THESIS

AT THE WATER'S EDGE:

AN ARCHAEOLOGICAL INVESTIGATION OF PLAYA OCCUPATION IN THE CENTRAL PLAINS

Submitted by

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ABSTRACT

AT THE WATER'S EDGE:
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IN THE CENTRAL PLAINS

Playa research on the American Great Plains has considerable potential to shed light on ancient hunter-gatherer lifeways and subsistence. These lacustrine environments provide a predictable water source and are ecological hubs for many species of mammals, waterfowl, and vegetation. The availability and abundance of resources create an environmental pull within the Plains that is ideal for ancient hunter-gatherer site choice in a region where resources are relatively scarce. This thesis provides an ecological and human behavioral approach to analyze the ancient history of mobile peoples by examining 18 archaeological playa site assemblages totaling 5,052 artifacts from the Central Plains. The lithic assemblages are placed within a geographic and environmental context, taking into consideration elements of site choice such as distance to playa, topographical location, and playa size.

The data reveal that site selection includes many complex factors not always determined by resource acquisition or the surrounding environment. The results also illustrate regional differences in playa occupation, specifically that occupations in the South Platte River Basin are more diverse and continuous when compared to playas elsewhere in the Great Plains. The findings from this research casts light on overall hunter-gatherer lifeways and reveals the importance of playas to indigenous groups in the Central Plains over a 12,000-year history.

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Finally, this thesis is dedicated to my three younger sisters Emii, Julie, and Sallie. May each of us receive the education we deserve and strive to be strong and bold. がんばれ！

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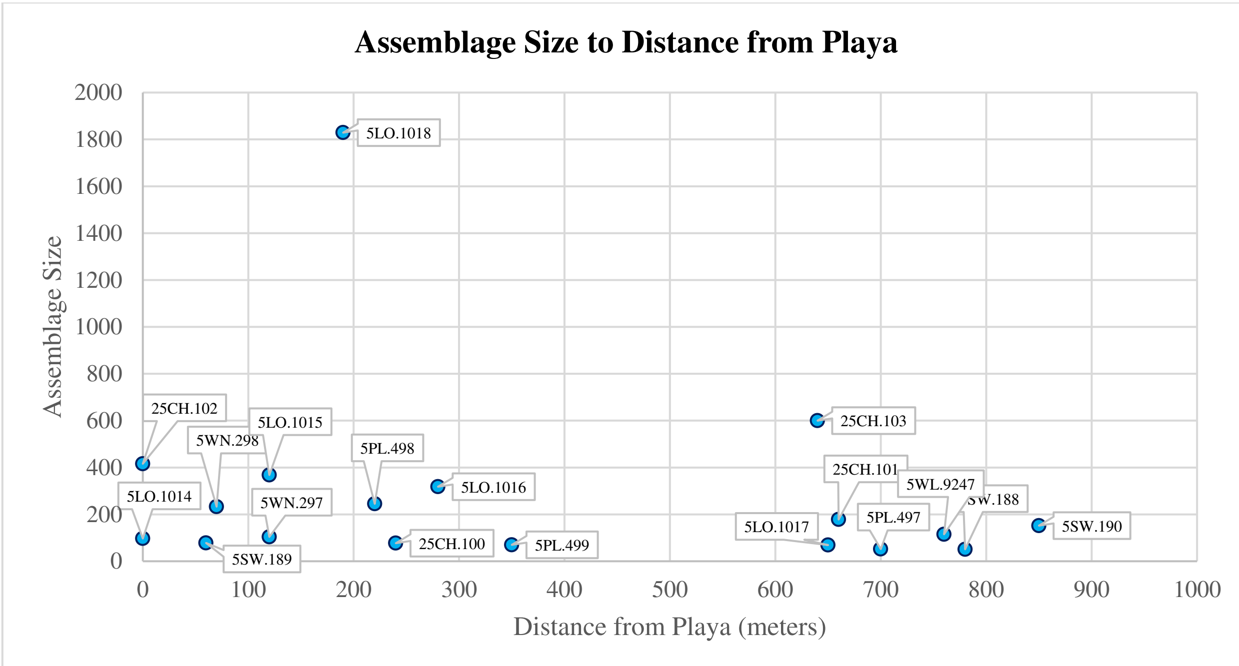
Assemblage Size to Distance from Playa
Assemblage Size
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CHAPTER ONE: INTRODUCTION

The indigenous peoples of the Great Plains of North America have utilized the resources associated with playa lakes for the past 12,000 years. Playas are the most prominent geographic feature on the plains, with over 80,000 of these water bodies dotting the landscape from Texas to Nebraska (Playa Lakes Joint Ventures 2019). Playas are circular, shallow basins that provide critical habitat for a diverse array of flora and fauna throughout the region (Haukos and Smith 1997; Smith 2003). They are hydrologically charged by precipitation, runoff, and, occasionally, ephemeral springs. These small water bodies provide a stark ecologic contrast to the relatively featureless Great Plains landscape (Bowen et al. 2010). This disparity and environmental isolation have been likened to an 'island on the plains,' an isolated ecosystem within a homogenous landscape that fosters biodiversity (Litwinionek et al. 2003). Such islands of resources were important landscape markers for mobile hunter-gatherer groups in the ancient past, as they provided predictable water, game, and diverse vegetation (Haukos and Smith 1994; Holliday 1997; Johnson 2008; Litwinionek et al. 2003). This thesis uses the concept of playas as an island or oasis to analyze the ancient history of the indigenous peoples in northeastern Colorado.

Although these areas have high potential for archaeological investigation, there has been limited research of playa lakes in the Central Plains. One of the major reasons for this is that playas are largely located on privately held properties that have restricted professional access. For this reason, the following research will take a collaborative approach and will analyze 18 playa sites in the South Platte River Basin of Colorado that were previously known only through private, avocational investigations. Figure 1 presents the study area, its geographical position within the Great Plains, and the distribution of playa lakes throughout the region. The study area is located in the northeastern corner of Colorado in the South Platte River Basin (highlighted in red) which is considered part of the Central Plains.

