	и уф	I	C
		10774/2	3	VC.	abk			vш	vii ab	L CT	С 8С
		101 K4/5		f	SUL		-		en Io	CL e	SC ECT
			111	۲۲ ۲	gi l	80	po	10	10	о то	SICL
		103/114/2	sg	1	pi	88	ps	VII E	so	LS	51L a:
	30	10 Y K4/3	1	ш	pr	S	р	r	sn	SL	51
			2	С	cpr	VS	vp	n	n	SCL	SIC
			5	VC	abk			vn	vn	L	C
		10YR4/3			sbk			en	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	40	10YR4/3	1	ш	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	50	10YR4/3	1	ш	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
5		10YR6/3			sbk			efi	eh	CL	SC
Ē			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
		10YR4/3	1	ш	pr	s	p	fr	sh	SL	Si
	60		2	с	- CIDIT	VS	vp	fi	h	SCL	SiC
			3	VC	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			SP	f	o Dl	SS	DS	vfr	so	LS	SīL
		10YR4/3	1	m	DT	s	n	fr	sh	SL	Si
	70	10110	2	c	onr	VS	r VD	fi	h	SCL	SiC
			3	VC.	abk	••	·P	vfi	vh	I.	C
		10YR6/3			shk			efi	eh	ст.	SC
		1011000	m	vf	OT	\$0	no	10	10	S	SICI
			60	f	nl	88	ns	vfr	80	IS	รับ
		10VR4/3	1	m	pr pr	99 6	pa n	fr	sh	SI	Si
	80	101104/3	2	ш с	pa (mr	1/2	P VD	<u>п</u> б	h	SCT	SiC
			2	10	- opz - ohlv	Va	۷P	n vfi	u vh	I	C
		10776/2	,	¥C.	able			vii ofi	vii ab		С 8С
		101 K0/5		f	SUK				en Lo	CL e	SC ECT
			ш св	۲۷ ۲	gi ni	80	po	10	10	о те	SICL 67
		103/124/2	sg	1	pi	88	ps	ν II	so	LS	51L c:
	90	10 1 K4/5	1	ш с	pr 	8	p 	ц	SII 1-	SL	51 8:0
			2	С	сря	vs	vp	n c	n	SCL	SK.
		1037757 2	3	VC	aok			VII 	vn	L	
		10 Y R6/3		~	sbk			en	eh •	CL	SC
			m	vf	gr	so	po	10	ю	S	SICL
			sg	f	pl	SS	ps	vtr	so	LS	SiL
	100	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	рг	s	p	fr	sh	SL	Si
	20		2	с	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	20	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	- 30		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	SO	LS	SiL
	40	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			cfi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	50	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	50		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
t 8		10YR6/3			sbk			cfi	ch	CL	SC
Ρi			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	60	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			cfi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	70	10YR4/3	1	ш	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	80	10YR4/3	1	ш	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SīL
	90	10YR4/3	1	m	pr	S	Р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh		C
	L	10YR6/3			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SICL
		10777	sg	f	pl	SS	ps	vir	SO		SıL
	100	10YR4/3	1	m	pr	S	Р	fr	sh	SL	SI
			2	С	cpr	VS	vp	11	n 	SCL	SIC
		10370 6/2	- 5	VC	аок			vii -"	vh		U BC
	1	10YK6/3			SDK			en	en	$\perp$ CL $\perp$	SC

			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	2.5YR3/3	1	m	рг	s	p	fr	sh	SL	Si
	10		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	ch	CL	SC
			m	vf	9T	so	no	10	lo	S	SiCL
			50	f	nl	ss	DS DS	vfr	50	IS	รัส
		10VP 4/3	1	m	PI TT	55 C	Ра	fr	ch	SI	Si
	20	1011(4/5	2	ш с	рл стт	3	P M	fi	h	SCI	SiC
			2	- C-	obk	və	٧p	11 775	n vib	T	
		10VD 5/2	3	vc	abk			vii afi	vii ab		С 8С
		101K3/5		6	SUK				01 1a		Je Biot
			ш	VI	-1	50	po	0	10	3 10	SICL
			sg	I	рі	SS	ps	VIT	SO		SIL
	30	10YR4/3	1	m	pr	S	Р	fr	sh	SL	S1
			2	С	срг	VS	vp	n –	h	SCL	SIC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	40	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			cfi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	ш	рг	s	р	fr	sh	SL	Si
	50		2	с	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
δ		10YR6/3			sbk			cfi	ch	CL	SC
Ρi			m	vf	9T	50	no	10	lo	S	SiCL.
			59	f	ъ- рі	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	nr	s		fr	sh	SL	Si
	60	101105	2	- m - c	CDT	ve	Р M	fi	h	SCT	SiC
			~	ve	abk	•	۰P	vfi	vh	I	C
		10VP6/3	,	**	shk			efi	eh.	СТ	SC SC
		1011005		T.F	SUK	<b>60</b>	70		ui Io	CL C	SCT
			ш сл	vi f	gi D	50	po	IU Vfr	10	10	SICL
		103/0 4/2	Sg 1	1	pi		ps	vu c	50 ali	L3 CT	<u>ы</u> . с:
	70	101K4/5	1	111	р	2	P	E E	511	SL BOT	31 B:C
			2	С	срг	vs	vp	 	n ,	SCL	SIC
			3	vc	abk			vn	vn	L	C
		10YR6/3			SDK			en	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vir	so	LS	SiL
	80	10YR4/3	1	m	pr	S	р	fr	sh	SL	S1
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			cfi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	20		2	с	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			cfi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SìL
	100	10YR4/3	1	т	рг	s	p	fr	sh	SL	Si
	100		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3	-	_	sbk			efi	eh –	CL.	SC

# B.4 Williamson

(m)     Moist     Dry     Image: field of the sector sector of the sector sector of the sector of the sector		Depth	Color		Structur	· a	Consistence			Texture		
m     vf     gr     so     po     b     b     S     SICI       10YR43     1.5     m     pr     ss     pr     fr     so     L.5     SI.       2     c     cpr     vs     vp     fi     h     SCL     SI.       2     c     cpr     vs     vp     fi     h     SCL     SI.       10YR53     m     vf     gr     so     pr     vs     so     L.5     SI.		(cm)	Moist Dry		Juuciui		W	/et	Moist	Dry	10.	uic
Pi     Pi     SS     Pi     SS     Nit     SS     SS       10YR-5     1.5     m     pr     s     p     fr     sh     SS     SS       10YR-5     3     vc     abk     -     eri     sh     SS     <				m	vf	gr	so	ро	lo	lo	S	SiCL
10     10\[\begin{tabular}{ c c c c c c c c c c c c c c c c c c c				sg	f	pl	SS	ps	vfr	so	LS	SiL
10     2     c     cp     fi     h     SCL     SiC       10YR5/3     3     vc     sbk     v     vfi     vh     L     C       10YR5/3     m     vff     gr     so     po     lo     lo     lo     S     SCL       20     m     vf     gr     so     po     lo     lo     lo     S     SCL     SiCL		10	10YR4/3	1.5	m	pr	s	р	fr	sh	SL	Si
Image: second				2	с	cpr	VS	vp	fi	h	SCL	SiC
TOYR5/3     m     off     gr     so     po     lo     lo <t< td=""><td></td><td></td><td></td><td>3</td><td>vc</td><td>abk</td><td></td><td></td><td>vfi</td><td>vh</td><td>L</td><td>C</td></t<>				3	vc	abk			vfi	vh	L	C
m     vt     gr     for     pls     vfr     so     LS     SiL     SiL     SiL       20     1     m     pr     s     pp     fr     shL     SIL     SIL       3     vc     abk     -     vfn     vh			10YR5/3			sbk			efi	eh	CL	SC
Set     isource     isource <thi>isource     isource     i</thi>				m	vt	gr	SO	ро	lo	lo	S	SICL
20     101 K4/3     1     m     p1     s     p     n     sL			10XB4/2	sg	I	pi	SS	ps	VII	so	LS	SiL
PEL     2     c     c     dak     v     fit     n     3. C.C     Sole       10YR5/3     -     sbk     -     efi     eh.     C.C     SC       30     -     m     vf     gr     so     po     lo     lo     S     SCL       30     -     gr     f     pl     so     po     lo     lo     S     SCL     SCL       30     -     sbk     -     vf     h     h     SCL     SCL     SCL       30     -     sbk     -     vf     wh     vf     wf     scl     wf     scl     wf     scl     wf     scl     wf     wf     scl     scl     scl     scl     scl     wf     scl     wf     scl<		20	101 K4/5	2	m	pr	5	P	II fi	sn h	SCI	SiC
Iory R5/3     m     vf     gr     sol     vf     gr     sol     vf     gr     sol     po     lo     lo     S     SiCL     SiCL <th< td=""><td></td><td></td><td></td><td>2</td><td>UC VC</td><td>able</td><td>vs</td><td>vp</td><td>n vfi</td><td>u vh</td><td>T</td><td>C</td></th<>				2	UC VC	able	vs	vp	n vfi	u vh	T	C
101     101 <td></td> <td></td> <td>10VR5/3</td> <td><u> </u></td> <td>ve</td> <td>shk</td> <td></td> <td></td> <td>efi</td> <td>eh</td> <td>CL</td> <td>SC</td>			10VR5/3	<u> </u>	ve	shk			efi	eh	CL	SC
Image: big big big big big big big big big big			101103/5	m	vf	σr	50	po	10	10	S	SiCL
30     10YR4/3     1     m     pr     s     p     fr     sh     SL     Si       30     2     c     cpr     vs     vp     fi     sh     SCL     SiC       3     vc     abk     -     vfi     vh     L     C       10YR5/3     m     vf     gr     so     po     lo     lo     S     SiCL       8g     f     pl     ss     pp     fit     so     LS     SiL				sg	f	 pl	SS	ps	vfr	so	LS	SiL
30     2     c     cpr     vs     vp     fi     h     SCL     SiC       10YR5/3     3     vc     abk     -     vfi     vh     L     C       40     -     sbk     -     vfi     vh     L     C     SiC       40     -     sbk     -     vfi     vh     Si     Si       40     -     10YR4/3     1     m     pr     s     p     fi     sh     SI     Si       2     c     cpr     vs     vp     fi     h     SC     Si			10YR4/3	1	m	pr	s	10	fr	sh	SL	Si
Image: Second second		30		2	с	cpr	vs	vp	fi	h	SCL	SiC
Introduct     Introduct <t< td=""><td></td><td></td><td></td><td>3</td><td>vc</td><td>abk</td><td></td><td></td><td>vfi</td><td>vh</td><td>L</td><td>С</td></t<>				3	vc	abk			vfi	vh	L	С
Matrix     Matrix<			10YR5/3			sbk			efi	eh	CL	SC
Here     IoyR4/3     1     m     pr     ss     ps     fr     sh     SL     Si       10YR4/3     1     m     pr     vs     vp     fit     sh     SL     SiC       2     c     cpr     vs     vp     fit     sh     SCL     SiC       10YR5/4     -     sbk     -     vft     vft     vft     vft     SO     P     lo     lo     SS     SIL     SiL       50     figf     pl     ss     ps     vft     vft     so     p     fit     so     SS     SIL     SIL </td <td></td> <td></td> <td></td> <td>m</td> <td>vf</td> <td>gr</td> <td>SO</td> <td>ро</td> <td>lo</td> <td>lo</td> <td>S</td> <td>SiCL</td>				m	vf	gr	SO	ро	lo	lo	S	SiCL
40     10YR4/3     1     m     pr     s     p     fr     sh     SL     Si       3     vc     abk     vc     abk     vf     vf     k     k     vf     k <t< td=""><td></td><td></td><td></td><td>sg</td><td>f</td><td>p1</td><td>SS</td><td>ps</td><td>vfr</td><td>so</td><td>LS</td><td>SiL</td></t<>				sg	f	p1	SS	ps	vfr	so	LS	SiL
$ \Gamma_{\rm L} = \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$		40	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				2	с	cpr	VS	vp	fi	h	SCL	SiC
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				3	vc	abk			vfi	vh	L	С
$ F_{\rm H} = \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$			10YR5/4			sbk			efi	eh	CL	SC
Ferror Ferror				m	vf	gr	SO	ро	lo	lo	S	SiCL
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			107777 1/0	sg	f	pl	SS	ps	vfr	so	LS	SiL
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		50	10Y K4/3	1	m	pr	S	p	fr	sh	SL	S1
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				2	с	cpr	VS	vp	fi c	h	SCL	SiC
$ \vec{E} = \begin{bmatrix} 1011033 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 $	_		10VP5/2		vc	abk			vn	vn	CT	50
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Ъ;		101 K3/3	m	vf	SOK	50	20	10	lo	CL S	SICI
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				sa	f	n1	50	ns	vfr	50	15	Sit
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			10YR4/3	1	m	pr	5	рз р	fr	sh	SL	Si
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		60	10110.00	2	c	cor	vs	vp	fi	h	SCL	SiC
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				3	vc	abk		·P	vfi	vh	L	C
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			10YR5/4			sbk			efi	eh	CL	SC
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				m	vf	gr	so	ро	lo	lo	S	SiCL
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				sg	f	pl	SS	ps	vfr	so	LS	SiL
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		70	10YR4/3	1.5	m	pr	s	р	fr	sh	SL	Si
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		/0		2	с	cpr	vs	vp	fi	h	SCL	SiC
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				3	vc	abk			vfi	vh	L	С
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			10YR6/3			sbk			efi	eh	CL	SC
$80 \begin{array}{ c c c c c c c c c c c c c c c c c c c$				m	vf	gr	so	ро	lo	lo	S	SiCL
$ 80 \begin{array}{ c c c c c c c c c c c c c c c c c c c$				sg	f	p1	SS	ps	vfr	SO	LS	SiL
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		80	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				2	с	cpr	VS	vp	fi	h	SCL	SiC
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				3	vc	abk			vfi	vh	L	C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			10YR6/3			sbk			eti	eh	CL	SC
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				m	vt	gr	SO	ро	lo	lo	S	SICL
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			10VD 4/2	sg	1	pi	SS	ps	vir	so	LS	51L c:
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		90	101 K4/3	1.5	m	pr	S	p vo	fr fr	sn h	SCI	51 SiC
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				2	VC VC	able	vs	vp	n vt	11 12h	T	C
$100 \text{ RO/RO/S} = \begin{array}{ c c c c c c c c c c c c c c c c c c c$			10VR6/2		ve	abk.			vii efi	vn	CT	SC SC
$100 \begin{array}{ c c c c c c c c c c c c c c c c c c c$			101 K0/3	m	vf	SUK or	80	20	10	10	e cr	SICT
$100 \frac{10YR4/3}{10YR7/2} \frac{1}{10} \frac{1}$				sσ	f	gi pl	50	po	vfr	50	LS	SiL.
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			10YR4/3	1	m	10r	5	ps p	fr	sh	SL.	Si
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		100	1011010	2	с.	CDT	vs	vn	fi	h	SCL	SiC
10YR7/2 sbk efi eh CL SC				3	vc	abk		· P	vfi	vh	L	C
			10YR7/2	_		sbk			efi	eh	CL	SC

			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			cfi	ch	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	so	LS	SiL
	20	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	ш	рг	s	p	fr	sh	SL	Si
	30		2	с	срг	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/2			sbk			cfi	eh	CL	SC
			ш	vf	धा	so	DO	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	ш	DI	s	D	fr	sh	SL	Si
	40		2	с	cpr	vs	VD	fi	h	SCL	SiC
			3	vc	abk		1	vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			ш	vf	धा	so	DO	lo	lo	S	SiCL
			SE	f	- Dl	SS	DS	vfr	so	LS	SiL
5		10YR5/3	1	т	рг	s	D	fr	sh	SL	Si
Pit	50		2	С	CDT	vs	VD	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			cfi	eh	CL	SC
			ш	vf	धा	so	DO	lo	lo	S	SiCL
			SE	f	Dl	SS	DS	vfr	so	LS	SiL
		10YR5/3	1	ш	DI	s	D	fr	sh	SL	Si
	60		2	с	cpr	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/2			sbk			cfi	eh	CL	SC
			m	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR5/3	1	ш	рг	s	p	fr	sh	SL	Si
	70		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/2			sbk			cfi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR5/3	1.5	ш	рг	s	р	fr	sh	SL	Si
	80		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			cfi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			Sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR5/3	ī	m	рг	s	р	fr	sh	SL	Si
	90		2	c	CDI	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			cfi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/2	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
t 3	40	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
Ä	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	70		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC

			m	vf	gr	SO	ро	ю	ю	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	10	10YR3/3	1	m	pr	s	p	fr	sh	SL	Si
	10		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			cfi	eh	CL	SC
ľ			m	vf	£۲	so	po	lo	lo	S	SiCL
			58	f	pl	ss	DS	vfr	so	LS	SiL.
		10YR3/3	1	m	DL	s	г- р	fr	sh	SL	Si
	20	1011200	2	c	CDT	vs	P VD	fí	h	SCL	SiC
			3	vc	abk		• •	vfi	vh	L	C
		10YR5/3	5		shk			efi	eh	CL	SC
-		TOTIES	m	vf	от	so	10	- In	lo lo	S	SiCT
				f	nl	50	po ps	vfr	SO	15	Sil
		10VR4/3	- <del>3</del> 6 1	m	TTT.	- 3-3 - C	р <i>3</i>	fr	ch	SI	Si
	30	1011(0.5	2	~	P <sup>A</sup>	vie	P VD	fi	h	SCI	SiC
			3	NC	abk	•	۰p	vfi	wh	T	C
		10785/3	5	VC.	chk			efi	eh	CT CT	SC SC
·		10110/3		vf	3UK	c0	100	La La	lo lo	CL CL	SC
			ш сл	f	gi pl	50	po	NU Vafr	ю со	16	SICL
		10VD 4/2	sg 1	1	pi	55	ps n	vii F	su	CT CT	SIL Ci
	40	101 K4/3	1	ш	pi	5	P	<u>п</u> б	511 b	SL	31 970
			2	C	cpi	VS	vp	11 	II enh	SCL T	SIC
		102060	3	ve	auk			VII _C	vii	L	
-		10Y K6/2		6	SDK			en	en		SC
			m	VI	gr	SO	ро	lo c	ю	5	SICL
			sg	I	pl	SS	ps	VIT	SO	LS	SIL
	50	10YR4/3	1	m	pr	S	р	lr r	sh	SL	SI
			2	С	cpr	VS	vp	n g	h	SCL	SIC
			3	VC	abk			vh	vh	L	С
4		10YR6/2			sbk			cti	ch	CL	SC
р.			m	vf	gr	SO	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SīL
	60	10YR4/3	1	m	pr	S	р	tr	sh	SL	SI
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vti	vh	L	С
-		10YR6/2			sbk			eti	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	70	10YR4/3	1	m	pr	S	P	fr	sh	SL	S1
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	ch	CL	SC
			m	vf	gr	SO	ро	ю	ю	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	80	10YR5/4	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/1			sbk			cfi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	90	10YR5/4	1	m	pr	s	р	fr	sh	SL	Si
	20		2.5	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/1			sbk			cfi	ch	CL	SC
Ì			m	vf	gr	so	ро	ю	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	100	10YR5/4	1.5	m	рг	s	р	fr	sh	SL	Si
	100		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR7/2			sbk			efi	ch	CL	SC

							_				
			m	vf	gr	SO	ро	ю	ю	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	10	10YR4/3	1	m	pr	s	Р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			cfi	ch	CL	SC
			ш	vf	धा	so	po	lo	lo	S	SiCL
			SE	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m		s	г- р	fr	sh	SL	Si
	20	101100	2	c m	CTTT	ve	P VD	fi	h	SCI	SiC
			2	NC NC	abk	•.5	•₽	vfi	vh	T	C
		10705/2	5	٧L	abk			afi	ah		C SC
		101 10/5		f	SUK				1		Di CT
			ш	VI	gi i	so	po	NO C	N)	3	SICL
			sg	I	рі	SS	ps	VIT	SO 1	LS	SIL
	30	10Y K4/3	1	m	pr	S	P	n	sn	SL	<u>81</u>
			2	С	cpr	VS	vp	n a	h	SCL	SIC
		<b>-</b>	3	VC	abk			vh	vh	L	С
		10YR5/3			sbk			en	en	CL	SC
			m	vf	gr	SO	ро	ю	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	40	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	фг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/4	1	ш	рг	s	Р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
\$		10YR6/3			sbk			cfi	ch	CL	SC
Pit			m	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
		10YR4/4	1	m	DI	s	D	fr	sh	SL	Si
	60		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL.	SC
		101110.2	m	vf	or	50	100	10	10	S	SiCL
			so	f	51 Dl	50	DS DS	vfr	50	LS	SiL
		10VP3/4	- <sup>3</sup> 5	m	PI TT	- 33 - C	- P-3	fr	ch	SI	Si
	70	10110/14	2	- m - c	P <sup>A</sup>	a NC	P M	- 11 - 15	h	SCI	SiC
			2	L.	фл	¥3	۷Þ	xfi	и vh	T	C
		10702/2		٧L	abk			ofi afi	wii ah		C SC
		101 K0/2	-	x.f	SUK		120	10	10	CL e	SC
			ш с~	VI F	gi	50	po	10	10	5	SICL CJ
		10702/4	sg	1	рі	- 33	ps r	vц f-	s0 ch	CI CI	ы. с:
	80	101 K3/4	1	ш	pi	5	P	п	511 1.	SL C/T	31
			2	C	- hh	vs	vp	11 E	11	SCL	SIC
		10100 640	.,	VC	abk			vii	1	L	
		10Y K6/2		<u> </u>	SDK			cn 1	en 1	CL	SC
			ш	VI	gr	so	po	lo	lo	S	SICL
		101555	sg	I	pl	SS	ps	vir	SO		SIL
	90	10YR3/2	1	m	pr	S	P	ir ~	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			cfi	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	100	10YR3/2	1	m	pr	s	р	fr	sh	SL	Si
	1.00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			cfi	ch	CL	SC