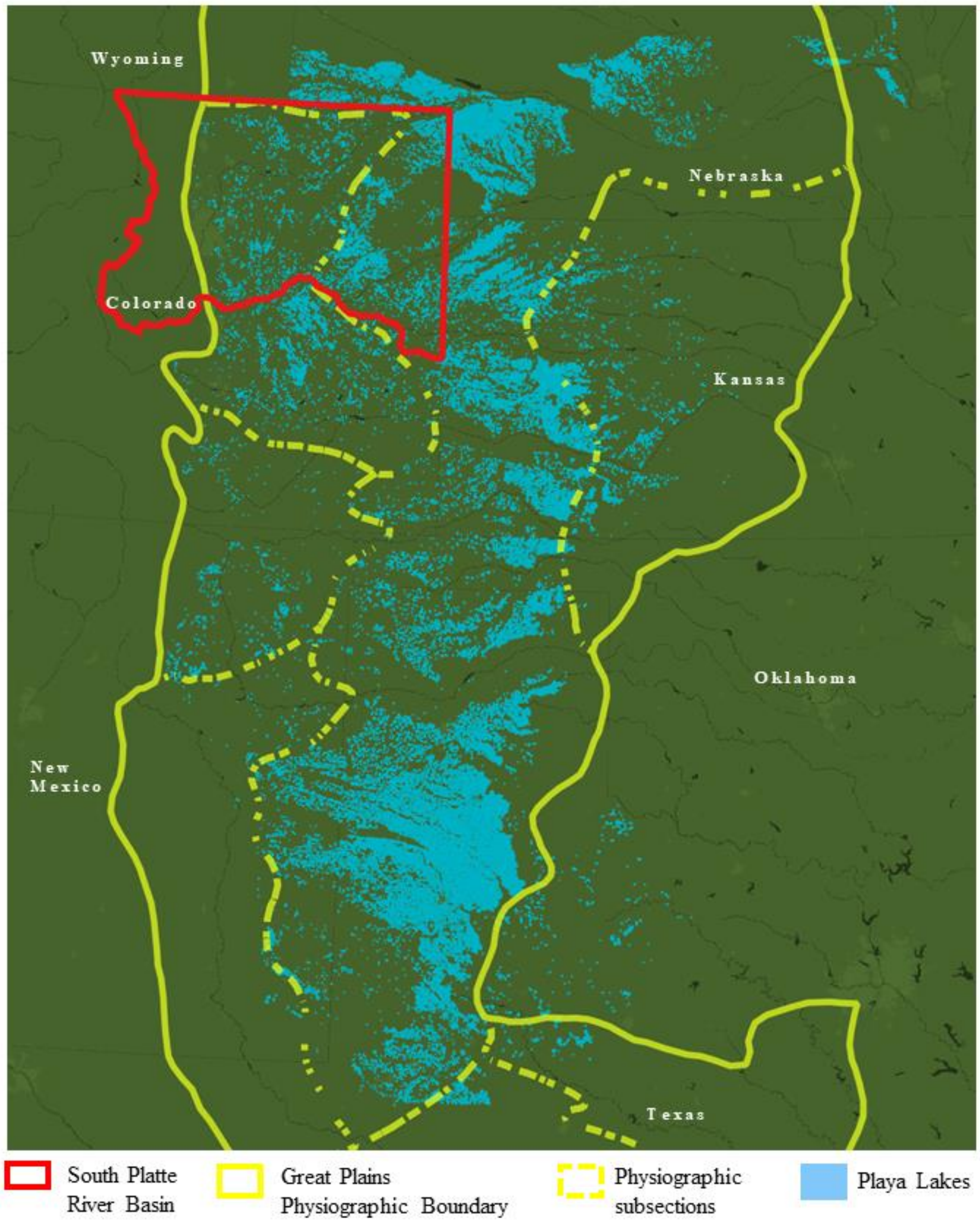

Figure 1. The South Platte River Basin is in the northeastern corner of the state of Colorado and is part of the western extent of the Central Great Plains. The dotted yellow lines indicate the various sections of the Great Plains Province with the study area being situated on the Colorado Piedmont and the High Plains.

Thesis Objectives and Research Questions

This thesis has two major goals. It aims to establish a baseline of playa archaeology in northeastern Colorado and to provide a better understanding of hunter-gatherer use and temporal occupation of playas within the Central Plains. Four primary questions guide this research:

I. *How many archaeological playa sites are recorded in Colorado?*

II. *What do the lithic assemblages from the 18 playa sites represent, specifically concerning time and tool diversity?*

III. *What are the morphological and geographic characteristics of the 18 playas?*

IV. *Are there distinguishable relationships between playa size, morphology, and associated cultural use of playas, particularly related to assemblage composition and temporal occupation?*

This first chapter serves as an introduction to the thesis and will lay out the theoretical framework and methods employed throughout. Chapter one will begin with a discussion of the history of archaeological theory in the Great Plains and how this thesis is situated within this context. This chapter will also demonstrate the significance of playas as a resource for ancient hunter-gatherers. It will define and introduce the concept of a "playa site," laying out the ways in which playa landscapes might have been utilized by ancient peoples and how this may be observed archaeologically. This chapter will also elaborate on the methodologies used throughout this thesis including concepts of ecological biodiversity, hunter-gatherer theory, human behavioral ecology, and lithic technological organization. Finally, this chapter will discuss the underlying theme of collaboration with artifact collectors and avocational researchers, by examining issues related to the ethics of working with non-professional archaeologists. The second chapter will provide a background of historical and contemporary playa research, highlighting key sites and scholars within the field. This chapter will provide the necessary background and comparative data for the rest of this thesis.

The following chapters will begin to answer the research questions posed above. Chapter three will address the first question pertaining to the number of playa sites: *how many archaeological playa sites are recorded in Colorado*? It will analyze the presence of playas generally in the state and discuss the few known archaeological playa sites. This section also examines the notable absence of sites in the South Platte River Basin, thus leading to the need for collaborative research with avocational archaeologists. Chapter four covers the history of the Mike Toft collection, which is the primary focus of this thesis. It will answer the second research question: w*hat do the lithic assemblages from the 18 playa sites represent?* To answer this, it will present an overview of the environmental and geographical setting of the South Platte River Basin and provide a descriptive site report for each of the 18 playa sites. It will also provide numerical data on assemblage size and the location of each site. Chapter five will analyze the environmental characteristics of the playas, answering the third question: *what are the morphological and geographic characteristics of the 18 playas?* The next chapter will give an analysis of the lithic assemblages from the 18 sites, discussing the specific artifact types and tools present within the collections. The seventh chapter will analyze and discuss the chronology of the 18 sites using the presence of key temporal artifacts including projectile point types, gravers, preforms, channel flakes, and ceramics. Chapter eight analyzes assemblage diversity of the 18 playa sites using the Shannon-Weaver methodology. Chapter nine collocates and examines the data presented from chapters six, seven, and eight, seeking to answer the fourth question: *are there distinguishable relationships between playa size, morphology, and associated cultural use of playas?* This section will examine the relationships between the variables of time, assemblage diversity, and playa morphology. Finally, chapter ten will conclude this thesis with an overall discussion of how the 18 playa sites fit within the existing literature and propose future research directions.

Archaeological Theory in the Great Plains

All scholarship is directed through theoretical frameworks that guides one's research and methodologies of data collection and analysis. The research in this thesis is designed using settlement system theories shaped by concepts of ecological biodiversity, human behavioral ecology, and lithic technological organization, all of which has been influenced by the history of archaeological research in the region. Within the South Platte River Basin, four predominant theories are present: Cultural-historical, processual, Marxist, and post-processual (Wood et al. 1999). The oldest and most prevalent theoretical framework in Plains Archaeology is a cultural-historical approach. This theory focuses on trait lists, while changes in traits are explained by external factors, especially related to human movement through migration and diffusion (Urban and Schortman 2012). This continuation of a long-established theoretical framework has been largely attributed to the predominance of Cultural Resource Management (CRM), as it is the primary source of archaeological investigation in the Plains (Wood et al. 1999).

Several critics have responded to this perpetuation of traditional theory and research methods in the region (Bamforth 1988, 2009; Mitchell 2006). First, some researchers have argued that these theories limit the way archaeologists view human movement in the past, as the dominant view of lifeways in the ancient history of the Great Plains remains one of frequent mobility, especially during the Paleoindian period (Bamforth 1988). Bamforth (2009) states that this cultural-historical lens leads researchers to analyze Paleoindian movement through the few preserved and diagnostic artifacts, especially discarded projectile points. This type of analysis paints a limited picture of human responses that are inherently tied to raw material sources and the hunting of big game. Bamforth (2009) critiques these methods by stating that the overemphasis of projectile points is problematic due to the inaccurate nature of raw material sourcing and the absence of analysis of other artifacts. He also argues that this methodology is perpetuated at sites occupied thousands of years after the Paleoindian period, due to the foundation laid out by this historical research (Bamforth 2009). This continuous focus of mobility in this way also fuels the notion that few changes occurred in culture during the lives of ancient peoples living in the Great Plains and further maintains the use of these older theories (Bamforth 1988).