			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	ī	m	DT	s	D	fr	sh	SL	Si
	10		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	T.	С
		10YR5/2	2		shk			efi	eh	СТ Г	SC
		TOTICIZ	m	vf	от	60	<b>D0</b>	lo lo	lo lo	S	SiCT
				f	-61 D		po	vfr	60 60	19	Ci Ci Ci
		10VD 4/2	- 3g 1	I TD	pr pr	55	ps D	fr.	ch	CI CI	<u>с;</u>
	20	1011(4)5	2	ш с	pr opr	3	P	11 - fi	511 b	SCI	8.0
			2	<u>с</u>	cpi	vs	vp	6	 	J	SIC
		103705/2	3	VC	abk			VШ аб	vII		
-		101 K3/2		c	SUK				en		<u>эс</u>
			ш	VI	gr	SO	ро	ю	Ю	3	SICL
			sg	I	рі	SS	ps	VIT	SO		SIL
	30	10Y K4/3	1	m	pr	S	Р	п	sn	SL	51
			2	С	cpr	VS	vp	n	h	SCL	SIC
			3	VC	abk			VII	vh	L	C
		10YR6/2			sbk			en	eh	CL	SC
			m	vf	gr	SO	po	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SĩL
	40	10YR4/3	1	m	рг	S	Р	fr	sh	SL	Si
			2	С	фг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	50	10YR4/3	1	ш	pr	s	р	fr	sh	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
9		10YR6/2			sbk			cfi	ch	CL	SC
Ъ.			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1.5	ш	pr	s	р	fr	sh	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			cfi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1.5	m	pr	s	р	fr	sh	SL	Si
	70		2	с	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC
ĺ			m	vf	धा	so	DO	ю	lo	S	SiCL
			Sg	f	pl	SS	ps	vfr	SO	LS	SìL
		10YR4/3	1	ш	DT	s	D	fr	sh	SL	Si
	80		2	С	CDT	VS	YD F	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			cfi	eh.	CL.	SC
		1011005	m	vf	9T	so	DO	lo lo	ln l	S	SiCL
			50	f	nl	ss	ns	vfr	so	IS	Sil
		10VR4/3	1	m	pr pr	s	p.s D	fr	sh	SI	Si
	90	1011012	2		<u>г</u> и (тиг	ve	Р VD	fi	h	SCT	SiC
			2	ve	apr	*2	٩v	vfi	и vh	J	C
		10776/2	5	**	chk			efi	vii eh	CT	80
ŀ		101 K0/3	-	<b>.</b> f	SUK		700	- CII 1	- CII 1	CL C	ы. С.
			ш с~	VI F	ᄞ	50	pu	TU TTE	N) co	0 10	orce ca
		1070 4/2	sg 1.5	1		55	ps	vii fr	SO ala	СТ	ыL с;
	100	101 K4/3	1.5	ш	pr.	5	4	II f	SII	SL SCT	- <b>31</b> 
			2	С 	cpr al-1-	VS	vp	11 e	11	J	SIC
		10377 5 5	3	vc	aok			vh ~	vh	L	C
		10YR6/2			SDK	1		en	en	CL	SC

		r								1	
			m	vf	gr	SO	ро	ю	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/2	1	m	DI	s	D	fr	sh	SL	Si
	10		2	c	(T)T	vs	vn	fi	h	SCL	SiC
			3	vc	abk		• •	vfi	vh	T	C
		10785/2	5	v.	cbk			efi	eh		SC SC
		101 K.3/2			SUK			<u>u</u>	-		3C
			ш	VI	gr	SO	ро	ю	Ю	5	SICL
			sg	t	pl	SS	ps	vir	SO	LS	SiL
	20	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gг	so	po	lo	lo	S	SiCL
			Sg	f	D	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	nr	s	n	fr	sh	SL	Si
	30	1011(05	2		(T)T	ve	P VD	fi	h	SCT	SiC
			2	T.	oble	¥3	٩v	11 575	n vh	JCL	C
		103705/0	3	ve	abk			vii	vii		
		104 K5/2			SDK			en	en		SC
			m	vf	gr	SO	ро	ю	ю	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	40	10YR4/3	1	m	рг	S	Р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	21	so	DO	lo	lo	S	SiCL
			59	f	nl	55	ns	vfr	so	LS	SiL
		10VR5/3	4	m	pr DT	c.	P	fr	sh	12	Si
	50	101103/5	5		pi (TDT	NC	P	п б	511 h	SCT SCT	SI
			3	C	-t-1-	vs	vp		1	SCL	SIC.
_			0	ve	abk			vii	VII 1	L	C
it 7		10YR7/2			SDK		_	ch	ch	CL	SC
Ъ			ш	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	60	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	00		2.5	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			cfi	ch	CL	SC
			m	vf	£Г	so	DO	lo	lo	S	SiCL
			50	f	nl	22	ns	vfr	so	LS	SiL
		10VP5/3	1	m	P <sup>1</sup>	с.	- P5	fr	ch	SI	Si
	70	10110/3	2.5		pi apr	3	P	п б	511 15	SCI	87
			2.5	L	-цл - Ц-	vs	vp		-1	SCL I	SIC.
				ve	abk			vii	VII 1	L	
		10YR7/2		-	SDK			en .	en .	CL	SC
			m	vf	gr	SO	po	<b>IO</b>	ю	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SīL
	80	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			cfi	ch	CL	SC
			ш	vf	gr	so	po	lo	lo	S	SiCL
			SB	f	bl	SS	DS	vfr	so	LS	SiL.
		10YR5/3	1	m	nr	s	n	fr	sh	SL	Si
	90		2.5	 C	1** (T)T	ve	r vn	fi	h	SCI	SiC
			2.5	ь. т.	- фл 	*3	٩v	11 775	11 12	T	C
1	1			VC	aUK.			vII 	-1		
		10373 7/0			shk			en	ch	CL	SC
		10YR7/2		-	JOR					-	a ·
		10YR7/2	m	vf	gr	so	ро	lo	ю	S	SiCL
		10YR7/2	m sg	vf f	gr pl	SO SS	<b>po</b> ps	lo vfr	lo so	S LS	SiCL SiL
	100	10YR7/2 10YR4/3	m sg 1	vf f m	gr pl pr	SO SS S	po ps P	lo vfr fr	lo so sh	S LS SL	SiCL SiL Si
	100	10YR7/2 10YR4/3	m sg 1 2	vf f m c	gr pl pr cpr	SO SS S VS	po ps p vp	ko vfr fr fi	lo so sh h	S LS SL SCL	SiCL SiL Si SiC
	100	10YR7/2 10YR4/3	m sg 1 2 3	vf f m c vc	gr pl pr cpr abk	SO SS S VS	po ps p vp	ko vfr fr fi vfi	lo so sh h vh	S LS SL SCL L	SiCL SiL Si SiC C

			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR3/3	ĩ	m	рг	s	D	fr	sh	SL	Si
	10		2	c	TTT	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		•P	vfi	vh	I	C
		10VP5/2	5		cbk			efi	eh	CI	SC SC
-		10110.42		~-f	SUR		-	10	lo	CL C	CiCT
			ш	VI C	1	50	po	10 6-	NU an	3 TC	SICL
			sg	1	рі	SS	ps	VII C	50	LS	SIL
	20	10YR4/2	1	ш	pr	S	p	İT	sh	SL	SI
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/2			sbk			cfi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	30		2	с	cpr	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	ĊL.	SC
-		TOTICAL	m	vf	OT	cn.	70	- Lo	h	S S	SICT
				f	51 D	50	po	ru vifr	ю 60	TC	SiCL
		10370 4/2	sg 1	1	pi	55	ps	vii E	su	LO	SIL
	40	10YK4/3	1	m	рг	S	р	IT	sn	SL	51
			2	С	cpr	VS	vp	n	h	SCL	SIC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	ш	рг	s	р	fr	sh	SL	Si
	50		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
∞		10YR6/2			sbk			cfi	eh	CL	SC
Ë.			m	vf	9T	so	DO	lo	lo	S	SiCL
			50	f	nl	SS	pe ps	vfr	so	IS	Sil
		10VR4/2	1	m	P <sup>1</sup>	c	n	fr	ch	51	Si
	60	1011002	2		pi opr	3	P	п б	511 1	SCT	SI
			2	- <u>-</u>	cpi	¥3	٧p	11	II rah	JCL	
			3	VC	auk			VII	VII 1	L	
		10YR6/2		-	SDK			- ch	eh	CL	SC
			m	vf	gr	SO	ро	ю	ю	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	70	10YR5/3	1	m	pr	s	Р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/3	1	ш	рг	s	р	fr	sh	SL	Si
	80		2	с	cpr	VS	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR7/2			sbk			cfi	eh	CL.	SC
-		TOTICAL	m	vf	от	60	DO	lo lo	h	s s	SiCT
				f	pl	50	po ne	vfr	60 60	TS	Sit
		107704/2	- 5g 1	1	PI	55	ps	₩II fr	su	CI	SIL C:
	90	101 K4/5	1		р	5	р	<u>п</u>	511	SL	31 B:C
			2.5	C	фт -11-	VS	vp	11 	Щ 1	JUL	SIL C
			3	VC	abk			vn	vn	L	C
		10YR7/2			sbk			eti	ch	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	100	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	100		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC

# B.5 Rock Spur

	Depth	Color		tructur	2		Consi	stence		Tay	ture
	(cm)	Moist Drv		uucuu	e	W	7et	Moist	Drv	164	luite
			m	vf	gr	SO	ро	lo	10	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	2.5Y 4/3	1	m	pr	s	p	fr	sh	SL	Si
	10		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	20	2.5Y 4/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	1o	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	1o	10	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
t 1	50	2.5Y 2.5/1	1	m	pr	s	р	fr	sh	SL	Si
P	50		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	s	p	fr	sh	SL	Si
			2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	10	10	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	70	2.5Y 2.5/1	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	10	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	80	2.5Y 2.5/1	1	m	pr	s	p	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	p1	SS	ps	vfr	so	LS	SiL
	90	2.5Y 2.5/1	1	m	pr	s	р	fr	sh	SL	Si
	_		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR7/2			sbk			efi	eh	CL	SC

			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/4	1	т	pr	s	P	fr	sh	SL	Si
	10		2	с	срг	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/2			sbk			cfi	eh	CL	SC
			m	vf	gr	SO	po	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/4	1	т	pr	s	p	fr	sh	SL	Si
	20		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/2			sbk			cfi	ch	CL	SC
			m	vf	gr	so	DO	lo	10	S	SiCL
			sg	f	bl	SS	ps	vfr	SO	LS	SiL
		10YR4/4	1	ш	DT	s	D	fr	sh	SL	Si
	30		2	с		vs	r VD	fi	h	SCL	SiC
			3	vc	abk		· F	vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	DO	lo	10	S	SiCL
			Sg	f	DI	SS	ps	vfr	so	LS	SiL
		10YR4/4	1	m	DT	s	D	fr	sh	SL.	Si
	40	1011101	2		r~ m	vs	P VD	fi	h	SCL	SiC
			3	vc	abk	•.5	۰p	vfi	vh	L	C
		10VR7/2			shk			efi	eh	ст Г	SC
		TOTICHZ	m	vf	01	so	<b>D</b> 0	10	10	S	SICL
			so	f	pl	ss	ns	vfr	so	IS	Sil
5		10VR4/4	1	m	P <sup>1</sup> DT	s	P <sup>5</sup>	fr	ch	SI	Si
Pit	50	101101	2		en en en en en en en en en en en en en e	vs	P VD	fi	h	SCL	SiC
			7	vc	abk	•10	۰p	vfi	vh	T	C
		10VR7/2	2		shk			efi	eh	ст П	SC
		TOTICAL	m	vf	01	so	100	10	10	S	SICL
			so	f	51 Dİ	ss	po ns	vfr	so	IS	Sil
		10VR4/3	- <sup>3</sup> 6 1	m	P <sup>1</sup> TT	s. c	p3 n	fr	st ch	SI	Si
	60	1011(4)	2	n c	pa CDT	ve	Р VD	fi	h	SCI	SiC
			2	vc	apr	4.5	۰p	vfi	и vh	T	C
		10VP7/2	2		chk			efi	eh	CT CT	SC
		TOTRAZ	m	vf	01	50	00	10	10	S	SICL
			so	f	51 Dİ	50	po ns	vfr	so	IS	Sil
		10YR4/3	35	m	P <sup>1</sup> TT	55	P <sup>3</sup>	fr.	sh	SL	Si
	70	TOTICITS	2		m m	vs	P VD	fi	h	SCL	SiC
			3	vc	abk	•.5	۰p	vfi	vh	L	C
		10VR7/2			shk			efi	eh	с П	SC
		TOTICHZ	m	vf	01	so	100	10	10	S	SICL
			so	f	nl	22	po DS	vfr	so	IS	Sil
		10VR4/3	1	m	P <sup>1</sup> DT	c	po D	fr	ch	SI	Si
	80	1011(4)	2	C	ри стиг	vs	P VD	fi	h	SCL	SiC
			7	vc	abk	•.5	۰p	vfi	vh	I	C
		10VR7/2	2	**	abk shk			efi	eh	л П	SC
	1	1011112	m	vf	01	so	no	10	10	S	SICT
			50	f	gi pl	50	po	vfr	50	18	SiL
		10VP 4/3	- <sup>3</sup> 5	 m	P <sup>1</sup>	- 3-3 C	P <sup>3</sup>	fr.	ch	SI	Si
	90	10164.5	1 2	- C	Р <sup>и</sup> (тт	3 VC	۲ ۱m	fi	- эп - Ъ	SCI	SiC
			2	The second	գր թեւ	*5	٩v	vfi	и vh	T	C
		10YP7/2	5	VL.	aux shk			vц efi	vц eh	л СТ	sc
		10110112			ave.			-	-		50

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	2.5Y5/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	2.5Y5/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	2.5Y5/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		2.5Y5/3	1	ш	DI	s	D	fr	sh	SL	Si
	40		2	с	COT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		1	vfi	vh	L	С
		10YR7/1	-		sbk			efi	eh	a	SC
			m	vf	2T	so	po	10	10	S	SiCL
			59	f	nl	ss	ns	vfr	80	LS	SiL
ъ		2 5 8 5 /3	1	m	DT	s	n	fr	sh	SL	Si
Pit	50	2.51515	2	C C	m	vs	P VD	fi	h	SCL	SiC
			2	ve	ahk	*6	•P	vfi	u vh	I	C
		10787/1	.,	**	shk			efi	eh	CT CT	SC SC
		1011(7)1	m	vf	OT	80	no		lo	S	SiCT
				f	-61 nl	00	po ne	vfr	80	IS	Sil
		25850	1	m	pr pr	00 0	ps n	fr	sb	SI	Si
	60	2.515/5	2	r m	pr opr	1/0	P M	- H - F5	h	SCI	Sic
			2	U VC	oble	Vð	۷P	<u>и</u> мб	ш •फ	J	C
		10777	3	VL	abk			ofi	vii ab		ec ec
		101 K//2		f	SUA.		na			e c	SC
				۷۱ ۴	gi nl	30	po	10	10	10	SICL CJ
		10776/5	- 8g - 1	1	pi pr	55	ps	fr	ab	CT CT	ы. с:
	70	101 K0/3	2		pr are	8	Ч Т	<u>п</u> 6	ы Б	SCI	51 850
			2	L Tra	oble	Vð	٧p	п с	11 	J	SK.
		10707/1	3	VC	able			<u>о</u> ғ	VII ch		ec ec
		101K//1		Trf	SUK.		12.0			e u	SCT
				VI £	gr r1	50	po	10	10	5	SICL
		1037757.7	sg	1	pr	SS	ps		so		SIL
	80	10Y K6/3		m	pr	S	р	n	sh 1	SL	51
			2	C	срг	VS	vp	<u>n</u>	n	SCL	SIC
		1017555	3	vc	abk.			vh ~	vh		C
		10YR7/2		-	sbk			efi	eh		SC
			m	vf	gr	so	po	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so		SiL
	90	10YR6/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC

			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	2.5Y5/3	1	m	pr	s	P	fr	sh	SL	Si
	10		2	с	cor	vs	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3	_		sbk			efi	ch	CL	SC
		10111010	m	vf	9T	so	no	10	ln	S	SiCL
			50	f	nl	55	pe DS	vfr	50	IS	Sil
		25850	36	m	pr pr	55	p3 D	fr	ch	SI	Si
	20	2.51505	2	- m	pa (The	NC NC	P TD	6	h	SCI	SiC
			2	L.	- срл abk	¥3	۷P	xfi	и хф	J	C
		10776/2	3	VL	chk			रम वर्ष	ah		SC SC
		101 K0/2			SUK			1.	1		Di CT
			ш	VI f	gi	50	po	10	10	а те	SICL
		0.537.414	sg	1	pi	55	ps –	vii c	-1		<u>ы</u> . с:
	30	2.5 1 4/4	1	m	рг	S	Р	IT C	SII	SL	51
			2	с	срг	VS	vp	n	n 1	SCL	SIC
			3	vc	abk			vh	vh		C
		10YR6/3			SDK			en	<u>en</u>	CL	SC
			m	vf	gr	SO	po	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	40	2.5Y4/4	4	m	pr	S	Р	fr	sh	SL	Si
			5	с	срг	VS	vp	fi	h	SCL	SiC
			6	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	50	10YR4/3	7	ш	pr	s	р	fr	sh	SL	Si
	50		8	с	срг	vs	vp	fi	h	SCL	SiC
			9	vc	abk			vfi	vh	L	С
4		10YR6/3			sbk			efi	ch	CL	SC
Pi			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	60	10YR4/3	10	ш	pr	s	p	fr	sh	SL	Si
	60		11	с	cpr	vs	VD	fi	h	SCL	SiC
			12	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC
			m	vf	er	so	po	10	lo	S	SiCL
			sg	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4/3	13	m	л	s	D	fr	sh	SL	Si
	70		14	с	CDT	vs	r VD	fi	h	SCL	SiC
			15	vc	abk		-1-	vfi	vh	L	C
		10YR6/3			sbk			efi	ch	CI.	SC
		1011000	m	vf	gr	so	po	10	10	S	SiCL
			Sg	f	pl	SS	DS	vfr	so	LS	Sil.
		10VR4/3	16	- m	р- тт	s	р». П	fr	ch	SI	Si
	80	1011(1)5	17	с С	CDT	vs	P VD	fi	h	SCL	SiC
			18	vc	abk	•.5	۰p	vfi	vh	I	C
		10776/3	10		cbk			efi	eh.	СТ	SC SC
		1011005	m	wf	SUK	60	no	10	10	CL C	SiCT
			m	f	gi D	50	po	10 vife	10	10	SICL CJ
		103/11/2	>g	1	PI	55		• m • f=	su	CT CT	5112
	90	101 K4/5	19	ш	pi	5	р 	<u>п</u> с	511	SL	31 BiC
			20	C	фі abb	vs	vp	 	11 	T	SIC C
		10370 6/2	21	VC	a0K.			<u>vu</u>	<u>vп</u>		
		10YR6/3			SDK			en 1	ch 1		SC
			m	VI	gr	SO	ро	10	lo		SICL
			sg	f	pl	SS	ps	vir	SO		SiL
	100	10YR4/3	22	m	pr	S	р	fr	sh	SL	Si
			23	С	cpr	VS	vp	fí	h	SCL	SiC
			24	VC	abk			vfi	vh		С
										1	00