More recent archaeological research has focused on settlement patterns, systems, and subsistence strategies that incorporate dynamic aspects of hunter-gatherer behavior (Bamforth 1988; Wood et al 1999). Settlement patterns are defined as the distribution of archaeological sites across a landscape, while settlement systems are the processes that established the distribution of archaeological sites (Urban and Schortman 2012; Wood et al. 1999). In the South Platte River Basin, and even across the Plains as a whole, settlement patterns and systems have been researched extensively (Wood et al. 1999). The distribution of resources across the Plains, not limited to tool stone, is typically patchy and thus the human-environment relation within the region is ripe for this type of processual analysis. This highlights the secondary issue of theoretical frameworks in the Plains: the notion of human behavior as fixed and predictable. This type of focus became popular around the 1960s at the same time as the development of the discipline of human ecology (Kelly 2013). As a relatively new anthropological sub-discipline, human behavioral and evolutionary ecology highlighted aspects of human subsistence and energy expenditure and how people in the past might have made decisions in order to reduce risk and increase their chances of survival (Johnson 2014; Kelly 2013). Human ecology perspectives are enmeshed with processual archaeology, also known as the 'New Archaeology' (Hegmon 2003). This new school of thought was popularized by Lewis and Sally Binford (Binford and Binford 1968). The theory uses theoretical frameworks that explain the processes of the archaeological record, moving away from merely identifying cultural traits. For example, researchers might analyze the distribution of sites by assessing the availability or patchiness of specific resources and then make inferences about human behavior based upon this distribution (Kelly 3013). Critics of such examples, and the application of this theory overall, point to the absence of human agency and the depiction of the environment as a passive backdrop in which humans are merely trying to survive (Bamforth 2009; Hegmon 2003; Mitchell 2006). Many of these critical responses also point to notions of environmental determinism and problematic concepts of cultural evolution (Bamforth 2009; Hegmon 2003; Mitchell 2006). Some have called for a more holistic approach by combining numerous methodologies and frameworks, creating what Hegmon (2003) calls "processual-plus."

Contemporary research in the Plains has focused on bringing together environmental analysis, ethnographic literature, deep time, and moving away from "the arbitrary division between history and prehistory" (Scheiber and Clark 2008:2). Newer methodologies and theories incorporate and focus on cultural aspects and considers the dynamic and inseparable relationship between the physical environment and human life (Mitchell 2006). In an effort to address some of the theoretical issues posed above and incorporate more contemporary frameworks, this thesis documents and analyzes collections from areas which are currently "blank spots" of indigenous history in the region. It also aims to highlight the *environmental possibilism* of indigenous groups, instead of focusing on environmental limitations. This concept is inspired by Lemke (2018:11-12):

> Rather than environmental determinism, the analysis of such flexibility can be referred to as environmental possibilism, the understanding that while the resource structure (including access to freshwater, primary production, and so on) may limit how intensely some areas can be used, foragers make choices to avoid or limit use in more marginal areas.

This concept is pertinent in the Great Plains, as this region has been largely ignored as a marginal landscape and is often perceived as devoid of permanent settlements (Wedel 1947, 1963). Thus, this research follows in the footsteps of others who focused on similar landscapes, such as the high alpine, that were once identified as peripheral or marginal (Benedict 1996; Benedict and Olson 1978; Cassells 2000; LaBelle and Pelton 2013; Walsh et al. 2007). The study of playa landscapes is another geographical region that has been overlooked. Focusing on such areas, like the high alpine, can reveal the diversity of local signatures of occupation and add to our understanding of the flexibility and diversity of human behavior.

Playa research provides an avenue to better understand the settlement systems of indigenous groups by exploring how the persistent use of a particular landscape shaped the lives and the history of hunter-gatherers within a region. The primary goal of this thesis is to investigate the interaction between people and their environments in a dynamic way. It will bring together traditional analysis of Plains archaeology and contextualize these findings within a landscape framework.

The Significance of Playa Resources

Water is a critical resource to the survival of human beings. Paleoanthropologists and archaeologists have long studied how ancient hunter-gatherer foraging decisions have been shaped by the availability of water (Ramsey and Rosen 2016). Most of their attention has focused on permanent water sources such as lakes and rivers, while more ephemeral water resources have been overlooked. Although there are obvious reasons to concentrate on permanent water, wetland environments such as swamps, seasonal streams or playas should not be neglected, as they provide insight into the flexibility and logistical mindset of hunter-gatherers of the past (Nicholas 1998).

There is some research that have focused on these often-mischaracterized wetland landscapes (Kelly 1997; Kelly 2013; Lemke 2018; Nicholas 1998; Wedel 1963). These ephemeral environments are generally located in areas that have relatively homogenous habitats. While these wetlands are often small and short-lived, they provide an ecological break and physiographic boundary of animal and plant diversity that is productive for foragers in the area (Nicholas 1998). Kelly (1997) has argued that wetlands are more biologically dynamic and diverse than open water environments such as large lakes. He states that the increased biological diversity is due to fluctuating water levels, which support a mosaic of flora that cycles between species that are more productive during mesic times and species that thrive in arid conditions, supporting vegetation in both environmental circumstances (Kelly 1997). This is particularly apparent in the Great Plains of North America, especially around seasonal playa lakes, as they provide the primary habitat for the flora and fauna throughout the region (Haukos and Smith 1994). Although there are large changes to the surrounding vegetation and water levels throughout the year, visitation by waterfowl tends to remain relatively consistent (Haukos and Smith 1994). Figure 2 provides an example of the seasonal fluctuation of water and vegetation at a playa lake in Larimer County, Colorado.

Figure 2. Images of a playa in Larimer County, Colorado throughout the seasons of 2020. Top left photo taken in early May, top right in June, bottom left in July, and bottom right in late August. These images illustrate the change in vegetation and water levels.

Over 80,000 playas have been identified across the Great Plains from Nebraska to the Llano Estacado of Texas (Playa Lake Joint Ventures 2019). These wetland environments provide a critical ecological niche that offers a diverse bio-community of resources, especially when compared to the surrounding landscape. In the Southern High Plains, playa features represent the predominant habitation for wildlife in the region with at least 29 mammalian and 130 avian species deemed as playa dependent (Haukos and Smith 1994). Geologic and pollen records indicate that playa ecology of the ancient past looked relatively similar to the present day (Haukos and Smith 1994; Holliday 1997). Historical documentation and the fossil record indicate that mammalian species including bison, black-footed ferret, beaver, and muskrat occupied playa landscapes in the past (Haukos and Smith 1994).

Playas are observed as distinct patch environments across the plains and are likened as a type of ecological island (Litwinionek et al. 2003). Playa islands are relatively isolated from other water resources in the plains and regional evidence suggests they served as a pull factor for hunter-gather groups in the past (Litwinionek et al. 2003). In prehistoric migration research, the causal factors of movement are often discussed as “push” and “pull” factors, meaning that migrants move across a landscape based upon conditions that either incite (push) or entice (pull) groups to migrate to a new place (Cameron 1995). Within this framework, playas can be classified as a pull factor due to the patchiness of resource availability across the plains, especially water. Kelly (2013) argues that water and fuel are the costliest of all resources (in terms of caloric transport costs) for hunter-gatherers and he suggests that ancient peoples would prioritize the most costly variables when choosing a place for residence. As such, playas in the Great Plains were likely to have been in the forefront of decision making for hunter-gatherer groups, as they not only provide a high priority resource, but additionally provide a diverse array of resources that is largely absent from the general Great Plains landscape.

Although the availability of water may have been a high priority, playas pulled hunter-gatherers to their shores for access to other purposes as well. Beyond aspects of food and shelter, spiritual, religious, and traditional considerations were also likely part of the decision-making process in finding a good camping spot or place to rest. The following section addresses the potential of playas as a pull factor for hunter-gatherers, specifically for hunting and camping.

Types of Playa Use: A Natural Animal Trap

Global research compiled by Nicholas (1998) shows that ephemeral wetland sites were frequently used for small-scale hunting. Nicholas (1998) compares watering holes and other ephemeral wetlands to that of game drives in alpine environments, in which the natural topography assists hunter-gathers in opportunistic hunting episodes. During periods of lower water levels, playas would have been favorable environments for animal congregation (Hill et al.

1995; Holliday et al. 1994). At the paleontological Stolles site, Haynes (2012) indicates that during Clovis times megafauna congregated at playas and are found to have died there naturally. As bison and mammoth instinctively gathered in playas, the thick concentrated clay would have limited any quick movements especially if numerous animals were concentrated within a single area. This would have provided hunter-gatherers the chance to utilize playas for opportunistic scavenging or pursuit hunting (Holliday et al. 1994). Such hunting tactics of group confusion and congregation have also been documented at arroyo trap sites (Todd et al. 2001).