<b></b>				0	_			1			0.01
			m	ví	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	1.0		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/1			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			SE	f	pl	SS	DS	vfr	so	LS	SiL
		2.5Y4/4	1	m	DF	s	D	fr	sh	SL	Si
	20		2	C	 CDT	vs	r Vn	fi	h	SCL	SiC
			3	ve	abk	*5	۰P	vfi	vh	I	C
		25850			abk			ofi	ah	a d	80
		2.313/3	_	f	SUK		-			a a	00
			ш		gi	so	po	10	10	3	SICL
			sg	Ι	pi	SS	ps	VIT	so		SIL
	30	2.5Y4/4	1	m	pr	S	Р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SIC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	2.5Y4/4	1	m	рг	s	р	fr	sh	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
s		10YR7/2			sbk			efi	eh	CL	SC
E.			m	vf	gr	so	po	10	lo	S	SiCL
			sg	f	pl	SS	DS	vfr	so	LS	SiL
		10YR3/3	1	m	nr	s	n	fr	sh	SL	Si
	50	10112.0	2	C	ener	vs	r Vn	fi	h	SCL	SiC
			3	ve	abk		•P	vfi	vh	I	C
		10777		10	shk			ofi	eh	CT D	SC
		101 K//2		vf	or	80	100	10	10	CL C	SCT
				VI f	gi ni	50	po	10 Vfr	10		SICL CJ
		102020	sg	1	pi pr		րջ	VII 6-	su	LO CI	01L 0:
	60	101 K2/2	1	ш	pr 	8	Ч	<u>п</u> с	511 L	SL OCI	31
			2	С	cpr	VS	vp	n c	n	SCL	SIC
			3	vc	abk			vh	vh		C
		10YR7/2			sbk			en	eh	CL	sc
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR3/4	1	m	рг	S	р	fr	sh	SL	Si
			2	с	срт	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR2/2	1	m	pr	s	p	fr	sh	SL	Si
	80		2	с	CDT	vs	vD	fi	h	SCL	SiC
			3	vc	abk		-r	vfi	vh	L	C
		10YR70			shk			efi	eh	a	SC
					TOG				~		

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	p	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	•	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	- cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/4			sbk			efi	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR5/3	1	m	рг	S	р	fr	sh	SL	Si
	30		2	С	- cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR6/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR5/3	1	m	pr	s	р	fr	sh	SL	Si
	40		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
t 6		10YR6/3			sbk			efi	eh	CL	SC
Ρį			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	, 0		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			ш	vf	<u>81</u>	so	DO	lo	lo	S	SiCL
			SE	f	Dl Dl	SS	DS	vfr	so	LS	SiL
		10YR5/3	1	m	DT	s	D	fr	sh	SL	Si
	30		2	c	CDT	VS	r VD	fi	h	SCL	SiC
			3	vc	abk		• •	vfi	vh	L	C
		10YR6/3			shk			efi	eh	a.	SC
		1011005	m	vf	OT	50	no	lo	lo	S	SiCL
			50	f	nl	88	ns	vfr	50	LS	SiL
		10VR4/3	1	m	pr pr	c	pa n	fr	eh	SI	Si
	40	1011(4/3	2	r m	pr (Thr	10	P	<u>п</u> б	h	SCI	SiC
			2	U VC	պո տե	¥ð.	٩v	<u>и</u> мб	wh	T	C
		10777672	3	VL	aux.			vш	oh		60
		101 K0/3		TTF	SUK		- 20		10	e u	ос 6:ст
				VI F	gi	50	po	10	10	0 10	SICL
•		10370370	sg	1	pi		ps	VII 6-	- 50		SIL
, H	50	101 K3/3	1	ш	pi 	8	Ч	п с	<u>ՏՈ</u> Ն	SL CU	51
н			2	C	- cpr	VS	vp	<u>п</u> е		SCL	SIC
		1032777/4	3	vc	aux.			<u>vш</u>	-1		
		10 Y K6/4		C	SDK.			en	en	u a	<u>SC</u>
			ш	VI	gr	so	ро	10	10	3	SICL
		103775 4/4	sg	I	рі	SS	ps	VIT	SO		SIL
	60	10Y K4/4	1	m	pr	S	р	n c	sn	SL	51
			2	C	cpr	VS	vp	n	h	SCL	SIC
			3	vc	abk.			vh	vh ·		C
		10YR6/3			sbk.			eh	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	t	pl	SS	ps	vir	so	LS	SiL
	70	10YR3/4	1	m	pr	S	р	fr	sh	SL	Sı
			2	C	cpr	VS	vp	fi	h	SCL	SIC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh		SC
			m	vf	gr	SO	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	80	10YR3/4	1	m	pr	s	р	fr	sh	SL	Si
	_		2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR6/4			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	30		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
8		10YR6/3			sbk			efi	eh	CL	SC
Ρi			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	40		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	ss	ps	vfr	so	LS	SiL
	<i>(</i> 0	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	60		2	с	- cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR6/2			sbk			efi	eh	a	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
10			sg	f	pl	ss	ps	vfr	so	LS	SiL
	10	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
		10YR4/4	sg	f	pl	SS	ps	vfr	so	LS	SiL
it 9	40	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
Ä			2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	C
		10YR6/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

# B.6 Famici

	Depth	Color					Consi	stence		-	
	(cm)	moist drv	2	structur	e	W	/et	Moist	Drv	Tex	ture
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR3/3	1	m	pr	S	р	fr	sh	SL	Si
			2	с	cpr	VS	vp	ti G	h	SCL	S1C
		103705/2	3	vc	abk			vn	vh	L	C
		10Y K5/3		f	SOK			eri 1e	en 1a	CL	SC
			m	¢1	gi	so	po	10	10	5	SICL
		10VP2/2	sg 1	1	pi pr	ss	ps	fr	so	LS ST	SIL Si
	30	101 K3/3	2	 	pi	5	P VD	fi	h	SCI	SIC
			3	VC	abk	vs	vp	n vfi	vh	T	C
		10VR5/3			shk			efi	eh	CT	SC
		101105/5	m	vf	σr	50	10	10	10	S	SICL
			sσ	f	n1	55	po ps	vfr	50	LS	SiL
		10YR3/3	1	m	pr	s	р5 р	fr	sh	SL	Si
	40	10110/2	2	с.	cor	vs	vn	fi	h	SCL	SiC
			3	vc	abk		••	vfi	vh	L	C
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	100	10	10	S	SiCL
			sg	f	 pl	SS	105	vfr	so	LS	SiL
		10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
Pit			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	60		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	, 0		2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	с	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	C
		10YR6/3			sbk			efi	eh	CL	SC
			m	vt	gr	SO	ро	lo	lo	S	SICL
		107777 1 2	sg	t	pl	SS	ps	vfr	so	LS	SiL
	90	10Y R4/3	1	m	pr	S	p	fr	sh	SL	S1
			2	c	cpr	VS	vp	n c	n	SCL	SIC
		10VP6/2	3	vc	a0K			VII of:	vn	L	80
		101 K0/5		2.5	SUK		-	en 1e	en 1-	CL C	SC
			m	vI f	gr n1	so	po	10	10	5	SICL
		10VR4/2	5g 1	1 m	pr pr	- 55	ps n	fr	so	SI	<u>о</u> ш с;
	100	101 K4/3	2		pi cmr	ve	P VD	fi	h	SCI	SiC
			2	VC	able	*5	۰P	11 11	wh	T	C
		10VR6/2	5	vc	shk			efi	eh	CI	SC
		101100/2			JOA			~~		L L	~~
			m	vf	gr	so	ро	lo	lo	S	SiCL
-----	-----	----------	---------------------	----------	------------	----	----------------	-----------	------------------	---------	------------
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			ш	vf	21	so	po	lo	lo	S	SiCL
			52	f	pl	SS	DS	vfr	so	LS	SiL
		10YR5/3	1	m	Dr	s	r- D	fr	sh	SL	Si
	20	10110/5	2		m	ve	r vn	fi	h	SCL	SiC
			3	vc	abk	*6	·P	vfi	vh	T	C
		1077/1		••	shk			efi	eh	D D	SC
		101 K//1		vf	SUK	80	200	la	la	CL C	SC
			ш са	f VI	gi D	50	po	10	10	0 10	SICL CT
		1037047	sg	1	pi	88	ps –	VII fa	so	LS	SIL 0:
	30	101 K4/5		ш	pr	8	P	II E	511	SL	51
			2	C	фт	VS	vp	n e	n	SUL	SR.
		101055	- 5	VC	aDK.			vn	vn	L	C
		10YR5/3		-	SDK			en	eh	CL a	SC
			m	vf	gr	so	ро		lo	S	SICL
		10175-15	sg	ť	pl	SS	ps	vir	so		SiL
	40	10YR4/3		m	рг	S	р	tr	sh	SL	Si
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
t 2		10YR5/3			sbk			efi	eh	CL	SC
Ξ.			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	6	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	00		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	D	fr	sh	SL	Si
	70		2	С	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	a	SC
			m	vf	<u>е</u> т	so	po	lo	lo	S	SiCL
			SP	f	nl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	DF	s	r <sup>2</sup>	fr	sh	SL	Si
	80	101103	2		m	ve	r vn	fi	h	SCL	SiC
			3	vc	abk	*6	·P	vfi	vh	T	C
		10776/3			shk			efi	eh	D D	SC
		101 K0/3		vf	OT	80	no		lo	S	SICT
				f	61 pl	80	po	vfr	80	19	SICL
		10774/2	- 3 <u>6</u> - 1	T	pi pr		po n	VЦ fr	ah	SI	SiL Ci
	90	101 K4/3	2	ш ~	pr arr	3	<u>ч</u>	н ғ	ծ11 Ի	SCI	31 920
			2	U Tra	ար	VS	vþ	ш ".е	<u>и</u> ,.ь.	T	
		1037055	<b>,</b>	VC	aUK.			vii ce	v11 al-		
		101 K5/3			SOK			en	en 1		50
			m	VI	gr	so	ро	10	10	S IC	SICL
		10177.45	sg	t	pi	SS	ps	vir	so		SIL
	100	10YR4/3		m	pr	S	р	fr	sh	SL	Si
			2	C	срг	VS	vp	fí	h	SCL	SIC
			3	VC	abk			vfi	vh		С
		10YR5/4			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	20		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/4			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	40		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
it 3		10YR5/3			sbk			efi	eh	CL	SC
Ε.			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SìL
	80	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh		C
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
		1015	sg	f	pl	SS	ps	vfr	so		SiL
	100	10YR4/3		m	pr	S	р	fr	sh	SL	Si
			2	C	cpr	VS	vp	n . r	h	SCL	SIC
		103775 6 20	3	vc	aok.			vh	vh		C
		101100/3			SUK			l CII	cn	L	30

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	CDT	VS	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR4/3	-		sbk			efi	eh	CL.	SC
		1011(1)5	m	vf	or	\$0	no	lo	lo	S	SICI
				f	bi nl	66	ne	vfr	80	18	Sil
		10772/2	1	m	pi pr	- 00 - 0	po n	fr	ch	SI	SiL
	20	101103/3	2	- LUL - C	pr over	3	Ч Улл	п - б	511 h	SCI	SI
			2	U	գո	və	vp	ш с	<u>п</u> ь	T	SIC
		103775475	3	VL	aux.			VII -C	VII _1		
		10Y K4/3			SDK			en	en	u a	SC
			m	VI	gr	so	ро	10	10	8	SICL
			sg	İ	pl	SS	ps	vir	so	LS	SiL
	30	10YR3/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/4	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/4	1	m	рг	s	р	fr	sh	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
4		10YR5/3			sbk			efi	eh	a	SC
Ρi			ш	vf	21	so	po	lo	lo	S	SiCL
			59	f	nl	SS	ns	vfr	80	LS	SiL
		10YR4/4	1	m	p-	s	n	fr	sh	SL	Si
	60	101101	2	 C	m	ve	r vn	fi	h	SCL	SiC
			3	ve	abk	•6	·P	vfi	vh	T	C
		10785/3	5	••	shk			efi	eh	d d	SC SC
		1011(5)/5		vf	OT	80	100		10	s s	SiCI
			ш со	f	gi nl	00	po	10 vfr	10	10	SICL
			ծ <u>ց</u> 1	1	pi pr	33	ps n	VII fr	ab	LS CI	<u>ы</u> .
	70	101 K4/4	1	ш	pr	8	P P	п 6	511	SL CT	51
			2	С	сря	VS	vp	n e	n	SUL	SR.
		101055	- 5	vc	aDK.			vn	vn		C
		10YR5/3			SDK			en	eh	CL a	SC
			m	VI	gr	so	ро		10	8	SICL
		1017	sg	f	pl	SS	ps	vir	SO		SIL
	80	10YR4/4	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/4	1	m	рг	S	р	fr	$^{\rm sh}$	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR5/4	ī	m	рг	s	p	fr	sh	SL	Si
	100		2	С	CDT	vs	vp	fi	h	SCL	SiC
			3	vc	abk	_	r	vfi	vh	L	C
		10YR6/2			sbk			efi	eh	CL.	SC
	L										

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR2/2	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR4/2			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			5 <u>2</u>	f	pl	SS	DS	vfr	so	LS	SiL
		10YR3/3	ĩ	m	DT	s	D	fr	sh	SL	Si
	20		2	c	onr	VS	r VD	fi	h	SCL	SiC
			3	vc	abk		۰r	vfi	vh	L	C
		10VR4/2	5		shk			efi	eh	a	SC
		1011(1)2	m	vf	or	80	no	lo	lo	S	SICT
			60 60	f	nl	66	ne	vfr	80	15	Si
		10772/2	*6 1	m	pi pr	- 00 - 0	po n	fr	eh	SI	Si
	30	101103/3	2	ш с	pr over	3	Ч тл	п - б	b an	SCI	SI SI
			2	L	- upa - ablz	və	٧p	<u>п</u> лб	ц vb	T	
		107740	3	VL	able.			vш	vii ob		С 8С
		101 K4/2		F	SUK		20		- to	cL c	SCT SCT
				vi £	gr	so	ро	10	10	5	SICL
		10370 4/4	sg	1	рі	88	ps	VII Cu	-1	LS	SIL 0:
	40	10YK4/4	1	m	pr	S	р	IT	sn	SL	- SI
			2	С	cpr	VS	vp	n	h	SCL	SIC
			3	vc	abk.			vh	vh	L	C
		10YR5/2			sbk			eti	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR5/4	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
it 5		10YR7/2			sbk			efi	eh	CL	SC
Ъ			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR5/4	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	70		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR5/4	1	m	pr	s	р	fr	sh	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	0.0	10YR5/4	ĩ	m	pr	s	p	fr	sh	SL	Si
	90		2	с	CDT	VS	VD	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR7/2	_		sbk			efi	eh	a.	SC
			m	vf	8L BL	so	po	lo	lo	S	SiCL
			59	f	Dl	SS	DS	vfr	so	LS	SiL
		10YR5/4	1	m	п	s	n	fr	sh	SL	Si
	100		2	c	CDF	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		· I'	vfi	vh	L	C
		10YR7/2			sbk			efi	eh	a	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
1			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	с	CDT	VS	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	21	so	po	lo	lo	S	SiCL
			52	f	D D	SS	DS	vfr	so	LS	SiL
		10YR3/2	1	m	DT	s	r- D	fr	sh	SL	Si
	20		2	 C	n-	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		•₽	vfi	vh	L	C
		10VR5/3			shk			efi	eh	a	SC
		1011(2)/5	m	vf	OT	\$0	no	lo	lo	S	SICI
				f	bi nl	66	ne	vfr	80	18	Sil
		10VR4/3	1	m	pi pr	- 00 - 0	po n	fr	eh	SI	SiL
	30	1011(4/5	2	r C	pr opr	170	P VD	<u>п</u> б	h	SCT	SiC
			2	ve	գո տե	V.D	чр	и 11	u vh	T	C
		10725/2	3	VL.	shk			ofi	oh	CT L	SC
		101 € 5/3		νf	SUK	80	na	- Lo	lo	cL e	SC
			ш са	f VI	gi nl	50	po	10	10	0 10	SICL CI
		107777	8g	1	pi pr	88	ps	VII fr	sb	LS	SIL c;
	40	101 K4/5	1	ш	pr 	8	P	Ш Б	511		51
			2	C	ф	VS	vp	£	n 	SCL	SR.
		1037757	3	VC	aok.			VII -C	Vn		
		10Y K6/3			SDK			en	en	u a	SC
			m	VI	gr	so	ро	10	10	8	SICL
		101010	sg	I	рі	SS	ps	VII	so	LS	SIL
	50	10Y R4/3		m	pr	S	р	n r	sh	SL	Si
			2	С	cpr	VS	vp	h a	h	SCL	SIC
			3	VC	abk.			vh	vh	L	С
it 6		10YR7/2			sbk			en	eh	CL	SC
д			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR5/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR5/3	1	m	рг	s	р	fr	sh	SL	Si
	100		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1.5	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			<b>S</b> 2	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	D	fr	sh	SL	Si
	20		2	c	CDT	VS	r VD	fi	h	SCL	SiC
			3	vc	abk		۰r	vfi	vh	L	C
		10YR4/3			shk			efi	eh	CL.	SC
		1011110	m	vf	PT	80	no	10	10	S	SiCL
			59	f	nl	SS	ns	vfr	so	LS	SiL
		10YR4/3	1	m	pi DT	6	n	fr	sh	SL	Si
	30	1011(1)5	2	r C	 CDF	ve	P VD	fi	h	SCT	SiC
			2	ve	ahk	•6	•₽	vfi	vh	T	C
		10VR5/3	,	••	shk			efi	eh	л П	SC
		10110//3	m	vf	OT	80	no		lo	S	SiCI
			е <b>п</b>	f	61 nl	00	po	vfr	80	19	SICL
		10VR4/3	а <u>в</u> 1	T T	pi pr	00 0	po n	fr	au ch	SI	SiL
	40	101 14/3	2	ш с	pr over	3	Ч Тл	п б	b su	SCI	51 870
			2	L	- ypi ablz	və	٧p	<u>п</u> лб	II wh	T	
		10705/2	3	٧L	able			vш	oh		С 8С
		101 10/3	m	νf	SUK	80	200	- Lo	lo	e c	SCI
			ш ал	f	gi nl	50	po	10	10	0 19	SICL
		10VP4/2	ە <u>ع</u> 1	T T	pi pr	<u>.</u>	ps n	fr	sb	SI	SIL Ci
	50	101 K4/3	2	ш	pi are	3	۲ سر	п б	511 b	SCI	6:0
			2	L VG	- фл abb	vs	vp	<u>п</u> лб	<u>п</u> ть	JUL T	SIC.
7		107705/2	3	VL	able.			<u>vп</u> б	vn		С 80
Pit (		101 10/3	m	νf	SUK	80	200	- Lo	lo	e u	SCI
I			ш	vi f	gi nl	80	po	10	10	о те	SICL
		107705/4	sg 1	1	pi pr	88	ps n	VII fr	so	LS	<u>о</u> п.
	60	101 10/4	1	ш	pr 	8	P Tm	n f	511	SL CT	81 810
			2	L Tra	ւգյո տեր	vs	vp	п б	11 	J J J	SIC.
		1037070	3	VL	aUK.			-e	-1	L CT	
		101 K//2		<b>F</b>	SUK			1.	- La	u c	SC CT
			ш	vi £	gi	80	po	10	10	о те	SICL
		1037077	sg	1	pi 	88	ps	VII fa	so	LS	SIL C:
	70	101 K0/3	1	ш	pr 	8	P	II E	5II	SL	91 870
			2	C .	ւգյո տեր	vs	vp	Ш Б	11 		SIC.
		10707/1	3	vc	able.			vii 	vn		С 80
		101 K//1		F	SUK		-		- la	c c	SCT SCT
			ш	vi f	gi nl	80	po	10	10	о те	SICL
		1037077	sg	1	pi n=	55	ps	VII fa	su	LS	SIL 6:
	80	101 K0/3	1	ш	pr 	8	P Tm	n f	511	SL CT	91 6-0
			2	L Tra	ւգյո տեր	vs	vp	п б	11 	J	SIC.
		10707/1	3	VL	able.			<u>vп</u> б	vii ab		С 80
		101 K//1		F	SUK		20		- la	c c	SCT SCT
			ш	vi f	gi nl	80	po	10	10	о те	SICL
		107705/4	sg 1	1	pi pr	88	ps n	VII fr	so	LS	<u>о</u> п.
	90	1011074	2	ш с	pr over	3	Ч тл	н б	b su	SCI	51 650
			2	L VG	- фл abb	vs	vp	<u>п</u> лб	II wh	JUL T	SIC.
		10707/1	3	vc	aUK.			vii of	V11		
		101 K//I		<b>.</b>	SUK	0.2		1-	1-	പ	<u>эс</u> е:/т
			ш а~	vi £	gr rl	80	po	01 10	10	5 19	or ca
		107705/4	sg	1	- pi	88	ps -	VII 6-	80 ah	LS	<u>ଥା</u> ସ:
	100	10110/4	1.5	ш	pr are	3	ч <u>ч</u>	<u>п</u> ғ	811 1-	SCI	31 920
			2	U U	ւրլ	VS	vp		11		SIC
		10707/1	3	VC	aUK.			VII 6E	vII		60
		101K//1			SUK			- CII	en	L	30

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR3/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	фт	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR3/2	1	m	рг	s	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR3/3	1	m	рг	S	р	fr	sh	SL	Si
			2	С	срт	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
it 8		10YR4/3			sbk			efi	eh	CL	SC
ᅀ			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vír	so	LS	SiL
	50	10YR3/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	f1	h	SCL	SIC
		10370 4 0	3	VC	abk			VII e	vn		C
		10Y K4/3		<b>f</b>	SOK				en la	u e	5U 6:71
			ш св	vi f	gi ni	80	po	10	10	5	SICL
		10783/3	8g 1	T	pr pr	- 88 - 0	ps n	vii fr	s0 eh	SI	SIL Si
	60	101103/3	2	r m	pı m	ve	Р VD	б	h	SCI	SiC
			3	vc	abk	10	٩٣	vfi	vh	I	C
		10YR5/3			sbk			efi	eh	a.	SC
		TOTICIS	m	vf	PT	so	po	lo	lo	S	SiCL
			SE	f	bl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	D	s	D	fr	sh	SL	Si
	70		2	c	CDT	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	00		2	С	срт	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

# B.7 Bitner

	Depth	Color	- Structure -		Consistence				Texture		
	(ст)	Moist Dry			C	W	/et	Moist	Dry		unc
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	ш	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
t 1			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	$^{\rm sh}$	SL	Si
	30		2	С	сpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
Ē			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
	40		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR5/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

	1	1							_		
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	1.0	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	с	cor	vs	vn	fi	h	SCL.	SiC
			2	NC L	able	••	۰p			т	C
		101055	5	VL	aux.			VII G	VII ,		
		10YR5/3			SDK			en	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	$\mathbf{ps}$	vfr	so	LS	SiL
		10YR5/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	с	cor	vs	vn	fi	h	SCL	SiC
			2	NC L	able	•0	۰p			т	C
		1010062	3	VL	11			VII C	VII ,		
		10Y R6/3			sbk			eh	eh	CL	sc
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	- VC	-r- ahl-		· P	vfi	vh	T	C
		1037077	5	VC.	aux.			•n e	-1		
		101 K0/5			SUK			en	en	u	30
			m	vf	gr	so	ро	lo	ю	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	40		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	T.	С
		10776/2	5		shk			ofi	ah	G	SC
		101 K0/3		6	SUK						0:01
			m	VI	gr	so	ро	10	10	5	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	рг	S	р	fr	$^{\rm sh}$	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
10		10VR5/3			shk			efi	eh	СТ	SC
Ë.		TOTIENS		vf	or	80	no	10	la	S S	SICI
-			100	VI	gi	50	po	10	10	5	SICL
			sg	I	pi	SS	ps	VII	so	LS	SiL
	60	10YR4/3	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL.	SC
				vf	OT	80	no	10	10	S	SICT
				f	- 51 - 51		po	10	10	TC	ea.
			sg	1	pi	88	ps	VII	so		SIL
	70	10Y K4/3	1	m	pr	S	р	IT	sh	SL	SI
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	po	lo	10	S	SICL
			20	f	nl	ee	ne	vfr	80	IS	Sil
		10779472	1	1	P		Po Po	fe	ah	er	<u>e:</u>
	80	101 K4/3		ш	pr	8	- P	п с	811 1	SL 007	0.0
			2	С	cpr	VS	vp	II	n	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			Sg	f	bl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	n	fr	sh	SI	Si
	90	1011(1)3	2		1 <sup>24</sup>	10	17 120	f	h	SCT	ein l
			2	C	фr	VS	vp	ш	щ	SUL -	SR.
			3	vc	abk.			vh	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	s	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	ī	m	DT	s	D	fr	sh	SL	Si
	100		2	~	11** (7747	1/0	r vn		h	SCT	Sic
			2	1 1	୍ୟୁ ଜନ	¥.ð	чР	н "с	н ,.ь.	T	
	1			110	- AUK			I VII	vn	L	- U
			5	ve	ut/h						

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	D	fr	sh	SL	Si
	10	1011110	2	 C	er-	vs	r VD	fi	h	SCL	SiC
			2	ve	գո տիե	•6	۰p	vfi	wh	T	C
		10776/2	3	VC.	able			v11 of	ah		С 8С
		101 K0/5		<b>F</b>	SUK			1.	1.	CL c	эс с:ст
			ш	VI	gr	so	ро	10	10	5	SICL
			sg	I	рі	SS	ps	VIT	so	LS	SIL
	20	10YR4.5/3	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4.5/3	1	m	рг	s	р	fr	sh	SL	Si
	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	a	SC
			m	vf	91	80	po	lo	10	S	SiCL
			50	f	nl	88	ns	vfr	80	IS	Sil
		10VR4/3	1	m	pr pr	00	po n	fr	ch	SI	Si
	40	1011(4/5	1	- m - c	рл стог	3	Ч м	fi	ы Ъ	SCI	SI SIC
			2	L	ւրո	vs	vp	Ш £	1-	JUL	SIC.
		10373776	3	VC	alok.			vn -e	Vn		
		10YK//2			SDK			en	en	CL a	SC
			m	vt	gr	SO	ро	10	lo	S	SICL
			sg	f	pl	SS	ps	vír	80	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	sh	SL	S1
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
it 3		10YR7/2			sbk			efi	eh	CL	SC
P.			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	(0)	10YR4.5/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	91	80	po	10	10	S	SiCL
			50	f	nl	88	ns	vfr	80	IS	Sil
		10VR4 5/3	1	m	P <sup>1</sup> DT	e	n	fr	eh	SI	Si
	70	10YR7/2	2	r L	pr mr	170	P VD	fi	h	SCI	SiC
		101 K//2	2	10	орл able	Vð	۷Þ	и тб	и т.h	T	C
			3	VL	ath.			vii of	۷11 ماد		С 60
				F	SUK			1	1-	<u>u</u>	<u>о:/т</u>
			m	VI	gr	so	ро	10	10	S	SICL
		10000 4 5 5	sg	Ι	pi	SS	ps		so		SIL
	80	10YR4.5/3	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4.5/3	1	m	рг	s	р	fr	sh	SL	Si
	50		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	ет	so	po	10	10	S	SiCL
			SP	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4 5/3	1	m	nr	s	n	fr	sh	SI	Si
	100		2	~	174 (THF	Ve	r vn	fi	h	SCT	SiC
			2	ve	ւրդ թիվ-	10	•₽	vfi	vh	T	C
		100070	,	¥L.	able			afi afi	vн oh	CT CT	er v
		1 1011/12			SUK			U U U	CIL	- UL	50

			ř				-	-			
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL.	SC
		10112/0	m	vf	PT	80	no	10	10	S	SiCL
				f	nl	66	ne	vfr	80	15	Sit
		10774/2	<sup>9</sup> 6 1	T	pi pr		P <sup>o</sup>	fr.	ch	SI	SiL Si
	20	101 K4/3	1		pr 	2	<u>Р</u>	п - б	<u>ы</u> ь	SL CT	- 51 - 65C
			2	L	ւրո	vs	vþ	ш £	<u>п</u> т	J	SR.
			3	VC	atok.			vn	vn	L	
		10YR5/3			sbk			eh	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	40		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	8T	so	DO	lo	10	S	SiCL
			59	f	nl	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	nr	e	n	fr	sh	SL	Si
	50	1011(1)5	2	r C	m	VC	P VD	fi	h	SCI	SiC
			3	ve	abk	10	<b>י</b> ף	и vfi	u vh	T	C
+		10776/2	5	¥L.	abk			ofi	ah	л СТ	SC SC
₽. D.		101 K0/3		τıf	SUK	60	na	Lo Lo	10	CL C	SCI
-				vı ٤	gi al	80	po	10	10	3	SICL
		103705 0	sg	1	pi	88	ps		50	LS	SIL G:
	60	1 10/18/07/0			pr	S	P	ш	SII	SL	- 21
	00	10110/0			-			c	1	OCT	0.0
		10112.00	2	С	cpr	VS	vp	fi	h	SCL	SiC
			2 3	C VC	cpr abk	VS	vp	fi vfi	h vh	SCL L	SiC C
		10YR6/3	2 3	C VC	cpr abk sbk	VS	vp	fi vfi efi	h vh eh	SCL L CL	SiC C SC
		10YR6/3	2 3 m	c vc vf	cpr abk sbk gr	VS SO	<b>v</b> р ро	fi vfi efi lo	h vh eh 10	SCL L CL S	SiC C SC SiCL
		10YR6/3	2 3 m sg	c vc vf f	cpr abk sbk gr pl	<b>VS</b> <b>SO</b> SS	vp po ps	fi vfi efi lo vfr	h vh ch lo so	SCL L CL S LS	SiC C SC SiCL SiL
	70	10YR6/3	2 3 m sg 1	c vc vf f m	cpr abk sbk gr pl pr	VS SO SS S	vp po ps p	fi vfi efi lo vfr fr	h vh ch 10 so sh	SCL L CL S LS SL	SiC C SC SiCL SiL Si
	70	10YR6/3 10YR5/3	2 3 m sg 1 2	c vc vf f m c	cpr abk sbk gr pl pr cpr	VS SO SS S VS	vp po ps p vp	fi vfi efi lo vfr fr fi	h vh ch lo so sh h	SCL L CL S LS SL SCL	SiC C SC SiCL SiL SiL SiC
	70	10YR6/3 10YR5/3	2 3 m sg 1 2 3	c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk	VS SO SS S VS	vp po ps p vp	fi vfi cfi lo vfr fr fi ti vfi	h vh ch lo so sh h vh	SCL L CL S LS SL SL SCL L	SiC C SC SiCL SiL Si SiC C
	70	10YR6/3 10YR5/3 10YR6/3	2 3 m sg 1 2 3	c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk	VS SO SS S VS	vp po ps p vp	fi vfi efi lo vfr fr fi vfi efi	h vh eh lo so sh h h vh eh	SCL L CL S LS SL SCL L L CL	SiC C SC SiCL SiL SiC SiC C C SC
	70	10YR6/3 10YR5/3 10YR6/3	2 3 m sg 1 2 3 m	c vc vf f m c vc vc	cpr abk sbk gr pl pr cpr abk sbk	VS 80 85 8 VS 80	vp po ps p vp	fi vfi efi lo vfi fr fi vfi efi lo	h vh eh lo so sh h vh eh	SCL L CL S LS SL SCL L CL S	SiC C SiCL SiL SiL SiC C C SC SiCL
	70	10YR6/3 10YR5/3 10YR6/3	2 3 m sg 1 2 3 m sg	c vc vf f m c vc vc vc	cpr abk sbk gr pl pr cpr abk sbk gr	VS SO SS VS SO SO SS	vp po ps p vp vp	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo	h vh ch lo so sh h vh ch lo so	SCL L S SL SCL SCL L CL S LS	SiC C SiCL SiL SiC SiC C SiC SiCL SiL
	70	10YR6/3 10YR5/3 10YR6/3 10YR5/3	2 3 m sg 1 2 3 m sg 1	c vc vf f m c vc vc vf f m	cpr abk sbk gr pl pr cpr abk sbk gr pl pl	VS SO SS VS SO SS SS S	vp po ps p vp vp	fi           vfi           efi           lo           vfr           fi           vfi           efi           lo           vfr           fi           vfi           efi           lo           vfi           fr	h vh ch lo so sh h vh ch lo so sh	SCL L S LS SL SCL L CL CL S LS SL	SiC C SC SiCL SiL SiC C C SC SiCL SiL Si
	70	10YR6/3 10YR5/3 10YR6/3 10YR5/3	2 3 m sg 1 2 3 m sg 1 2 2	c vc vf f m c vc vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr pl	VS SO SS VS SO SS SS S VS	vp po ps vp vp po ps ps p vp	fi vfi efi lo vfr fr fi vfi efi lo vfr fr fr fr	h vh ch so sh h vh ch lo so sh h	SCL L S LS SL SCL L CL S LS LS SL SCL	SiC SC SiCL SiL Si SiC C SC SiCL SiL Si SiC
	70	10YR6/3 10YR5/3 10YR6/3 10YR5/3	2 3 m sg 1 2 3	c vc f f m c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr cpr	VS SO SS VS SO SS SS S VS	vp po ps p vp vp po ps ps p vp	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fi           vfi           fi           vfi           fr           fi           vfi           fi           vfi	h vh ch so sh h vh ch lo so sh h y	SCL L S SL SCL CL CL S LS SL SCL L	SiC SC SiCL SiL SiC C SiC SiCL SiL SiC SiC C
	70	10YR6/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	c vc f f m c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr cpr abk sbk	VS SO SS VS SO SS SS S VS	vp po ps p vp vp po ps p vp	fi vfi efi lo vfr fr efi lo vfi efi fr fr fr	h vh ch so sh h vh ch lo so sh h h vh	SCL L S SL SCL CL CL S LS SCL SCL L CL	SiC SiCL SiL Si SiC C SiC SiCL SiL Si SiC C SiC SiC
	70	10YR6/3 10YR5/3 10YR6/3 10YR5/3	2 3 m sg 1 2 3 m sg 1 2 3	c vc f f m c vc vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr pl pr cpr abk sbk	VS SO SS VS SO SS S VS	<ul> <li>vp</li> <li>po</li> <li>ps</li> <li>p</li> <li>vp</li> <li>ps</li> <li>ps</li> <li>po</li> <li>ps</li> <li>pv</li> <li>pv</li> <li>pv</li> <li>pv</li> <li>po</li> <li>ps</li> <li>po</li> <li>po</li> </ul>	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo	h vh ch lo so sh vh ch lo so sh h vh ch	SCL L S SL SCL L CL S L S L S L S CL C L S S L S S CL S CL S S CL S S S S	SiC SiCL SiL SiC C SiC SiCL SiL SiL SiC C SiC SiCL SiC SiCL
	70	10YR6/3 10YR5/3 10YR6/3 10YR6/3	2 3 m sg 1 2 3	c vc f f m c vc vf f m c vc vc vf	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk gr pl	VS SO SS VS SO SS S VS SS SS SS SS SS SS SS	<ul> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ур</b></li> <li><b>ур</b></li> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ро</b></li> <li><b>ру</b></li> <li><b>ур</b></li> <l< td=""><td>fi           vfi           efi           lo           vfi           fr           ofi           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           lo           vfi</td><td>h ch lo so sh h ch ch so sh h v h k to so sh</td><td>SCL L S SL SCL L CL S L S L S CL CL S L S</td><td>SiC SiCL SiL SiC C SiC SiCL SiL SiC SiC C SiCL SiCL</td></l<></ul>	fi           vfi           efi           lo           vfi           fr           ofi           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           lo           vfi	h ch lo so sh h ch ch so sh h v h k to so sh	SCL L S SL SCL L CL S L S L S CL CL S L S	SiC SiCL SiL SiC C SiC SiCL SiL SiC SiC C SiCL SiCL
	70	10YR6/3 10YR5/3 10YR6/3 10YR6/3	2 3 m sg 1 2 3	vf f m c vc vf f f m c vc vc vf f f m	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk gr pl	VS SO SS VS SO SS S VS SO SS c	<ul> <li>vp</li> <li>po</li> <li>ps</li> <li>p</li> <li>vp</li> <li>po</li> <li>ps</li> <li>p</li> <li>vp</li> <li>po</li> <li>ps</li> <li>p</li> <li>vp</li> <li>ps</li> </ul>	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           fi           vfi           efi           lo           vfi	h ch lo so sh h ch lo so sh h h vh ch lo so sh	SCL L S SL SCL L CL S L S CL S CL CL S L S	SiC SiCL SiL SiC C SiC SiCL SiL SiC C SiCL SiCL
	70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	c vc f f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk gr pl pr	VS SO SS S VS SO SS S S VS S S S S S S S	<ul> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ур</b></li> <l< td=""><td>fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfit           fi           vfit           efi           lo           vfit           efi           lo</td><td>h eh lo so sh h vh eh lo so sh h vh eh lo so sh b</td><td>SCL L S SL SCL L CL S L S CL S L S CL S L S</td><td>SiC C SiCL SiL SiC C SiCC SiCL SiL SiC C SiCL SiC SiCL SiL SiL SiC SiCL</td></l<></ul>	fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfit           fi           vfit           efi           lo           vfit           efi           lo	h eh lo so sh h vh eh lo so sh h vh eh lo so sh b	SCL L S SL SCL L CL S L S CL S L S CL S L S	SiC C SiCL SiL SiC C SiCC SiCL SiL SiC C SiCL SiC SiCL SiL SiL SiC SiCL
	70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3 m sg 1 2 3 m sg 1 2 3 1 2 2 3	c vc f f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk	VS SO SS VS SO SS S VS SO SS S VS	<ul> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ур</b></li> <li><b>ур</b></li> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ро</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li< td=""><td>fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi           fi           vfi           fi           vfi           fi           vfi           fi           vfi           fi           vfi           fi           vfi</td><td>h eh so sh h vh eh lo so sh h vh eh io so sh h y</td><td>SCL L S SL SCL CL S LS SCL SCL</td><td>SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiL SiC SiC SiC SiC C</td></li<></ul>	fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi	h eh so sh h vh eh lo so sh h vh eh io so sh h y	SCL L S SL SCL CL S LS SCL SCL	SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiL SiC SiC SiC SiC C
	70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	c vc f m c vc vf f m c vc vc vf f m c vc	cpr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk	VS SO SS VS SO SS S VS SS S VS	<ul> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li><b>р</b></li> <li><b>ур</b></li> <li< td=""><td>fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi           fr           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfi           fi           vfi           efi           lo</td><td>h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh</td><td>SCL L S SL SCL L CL S L S CL S L S CL S L S</td><td>SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiC SiCL SiC SiCL SiC SiC SiC</td></li<></ul>	fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi           fr           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfi           fi           vfi           efi           lo	h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh	SCL L S SL SCL L CL S L S CL S L S CL S L S	SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiC SiCL SiC SiCL SiC SiC SiC
	70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	c vc f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk	VS SO SS VS SO SS S VS SO SS S VS	<ul> <li><b>ур</b></li> <li><b>ро</b></li> <li><b>ур</b></li> <l< td=""><td>fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir</td><td>h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh</td><td>SCL L S SL SCL CL S LS SL SCL CL S LS SL SL SL SL SL SL SL SL</td><td>SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiC SiCL SiC SiCL SiC SiC SiC</td></l<></ul>	fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fr           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir           fi           vfi           efi           lo           vfir	h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh	SCL L S SL SCL CL S LS SL SCL CL S LS SL SL SL SL SL SL SL SL	SiC SiCL SiL SiC C SiC SiCL SiL SiC SiCL SiC SiCL SiC SiCL SiC SiC SiC
	70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	c vc f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr cpr abk sbk gr cpr abk sbk	VS SO SS VS SO SS S VS SS S VS SS S S S S S S S S S S S	<ul> <li><b>ур</b></li> <li><b>ро</b></li> td--><td>fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           fi           vfi           fi           vfi           fi           vfi           fi</td><td>h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh lo</td><td>SCL L S SL SCL CL S LS SL SCL L CL S LS SL SL SL SL SL SL SL SL</td><td>SiC SiCL SiL SiC SiC SiC SiCL SiC SiC SiC SiC SiC SiC SiC SiC SiC SiC</td></li></ul>	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           fi           vfi           fi           vfi           fi           vfi           fi	h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh lo	SCL L S SL SCL CL S LS SL SCL L CL S LS SL SL SL SL SL SL SL SL	SiC SiCL SiL SiC SiC SiC SiCL SiC SiC SiC SiC SiC SiC SiC SiC SiC SiC
	70 70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	vf f m c vc vf f f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk	VS SO SS VS SO SS S VS SS S S S S S S S S S S S	νp       po       p       p       p       p       po       ps       p       po       ps       po       ps       po       ps       po       ps       po       po       po       ps	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fi           vfi           fi           vfi           efi           lo           vfi           efi           lo           vfi           efi	h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh lo so	SCL L S SL SCL CL CL S LS SCL CL S LS SL SCL L CL S LS SL S S S S S S S S S S S S S	SiC SiCL SiL SiC SiC SiC SiCL SiC SiC SiC SiC SiC SiC SiC SiC SiC SiC
	70 70 80 90	10YR6/3 10YR5/3 10YR5/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	vf f m c vc vf f f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr abk sbk gr pl pr abk sbk gr pl pr cpr abk sbk	VS SO SS VS SO SS S VS SO SS S S S S S S S S S S S S	νp       po       p       p       p       p       po       p	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           fr           fr	h eh lo so sh h vh eh lo so sh h vh eh lo so sh h vh eh lo so sh	SCL L S SL SCL CL S LS SCL SCL	SiC SiCL SiL SiL SiC C SiC SiCL SiC SiC SiC SiCL SiC SiC SiC SiC SiC SiC SiC SiC SiC
	70 70 80 90	10YR6/3 10YR5/3 10YR5/3 10YR5/3 10YR5/3 10YR5/3	1 2 3 <b>m</b> sg 1 2 3 <b>m</b> sg 1 2 3 <b>m</b> sg 1 2 3 <b>m</b> sg 1 2 3 <b>m</b> sg 1 2 2 3	vf f m c vc vf f f m c vc vf f m c vc vf f f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr abk sbk gr pl pr abk sbk gr pl pr cpr abk sbk	VS SO SS SO SS S VS SO SS S S VS SO SS S VS	νp       po       p	fi           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           fr           fi           vfi           fi	h eh so sh h vh ch lo so sh h vh ch lo so sh h vh ch lo so sh h vh	SCL L S S S S C C S C S S C S S C S C S C S C S C S C S C S C S C S C S C C S S C C S S C C C S S C C C C C C C C C C C C C	SiC SiCL SiL SiL SiC C SiCL SiL SiC SiC SiC SiCL SiC SiC SiC SiC SiC SiC SiC SiC SiC SiC
	70 70 80 90	10YR6/3 10YR5/3 10YR6/3 10YR5/3 10YR5/3 10YR5/3	2 3 m sg 1 2 3	vf f m c vc vf f f m c vc vf f m c vc vf f m c vc	cpr abk sbk gr pl pr abk sbk gr pl pr abk sbk gr qp abk sbk gr pr abk sbk	VS SO SS S SO SS S VS SO SS S VS SO SS S VS S S VS S S S S S S S S S S S S S	νp       po       ps       pv       po       ps       pv       pv       pv       pv	fi           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           efi           lo           vfi           efi           vfi	h ch so sh ch ch ch ch so sh h ch ch ch ch ch ch ch so sh h ch ch so sh h vh ch ch ch ch ch ch ch ch ch ch ch ch ch	SCL CL S SL SCL CL S LS SCL SCL	SiC SiCL SiL SiL SiC SiC SiCL SiL SiC SiC SiC SiC SiC SiC SiC SiC SiC SiC