The potential for playas as hunting traps have been recorded archaeologically in the Southern High Plains at the Miami, San Jon, and Big Lake sites in west Texas (Hill et al. 1995; Holliday et al. 1994; Turpin et al. 1997). In particular, the Big Lake site is a prominent example of opportunistic hunting. The environmental and faunal records indicate that the site represents a Late Paleoindian single hunting event where a herd of bison were driven into the lakebed to increase potential hunting yield (Turpin et al. 1997). In southwestern Kansas, the broken legs of the bison at the Winger site similarly suggests that playas were not only places where large game congregated, but that in period of muddy conditions, hunter-gatherers coerced animals into lakebeds as a natural animal trap (Mandel and Hofman 2003). Ancient people’s use of the surrounding topography and environmental conditions for reducing hunting risk is a commonly observed phenomenon, not only limited to playas. In Wyoming, the Muddy Creek bison corral exemplifies such land use with a physical corral built within a low depression, where wet mud would have accumulated and impaired stampeding animals that were driven into the corral (Kornfeld et al. 2010).

Types of Playa Use: A Good Camping Spot

Just as playas attract various animals, they are also good places for people to inhabit. The availability of water, topographical relief, and biodiversity that are all associated with playa habitats provide beneficial and necessary resources for hunter-gatherer communities. An archaeological example from the Great Basin show that no matter how arid the region was, populations congregated around wetland areas and hunting strategies were concentrated towards wetland-specific technologies, such as duck decoys and fishhooks (Kelly 1997). Within the same region, ethnographic data suggests that these seasonal wetlands acted as a residential hub for semi-sedentary populations, providing enough resources for extended periods of generational occupation (Kelly 1997).

While it is clear that playas attracted people of the past, archaeologists have not always clearly defined how they associate sites to playa lakes. Within the literature, only three publications have explicitly defined parameters for an archaeological playa site (Hurst et al. 2010; Judge 1973; Wendorf and Hester 1962). Hurst et al. (2010) and Judge (1973) identified sites to be associated with a playa by its proximity. Within their separate research, they both conclude that all "playa sites" would be within one kilometer of the playa rim. Although Hurst et al. (2010) does not delve into the theoretical reasonings behind this parameter, Judge's (1973) survey of over 30 sites in the Central Rio Grande Valley in New Mexico shows that 18 of these sites were found no more than three-quarters of a mile (1.2 kilometers) from a playa. He also finds that Paleoindian occupations were closest to playas and were found several hundred to 750 meters away (Judge 1973).

Wendorf and Hester (1962) and Kelly (2013) also concur that campsites are typically a distance of one kilometer or less from any water source. In the Great Plains, an analysis of 55 sites by Wendorf and Hester (1962) found that in addition to the one kilometer distance from water, campsites were also preferred on ridges, dunes, or hills that had a view of a playa or stream. Ethnographically, campsites are also most typically situated within one kilometer of a water source. In Venezuela, the Pumé women carry their daily water to camp and stay within a comfortable 700 meters (Kelly 2013). Other variables to consider for campsites include avoidance of bugs (especially mosquitoes), concealment from animals, and wind (Kiviat 1991). These potential issues can be mitigated by staying away from the rim of a playa but still within a one-kilometer distance, sometimes taking advantage of associated lunettes or other nearby landforms. All 18 playa sites analyzed in this thesis are within this one-kilometer distance established in the literature. Further, this geographic delineation will be reassessed in the final parts of this study.

Methodology

The primary methods used in this thesis pertain to the analysis and interpretation of stone tools. The following section describes the ways in which artifacts were classified, the variables that were documented, and what sources were used in assigning temporal ranges for diagnostic artifacts. This section also lays out the theoretical perspectives used within the investigation.

Human Behavioral Ecology

This research employs a variety of human behavioral ecology frameworks, which focuses on understanding adaptive human behavior in response to their natural environments. Nested within this theory is optimal foraging theory, which is a model of hunting and gathering that assesses the most ideal (or optimal) foraging opportunities, taking into consideration risks and constraints (Kelly 2013). These frameworks attempt to address how people respond (adapt) and interact with environmental variables, especially. In terms of playa research, archaeologists use these theories to predict that playas would be productive places for hunter-gatherers to reside because of the abundance and diversity of plants and animals (i.e. caloric value), especially compared to the surrounding ecosystem. Additionally, the thousands of playas across the Plains increase foraging capacity overall and further reduces hunting and gathering risk. Even in cases when a single playa is dry or unproductive, another nearby playa is likely available, making not only single playas attractive but playa landscapes generally an ideal hunting and gathering space.

The primary approach of this research is through the principle of species-area relationship and hunter-gatherer site selection. Figure 3 depicts the theoretical relationship between these two concepts. Many ecologists and biologists have studied the ecological concept of species-area (Cariveau and Johnson 2007; Connor and McCoy 1979; Hill 2007; Venne et al. 2012).

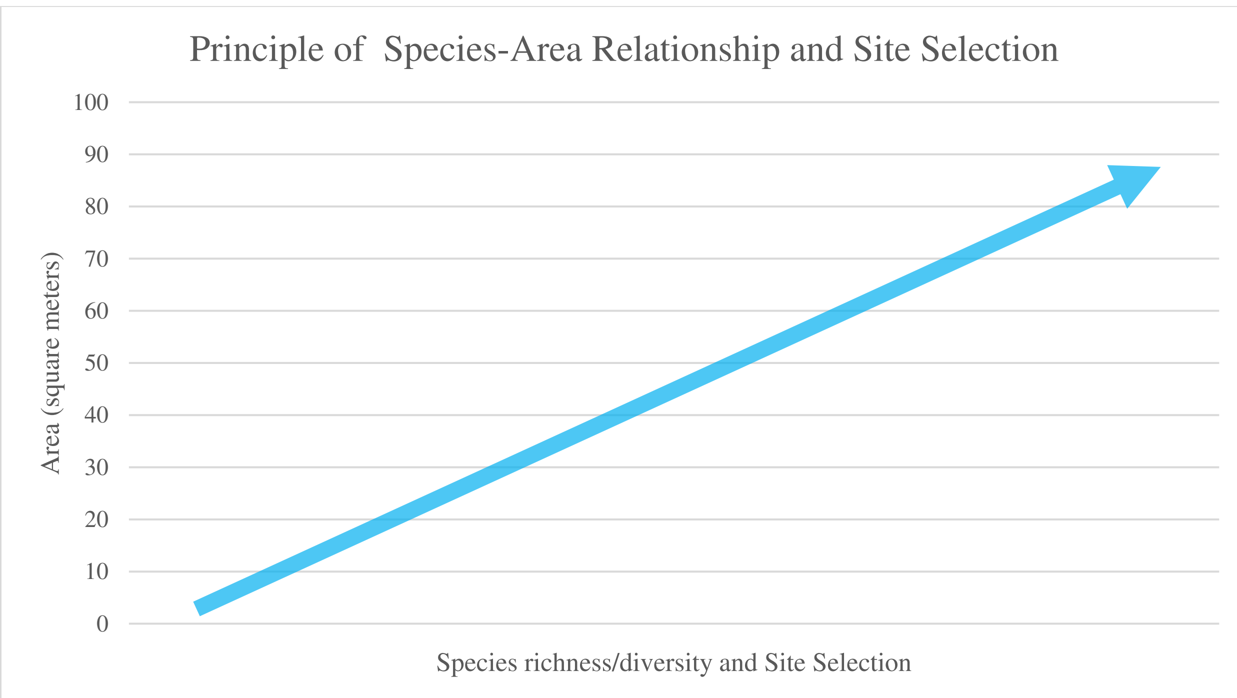

Figure 3. Visual representation of the principles of species to area relationship and hunter-gatherer site selection created from archaeological and ecological theory established by Binford 1980, Cariveau and Johnson 2007, Connor and McCoy 1979, and Kelly 2013.