			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	a	SC
			m	vf	<b>8</b> T	so	DO	lo	lo	S	SiCL
			59	f	nl	SS	ps	vfr	so	LS	SiL
		10YR3/3	1	m	DT	s	p~ n	fr	sh	SL.	Si
	20	10110/5	2		mr.	ve	P VD	fi	h	SCL	SiC
			3	vc	abk		•P	vfi	vh	L	C
		10VR7/2	5	••	shk			efi	eh	a a	SC
		1011012	m	vf	OT	\$0	no	lo	lo	S	SiCI
			60	f	nl	66	ne	vfr	80	19	Sil
		10VR3/2	1	m	pi Dr	e	n	fr	sb	SI	Si
	30	101105/2	2	r r	pr opr	170	P VD	fi	h	SCI	SiC
			2	U VC	պո տեւ	V.D	۷P	и vfi	и vh	T	C
		107760	3	٧L	abk			ofi	ah	CT CT	С 8С
		101 K0/2		νf	SUK	80	200	UI Io	lo	e c	SCI
			ш са	¢1	gi nl	50	po	10	10	0 10	SICL
		107020	sg 1	1	pi pr	33	ps n	VШ fr	su	ES CI	SIL C:
	40	101 10/2	1	ш	pr 	8	<u>Р</u>	<u>п</u> б	511	SL CT	91 6-0
			2	L Tra	պո	vs	٧þ	ш Б	<u>п</u> ь	JUL T	SIC.
		1037070	3	VC	aUK.			- C	vn -h		
		10 Y K6/2			SOK			en	en	u a	3C
			m	VI	gr	so	ро	10	10	5	SICL
		101/02/2	sg	I	рі	SS	ps	VII	so	LS	SL
	50	10YR3/3		m	pr	S	р	r r	sn	SL	51
			2	С	cpr	VS	vp	11	n 1	SCL	SIC
			3	VC	aDK.			vn	vn	L	C
ùt 5		104 K5/2		-	SDK			en	en	u a	SC
щ			m	VI	gr	so	ро	10	10	8	SICL
		101/02/2	sg	I	рі	SS	ps	VII	so		SIL
	60	10YR3/3		m	pr	S	р	r r	sn	SL	51
			2	С	cpr	VS	vp	11	n	SCL	SIC
			5	VC	adk.			vn	vn	L	C
		10YR5/2			SDK			en	eh	a	SC
			m	VI	gr	so	ро	10	10	S	SICL
			sg	I	рі	SS	ps		so		SIL
	70	10YR3/2		m	pr	S	р	fr	sh	SL	- <u>Si</u>
			2	C	cpr	VS	vp	II	h ,	SCL	SIC
			- 5	VC	abk.			vh	vh	L	C
		10YR5/2		-	SDK			en	eh	CL a	SC
			<b>m</b>	vi	gr	so	ро	10	10	S I C	SICL
			sg	I	рі	SS	ps		so		SIL
	80	10YK3/2		m	pr	S	р	n	sn	SL	- <u>SI</u>
			2	C	cpr	VS	vp	II .	h ,	SCL	SIC
			3	VC	abk.			vh	vh	L	C
		10YR5/2		-	SDK			en	eh	CL a	SC
			m	VI	gr	so	ро	10	10	S	SICL
		1037753.5	sg	1	pi	SS	ps	VIT	so		SIL
	90	10YR3/2		ш	рг	S	р	II C	sh '	SL	51
			2	C	cpr	VS	vp	11	n . 1	SCL	SIC
		1037757	3	VC	aok			vh	vh		
		10Y K6/2			SOK		_	en	en	u c	SC
			<b>m</b>	vi	gr	so	ро	10	10	S I C	SICL
		1037733.2	sg	Ι	pi	SS	ps		so		SIL
	100	10YR3/2		ш	рг	S	р	II C	sh 1	SL	51
			2	C	cpr	VS	vp	n	n	SCL	SIC
		1037757 5	5	VC	aok.			VII	vn		
		I IUY K677	1		SDK			en	en	I CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	1.0	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	с	CDT	VS	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10VR5/2			shk			efi	eh	ā	SC
		10110.2		vf	or	80	na	lo	10	GL C	SiCI
				f	- 61 - 21	30	po	10	10	Te	SICL
		103704.7	sg 1	1	pi	22	ps	VII Cu	30 - 1-		ы а:
	20	10Y K4/3	1	m	pr	S	р	II G	sn	SL	51
			2	С	cpr	VS	vp	n	n	SCL	SIC
			3	vc	abk.			vh	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	30		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/2			sbk			efi	eh	CL	SC
			m	vf	8T	so	DO	10	10	S	SiCL
			59	f	D D	SS	DS	vfr	so	LS	SiL
		10YR4/3	1	m	рг	s	n	fr	sh	SI.	Si
	40	1011(1)5	2	r C	en en en en en en en en en en en en en e	170	P VD	- <del>1</del> - 6	h	SCT	Sic
			2		орл able	Vð	۷P	и б	n vh	T	
		1037060	3	VL	able.			<u>vп</u> б	vii ah		
		101 K0/2			SUK			1.	- En	u c	SC
			m	VI	gr	so	ро	10	10	3	SICL
			sg	I	рі	SS	ps	VII	so		SIL
	50	10Y K4/3	1	m	pr	S	р	fr	sh	SL	SI
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
it 6		10YR6/2			sbk			efi	eh	CL	SC
Ä			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	00		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	a	SC
			m	vf	9T	80	no	ю	lo	S	SICL
			50	f	nl	88	ns	vfr	50	IS	Sil
		10774/2	<sup>2</sup> 5	T	pi pr		ps n	fr	sb	ei ei	Gi Ci
	70	101 1473	2	- LUL - C	pr over	3	тр Тр	п - б	ы	SCI	SI
			2	U	պո	və	٧Þ	п с	<u>п</u> ь	J	SIC.
		1037776	3	ve	aluk.			VII -C	VII -1	L	
		10 Y K6/2			SDK			en	en	u a	SC
			m	vi	gr	so	ро	10	10	8	SICL
			sg	f	pl	SS	ps	vir	so		SiL
	80	10YR4/3		m	pr	S	р	fr	sh		Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	90		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	a	SC
			m	vf	gr	so	po	10	10	S	SiCL
			so	f	pl	se	ne	vfr	50	IS	SiL
		10774/2	1	T	P <sup>1</sup> DF	- 00 - 0	p <sup>o</sup> n	fr	sh	SI	Si
	100	1011(4/3	2		pr over	320	Ул	- H - F	511 h	SCT	Sic
			2	L 1/2	able	vð	чР	и ът	<u>и</u> уљ	T	
		1015555	3	VC	abk			vn	vn		
		10YR6/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/2	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			8 <b>2</b>	f	pl	SS	DS	vfr	so	LS	SiL
		10YR4/2	1	m	рг	s	n	fr	sh	SL	Si
	20		2	c	onr	VS	vn	fi	h	SCL	SiC
			3	vc	abk		·r	vfi	vh	L	C
		10VR6/3	5		shk			efi	eh	a	SC
		101100/5	m	vf	or	80	na	10	10	S	SICT
			60 60	f	nl	66	ne	vfr	80	19	Sil
		107840	1	m	pi pr	0	pa n	т fr	eh	SI	Si
	30	101104/2	2	r L	pr opr	170	P VD	<u>п</u> б	h	SCI	SiC
			2	ve	պո տեւ	V.D	чр	и vfi	и vh	T	C
		10777	3	٧L	able			of	vii ab		С 8С
		101 K//2		<b></b> f	SUK			10	10	cL c	SCT SCT
				VI F	gr	so	po	10	10	5	SICL
		1037040	sg	1	рі	SS	ps		so	LS	SIL CI:
	40	10 Y K4/2	1	ш	pr	S	р	r r	sn	SL	51
			2	С	cpr	VS	vp	n	n	SCL	SIC
			3	VC	abk.			vh	vh	L	C
		10YR7/2		6	sbk			eh	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/2	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
it 7		10YR7/2			sbk			efi	eh	CL	SC
ዋ			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/2	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
			2	C	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	00		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR5/3	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfi	so	LS	SiL
	100	10YR5/3	1	m	рг	s	р	fr	$\mathbf{sh}$	SL	Si
	100		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		_	vfi	vh	L	С
		10YR7/1			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR7/1	1	ш	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/1			sbk			efi	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR7/2	1	ш	DI	s	D	fr	sh	SL	Si
	20		2	с	COT	vs	VD	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/2	_		sbk			efi	eh	а.	SC
		1011072	m	vf	PT	80	no	10	lo	S	SiCL
			50	f	nl	ss	ns	vfr	50	LS	SiL
		10VR7/2	1	m	п	e	n	fr	sh	SI	Si
	30	1011012	2	r C	 CTUT	ve	P VD	fi	h	SCI	SiC
			3	ve	abk	•0	۰P	vfi	vh	I	C
		10YR7/2	5		shk			efi	eh	a	SC
		1011(1)2	m	vf	OT	80	no	lo	10	S	SiCL
			50	f	nl	55	ns	vfr	50	IS	SiL
		10VR70	1	m	р	e	n	fr	sh	SI	Si
	40	1011(72	2	r C	pr mr	ve	P VD	fi	h	SCT	SiC
			2	ve	ahlz	•13	•P	и vfi	n vh	T	C
80		10VR7/2	5		shk			efi	eh	a	SC
Pit		1011(1)2	m	vf	OT	80	no	lo	lo	S	SiCL
			60	f	nl	60	ne	vfr	80	18	Sil
		107870	1	m	рі	00 Q	ps n	fr	sh	SI	Si
	50	1011(1/2	2	e m	pr onr	ve	P VD	fi	h	SCI	SiC
			3	ve	shk	10	۰P	и vfi	и vh	I	C
		10777	,	10	shk			ofi	eh	a d	SC SC
		10111.12	m	vf	OT	80	100	10	10	s s	SiCT
				f	51 nl	ee	po ne	vfr	80	18	SI
		107870	1	m	pi DT	- 00 - 0	po n	vп fr	eh	SI	Si
	60	1011112	2	r C	pr m	ve	P VD	п fi	h	SCI	SiC
			3	ve	opa shk	10	٩٢	и vfi	u vh	I	C
		107870	5	10	chk			ofi	٥h	d L	SC SC
		1011(72	m	vf	OT	80	100	10	10	s s	SICT
				f	51 nl	00	po ne	vfr	80	18	รส
		10778/1	1	1	PI DT	- aa - a	po n	vn fr	ab	SI SI	SiL.
	70	101 K6/1	1	ш с	pi an	3	P T	п б	<u>ы</u> ь	SCI	51 SiC
			2	L.	գտ abk	vð	٧p	п ъ.б		J	SIC.
		10700/1	3	VC	able			<u>л</u> а С	<u>үн</u>		ec ec
		101 K6/1		f	SUK					e a	SC SCT
			ш а~	VI F	gi ri	80	po	10 10	10	10	SICL ga
		10709/1	ag 1	1	рг	- 35 - 0	ps n	vц fr	ab	LS SI	SIL Ci
	80	101 K6/1	1	ш с	pr are	3	ч тт	н f	հ	SCT	01 01
			2	L VC	- чря able	Vð	٩v	u vfi	n vh	J	
		10778/1	,	VL.	shk			еfi	eh		SC

# B.8 Scoria

	Depth	Color		1			Consi	stence		Ter	<b>t</b> 1200
	(cm)	Moist Dry	6	uucuu	e	w	/et	Moist	Dry	Tex	ше
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	$\mathbf{sh}$	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3		-	sbk			efi	ch	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vir	SO	LS	SiL
	30	10YK4/3	1	m	рг	S	р	fr	sh	SL	S1
			2	С	cpr	vs	vp	n	h	SCL	SIC
		103705 2	3	vc	abk			V0 _C	VII _L		
		10 Y K 5/3		6	SDK			<u>en</u>		CL c	SC
			ш	vi f	gr 1	so	po	10	10	5 10	SICL
		103704/2	sg 1	1		55	ps n	VII fo	so	LS	51L 84
	40	101 K4/3	2	ш а	pi	S	P vm	ш - б	511 b	SL SCI	81 840
			3	ve	գր թեե	vs	vp	11 11	ու Խհ	SCL I	SIC C
		10VR5/3	5	ve	shk			efi	vii eh	л СТ	90 80
		10110/5	m	vf	OT	50	no	- Un	 lo	S S	SiCI
			50	f	51 nl	50	ns	vfr	50	TS	Sit
		10YR 5/3	1	m	pr pr	55	p.s n	fr	sh	SL	Si
	50	10110/5	2		enr	vs	yn	fi	h	SCL	SiC
			3	vc	abk		·P	vfi	vh	L	C
-		10YR6/3			sbk			efi	eh	CL	SC
꿆			m	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR5/3	1	m	рг	s	р	fr	sh	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR5/3	1	m	рг	S	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	po	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vir	so		SiL
	80	10YK5/3	1	m	pr	S	р	fr	sh	SL	S1
			2	С	cpr	vs	vp	11	<u>п</u>	SCL	SU
		107060	3	vc	abk			 	vn	L	
		10 Y K0/3		f	SDK		20			e ci	SC SCT
			- III 5 0	vi f	gr pl	so	po	10	01	5 TC	SICL CT
		10705/2	sg 1	1	pr	55	րչ	vii fr	50 ch	E5 CT	6.
	90	10110.3/3	2	ш С	pi cpr	ə Ve	р vn	fi	ы h	SCL	SiC
			3	vc	abk	15	۰p	vfi	vh	L	C
		10YR6/3	5		sbk			efi	eh	сī.	sc
		10111010	m	vf	gr	so	<b>DO</b>	 ]o	10	S	SiCL
			59	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	DT	s	p	fr	sh	SL	Si
	100		2	С	cpr	vs	VD	fi	h	SCL	SiC
			3	vc	abk	_	<b></b>	vfi	vh	L	c
		10YR6/3			sbk			efi	eh	CL	SC

	1							r			
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/2.5	1	m	рг	s	р	fr	sh	SL	Si
	20		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/2.5	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/2.5	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
it 2		10YR6/3			sbk.			efi	eh	CL	SC
Å,			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	80	LS	SiL
	90	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	CDT	VS	VD	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	<b>8</b> T	so	po	lo	lo	S	SiCL
			59	f	nl	SS	ns	vfr	80	LS	SiL
		10YR4/3	1	m	DT	s	n n	fr	sh	SL	Si
	20	101100	2	с.	m CDT	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		•P	vfi	vh	L	C
		10VR4/3	5		shk			efi	eh	с П	SC
		1011(1)5	m	vf	OT	\$0	no	lo	lo	S	SiCI
			50	f	nl	50	ns	vfr	50	IS	Sil
		10VR4/3	1	m	pi Dr	e	n	fr	sh	SI	Si
	30	1011(4/5	2	r C	pr mr	ve	P VD	fi	h	SCI	SiC
			2	ve	opz obł	10	Ψ	vfi	u vh	T	C
		10VP5/2	,	VC.	abk			ofi	ah	CT CT	С 8С
		1011073		wf	SUK	8.0	no	la	lo	CL e	SC SCT
			ш сл	vi f	gi nl	50	po	10	10	0	SICL
		107784/2	sg 1	1	pi pr	88	ps	VII fr	sb	LS	<u>ы</u> г.
	40	101 K4/3	1	ш	pr 	8	<u>Р</u>	n f	511	SL	81 810
			2	C		vs	vp	Ш £		SCL	SIC.
		103705 0	3	VC	aDK.			- C	vn		
		104 K5/3		6	SDK			en	en	u a	SC
			m	VI	gr	so	ро	10	10	8	SICL
		10377 4 7	sg	I	рі	SS	ps	VII	so	LS	SIL a'
	50	10Y K4/3		ш	pr	S	р	II C	sn	SL	51
			2	С	cpr	VS	vp	n	n	SCL	SIC
		1010050	3	VC	aDK.			vn	vn	L	C
ìt 3		10YR5/3		C	SDK			en	eh	CL a	SC
д			m	vt	gr	so	ро	lo	lo	S	SICL
			sg	I	pl	SS	ps	vir	so	LS	SiL
	60	10Y R4/3		m	pr	S	р	fr	sh	SL	<u>Si</u>
			2	С	cpr	VS	vp	n	h	SCL	SIC
			3	VC	abk.			vh	vh	L	C
		10YR5/3			sbk			eh	eh	CL	SC
			m	vt	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vir	so	LS	SiL
	70	10YR4/4	1	m	pr	S	р	fr	sh	SL	SI
			2	С	cpr	VS	vp	f1	h	SCL	SIC
			3	VC	abk.			vh	vh	L	C
		10YR5/3			sbk			eh	eh	CL	SC
			m	vt	gr	so	ро	lo	lo	S	SICL
			sg	I	pl	SS	ps	vir	so	LS	SiL
	80	10Y K4/4	I	m	pr	S	р	fr	sh	SL	SI
			2	С	cpr	VS	vp	f1	h	SCL	SIC
			3	VC	abk.			vh	vh	L	C
		10YR5/3		6	sbk			en	eh	CL	SC
			m	vt	gr	so	ро	lo	lo	S	SICL
		10000 410	sg	1	pi	SS	ps	vir	so		SIL
	90	10Y K4/6	I	m	pr	S	р	1r ~	sh	SL	SI
			2	С	cpr	VS	vp	f1	h	SCL	SIC
		10000-0	3	vc	abk.			vti	vh	L	C
		10YR7/2		~	sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
		10777	sg	f	pl	SS	ps	vfr	so		SiL
	100	10YR4/6	-	m	pr	S	р	Ť	sh	SL	SI
			2	С	cpr	VS	vp	fi	h	SCL	SIC
			3	VC	abk.			vfi -	vh	L	C
		I IOYR7/2	1		sbk			efi	⊢ eh –	i CL	-SC

										-	
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10VR5/3			shk			efi	eh	ā	SC
		TOTIENS		vf	OT	80	no	lo	lo	S	SICT
				f	-61 - DI	20	po	10 vfr	10	10	Sit
		10370 4 7	sg	1	pi 	55	ps	VII £n	80 ab	LS CI	SIL Ci
	20	101 K4/5	1	ш	pr	S	р	II C	sn	SL	51
			2	C	срг	VS	vp	n r	n	SCL	SR.
			- 3	vc	abk			vh	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR3/2	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR3/2	1	m	pr	s	р	fr	sh	SL	Si
	40		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	a	SC
			m	vf	PT	80	по	10	lo	S	SiCL
			50	f	nl	55	ns	vfr	50	IS	Sil
		107830	1	T T	pi pr	0	pa	fr	ch	SI	SiL
	50	101 10/2	1	- LLL - A	pr mr	3	P	п - б	<u>ы</u> ь	SL SL	SI SiC
			2	L Tra	պո	VS	vp	ш б	11 		SR.
_		1000000	3	VC	atak.			VII	Vn		
ùt 4		104 KS/3			SDK			en	en	<u>u</u>	SC
д			m	vt	gr	so	ро	lo	lo	S	SICL
			sg	ť	pl	SS	ps	vfr	so	LS	SiL
	60	10YR3/2	1	m	pr	S	р	fr	sh	SL	S1
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	80		2	c	CTTT	vs	yn	fi	h	SCL	SiC
			3	vc	abk		· •	vfi	vh	T.	C
		107870			shk			efi	eh	ā	SC
		1011(7/2	m	vf	OT	60	no	lo	lo	S	SICT
				f	61 nl	00	po	10	60	19	SiL
		10774/2	*8 1	1	рг	55	ps n	fr-	oh	CI CI	ы. c:
	90	101 K4/3	1	ш	pr	<b>3</b>	4	н с	511	SL SCT	- 31 - 620
			2	C	фr 	VS	vp	n	11		21
		10175-5	3	VC	abk.			VII	vh ,		
		10Y K7/2		-	sbk			eti	eh		SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR5/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR5/3	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	a	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
t 5	30	10YR5/3	1	m	рг	S	р	fr	$\mathbf{sh}$	SL	Si
Ξ	50		2	С	фr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR5/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
	40		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk.			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR5/3	1	m	pr	S	р	fr	sh	SL	Si
	50		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC

			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	ш	pr	s	р	fr	$^{\rm sh}$	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR3/3	1	m	рг	s	р	fr	$\mathbf{sh}$	SL	Si
	20		2.5	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
Pit 6		10YR5/3			sbk			efi	ch	CL	SC
Ā			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/3	1	ш	pr	s	р	fr	$\mathbf{sh}$	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	ch	CL	SC