The principle of species-area states that as the physical area and habitat of a particular species increases, the population of that species would also increase. In an archaeological sense, this would hypothetically improve the available resources for hunter-gatherers, making it more enticing to hunt and live within an area. This type of framework is often used in hunter-gatherer research in discussions of resource exploitation and sustainability of groups and has been observed ethnographically and archaeologically (Binford 1980; Cariveau and Johnson 2007; Connor and McCoy 1979; Kelly 2013). This thesis applies these concepts to playa lakes in the Great Plains, as they provide critical habitats for animal and plant life. Biologists have identified over 108 avian, 29 mammalian, and 70 native plant species that migrate, breed, and live in and around playa lakes in the Southern High Plains (Haukos and Smith 1994; Tsai et al. 2012).

In relation to playa morphology and biodiversity, studies have shown that playa size correlates with longer and more frequent wet periods, which in turn correlates with increased flora and fauna species richness (Venne et al. 2012). In avian species, richness and diversity has also been found to be closely related to increased playa size (Cariveau and Johnson 2007). In flora, fauna, and avian species, Cariveau and Johnson (2007) and Venne et al. (2012) found that playa area was more significant than playa depth as a predicting factor for species richness and diversity. For these reasons, playa shape and size were chosen, as variables for analysis in chapter five.

Technological Organization

Much of this thesis is focused on lithic assemblages, the various stone tools that ancient hunter-gatherers used in their daily lives and eventually discarded. The organization of this technology can be simply defined as “the regular relationship between tools, activities, and activity planning” (Sellet et al. 2006:224). Theoretically, this relationship is “regular,” but is variable as activity planning is situational to factors such as topography, landscape, and season (Sellet et al. 2006). One of the technological patterns most prominent to this research is the basic concept that increased tool diversity is indicative of site reoccupation or increased occupation span (Kelly 2013; Reckin and Todd 2020; Shott 1986). Several assumptions emerge from this pattern of technological diversity. For example, special task-oriented sites, such as hunting camps, plant collecting stations, or butchering sites, would have a lower tool diversity index than that of a basecamp (Reckin and Todd 2020; Shott 1986). In other words, if a narrow range of activities took place at a particular location, one would expect to find a relatively low diversity index; if a relatively wide range of activities took place at a particular location, the opposite effect should be observed (Andrefsky 2005; Binford 1980).

In relation to water sources, Veth's (2006) research in the Australian desert found that sites with the highest values of artifact diversity were nearest permanent water, and in contrast, ephemeral residences or "passing-through places" (places of rest or non-residential task sites) generally had low artifact diversity. The permanent water allowed people to take advantage of a particular location for a longer period, resulting in a lithic assemblage representing a diverse array of activities including processing of animals and plants, tool manufacture, maintenance, and other day to day activities. In contrast, the lithic assemblages at ephemeral sites near seasonal water sources reveal that people occupied them for less time, and thus participated in fewer activities (resulting in a lower diversity index) (Veth 2006). Although playa sites in the Plains are not permanent water sources, they were likely more than just "passing-though places," based upon the availability and stability of plant and animal resources. For these reasons, playa lithic assemblages in this thesis are expected to have moderate to high artifact diversity, with an archaeological signature that would most closely resemble an aggregation or instead a palimpsest site, as a wide variety of activities were likely to have occurred there over thousands of years.

Measuring Diversity

As discussed above, diversity indices derived from lithic assemblages can be used to differentiate sites that were occupied for longer or shorter periods. Diversity is traditionally defined as the number of different artifact types that contribute to any given assemblage (Leonard and Jones 1989). Many archaeologists and mathematicians alike have discussed the need for increased specificity when it comes to addressing and using diversity measurements in archaeological analysis (Shott 2010; Shott et al. 1989). To address some of these issues, diversity indices like the Shannon-Weaver or Simpson Index have been implemented to increase scientific rigor. The Shannon-Weaver index is used to calculate the relationship between richness (the number of distinct artifact types) and evenness (the frequency of each distinct artifact type) and the likelihood that a specific artifact would be found within an assemblage. Similarly, the Simpson index measures diversity, but with an additional measure of dominance (the presence of abundant categories) (Reckin and Todd 2020; Spellerberg and Fedor 2003). This thesis uses the Shannon-Weaver index, as many argue it is detached from total sample size and is therefore a more suitable way to measure richness and diversity across assemblages with varied sizes (Cruz-Uribe 1988; De 2007). The 18 lithic assemblages analyzed in this thesis are disparate, ranging from 52 to 1,829 artifacts, thus the Shannon-Weaver index was implemented as the most appropriate method of analyzing diversity.

Lithic Analysis

The following attributes were recorded for each of the 5,052 artifacts collected from the 18 playa sites: artifact class, artifact element, mass, raw material, presence or absence of cortex, temporal age, type, and portion. Artifact class is characterized by the raw material makeup or functional category of a specific artifact. For example, any modified flaked stone artifacts' class would be recognized as "chipped stone" or CS for short. The artifact element refers to the specific function of an artifact. Throughout this thesis it is used synonymously with artifact type. Each lithic artifact is organized into artifact categories or class elements, based upon its morphology. Artifact categories include items such as projectile points, bifaces, preforms, hafted knives, edge modified flakes, scrapers, drills, cores, hand stones, and netherstones (See Appendix A for a complete list of categories). Such classifications were made using a basic, broad lithic artifact typology described by Andrefsky (2005). Although the names of the elements are descriptively functional, the tool itself is not assumed to be limited to that function. Nevertheless, the distinct artifact types are assumed to represent a minimum behavior or activity type. For example, bifaces are analyzed as a representation of single distinct behavior, although it is well accepted that a single biface can accomplish various tasks and has a complex use-life (Kelly 1988). Due to the quantity of tools within the assemblages, only the broad morphology of any given tool was assessed. The characterization of artifact types is a critical piece of this thesis, as the number of distinct types results in the diversity indices that are used to analyze occupational duration and intensity.

Another aspect of lithic analysis is the debris and debitage left behind from lithic reduction and tool production. Although the presence of specific debitage types is also indicative of diverse behaviors and activities, in lieu of time and research goals, analysis of debitage was omitted from this study.

Measuring Time

One of the most important aspects of archaeology is measuring and determining time. The most dependable measure of time is through stratigraphic provenience and independent dating (e.g., radiocarbon dating). However, one of the most common ways of “dating” is through artifact types that are potentially diagnostic to a specific period (Urban and Shortman 2012).

Such typologies are constructed from artifacts recovered from well stratified and dated contexts. Subsequently, when these same artifact types are found at other sites, their well-understood temporal provenience provides an approximate age for artifacts found at other non-stratified or non-dateable sites. This can be in the form of a broad range of time, such as the transition from older hunting technologies of spear points and darts to the more recent introduction of bows and arrows (Shott 1997). In other situations, artifacts are more indicative of a narrower window of time, such as regional projectile point types that have limited temporal use. This is particularly useful for collector's assemblages, which are typically surface collections with no stratified context.

All of the artifacts examined in this these are strictly limited to the surface. Therefore, approximate time will be determined from the presence of diagnostic artifacts such as projectile points. Other tools and artifact types are also indicative of specific temporal markers (See Appendix B for complete chronology and artifact associations). For example, ceramics in the South Platte River Basin are known to be present only after 1,800 B.P. (Gilmore et al. 1999) and channel flakes are known to be from the fluting process of Clovis and Folsom aged tools from the Early and Middle Paleoindian periods (12,000 – 10,000 B.P.) (Sellet 2013). The identification of temporally distinct artifacts is based upon peer reviewed literature within the region. Priscilla Ellwood's compilation of Colorado pottery informed the ceramic identification (Ellwood 2002). Classification of Paleoindian gravers, channel flakes, and preforms were based upon research from Amick (1999), Sellet (2013), and Wilmsen and Roberts (1978). The South Platte River Basin chronology and projectile point typology will follow Gilmore et al. (1999). Projectile point identification has an expansive literature that is detailed in Table 1. Additionally, broad regional literature, including Gilmore et al. (1999), Kornfeld et al. (2010), and Peck (2011), were also used for projectile point classification.

Table 1. Resource list for projectile point classification.

Period	Stage	Type	Reference
Paleoindian	*Early*	Clovis	Boldurian (2008)
	Middle	Folsom	Amick (1999); Meltzer et al. (2002); Wilmsen and Roberts (1978)
	Late	Agate Basin	Guarino (2018); Kornfeld (2013); Irwin-Williams et al. (1973)
		Alberta	Irwin-Williams et al. (1973)
		Angostura	Thoms (1993)
		Eden	Frison (1984)
		Hell Gap	Irwin-Williams et al. (1973)
		James Allen	Mulloy (1959)
		Scottsbluff	Frison (1984)
Archaic	*Early*	Mount Albion	Benedict and Olson (1978)
	Middle	Duncan-Hanna	Davis and Keyser (1999)
		Mallory	Davis and Keyser (1999)
		McKean	Davis and Keyser (1999); Kornfeld et al. (1995)
	Late	Yonkee	Bentzen (1962) Todd et al. (2001)
		Besant/Outlook	Bubel (2014)
		Pelican Lake	Peck (2011)
Late Prehistoric	*Early Ceramic*	Hogback	Somer (1997); Perlmutter (2015)
	Middle Ceramic	Avonlea	Kehoe (1966)

Archaeological Research Partners

The archaeological assemblages analyzed in this thesis are from the private collection of avocational archaeologist Mike Toft. As playas in northeastern Colorado are overwhelmingly situated on privately-owned properties, this research would not be possible without collaborations between professionals, private landholders, and avocational archaeologists. Of course, there are various ethical concerns that must be considered when entering such alliances. There is a spectrum of those who participate in archaeology outside of the professional realm, including single-time collectors, looters, and researchers. Some have intentions to monetize and commodify, rather than to protect (LaBelle 2003a; Pitblado 2014). Others, such as Mike Toft, fall on the opposite end of this spectrum and are cultural resource stewards.

Mike Toft has worked and lived in the region for over 50 years. Toft is a graduate of the very first 1969 Colorado State University archaeological field school and has a long history of working with professional archaeologists. Most notably, he assisted in the analysis and publication of the Nelson site with several academic archaeologists and researchers (Kornfeld et al. 2007). He has also excavated with the Smithsonian Institution at many classic Plains sites including Claypool, Jones-Miller, Donovan, Dutton, and Frasca site (Personal communication Mike Toft 2019). Looking at his history, it is easy to delineate his expertise and professionalism as a cultural resource advocate, as he is well versed in the literature and advocates for the importance of archaeological provenience.

In a similar collaboration, Reckin and Todd (2020) identify several potential issues with the nature of private assemblage. In this study, they highlight the complication of these collections in analyzing artifact diversity, as many collectors are drawn to projectile points and similar formal tools but leave behind items such as utilized flakes, ground stone, and ceramics (Reckin and Todd 2020). In these cases, the diversity indices can rather indicate collector bias instead of ancient behaviors. Although this is a fair assessment of private collections, the assemblages analyzed in this thesis are likely a better representation of the true archaeological record at the sites visited by Toft. His methodology and practice consist of collecting all items including flakes, cores, utilized flakes, ground stone fragments, and ceramics at all sites. As these data were available, this thesis analyzes not just stone tools but all artifact types (except for debitage as discussed above).

Summary

This research focuses on an environment that is seasonal and patchy, but that provides critical resources for hunter-gatherers across an ecologically homogenous landscape. The biodiversity of playa lakes in the Great Plains can help expand contemporary understanding and representation of ancient hunter-gatherer lifeways. Through a human behavioral ecological lens, this research aims to shed light on diet, technology, and settlement patterns, specifically looking at how peoples of the past lived around playa lakes. Such archaeological research within marginal or seasonally limited environments can shed light into the flexibility of past mobile societies, adding to the environmental possibilism of indigenous groups (Lemke 2018).

Little is known about ancient life near playas in northeastern Colorado, and this theme of marginality is not a new concept within this region. Almost 60 years ago Waldo Wedel (1963) called archaeologists to action to take notice of the often misconceived “Great American Desert.” He highlighted the potential and longstanding history of the utilization of ephemeral water sources in the plains. This thesis aims to answer his call by investigating the “blank spots” of indigenous history near playa lakes in the South Platte River Basin.

CHAPTER TWO: HISTORY OF PLAYA RESEARCH

Much of what is known about playas and their associated archaeology stems from research over the past 60 years in the Southern Plains. The most prominent archaeological and geological publications are those of Vance Holliday (1997) and from notable sites including the San Jon (Hill et al. 1995), Ryan (Hartwell 1995), Miami (Holliday et al. 1994), Big Lake (Turpin et al. 1997), Tahoka Walker (Hurst et al. 2010), and Nall sites (LaBelle et al. 2003). The sites in the Southern Plains are represented primarily by Paleoindian-aged mammoth and bison kill sites, indicated by small lithic assemblages comprised of few projectile points and flakes. Additionally, several Class III surveys in Wyoming (LaBelle 2003b and 2004) and Oklahoma (Brosowske and Bement 1998) also shed light on playa occupations on a broader landscape level. Regarding the biodiversity of playas, research by David Haukos and Loren Smith (1994; 1997) have also been fundamental to contemporary understandings of playa landscape ecosystems. Overall, archaeological work has identified only a few sites and regions in the Great Plains that are associated with playas.

Southern High Plains

Playas in the Southern High Plains provide critical habitats for at least 20 mammalian, 130 avian, and 70 plant species (Haukos and Smith 1994). These species have been deemed playa dependent and have a long evolutionary history alongside the seasonal availability of water. The flora and fauna that are present today looks relatively similar to the ancient past, save for mammalian species which have gone either gone extinct or have extremely low populations, including bison, beaver, black-footed ferrets, and muskrat (Haukos and Smith 1994).

The geochronology of playas in the Southwest indicate that some playa basins are 30,000 years old. Through geochronological reconstruction of playa basins by Holliday et al. (1996), both large and small playas are known to have been formed by the end of the Pleistocene. With increased aridity, the end of the Pleistocene also marks the time when some basins began filling with sediment and continued to fill through the early Holocene. In parallel with sediment fill, stratigraphic analysis also illustrates that playas held water during most of the middle Pleistocene and did not begin drying up until the early Holocene (Holliday et al. 1996). This relatively xeric period in the region is known as the Altithermal, or Hypsithermal, which occurred 8,500 to 4,000 calibrated years B.P. (Wood 1998; Meltzer 1999). This period is marked by reduced forest cover, the expansion of drought-tolerant grasses and decreasing lake levels (Meltzer 1999). Such climate change determined the hydrocycles of playa lakes, and as water levels fluctuated, lacustrine and drought signatures were created in the soil, leaving a distinct transitionary mark. These changes created a conducive environmental record for comparison with the changing subsistence patterns of indigenous peoples.

There are a variety of ancient hunter-gatherer subsistence strategies in the Southern Plains, although the most common are mammoth and bison hunting sites. The Big Lake site (41RG13) in Reagan County, Texas is a single event bison hunting episode, with a minimum of 10 individual bison (Turpin et al. 1997). Turpin et al (1997) recovered in situ bison with articulated leg bones that suggest that the bison died in a standing position. Only one projectile point was recovered among the bison remains, although several others were recovered by local collectors, all of which were Late Paleoindian types. Turpin et al. (1997) interprets this event to have been an incident of opportunistic hunting due to the absence of tools. The sediment composition surrounding the bison bone bed indicate that the event occurred during a relatively arid period and the bison likely were aggregating in the shallow and muddy water. Site 41RB13 is just one of many occupations around Big Lake, ranging from the Paleoindian to the Late Prehistoric. The lake itself and the surrounding area has had intensive reconnaissance work from a pipeline project in 1988 resulting in a total of 36 sites that are directly related to the exploitation of Big Lake, although many of these sites were farther than a 1-kilometer distance (Turpin et al. 1997). The Miami site (41RB1) is another single episode hunting event in Roberts County, Texas (Holliday et al. 1994). Researchers recovered one fluted projectile point within the carcass of one adult mammoth. Similar to the Big Lake site, the assemblage is extremely small, and Holliday et al. (1994) suggests that although several scenarios are probable, that it was likely an opportunistic scavenging event rather than a planned hunting episode. Unlike the Big Lake Site, investigations at the Miami site were limited to the basin of the playa and broader playa occupation in the area is unknown (Holliday et al. 1994). The San Jon site (4LA6437) is the final bison kill site dating between the Late Paleoindian and the Late Archaic (Hill et al. 1995). Once again, the analyzed lithic assemblage is small, with only nine points and few pieces of debitage. At the time of the initial investigation, the San Jon site was one of the first recorded multicomponent sites observed within a playa basin (Hill et al. 1995:386). Similar to the Miami and Big Lake sites, whether the bison were pushed into the playa or naturally congregated and subsequently died there is still unknown. In either case, the fragments of projectile points and debitage found within the bone bed indicate that hunter-gatherers exploited the bison remains.