			т	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
5		10YR6/3			sbk			efi	ch	CL	SC
Ē			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	10		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	• •	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	30		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	40		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
80		10YR5/4			sbk			efi	eh	CL	SC
Ë			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	<b>70</b>	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	6U		2.5	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	70		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	80	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	80		2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/4	1.5	m	pr	s	р	fr	sh	SL	Si
	20		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/4			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	100		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	a	sc

					_						
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	рг	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			Sg	f	pl	SS	DS	vfr	so	LS	SiL
		10YR3/2	1.5	m	DT	s	r- D	fr	sh	SL	Si
	20		2	 C	n-	vs	r VD	fi	h	SCL	SiC
			3	vc	abk		•₽	vfi	vh	T	C
		10785/3			ehk			efi	eh	D D	sc
		1011(5/3		wf	SUR.	50	200	la	la	CL C	SCI
			ш са	vi f	gi nl	50	po	10	10	10	SICL CI
		1037047	sg	1	pi The second se	88	ps –	VII fa	so		51L 0:
	30	101 K4/5	1.5		рі	S	P	II E	511 L	SL	51
			2	С	срг	VS	vp	n r	n	SUL	SR.
		1010065	3	VC	atok.			VII G	vn		
		10 Y K6/3		C	SDK			en	en	u a	SC
			m	VI	gr	so	ро	10	10	S	SICL
			sg	I	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	cpr	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
6		10YR6/3			sbk			efi	eh	CL	SC
Ρi			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	60		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	91	80	no	10	10	S	SiCL
			50	f	nl	66	ns	vfr	50	IS	Sil
		10YR5/3	1	m	Dr.	s	n po	fr	sh	SL	Si
	70	10110,5	2	r C	m	ve	P VD	fi	h	SCI	SiC
			2	ve	ohl-	13	Υ	vfi	n vh	T	C
		10777		¥L.	shk			ofi	ah	CT CT	SC SC
		101 K//2		wf	3UK	80	100	- 1e	1e	e c	Sict
				f	51 51	50	po	10	10	10	cit.
		107050	8g	1 	- PI		ps ~	VII fr	ab	LO	ы. с:
	80	10110/5	1.5	ш	pr		<u>ч</u>	11 #	511	SL	91 6:0
			2	C	фт abb	VS	vp		11 		SIL
		103/07/2	5	VC	a0K			vn - c	vn		
		10YK//2		C	SDK			en	en	u a	SC
			m	VI	gr	so	ро	10	10	S I S	SICL
			sg	ť	pl	SS	ps	vir	so		SIL
	90	10YR4/3	1	m	рг	S	р	tr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	100		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

#### B.9 Polo Cove

	Color (cm) Moist Dry	lor		tractar	~		Consi	stence		Texture		
	(cm)	Moist	Dry		шилин	IC .	N	/et	Moist	Dry	102	ше
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SìL
	10	10YI	R4/3	1	m	pr	s	р	fr	sh	SL	Si
	10			2	С	срг	vs	vp	fi	h	SCL	SiC
				3	vc	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YI	R4/3	1	m	pr	s	р	fr	sh	SL	Si
	20			2	С	срг	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YI	R4/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	50			2	С	cpr	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R5/3			sbk.			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
Ξ	40	10Y]	R4/4	1	m	pr	s	р	fr	sh	SL	Si
Ρi	40			2	С	cpr	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R6/3			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10Y]	R6/3	1	m	pr	S	р	fr	sh	SL	Si
	50			2	С	срг	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R7/2			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10Y]	R6/3	1	m	pr	S	р	fr	$\mathbf{sh}$	SL	Si
				2	С	срг	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R7/2			sbk			efi	eh	CL	SC
				m	vf	gr	so	ро	lo	lo	S	SiCL
				sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	_10YI	R5/4	1	m	pr	s	р	fr	sh	SL	Si
	/0			2	С	cpr	vs	vp	fi	h	SCL	SiC
				3	VC	abk			vfi	vh	L	С
		10YI	R7/2			sbk			efi	eh	CL	SC

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/6	1	m	рг	s	р	fr	$\mathbf{sh}$	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR3/4	1	m	pr	S	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR3/4	1	m	pr	s	р	fr	sh	SL	Si
	50		2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
it 2	40	10YR3/4	1	m	pr	S	р	fr	sh	SL	Si
Ë,			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	50	10YR4/4	1	m	pr	S	р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/4	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/4	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR7/2			sbk			efi	eh	CL	SC

	10		m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	cpr	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
5	20	10YR4/4	1	ш	pr	s	р	fr	$^{\rm sh}$	SL	Si
Ξ.	30		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	40	10YR4/2	1	m	pr	s	р	fr	$^{\rm sh}$	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk.			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/2	1	m	pr	s	р	fr	sh	SL	Si
	00		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR6/3			sbk			efi	eh	CL	SC

		-			_				_		
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	рг	S	р	fr	$^{\rm sh}$	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
		10112.0	m	vf	от	\$0	no	10	lo	S	SiCI
				f	- Br - Di	00	ne	vfr	80	19	Sil
		10702/2	- 3g 1	1	pa Tar	- 33 - 6	pa	fr.	ch	CT CT	6;
	20	101 10/13	1	ш а	- pa anar		P	п 6	<u>ы</u> ь	SCI	- SI 9-C
			2	C	сря	vs	vp	Ш 	-1	SCL	SR.
			3	VC	aok			vn	vn	L	C
		10YR5/4			sbk			eh	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	30	10YR3/3	1	m	pr	8	р	fr	$^{\rm sh}$	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
		10YR3/2	1	ш	pr	s	р	fr	sh	SL	Si
	40		2	с	СОГ	vs	VD	fi	h	SCL	SiC
			3	VC.	abk		-1	vfi	vh	I.	C
		10VR5/4			shk			efi	eh	ст П	SC
		10110.		vf	OT	80	no	10	lo	S	SICT
			20	f	51 nl	80	po	vfr	80	IS	SICL
		10702/2	sg 1	1	pi The	00	ps n	fr.	ch	EI	<u>о:</u>
	50	101 10/2	1	ш	pr.	8	P	ш с	511 L	SL OGT	31
			2	С	cpr	VS	vp	n	n	SCL	SIC
-			3	VC	abk			vh	vh	L	С
it 4		10YR5/4			sbk			efi	eh	CL	SC
а.			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	60	10YR3/5	1	m	рг	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	DS	vfr	so	LS	SiL
		10YR3/2	1	m	DE	s	D	fr	sh	SL	Si
	70		2	с	СПГ	vs	vn	fi	h	SCL	SiC
			3	vc	abk		•₽	vfi	vh	I	C
		10VR5/4	5		shk			efi	eh	л П	SC
		10110/4	-	<b>.</b> f	SUK				La	CL e	SCT SCT
				vi f	gi 1	50	po	10	10	Т.С.	OT OT
		101002/0	sg	1	р	88	ps		so		5IL a:
	80	10YR3/2	1	m	pr	S	р	IT	sh -	SL	SI
			2	С	срг	VS	vp	n	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
									1		SC
		10YR5/4			sbk			efi	eh	CL	50
		10YR5/4	т	vf	sbk gr	so	ро	efi lo	eh lo	CL S	SiCL
		10YR5/4	m sg	vf f	sbk gr pl	SO SS	<b>po</b> ps	efi lo vfr	eh lo so	CL S LS	SiCL SiL
		10YR5/4 10YR3/2	m sg 1	vf f m	sbk gr pl pr	SO SS S	ро ps p	efi lo vfr fr	eh lo so sh	CL S LS SL	SiCL SiL Si
	90	10YR5/4 10YR3/2	m sg 1 2	vf f m c	sbk gr pl pr cpr	SO SS S VS	po ps p vp	efi lo vfr fr fi	eh lo so sh h	CL S LS SL SCL	SiCL SiL Si SiC
	90	10YR5/4 10YR3/2	m sg 1 2 3	vf f m c vc	sbk gr pl pr cpr abk	SO SS S VS	po ps p vp	efi lo vfr fr fi vfi	eh lo so sh h vh	CL S LS SL SCL L	SiCL SiL Si SiC C
	90	10YR5/4 10YR3/2	m sg 1 2 3	vf f m c vc	sbk gr pl pr cpr abk sbk	SO SS S VS	po ps p vp	efi 10 vfr fr fi vfi efi	eh lo so sh h vh eh	CL S LS SL SCL L CL	SiCL SiL Si SiC C SC
	90	10YR5/4 10YR3/2 10YR5/4	m sg 1 2 3	vf f m c vc	sbk gr pl pr cpr abk sbk	\$0 \$5 \$ ¥\$	po ps p vp	efi lo vfr fr fi vfi efi	eh lo so sh h vh eh	CL S LS SL SCL L CL S	SiCL SiL Si SiC C SC SiCL
	90	10YR5/4 10YR3/2 10YR5/4	m sg 1 2 3 m	vf f m c vc vf	sbk gr pl pr cpr abk sbk gr rJ	\$0 \$\$ \$ ¥ \$ \$0	po ps p vp	efi lo vfr fr fi vfi efi lo	eh lo so sh h vh eh lo	CL S LS SL SCL L CL S LS	SiCL SiL Si SiC C SC SiCL SiT
	90	10YR5/4 10YR3/2 10YR5/4	m sg 1 2 3 m sg	vf f m c vc vf f	sbk gr pl pr cpr abk sbk gr pl	SO SS VS SO SS	po ps p vp po ps	efi lo vfr fr fi vfi efi lo vfr fr	eh lo so sh h vh eh lo so	CL S SL SCL CL CL S LS S	SiCL SiL SiC SiC SiCL SiCL SiL SiL
	90	10YR5/4 10YR3/2 10YR5/4 10YR3/2	m sg 1 2 3 m sg 1 2	vf f m c vc vf f m	sbk gr pl cpr abk sbk gr pl pr	SO SS S VS SO SS S	po ps p vp po ps p	efi lo vfr fr fi vfi efi lo vfr fr fr	eh lo so sh h vh eh lo so sh	CL S SL SCL CL S LS SL SCL	SiCL SiL Si SiC C SiC SiCL SiL Si SiC
	90	10YR5/4 10YR3/2 10YR5/4 10YR3/2	m sg 1 2 3 m sg 1 2 2	vf f m c vc vf f m c	sbk gr pl cpr abk sbk gr pl pr cpr	SO SS VS SO SS S VS	po ps p vp po ps p vp	efi lo vfr fr fi vfi efi lo vfr fr fi	eh lo so sh h vh eh lo so sh h	CL S LS SL SCL L CL S LS SL SCL L	SiCL SiL Si SiC C SiC SiCL SiL Si SiC
	90	10YR5/4 10YR3/2 10YR5/4 10YR3/2	m sg 1 2 3 m sg 1 2 3	vf f m c vc vf f m c vc	sbk gr pl cpr abk sbk gr pl pr cpr abk	80 88 VS 80 88 88 88 88 88	ро ps p vp po ps p vp	efi lo vfr fr fi vfi efi lo vfr fr fi fi	eh lo so sh h vh eh lo so sh h h	CL S SL SCL CL S LS SL SCL SCL L C	SiCL SiL SiC C C SiC SiCL SiL SiL SiC C C

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	10	10YR3/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	<b>2</b> T	so	po	lo	lo	S	SiCL
			S2	f	bl	SS	DS	vfr	so	LS	SĩL
		10YR3/3	1	m	DE	s	r- D	fr	sh	SL	Si
	20		2	c	CDT	vs	r VD	fi	h	SCL	SiC
			3	vc	-r- ahk		.1	vfi	vh	L	C
		10YR5/3	-		sbk			efi	eh	CL	SC
			m	vf	PT	so	po	lo	10	S	SiCL
			50	f	nl	ss	ns	vfr	so	LS	SiL
		10YR4/3	1	m	nr	8	n	fr	sh	SL	Si
	30	1011(1)5	2	c III	PA CDF	1/5	P VD	fi	h	SCI	SiC
			3	vc	abk	•0	P	vfi	vh	I	C
		10VR5/3		10	shk			efi	eh	ст П	SC SC
		10110/3	m	vf	or	\$0	no		lo	S	SiCI
				f	6 <sup>1</sup>	90	ns	vfr	50	15	SiL
		10VR4/3	- 26 1	T	pa na	- 33 - 0	po n	fr	st	SI	SiL
	40	1011(4)5	2	- m - c	pr. cmr	0 18	P VD	n fi	ы	SCT	Sic
			2	10	obk	va	۷Þ	11 126	11 14	J	C
		103705/2	3	VL.	able			<u>vп</u> -б	vII eb		60
		101103/3		<b>f</b>	SUK				en la	CL c	SU Girt
			ш	vı ٤	gi al	so	po	10	10	5 10	SICL
		103/0 4/2	sg	1	р	SS	ps	VII	so	LS	51L a:
	50	101 K4/3	1	m	рг	S	Р	п	sn L	SL	51
			2	С	срг	vs	vp			SCL	SIC
		1000000	3	VC	aok.			vn c	VII VII	L	0
μ.		10110/3		e	SOK			en	en 1	u a	<u>SC</u>
щ			m	VI	gr	so	ро	10	10	8	SICL
			sg	I	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/3	1	m	pr	S	Р	ir a	sh -	SL	Si
			2	С	срг	VS	vp	fi a	h	SCL	SIC
			3	VC	abk			vh	vh	L	C
		10YR5/3			sbk			en	eh ·	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	t	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	pr	S	р	ir G	sh	SL	Si
			2	С	cpr	vs	vp	n a	h	SCL	SIC
			3	VC	abk			vh	vh	L	С
		10YR5/3		-	sbk			en	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SICL
			sg	f	pl	SS	ps	vfr	SO	LS	SiL
	80	10YR4/3	1	m	pr	S	р	fr	sh	SL	Sı
			2	С	срг	VS	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/3		_	sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	90	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	100		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC

_							_				
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR3/3	1	m	pr	s	р	fr	$\mathbf{sh}$	SL	Si
	10		2	с	срг	vs	VP	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR4/3	-		shk			efi	eh	CT	SC
		1011005	-	vf	OT	80	100	lo	la	e	SICI
				f	gi ni	50	po	10 vife	10	10	SICL CI
		100002/2	sg	1	p	88	ps	VII C	50	LS	<u>ыг</u>
	20	104 K3/3	1	m	pr	S	р	IT	sn	SL	<u>S1</u>
			2	С	срг	vs	vp	h	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	- 30		2	с	Срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/3	-		shk			efi	eh	CI	SC
		10110,5		vf	OT	80	no	la	10	e e	SICT
				f	gi ni	50	po	TU	10	10	SICL CI
		1037734/2	sg	1	p	88	ps	VII C	50	LS	<u>ыг</u>
	40	10Y K4/3	1	m	pr	S	р	n a	sn	SL	<u>81</u>
			2	С	срг	vs	vp	fi	h	SCL	SIC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	P	fr	sh	SL	Si
	50		2	с	СОГ	vs	VD	fi	h	SCL	SiC
			-	vc	abk		• <b>P</b>	vfi	vh	I	C
Ś		10785/3	5	***	shk			ofi	ah	CT CT	SC
Ъ.		10110.5		νf	SUK	60	100	la la	10	CL e	SICT
-			111	۲۷ ۲	gi 1	80	po	10	10		SICL
			sg	1	р	SS	ps	VII	so	LS	SIL
	60	10YR4/3	1	m	рг	S	Р	tr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	70	10YR4/3	1	m	рг	s	р	fr	sh	SL	Si
	/0		2	с	CDT	vs	VD	fi	h	SCL	SiC
			3							-	C
				VI.	abk			vfi	vh	I I.	
		10VP5/2	-	VC.	abk sbb			vfi efi	vh eh		sc
		10YR5/3		vL	abk sbk	80	200	vfi efi	vh eh	L CL S	SC SiCT
		10YR5/3	m	vt	abk sbk gr	SO	ро	vfi efi lo	vh eh lo	L CL S	SC SiCL
		10YR5/3	m sg	vt vf f	abk sbk gr pl	SO SS	po ps	vfi efi lo vfr	vh eh lo so	L CL S LS	SC SiCL SiL
	80	10YR5/3 10YR4/3	m sg 1	vf f m	abk sbk gr pl pr	SO SS S	po ps p	vfi efi lo vfr fr	vh eh lo so sh	L CL S LS SL	SC SiCL SiL Si
	80	10YR5/3 10YR4/3	m sg 1 2	vf f m c	abk sbk gr pl pr cpr	SO SS S VS	po ps p vp	vfi efi lo vfr fr fi	vh eh lo so sh h	L CL S LS SL SCL	SC SiCL SiL Si SiC
	80	10YR5/3 10YR4/3	m sg 1 2 3	vf f m c vc	abk sbk gr pl pr cpr abk	SO SS S VS	po ps p vp	vfi efi lo vfr fr fi fi vfi	vh eh lo so sh h vh	L CL S LS SL SCL L	SiCL SiL SiL SiC SiC C
	80	10YR5/3 10YR4/3 10YR5/3	m sg 1 2 3	vf f m c vc	abk sbk gr pl pr cpr abk sbk	SO SS S VS	po ps p vp	vfi efi lo vfr fr fi vfi efi	vh eh lo so sh h vh eh	L CL S LS SL SCL L CL	SiCL SiL SiL SiC SiC C SC
	80	10YR5/3 10YR4/3 10YR5/3	m sg 1 2 3 m	vc vf f m c vc vc	abk sbk gr pl pr cpr abk sbk gr	\$0 \$\$ \$ ¥\$ \$0	ро <b>р</b> з <b>р</b> <b>ур</b> ро	vfi efi lo vfr fr fi vfi efi lo	vh eh lo so sh h vh eh	L CL S LS SL SCL L CL S	SC SiCL SiL SiC SiC C SC SiCL
	80	10YR5/3 10YR4/3 10YR5/3	m sg 1 2 3 m sg	vc vf f m c vc vc vf f	abk sbk gr pl pr cpr abk sbk gr pl	\$0 \$\$ \$ <b>V</b> \$ \$0 \$\$	ро <b>р</b> ѕ <b>р</b> <b>vр</b> ро <b>р</b> ѕ	vfi efi lo vfr fr fi vfi efi lo vfr	vh eh lo so sh h vh eh lo so	L CL S LS SL SCL L CL S LS	SC SiCL SiL SiC SiC C SC SiCL SiL
	80	10YR5/3 10YR4/3 10YR5/3 10YR4/4	m sg 1 2 3 m sg 1	vc vf f m c vc vc vf f m	abk sbk gr pl pr cpr abk sbk gr pl pr	\$0 \$\$ \$ ¥ \$ \$0 \$\$ \$ \$	ро <b>р</b> я <b>р</b> <b>ур</b> 	vfi efi lo vfr fr fi vfi efi lo vfi fr	vh ch lo so sh h vh ch lo so so	L CL S LS SL SCL L CL S LS SL	SC SiCL SiL SiC SiC SC SiCL SiL SiL
	80	10YR5/3 10YR4/3 10YR5/3 10YR4/4	m sg 1 2 3 m sg 1 2	vc vf f m c vc vc f f m c	abk sbk gr pl cpr abk sbk gr pl pr cpr	SO SS VS SO SS S S	ро <b>р</b> я <b>р</b> <b>ур</b> ро <b>р</b> я <b>р</b> <b>ур</b>	vfi efi lo vfr fr fi vfi efi lo vfr fr fr fr	vh ch lo so sh h vh ch lo so so sh h	L CL S LS SL SCL L CL S LS SL SCL	SC SiCL SiL Si SiC C SiCL SiCL SiL Si SiC
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4	m sg 1 2 3 m sg 1 2 3	vc vf f m c vc vf f m c vr	abk sbk gr pl cpr abk sbk gr pl pr cpr abk	\$0 \$\$ \$ \$ \$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ро <b>р</b> s <b>р</b> <b>v</b> р <b>р</b> о <b>р</b> s <b>р</b> <b>v</b> р	vfi efi lo vfr fr fi efi lo vfr fr fr fi vfi	vh ch so sh h vh ch lo so sh h y	L CL S LS S LS CL CL S LS SL S CL I I	SC SiCL SiL SiC SiC SiCL SiL SiL SiC SiC
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4	m sg 1 2 3 m sg 1 2 3	vc vf f m c vc vf f m c vc	abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbt	\$0 \$\$ \$ \$ \$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	po ps p vp po ps p vp	vfi efi lo vfr fr fi vfi efi lo vfr fr fi fi vfi	vh eh lo so sh h vh eh lo so sh h h vh	L CL S LS SL CL CL S LS SL SCL L CL	SC SiCL SiL SiC C SC SiCL SiL SiL SiC C C SiC SiC
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4 10YR5/3	m sg 1 2 3 m sg 1 2 3 3	vc vf f m c vc vf f m c vc vc	abk sbk gr pl pr cpr abk sbk gr pl pr cpr abk sbk	SO SS VS SO SS S VS	po ps p vp po ps p vp	vfi efi lo vfr fr efi efi fr fr fr fr fr fi vfi efi	vh eh lo so sh h vh eh lo so sh h h vh eh	L CL S LS S L CL CL S LS S L S CL L CL C C CL	SC SiCL SiL SiC C SC SiCL SiL SiC SiC C SC SC SiC
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4 10YR5/3	m sg 1 2 3 m sg 1 2 3 1 2 3 1	vc vf f m c vc vf f m c vc vc	abk sbk gr pl cpr abk sbk gr pl pl pr cpr abk sbk	\$0 \$\$ \$ \$0 \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$	ро <b>рз</b> <b>р</b> <b>ур</b> <b>ро</b> <b>рз</b> <b>р</b> <b>ур</b> <b>ур</b>	vfi efi lo vfr fr efi efi fr fr fr fr fi vfi efi lo	vh eh so sh h vh eh lo so sh h h vh eh ch	L CL S LS SL CL CL S LS SL SCL L CL CL S CL	SC SiCL SiL SiC C SiCL SiCL SiL SiC SiC C C SC SC SiCL
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4 10YR5/3	m sg 1 2 3 m sg 1 2 3 1 2 3	vc f m c vc vf f m c vc vf f f m c vc	abk sbk gr pl cpr abk sbk gr pl pr cpr abk sbk gr	\$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ро <b>р</b> з <b>р</b> <b>у</b> р <b>у</b> р <b>р</b> з <b>р</b> <b>у</b> р <b>у</b> р	vfi           efi           lo           vfi           fr           efi           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           ofi           lo           vfi           lo           vfi           lo           vfi	vh eh so sh h vh eh lo so sh h h vh eh eh	L CL S LS SCL L CL S LS SL SCL L CL S L S	SC SiCL SiL SiC C SC SiCL SiL SiC SiC C SC SC SiCL SiCL
	80 90	10YR5/3 10YR4/3 10YR5/3 10YR4/4 10YR5/3	m sg 1 2 3 m sg 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 3 1	vc f m c vc vf f m c vc vf f m c vc	abk sbk gr pl cpr abk sbk gr pl pr cpr abk sbk gr sbk gr pl	\$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ро <b>р</b> з <b>у</b> р уро <b>р</b> з <b>р</b> з <b>р</b> ур ур ур ур уро ро <b>р</b> з <b>р</b> о <b>р</b> з	vfi           efi           lo           vfi           fr           efi           lo           vfi           efi           lo           vfi           fr           fi           ovfi           fr           lo           vfi           efi           lo           vfir           fr           fr	vh ch so sh h vh ch b so sh h vh ch lo so so so	L CL S LS SCL L CL S LS SL CL CL CL S LS SL SL	SC SiCL SiL SiC C SC SiCL SiL SiC SiC SiC SiC SiCL SiC SiCL SiL SiL
	80 90 100	10YR5/3 10YR4/3 10YR5/3 10YR5/3 10YR5/3	m sg 1 2 3 m sg 1 2 3 1 2 3 1 2 2 3	vc f m c vc vf f m c vc vf f m c vc	abk sbk gr pl cpr abk sbk gr pl pr abk sbk gr sbk gr pl pr cpr abk	\$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ро <b>р</b> з <b>у</b> р <b>у</b> р <b>у</b> р <b>у</b> р <b>у</b> р <b>у</b> р <b>у</b> р <b>р</b> о <b>р</b> з <b>р</b> о <b>р</b> з <b>р</b> о <b>р</b> з <b>р</b> о <b>у</b> р	vfi           efi           lo           vfi           fr           efi           lo           vfi           efi           lo           vfi           fr           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           lo           fr           fr           fr           fr	vh eh so sh h vh eh lo sh h vh ch lo so sh h h	L CL S LS SCL L CL S LS SL CL CL CL S LS SL SCL	SC SiCL SiL SiC C SC SiCL SiL SiC SiC SiC SiC SiC SiC SiC SiC SiC
	80 90 100	10YR5/3 10YR4/3 10YR5/3 10YR4/4 10YR5/3	m sg 1 2 3 m sg 1 2 3 1 2 3 3 3	vc f f vc vc vf f m c vc vf f m c vc	abk sbk gr pl cpr abk sbk gr pl pr abk sbk gr sbk gr pl pr abk	\$0 \$\$ \$ \$0 \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	ро <b>р</b> з <b>у</b> р уро <b>р</b> з <b>р</b> ур ур ро <b>р</b> з <b>р</b> о <b>р</b> з <b>р</b> о <b>р</b> з <b>р</b> ур	vfi           efi           lo           vfi           fr           efi           ovfi           fr           lo           vfi           efi           lo           vfi           fr           lo           vfi           efi           lo           vfi           efi           lo           vfi           fr           fi           vfi           vfi	vh eh so sh h ch lo so sh h vh ch lo ch lo so sh h vh	L CL S LS SCL CL CL S LS SCL L CL S LS SL S S LS LS L S L	SC SiCL SiL SiC C SC SiCL SiL SiC SiC SiC SiCL SiC SiCL SiC SiC SiC C C