Two other key sites in the Southern Plains, the Ryan and Tahoka-Walker sites, suggest very different playa landscape occupation. The Ryan site (41LU72) is located in Lubbock County, Texas (Hartwell 1995). The site is comprised of at least 114 artifacts, 31 of which are complete. These artifacts were found along the perimeter of a playa but still within the basin.

Although the site has been disturbed by agricultural plowing and alluvial erosion, the clustered nature of the artifacts and the large collection of complete bifaces and tools indicate that the overall site represented a cache. The morphology of the tools and the radiocarbon dates place the cache within the Plainview period (10,000 radiocarbon years B.P.). The final prominent playa site is the Tahoka Walker site (41LY53), located in Lynn County, Texas (Hurst et al. 2010). The site is situated 0.92 kilometers from the playa rim. 41LY53 stands out from among the other playa sites with a large (n=1,442), diverse assemblage, and most notably, the only sites with hearthstones (Hurst et al. 2010). Hurst et al. (2010) interprets the site as an open-air campsite, making it the only playa camp known in Texas.

Lesser known archaeological investigations of playas in the Lubbock Lake area add to the intensity of playa occupations in the Southern Plains. The Perry site (42LU75) is located in Lubbock County, Texas and represents a playa site situated on a lunette (Brown 1999a). 42LU75 has a large Late Prehistoric to Protohistoric assemblage, with much of the analyzed artifacts being from surface collections by local avocational archaeologists. In addition to the lithic artifacts, unlike the other playa sites covered in this section, the Perry site has a large pottery assemblage (n=2,696). Just south of the Perry site is the Wolfforth site (has not received a Smithsonian trinomial number), another private surface collection that represents a multicomponent site spanning from the Middle Archaic to the Protohistoric (Brown 1999b). The Wolfforth site has a diverse array of artifacts including beads, pipe fragments, drill, scrapers, ground stone, and other bifacial tools. The diversity and size of the artifact assemblage at the Perry and Wolfforth site represents a more expansive temporal and functional occupation of playas, especially when compared to the artifact assemblages of bison/mammoth hunting sites known throughout the region (Hartwell 1995; Hill et al. 1995; Holliday et al. 1994; Turpin et al. 1997).

Outside of Texas, the Nall site (LaBelle et al. 2003) and CRM reconnaissance by Brosowske and Bement (1998) also shed light on playa occupation. The Nall site (34CI134) in Cimarron County, Oklahoma represents a large lithic assemblage with over 1,000 artifacts (LaBelle et al. 2003). The chipped stone tools are comprised of points (n=400+) and scrapers (n=150+). In addition, at least 600 flakes have also been recorded from the site. The most predominant points are from the Late Paleoindian era, especially Allen and Plainview types. Many of the artifacts known from the Nall site are from a local collection accumulated in the early 1930s (LaBelle et al. 2003). More recent work by LaBelle et al. (2003) resulted in one of the largest excavations of any playa site. This work generated a robust assemblage of flakes, and smaller amounts of animal bone and stone tools dating to the Early-Middle Holocene (LaBelle, personal communication 2021).

Many of the sites described above have focused on intra-site level analysis of playa occupation and less research has been dedicated to the broader landscape level. One exception is the work of Brosowske and Bement (1998) in the Oklahoma Panhandle. This reconnaissance project surveyed 5,520 acres focusing specifically on assessing site distribution within a playa landscape. Their landscape approach was guided by concepts of tethered nomadism, a theory introduced by Taylor (1964) which discusses hunter-gatherers being tethered or rooted to a resource because it is scarce elsewhere within the region. During this survey, Brosowske and Bement (1998) recorded 28 sites in close proximity to 14 playas. The results recovered few lithics, with the largest prehistoric assemblage from one site being 40 artifacts. The lithic analysis determined that activities near playas, although ephemeral, were diverse and included hunting, butchering, tool production, maintenance, and plant processing.

These studies from individual playa sites and landscape surveys from the Southern Plains illustrate the variety of playa occupations, from single episode hunting events, to open camp sites, to caching. The assemblage and playa characteristics of key sites in the Southern Plains literature are detailed in Table 2. The data from the seven sites show that the playas were largely utilized as places for opportunistic hunting (n=4; 57% of sites), with some evidence for larger campsites, like the Nall and Tahoka-Walker sites (Hurst et al. 2010; LaBelle et al. 2003). The sites were predominately situated within the playa basin (n=4), with some located along the northern (n=1) and northwestern (n=2) perimeters of the playa.

Comparisons of playa assemblage size show that over 50% of sites have no more than 10 artifacts, all of which are from mammoth, or bison kill sites. The remaining three sites have extremely large assemblage sizes ranging from 114 to 1000+ artifacts. The two largest assemblages are the Nall and Tahoka-Walker sites, which are both considered to be campsites. These two sites are comparable with the assemblage size and artifact diversity of the Perry and Wolfforth sites in western Texas. Although these two are lesser known, when added to the prominent playa literature, they paint a much more diverse picture of playa occupation in the Southern Plains. Similarly, although the Southern Plains is well known for its playa archaeology, other subregions of the Plains, including Wyoming and Kansas, also have recorded occupations and can enhance our understanding of ancient hunter-gatherers and playa utilization.

Table 2. Playa data and assemblage characteristics documented from key sites in the Plains.

Site	State	Site type	Artifact assemblage	Occupation age	Depth (m)	Diameter (m)	Site location	Reference
Winger (14ST401)	KS	Bison Kill	-PP (n=2) -Flake tool (n=1)	Late Paleo	5	–	In the playa basin	Mandel and Hofman (2003)
San Jon (29LA6437)	NM	Bison Kill	-PP (n=9) -Flakes (n=?; notes indicate few flakes) -Ceramics (n=?)	Late Paleo-Late Archaic	10	360	In the playa basin	Hill et al. (1995)
Nall (34CI134)	OK	Campsite	-PP (n=400+) -Scraper (n=150+) -Flakes (n=600+)	Late Paleo	4-6	750-1000	Northwest of playa	LaBelle et al. (2003)
Big Lake (41RG13)	TX	Bison Kill	-PP (n=6)	Late Paleo	–	–	North of playa	Turpin et al. (1997)
Miami (41RB1)	TX	Mammoth Kill	-PP (n=3) -Scraper (n=2) -Flakes (n=2)	Clovis	1.6	23	In the playa basin	Holliday et al. (1994)
Ryan (41LU72)	TX	Cache	-PP (n=14) -BF (n=46) -Flake tool (n=1) -Flakes (n=46) -Ground stone (n=3)	Plainview	–	–	In the playa basin	Hartwell (1995)
Tahoka-Walker (41LY53)	TX	Campsite	-PP (n=25) -BF (n=29) -Core (n=17) -Flakes (n=965) -Drill (n=4) -Flake tool (n=46) -Hearthstone (n=356)	Paleo-Late Archaic	–	–	Northwest-southeast of playa	Hurst et al. (2010)

Dash (–) indicates that the data was unavailable or unreported in the literature.