			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/4	1	m	pr	s	р	fr	sh	SL	Si
	10		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
	20		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	20	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	40	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	40		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
ц Ч		10YR5/3			sbk			efi	eh	CL	SC
Ā			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	60	10YR4/4	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SīL
	70	10YR4/4	1	m	pr	S	р	fr	sh	SL	SI
			2	С	cpr	VS	vp	h r	h	SCL	SIC
			3	VC	abk			vn c	vn	L	C
		104 KS/3		c	SDK			en	en		SC
			m	VI	gr	so	ро	10	10	8	SICL
			sg	1	р	88	ps		so	LS	51L c:
	80	101 K4/4	1	ш	pr	8	P	E E	SII b	SL	<u>8</u> 1
			2	C	cpi	vs	vp	Ш б	 	SCL	SIC
		103705/2	3	VC	abl			vii efi	vii ab		C C
		101 (3/3		f	SUK			en la	en la	CL e	<u>эс</u> с:ст
			Ш 6 <b>0</b>	f VI	gi ni	80	po	10 vfr	10	5 19	SICL
		10VP 4/4	sg 1	1	pr m	33	ps n	fr	ah	LS SI	ыг с:
	90	101 K4/4	1	ш с	pa. com	6 10	Ч ул	<u>п</u> б	<u>ծ</u> ո	SCI	51 SiC
			2	ь те	ւրլ տեխ	٧ð	vp	ш таб	ц vh	T	SIC C
		10VP5/2	3	VC.	abk			ofi	ah	CT CT	SC SC
		10110/3		vf	or	80	no		le le	e cr	SiCT
				f	gi nJ	80 ee	ne	vfr	80	16	SICL
		10YR4/4	₽ <u>6</u>	m	pa nar	00 Q	n n	fr	ch	SI	Si
	100	1011NT/T	2	C III	CDit.	vs	Р VD	fi	h	SCL	SiC
			3	vc	abk	-0	۰P	vfi	vh	L	C
		10YR5/3			sbk			efi	eh	CL	SC

							_				
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	10	10YR4/3	1	m	pr	s	р	fr	sh	SL	Si
	10		2	с	срг	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/4	-		shk			efi	eh	CL.	SC
		10110/1	m	vf	OT	80	no	10	lo	S	SICT
				f	51 D	00	po	10 vfr	10	10	SICL
		10570 4/2	ag 1	1	pr.	33	ps 	fe	ab	LO	SIL 0:
	20	101 K4/3	1	ш	hr	8	Ч	11	SII	SL	51
			2	С	срг	vs	vp	n	n	SCL	SIC
			3	VC	abk			vh	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			ш	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	30	10YR4/4	1	m	pr	S	р	fr	$^{\rm sh}$	SL	Si
	50		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	vc	abk			vfi	vh	L	С
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	<b>2</b> T	so	po	lo	lo	S	SiCL
			59	f	nl	SS	ns	vfr	so	LS	SiL.
		10VR4/3	1	m	P <sup>2</sup>	e	ps n	fr	sh	SI	Si
	40	1011(4)5	2	- m - c	pa cmr	10	P VD	6	h	SCI	SiC
			2	<u>с</u>	-bb	va	۷Þ	E	11 	J J	SR.
			3	VC	abk.			VII G	VII VII	L	
		10YR5/4			sbk			efi	eh	CL	SC
			m	vf	gr	SO	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	50	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
00		10YR5/4			sbk			efi	eh	CL	SC
ЪĦ			m	vf	gr	so	po	lo	lo	S	SiCL
			52	f	DI	SS	DS	vfr	so	LS	SiL
		10VR4/3	1	m	- 17- 176	e	r- n	fr	sh	SI	Si
	60	1011005	2	c .	enr	140	P VD	6	h	SCI	SiC
			2		opt	٧ð	۷Þ	- 11 	 	J	SIC.
		1000000	3	VL	11			VII C	<u>үп</u>		
		10110/3		~	SDK			en	en		SC arm
			m	vf	gr	so	ро	10	10	8	SICL
			sg	f	pl	SS	ps	vfr	SO		SiL
	70	10YR4/3	1	m	pr	S	р	fr	sh	SL	Si
			2	С	срг	VS	vp	fi	h	SCL	SiC
			3	VC	abk			vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	00	10YR4/3	1	ш	рг	S	р	fr	sh	SL	Si
	80		2	с	срг	vs	VD	fi	h	SCL	SiC
			3	vc	abk		-	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CL.	SC
		10112.0	m	vf	or	\$0	no	10	lo	S	SICT
			60	f	ъ <sup>г</sup> рі	ge	pe	vfr	80	19	Sil
		10704/2	а <u>в</u> 1	1	- pi	- <u>-</u>	ps r	¥П •	s0	CT CT	оц. с:
	90	1011(4/3		-	pr.	8	<u>р</u> 	II E	511	SL	31 0:0
			2	С	срг	VS	vp		n -	SCL	SIC
			3	VC	abk			vti	vh		C
		10YR5/3			sbk			efi	eh	CL	SC
			m	vf	gr	so	ро	lo	lo	S	SiCL
			sg	f	pl	SS	ps	vfr	so	LS	SiL
	100	10YR4/3	1	m	рг	S	р	fr	sh	SL	Si
	100		2	С	срг	vs	vp	fi	h	SCL	SiC
			3	VC	abk		_	vfi	vh	L	С
		10YR5/3			sbk			efi	eh	CI.	SC
	1										

# APPENDIX C

pXRF Returned Data (in parts per million)

# C.1 Emerald Slope

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#15	30672.0	22.0	16650.0	11965.0	432.0	55.0
	20	#16	25904.0	12.0	16941.0	12673.0	296.0	49.0
	30	#17	17583.0	14.0	16529.0	11218.0	360.0	48.0
	40	#18	31979.0	10.0	16030.0	10430.0	301.0	43.0
p2	50	#19avg	44377.7	11.7	15220.7	10830.0	277.3	48.3
	60	#20	37598.0	9.0	12567.0	12955.0	255.0	39.0
	70	#21	28630.0	7.0	14224.0	12547.0	343.0	43.0
	80	#22	23318.0	6.0	13751.0	10532.0	273.0	40.0
	90	#23	21380.0	11.0	12878.0	12878.0	293.0	41.0
	Average		29049.1	11.4	14976.7	11780.9	314.5	45.1
	Minimum		17583.0	6.0	12567.0	10430.0	255.0	39.0
	Maximum		44377.7	22.0	16941.0	12955.0	432.0	55.0
	Std. Dev.		8310.1	4.7	1677.7	1037.1	55.1	5.3
	10	#24	14716.0	26.0	22554.0	13257.0	362.0	141.0
	20	#25	11912.0	30.0	23441.0	12744.0	417.0	141.0
	30	#26	10201.0	26.0	23651.0	11204.0	420.0	87.0
	40	#27	13403.0	14.0	22501.0	10995.0	413.0	72.0
p5	50	#28a	27368.0	18.0	20475.3	11412.7	563.3	67.0
	60	#29	13953.0	22.0	21659.0	11075.0	480.0	71.0
	70	#30	19211.0	11.0	19301.0	9722.0	588.0	64.0
	80	#31	16175.0	22.0	19148.0	10865.0	447.0	63.0
	90	#32	17166.0	24.0	17805.0	10796.0	366.0	55.0
	Average		16011.7	21.4	21170.6	11341.2	450.7	84.6
	Minimum		10201.0	11.0	17805.0	9722.0	362.0	55.0
	Maximum		27368.0	30.0	23651.0	13257.0	588.0	141.0
	Std. Dev.		5047.9	6.1	2080.5	1060.6	79.8	33.1

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#19a	47583.0	16.0	14627.0	10488.0	257.0	44.0
#19b	45251.0	9.0	14971.0	10780.0	270.0	47.0
#19c	40299.0	10.0	16064.0	11222.0	305.0	54.0
Average	44377.7	11.7	15220.7	10830.0	277.3	48.3
Minimum	40299.0	9.0	14627.0	10488.0	257. <b>0</b>	44.0
Maximum	47583. <b>0</b>	16.0	16064.0	11222.0	305.0	54.0
Std. Dev.	3719.7	3.8	750.3	369.5	24.8	5.1
#28a	26076.0	20.0	20605.0	11752.0	565.0	67.0
#28b	27618.0	15.0	19497.0	11295.0	565.0	64.0
#28c	28410.0	19.0	21324.0	11191.0	560.0	70.0
Average	27368.0	18.0	20475.3	11412.7	563.3	67.0
Minimum	26076.0	15.0	19497.0	11191.0	560.0	64.0
Maximum	28410.0	20.0	21324.0	11752.0	565.0	70.0
Std. Dev.	1186.9	2.6	920.4	298.4	2.9	3.0

# C.2 Kindred

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#53	23215.0	26.0	19627.0	11767.0	426.0	60.0
	20	#54	23302.0	16.0	18665.0	10727.0	417.0	54.0
	30	#55	24862.0	17.0	18922.0	11059.0	376.0	54.0
	40	#56	46090.0	12.0	20171.0	10433.0	352.0	55.0
pl	50	#57avg	45703.3	13.7	19391.7	10461.3	370.7	50.7
	60	#58	87203.0	11.0	16905.0	8655.0	290.0	50.0
	70	#59	76666.0	16.0	22491.0	9729.0	346.0	55.0
	80	#60	43818.0	11.0	20781.0	9595.0	382.0	50.0
	90	#61	47651.0	17.0	22639.0	9800.0	409.0	47.0
	Average		46501.1	15.5	19954.7	10247.4	374.3	52.9
	Minimum		23215.0	11.0	16905.0	8655.0	290.0	47.0
	Maximum		87203.0	26.0	22639.0	11767.0	426.0	60.0
	Std. Dev.		22706.2	4.6	1831.1	915.7	42.1	3.8
	10	#62	21937.0	19.0	18732.0	11234.0	385.0	55.0
	20	#63	16403.0	14.0	18646.0	11081.0	371.0	54.0
	30	#64	10756.0	14.0	18107.0	9911.0	344.0	58.0
	40	# <b>6</b> 5	18066.0	17.0	18503.0	9716.0	359.0	56.0
53	50	#66avg	23648.3	12.7	18993.7	9866.0	642.3	49.3
P2	60	#67	37335.0	24.0	19276.0	9298.0	405.0	56.0
	70	#68	35025.0	20.0	20362.0	9530.0	367.0	54.0
	80	# <b>69</b>	36865.0	19.0	21993.0	10273.0	423.0	53.0
	90	<b>#70</b>	37300.0	16.0	21401.0	10468.0	395.0	52.0
	100	#71	38592.0	13.0	23087.0	10764.0	378.0	58.0
	Average		27592.7	16.9	19910.1	10214.1	406.9	54.5
	Minimum		10756.0	12.7	18107.0	9298.0	344.0	49.3
	Maximum		38592.0	24.0	23087.0	11234.0	642.3	58.0
	Std. Dev.		10532.1	3.6	1710.0	660.8	85.8	2.7

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#57a	45066.0	8.0	20154.0	9896.0	387.0	48.0
#57b	45187.0	16.0	20313.0	10240.0	374.0	54.0
#57c	46857.0	17.0	17708.0	11248.0	351.0	50.0
Average	45703.3	13.7	<b>19391</b> .7	10461.3	370.7	50.7
Minimum	45066.0	8.0	17708.0	9896.0	351.0	48.0
Maximum	46857.0	17.0	20313.0	11248.0	387.0	54.0
Std. Dev.	1000.9	4.9	1460.3	7 <b>0</b> 2.7	18.2	3.1
#66a	23075.0	10.0	18420.0	9747.0	641.0	48.0
#66b	22392.0	15.0	18920.0	9813.0	646.0	50.0
#66c	25478.0	13.0	19641.0	10038.0	640.0	50.0
Average	23648.3	12.7	18993.7	9866.0	642.3	49.3
Minimum	22392.0	10.0	18420.0	9747.0	640.0	48.0
Maximum	25478.0	15.0	19641.0	10038.0	646.0	50.0
Std. Dev.	1620.9	2.5	613.8	152.6	3.2	1.2

#### C.3 Hat Ranch

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
р3	10	#72	22590.0	19.0	21093.0	11227.0	373.0	85.0
	20	#73	21953.0	18.0	21832.0	10888.0	410.0	87.0
	30	#74	23995.0	16.0	21594.0	10326.0	400.0	80.0
	40	#75	22775.0	23.0	20716.0	10115.0	368.0	77.0
	50	#76a	24243.3	17.7	20344.3	10608.0	375.7	91.3
	60	#77	49964.0	11.0	21530.0	9374.0	339.0	59.0
	70	<b>#78</b>	60161.0	15.0	22617.0	9310.0	357.0	50.0
	80	# <b>79</b>	58573.0	20.0	20252.0	9198.0	327.0	52.0
	90	<b>#80</b>	50748.0	20.0	19311.0	9833.0	340.0	46.0
	100	<b>#81</b>	45352.0	13.0	17504.0	10386.0	302.0	48.0
	110	#82	65303.0	15.0	13360.0	10416.0	260.0	39.0
Average			40514.3	17.1	20013.9	10152.8	350.2	64.9
Minimum			21953.0	11.0	13360.0	9198.0	260.0	39.0
Maximum			65303.0	23.0	22617.0	11227.0	410.0	91.3
	Std. Dev.		17499.0	3.5	2603.2	662.4	43.4	19.2
	10	#83	8877.0	21.0	18758.0	12386.0	411.0	70.0
	20	#84	9694.0	23.0	20754.0	11610.0	406.0	74.0
	30	#85	8702.0	19.0	18451.0	9980.0	378.0	69.0
	40	# <b>86</b>	9174.0	14.0	17410.0	10216.0	365.0	67.0
<b>D6</b>	50	#87a	9048.3	16.0	19296.0	10985.3	379.0	56.0
po	60	#88	8708.0	19.0	18156.0	11255.0	342.0	53.0
	70	#89	9201.0	14.0	16954.0	11368.0	363.0	52.0
	80	<b>#90</b>	21843.0	7.0	16519.0	11163.0	323.0	52.0
	90	<b>#91</b>	30860.0	15.0	15810.0	10853.0	357.0	49.0
	100	<b>#92</b>	35473.0	9.0	14523.0	10678.0	292.0	41.0
Average			15158.0	15.7	17663.1	11049.4	361.6	58.3
Minimum			8702.0	7.0	14523.0	9980.0	292.0	41.0
Maximum			35473.0	23.0	20754.0	12386.0	411.0	74.0
Std. Dev.			10355.6	5.1	1809.0	689.3	36.1	10.9

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#76a	24046.0	15.0	19505.0	10990.0	385.0	124.0
#76b	23520.0	19.0	20240.0	10694.0	358.0	77.0
#76c	25164.0	19.0	21288.0	10140.0	384.0	73.0
Average	24243.3	17.7	20344.3	10608.0	375.7	91.3
Minimum	23520.0	15.0	19505.0	10140.0	358.0	73.0
Maximum	25164.0	19.0	21288.0	10990.0	385.0	124.0
Std. Dev.	839.6	2.3	896.1	431.5	15.3	28.4
#87a	8656.0	17.0	18682.0	10338.0	361.0	54.0
#87b	9223.0	16.0	18802.0	11047.0	396.0	55.0
#87c	9266.0	15.0	20404.0	11571.0	380.0	59.0
Average	9048.3	16.0	19296.0	10985.3	379.0	56.0
Minimum	8656.0	15.0	18682.0	10338.0	361.0	54.0
Maximum	9266.0	17.0	20404.0	11571.0	396.0	59.0
Std. Dev.	340.5	1.0	961.4	618.8	17.5	2.6

#### C.4 Williamson

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
- 14	10	#144	9088.0	23.0	20218.0	15277.0	388.0	86.0
	20	#145	7312.0	18.0	17744.0	13281.0	341.0	76.0
	30	#146	7825.0	18.0	18865.0	13742.0	372.0	70.0
	40	#147	8103.0	17.0	17389.0	13900.0	402.0	66.0
	50	#148avg	9293.3	15.0	17684.3	13317.7	314.3	69.7
P4	60	#149	8899.0	18.0	17713.0	14096.0	349.0	71. <b>0</b>
	70	#150	9548.0	20.0	18512.0	13754.0	340.0	72.0
	80	#151	10263.0	20.0	13899.0	13599.0	236.0	58.0
	90	#152	13492.0	15.0	14020.0	13623.0	226.0	55.0
	100	#153	14951.0	22.0	14978.0	13075.0	329.0	58.0
Average			9877.4	18.6	17102.2	13766.5	329.7	68.2
Minimum			7 <b>312.0</b>	15.0	13899.0	13075.0	226.0	55. <b>0</b>
Maximum			14951.0	23.0	20218.0	15277.0	402.0	86.0
	Std. Dev.		2470.4	2.7	2115.6	612.2	58.5	9.4
	10	#154	8216.0	24.0	20627.0	13747.0	361.0	93.0
	20	#155	8179.0	21.0	21298.0	13655.0	331.0	98.0
	30	#156	7862.0	31.0	21608.0	12259.0	402.0	92.0
	40	#157	9886.0	35.0	23367.0	12991.0	348.0	88.0
<b>D</b> 7	50	#158avg	15149.7	21.7	20867.7	12851.3	303.3	79.3
p,	60	#159	16014.0	21.0	19432.0	12118.0	259.0	75.0
	70	#160	18254.0	19.0	17679.0	12461.0	298.0	60.0
	80	#161	18318.0	17.0	17812.0	11904.0	256.0	75. <b>0</b>
	90	#162	19826.0	17.0	19101.0	12759.0	261.0	76.0
	100	#163	20341.0	23.0	17683.0	13512.0	267.0	71.0
Average			14204.6	23.0	19947.5	12825.7	308.6	80.7
Minimum			7862.0	17.0	17679.0	11904.0	256.0	60.0
Maximum			20341.0	35.0	23367.0	13747.0	402.0	98.0
Std. Dev.			5140.2	5.8	1926.4	653.6	50.4	11.8

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#148a	9680.0	15.0	17908.0	13391.0	330.0	74.0
#148b	9006.0	14.0	17395.0	13129.0	310.0	68.0
#148c	9194.0	16.0	17750.0	13433.0	303.0	67.0
Average	9293.3	15.0	17684.3	13317.7	314.3	69.7
Minimum	9006.0	14.0	17395.0	13129.0	303.0	67.0
Maximum	9680.0	16.0	17908.0	13433.0	330.0	74.0
Std. Dev.	347.8	1.0	262.7	164.7	14.0	3.8
#158a	14690.0	21.0	20571.0	13133.0	315.0	77.0
#158b	15280.0	23.0	21335.0	12731.0	298.0	80.0
#158c	15479.0	21.0	20697.0	12690.0	297.0	81.0
Average	15149.7	21.7	20867.7	12851.3	303.3	79.3
Minimum	14690.0	21.0	20571.0	12690.0	297.0	77.0
Maximum	15479.0	23.0	21335.0	13133.0	315.0	81.0
Std. Dev.	410.3	1.2	409.6	244.8	10.1	2.1
### C.5 Rock Spur

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#1	11285.0	22.0	31303.0	13391.0	597.0	91.0
	20	#2	10339.0	31.0	35862.0	14752.0	499.0	83.0
	30	#3	10718.0	27.0	36312.0	14106.0	556.0	86.0
5	40	#4	9839.0	28.0	35391.0	11588.0	474.0	87.0
P2	50	#5avg	10840.7	36.7	33069.7	11077.0	467.3	76.7
	60	#6	13627.0	42.0	32775.0	12114.0	500.0	80.0
	70	#7	20253.0	57.0	34089.0	10653.0	480.0	84.0
	80	#8	42547.0	52.0	35130.0	11432.0	491.0	72.0
Average			16181.1	37.0	34241.5	12389.1	508.0	82.5
	Minimum		9839.0	22.0	31303.0	10653.0	467.3	72.0
	Maximum		42547.0	57.0	36312.0	14752.0	597.0	91.0
	Std. Dev.		11180.0	12.5	1740.5	1507.3	45.1	6.1
	10	<b>#9</b>	11071.0	31.0	34523.0	13953.0	519.0	95.0
	20	#10	11247.0	30.0	34869.0	12214.0	504.0	80.0
	30	#11	11256.0	26.0	30097.0	11283.0	461.0	75.0
po	40	#12	27815.0	29.0	29733.0	10321.0	366.0	72.0
	50	#13avg	72792.3	37.0	25888.0	9485.0	376.3	69.3
	60	#14	56760.0	29.0	31127.0	10386.0	435.0	78.0
	Average		31823.6	30.3	31039.5	11273.7	443.6	78.2
	Minimum		11071.0	26.0	25888.0	9485.0	366.0	69.3
	Maximum		72792.3	37.0	34869.0	13953.0	519.0	95.0
	Std. Dev.		26808.3	3.7	3344.9	1609.8	63.6	9.1

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#5a	11189.0	33.0	32666.0	10922.0	475.0	77.0
#5b	11024.0	42.0	33342.0	11234.0	460.0	75.0
#5c	10309.0	35.0	33201.0	11075.0	467.0	78.0
Average	10840.7	36.7	33069.7	11077.0	467.3	76.7
Minimum	10309.0	33.0	32666.0	10922.0	460.0	75.0
Maximum	11189.0	42.0	33342.0	11234.0	475.0	78.0
Std. Dev.	467.77	4.73	356.62	156.01	7.51	1.53
#13a	72187.0	33.0	24847.0	8915.0	350.0	66.0
#13b	80387.0	42.0	29770.0	10237.0	415.0	71.0
#13c	65803.0	36.0	23047.0	9303.0	364.0	71.0
Average	72792.3	37.0	25888.0	9485.0	376.3	69.3
Minimum	65803.0	33.0	23047.0	8915.0	350.0	66.0
Maximum	80387.0	42.0	29770.0	10237.0	415.0	71.0
Std. Dev.	7 <b>310</b> .8	4.6	3480.3	679.5	34.2	2.9

# <u>C.6 Famici</u>

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#93	9958.0	10.0	20043.0	12435.0	355.0	62.0
	20	<b>#94</b>	11800.0	14.0	18396.0	10862.0	267.0	53.0
	30	#95	11076.0	22.0	23363.0	11083.0	355.0	63.0
	40	#96	24282.0	14.0	19623.0	9931.0	336.0	56.0
5	50	#97avg	72573.3	14.7	14826.3	9427.3	258.3	49.7
- P2	60	<b>#98</b>	72831.0	24.0	13540.0	10480.0	293.0	49.0
	70	#99	56881.0	14.0	13699.0	9766.0	273.0	47.0
	80	#100	58430.0	22.0	14842.0	10850.0	275. <b>0</b>	53.0
	90	#101	53740.0	14.0	13919.0	9031.0	260.0	47.0
	100	#102	57252.0	16.0	13669.0	10376.0	236.0	46.0
Average			42882.3	16.5	16592.0	10424.1	290.8	52.6
	Minimum		9958.0	10.0	13540.0	9031.0	236.0	46.0
	Maximum		72831.0	24.0	23363.0	12435.0	355.0	63.0
	Std. Dev.		25708.4	4.6	3492.1	969.9	42.7	6.1
	10	#103	9201.0	8.0	20410.0	11827.0	373.0	56.0
	20	#104	8636.0	19.0	19699.0	10835.0	347.0	58.0
	30	#105	9242.0	17.0	20063.0	11477.0	395.0	60.0
58	40	#106	8010.0	21.0	18018.0	11172.0	369.0	44.0
Po	50	#107avg	10068.3	18.3	24394.7	10405.7	405.7	57.3
	60	#108	10029.0	21.0	25196.0	10576.0	406.0	59.0
	70	#109	8410.0	15.0	21284.0	10648.0	362.0	49.0
	80	#110	7640.0	17.0	17129.0	12039.0	329.0	46.0
	Average		8904.5	17.0	20774.2	11122.5	373.3	53.7
	Minimum		7640.0	8.0	17129.0	10405.7	329.0	44.0
	Maximum		10068.3	21.0	25196.0	12039.0	406.0	60.0
	Std. Dev.		889.3	4.2	2818.3	607.7	27.7	6.3

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#97a	71985.0	12.0	14397.0	9288.0	274.0	47.0
#97b	77668.0	15.0	15467.0	9666.0	261.0	54.0
#97c	68067.0	17.0	14615.0	9328.0	240.0	48.0
Average	72573.3	14.7	14826.3	9427.3	258.3	49.7
Minimum	68067.0	12.0	14397.0	9288.0	240.0	47.0
Maximum	77668.0	17.0	15467.0	9666.0	274.0	54.0
Std. Dev.	4827.5	2.5	565.4	2 <b>0</b> 7.7	17.2	3.8
#107a	10218.0	17.0	24418.0	10962.0	401.0	54.0
#107b	10082.0	19.0	25153.0	10258.0	410.0	59.0
#107c	9905.0	19.0	23613.0	9997.0	406.0	59.0
Average	10068.3	18.3	24394.7	10405.7	405.7	57.3
Minimum	9905.0	17.0	23613.0	9997.0	401.0	54.0
Maximum	10218.0	19.0	25153.0	10962.0	410.0	59.0
Std. Dev.	156.9	1.2	770.3	499.2	4.5	2.9

### C.7 Bitner

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#111	27113.0	16.0	18932.0	11214.0	344.0	72.0
	20	#112	29744.0	17.0	17300.0	11016.0	325.0	65.0
	30	#113	33078.0	13.0	17684.0	11582.0	304.0	60.0
	40	#114	30287.0	22.0	17244.0	10992.0	359.0	56.0
<b>D</b> 2	50	#115avg	17451.7	15.3	16901.3	11151.0	384.3	51.3
P2	60	#116	24111.0	17.0	16599.0	11361.0	383.0	51.0
	70	#117	17719.0	15.0	17125.0	10434.0	343.0	55.0
	80	#118	8528.0	19.0	14095.0	13161.0	483.0	46.0
	90	#119	13781.0	19.0	16110.0	12330.0	365.0	54.0
	100	#120	15500.0	18.0	16909.0	11220.0	381.0	55.0
Average			21731.3	17.1	16889.9	11446.1	367.1	56.5
Minimum			8528.0	13.0	14095.0	10434.0	304.0	46.0
	Maximum		33078.0	22.0	18932.0	13161.0	483.0	72.0
	Std. Dev.		8243.2	2.5	1231.7	771.4	48.4	7.5
	10	#121	33189.0	20.0	19302.0	10811.0	341.0	74.0
	20	#122	34428.0	12.0	19340.0	10563.0	341.0	69.0
	30	#123	39343.0	24.0	16519.0	10417.0	344.0	56.0
	40	#124	34564.0	13.0	17697.0	10612.0	336.0	55.0
<b>P</b> 4	50	#125avg	47842.0	16.0	18554.7	14047.3	328.3	44.0
P	60	#126	48031.0	19.0	17957.0	14068.0	328.0	44.0
	70	#127	29810.0	21.0	19318.0	14424.0	381.0	47.0
	80	<b>#128</b>	55466.0	18.0	19618.0	12494.0	303.0	46.0
	90	#129	66400.0	17.0	17537.0	13062.0	327.0	41.0
	100	#130	63673.0	18.0	18866.0	14203.0	363.0	45.0
	Average		45274.6	17.8	18470.9	12470.1	339.2	52.1
	Minimum		29810.0	12.0	16519.0	10417.0	303.0	41.0
Maximum			66400.0	24.0	19618.0	14424.0	381.0	74.0
	Std. Dev.		13147.0	3.6	1010.4	1708.5	21.2	11.3

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#115a	17516.0	13.0	16934.0	10968.0	393.0	53.0
#115b	16337.0	17.0	17106.0	10835.0	365.0	49.0
#115c	18502.0	16.0	16664.0	11650.0	395.0	52.0
Average	17451.7	15.3	16901.3	11151.0	384.3	51.3
Minimum	16337.0	13.0	16664.0	10835.0	365.0	49.0
Maximum	18502.0	17.0	17106.0	11650.0	395.0	53.0
Std. Dev.	1083.9	2.1	222.8	437.2	16.8	2.1
#125a	50238.0	15.0	17295.0	13537.0	335.0	44.0
#125b	45629.0	14.0	19554.0	14234.0	318.0	48.0
#125c	47659.0	19.0	18815.0	14371.0	332.0	40.0
Average	47842.0	16.0	18554.7	14047.3	328.3	44.0
Minimum	45629.0	14.0	17295.0	13537.0	318.0	40.0
Maximum	50238.0	19.0	19554.0	14371.0	335.0	48.0
Std. Dev.	2309.9	2.6	1151.8	447.2	9.1	4.0

### C.8 Scoria

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#33	14684.0	18.0	15599.0	11708.0	326.0	60.0
	20	#34	15761.0	12.0	14797.0	12266.0	325.0	61.0
	30	#35	23677.0	25.0	14760.0	11393.0	297.0	116.0
	40	#36	15431.0	11.0	13910.0	12117.0	321.0	65.0
nl	50	#37avg	48846.3	15.0	13558.3	11110.3	298.3	47.0
Ът	60	#38	65060.0	18.0	12776.0	10584.0	289.0	48.0
	70	#39	62630.0	10.0	12577.0	11137.0	305.0	51.0
	80	#40	53224.0	14.0	13207.0	9924.0	295.0	55.0
	90	#41	47751.0	10.0	14083.0	9648.0	297.0	52.0
	100	#42	44027.0	10.0	9851.0	10276.0	251.0	40.0
Average			39109.1	14.3	13511.8	11016.3	300.4	59.5
Minimum			14684.0	10.0	9851.0	9648.0	251.0	40.0
	Maximum		65060.0	25.0	15599.0	12266.0	326.0	116.0
	Std. Dev.		19888.9	4.9	1597.3	895.5	21.9	21.2
	10	#43	9826.0	12.0	15064.0	11094.0	330.0	65.0
	20	#44	9786.0	20.0	15745.0	11130.0	341.0	62.0
	30	#45	9658.0	18.0	16001.0	11234.0	329.0	62.0
	40	#46	<b>9777.0</b>	17.0	17611.0	11267.0	348.0	57. <b>0</b>
53	50	#47avg	9042.0	20.7	19822.7	11944.0	383.7	57.7
P3	60	#48	8914.0	22.0	19135.0	11322.0	385.0	55.0
	70	#49	17667.0	19.0	20131.0	10867.0	384.0	61.0
	80	#50	34007.0	25.0	17217.0	10730.0	327.0	52.0
	90	#51	48000.0	15.0	17592.0	10721.0	326.0	57.0
	100	#52	88878.0	19.0	16983.0	8776.0	292.0	50.0
	Average		24555.5	18.8	17530.2	10908.5	344.6	57.9
	Minimum		8914.0	12.0	15064.0	8776.0	292.0	50.0
Maximum		88878.0	25.0	20131.0	11944.0	385.0	65.0	
	Std. Dev.		26214.0	3.6	1719.5	828.5	30.9	4.7

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#37a	49420.0	16.0	13247.0	11747.0	281.0	44.0
#37b	49532.0	13.0	13371.0	10701.0	294.0	52.0
#37c	47587.0	16.0	14057.0	10883.0	320.0	45.0
Average	48846.3	15.0	13558.3	11110.3	298.3	47.0
Minimum	47587. <b>0</b>	13.0	13247.0	10701.0	281.0	44.0
Maximum	49532.0	16.0	14057.0	11747.0	320.0	52.0
Std. Dev.	1092.1	1.7	436.3	558.8	19.9	4.4
#47a	9524.0	19.0	20357.0	12069.0	388.0	59.0
#47b	8875. <b>0</b>	23.0	19753.0	11934.0	379.0	57.0
#47c	8727.0	20.0	19358.0	11829.0	384.0	57.0
Average	9042.0	20.7	19822.7	11944.0	383.7	57.7
Minimum	8727.0	19.0	19358.0	11829.0	379.0	57.0
Maximum	9524.0	23.0	20357.0	12069.0	388.0	59.0
Std. Dev.	423.9	2.1	503.1	120.3	4.5	1.2

#### C.9 Polo Cove

Pit	Depth	Sample	Ca	Cu	Fe	K	Mn	Zn
	10	#131	13271.0	21.0	17916.0	11539.0	332.0	72.0
	20	#132	15156.0	15.0	17464.0	11289.0	352.0	65.0
	30	#133	11430.0	16.0	18087.0	11602.0	327.0	56.0
p2	40	#134	29898.0	16.0	17543.0	11488.0	337.0	57.0
	50	#135avg	112269.7	14.0	13688.3	9849.7	266.3	59.3
	60	#136	119473.0	13.0	13378. <b>0</b>	<b>9972.0</b>	262.0	61.0
	70	#137	109332.0	15.0	12884.0	9494.0	230.0	58.0
Average			58690.0	15.7	15851.5	10747.7	300.9	61.2
Minimum			11430.0	13.0	12884.0	9494.0	230.0	56.0
	Maximum			21.0	18087.0	11602.0	352.0	72.0
	Std. Dev.		51882.2	2.6	2391.8	928.9	47.1	5.6
	10	#138	13567.0	13.0	18388.0	11119.0	325.0	74.0
	20	#139	12711.0	15.0	17129.0	11404.0	305.0	62.0
	30	#140	13617.0	8.0	18154.0	10613.0	330.0	60.0
P4	40	#141	12133.0	16.0	18295.0	10845.0	332.0	58.0
	50	#142avg	19573.0	11.3	16740.0	11265.0	318.0	54.0
	60	#143	60217.0	12.0	14318.0	9479.0	241.0	51.0
	Average		21969.7	12.6	17170.7	10787.5	308.5	59.8
	Minimum		12133.0	8.0	14318.0	9479.0	241.0	51.0
Maximum		60217.0	16.0	18388.0	11404.0	332.0	74.0	
	Std. Dev.		18928.6	2.8	1551.6	702.0	34.5	8.0

Triplicates	Ca	Cu	Fe	K	Mn	Zn
#135a	116158.0	14.0	13687.0	10294.0	266.0	60.0
#135b	110723.0	15.0	13837.0	9729.0	281.0	58.0
#135c	109928.0	13.0	13541.0	9526.0	252.0	60.0
Average	112269.7	14.0	13688.3	9849.7	266.3	59.3
Minimum	109928.0	13.0	13541.0	9526.0	252.0	58.0
Maximum	116158.0	15.0	13837.0	10294.0	281.0	60.0
Std. Dev.	3390.8	1.0	148.0	398.0	14.5	1.2
#142a	18171.0	18.0	15480.0	11592.0	304.0	54.0
#142b	19776.0	10.0	17346.0	10537.0	325.0	53.0
#142c	20772.0	6.0	17394.0	11666.0	325.0	55.0
Average	19573.0	11.3	16740.0	11265.0	318.0	54.0
Minimum	18171.0	6.0	15480.0	10537.0	304.0	53.0
Maximum	20772.0	18.0	17394.0	11666.0	325.0	55.0
Std. Dev.	1312.3	6.1	1091.5	631.6	12.1	1.0

### APPENDIX D

MS2000 Grain Size Distribution Charts & Triplicate Data









#### D.3 Hat Ranch





#### D.4 Williamson







### D.6 Famici



#### D.7 Bitner















## D.10 Triplicates

Vineyard	Pit (Depth)	Triplicate #	Machine Reading	Machine Concentration	Actual Concentration	Error (%)	
			1	0.043	0.103	58.1	
ES	2 (50 cm)	1	2	0.048	0.103	53.7	
			3	0.063	0.103	39.1	
			1	0.037	0.087	57.2	
ES	2 (50 cm)	2	2	0.039	0.087	54.7	
			3	0.044	0.087	49.5	
			1	0.069	0.117	40.7	
ES	2 (50 cm)	3	2	0.067	0.117	43.2	
			3	0.060	0.117	49.1	
			1	0.010	0.024	56.7	
WI	7 (40 cm)	1	2	0.011	0.024	56.3	
			3	0.010	0.024	56.7	
			1	0.010	0.021	53.3	
WI	7 (40 cm)	2	2	0.010	0.021	54.8	
			3	0.010	0.021	51.4	
			1	0.009	0.023	61.3	
WI	7 (40 cm)	3	2	0.010	0.023	57.4	
			3	0.010	0.023	55.2	
			1	0.011	0.031	64.5	
RS	RS 8 (10 cm)	1	2	0.012	0.031	60.0	
			3	0.015	0.031	51.0	
				1	0.010	0.025	60.4
RS	8 (10 cm)	2	2	0.012	0.025	51.2	
			3	0.012	0.025	52.8	
			1	0.009	0.025	64.0	
RS	8 (10 cm)	3	2	0.010	0.025	60.4	
			3	0.009	0.025	62.8	
			1	0.049	0.126	61.1	
FM	5 (20 cm)	1	2	0.052	0.126	58.6	
			3	0.049	0.126	61.2	
			1	0.040	0.105	62.3	
FM	5 (20 cm)	2	2	0.041	0.105	61.1	
			3	0.052	0.105	50.4	
			1	0.060	0.140	57.4	
FM	5 (20 cm)	3	2	0.055	0.140	61.1	
			3	0.056	0.140	60.0	
			1	0.028	0.090	69.4	
BT	2 (50 cm)	1	2	0.036	0.090	60.6	
			3	0.033	0.090	63.9	
	a	_	1	0.020	0.062	68.2	
BL	2 (50 cm)	2	2	0.026	0.062	58.7	
			3	0.024	0.062	60.6	
<b>D</b>	a	<u>^</u>	1	0.025	0.067	62.2	
RI	2 (50 cm)	5	2	0.025	0.067	62.7	
	1		3	0.026	0.067	61.6	