Playas in Wyoming and Kansas

The literature of the Southern Plains is vast and although recorded playas sites elsewhere are few, there are several notable playa sites in the Central and Northern Plains, especially the Winger site (14ST401) (Mandel and Hofman 2003) and reconnaissance inventories in Wyoming by LaBelle (2003b, 2004). In southwestern Kansas, the Winger Site (14ST401) located in Stanton County represents a bison kill with the remains of at least six bison (Mandel and Hofman 2003). The positioning of the preserved leg bones indicate that they likely collapsed while standing in thick mud, similar to that of at Big Lake (Turpin et al. 1997). Three lithic artifacts were recovered in the disturbed areas of the site, including a large bifacial thinning flake, ovate biface, and a fragment of an Allen point. Within the bone bed itself, a backed knife and complete and fragmentary Allen points were recovered in situ. The assemblage at the Winger site is small and is similar to other bison and mammoth kill sites in the Southern Plains.

Farther north, in northeastern Wyoming, several CRM surveys have also identified playa occupations on the landscape level. Class III inventories by LaBelle (2003b; 2004) have found similar occupation patterns recorded in Oklahoma by Brosowske and Bement (1998). Across 3,080 acres of survey, LaBelle (2003b) identified three historic scatters (48CA4588, 48CA4589, 48CA4593), one prehistoric lithic scatter (48CA4594), two isolated points, and one isolated scraper that were all recorded either on the surface of a playa basin or on nearby benches within several hundred meters of a playa (LaBelle 2003b). Another large inventory (5,153 acres) found several playa sites including an isolated late Paleoindian point and three prehistoric sites (48CA4774, 48CA5214, and 48CA5215). Both sites 48CA4774 and 48CA5214 had few artifacts and were situated on a flat plain (LaBelle 2004). In contrast, site 48CA5215 was the only site situated on a knoll and had the largest lithic assemblage (n=55). The artifacts analyzed from site

48CA5215 were diverse and included items such as a drill and ground stone fragments. The Class III inventory shows that most of the prehistoric sites were ephemeral lithic scatters or isolated finds (except for site 48CA5215), almost identical to the Brosowke and Bement (1998) surveys in Oklahoma (LaBelle 2004). Additionally, all the sites were located either within the basin or along the northwest, north, northeast, or eastern perimeter. This directional pattern has also been observed in the Southern High Plains.

Several other geologic and biologic studies in eastern Wyoming by Bowman (1997), Brough (1996), and Holpp (1977) have recognized playa landscapes for their resources potential but have yet to be the focus of any archaeological inquiry.

Discussion

Although playas are one of the primary landforms on the Great Plains, there is a relatively limited literature on the occupation of these seasonal lakes. The Southern Plains has the most research, followed by CRM literature in Wyoming. There are at least seven key sites (Table 2) that form contemporary understandings of hunter-gatherer lifeways around playas. Several themes stand out when assessing the sites side by side. First, the archaeology at playa lakes are either extremely small, less than 10 artifacts, or extremely large, more than 1,000 artifacts. Related to collection size, four of the seven lithic and faunal assemblages indicate that sites were single event hunting episodes, while only two sites suggest any longer-term occupations or camps.

Second, the analysis of the sites revealed a distinct pattern of being situated within the playa basin itself or along the northern perimeters. The location of the site and site type seems to correlate with this small data set, as all kill sites were within the basin and camp sites were on the uplands. The third pattern observed among the seven playa sites is their temporal occupation.

Much of the chronology of playa sites are primarily represented by the Late Paleoindian era, although there are some Archaic representations at the San Jon and Tahoka-Walker sites (Hill et al. 1995; Hurst et al. 2010). All seven sites have diagnostic artifacts from the Paleoindian period, contributing to a current assumption that playa use is primarily a Paleoindian phenomenon (Judge 1973). Not until a consideration of broader playa literature, such as the Perry and Wolfforth sites, are there any representation of the Late Prehistoric period (Brown 1999a, 199b).

A final theme not related specifically to playa archaeology but regarding discovery is that almost all sites (apart from the Big Lake site) were initially discovered by avocational archaeologists. Many of the investigations begin with the analysis of surface collections that then lead researchers to deeper questions and ultimately to complete excavations (Brown 1999a; Holliday et al. 1994; Hill et al. 1995; LaBelle et al. 2003). Such a pattern has also been observed in Paleoindian research, specifically in regard to Clovis aged sites (Pitblado 2014). Pitblado (2014) lays out the importance of avocational and professional partnerships in archaeological research by providing a case study of Clovis period occupations. Many of the Clovis-aged sites are known solely because of the willingness of both private landowners, i.e. collectors, and professional archaeologists to work together. If not for this partnership, much of the data that contributes to our interpretations of the earliest peoples living in the Great Plains would be unknown. If such partnerships were not prioritized, this displaced data would change our entire perception of early human colonization (Pitblado 2014). Similarly, ancient hunter-gatherer movement across the Plains, specifically regarding playas, has been informed by collaborations with non-professionals. Further studies, such as this thesis, prove why such partnerships are crucial.

Playa landscapes provide resource diversity for both animals and for indigenous groups of the past who hunted and gathered across the Great Plains. These examples throughout the Southern Plains and beyond suggest that wetland environments are highly productive and have been part of ancient cultures and lifeways. This archaeological evidence suggests that playas were likely chosen for both spontaneous and longer-term purposes ranging from single encounter hunting traps to tool caches, to campsites with longer occupations. The current playa literature discusses a long record of hunter-gatherer utilization of playa landscapes, specifically during the Paleoindian and into the Archaic period, with a high frequency of mammoth and bison exploitation. Although contemporary research from the Southern Plains, Wyoming, and Kansas is critical for research, it still provides only a limited view of playa landscape use.

Other regions within the Great Plains, particularly in the Central Plains, remain largely unexplored. In the state of Colorado, very few playas are known to be associated with archaeology, let alone targeted for survey. This is in spite of the fact that there are over 8,000 playas identified throughout the state, with at least 4,000 of those in eastern Colorado (Playa Lake Ventures 2019). Much of this is due to private land ownership, which impedes professional or academic investigation because of the lack of Section 106 work within the region. To better understand the playas within the study area of the South Platte River basin, the following chapter aims to set a baseline and to identify the gaps in our understanding of the archaeology of playas in northeastern Colorado.

CHAPTER THREE: PLAYA ARCHAEOLOGY IN COLORADO

There are strikingly few recorded playa sites within the state of Colorado. However, based on data from the Southern Plains and the high frequency of playas generally, this thesis proposes that there is great potential for playa archaeology in the state. Paired with analysis of privately known sites by local avocational archaeologist Mike Toft, a new picture of hunter-gatherer subsistence in the plains begins to emerge. This new data show that playa settlement is not limited to the Southern High Plains or anomaly sites in the Northern Plains. This chapter will discuss and examine playas generally within the state of Colorado, the archaeological record within the database of the Office of Archaeology of Historic Preservation (OAHP), and the few playa-focused surveys and playa sites within the study area of the South Platte River Basin.

Mapping Playas in the Great Plains

A regional stewardship group called Playa Lakes Joint Ventures (PLJV) has mapped and studied the presence and distribution of playa lakes for habitat conservation purposes. This organization was established in the 1990s and has worked to conserve and preserve playa lake landscapes for migrating bird populations (Playa Lakes Joint Ventures 2019). PLJV has created an interactive digital map of the location of all potential playas within the states of Nebraska, Kansas, Colorado, Oklahoma, Texas, and New Mexico. The locations of playas were determined by compiling polygons derived from GIS data within SSURGO Soils, Landsat, National Wetlands Inventory, National Agricultural Imagery Program, National Hydrography Dataset, and the Nature Conservancy (Boagerts 2019). This open source data indicate that Colorado alone has 8,049 playas, primarily clustered in the eastern half of the state. There are a total of 2,444 playas in the five counties within the study area of this thesis, comprising 30% of the state total. Within the entire study area, including Chase county in Nebraska, there are 4,230 playas. The playa frequency in each of the six counties are as follows: Washington (n=1,180), Sedgwick (n=404) Weld (n=357), Phillips (n=288), Logan (n=215), and Chase County (n=1,786) (Figure 4).

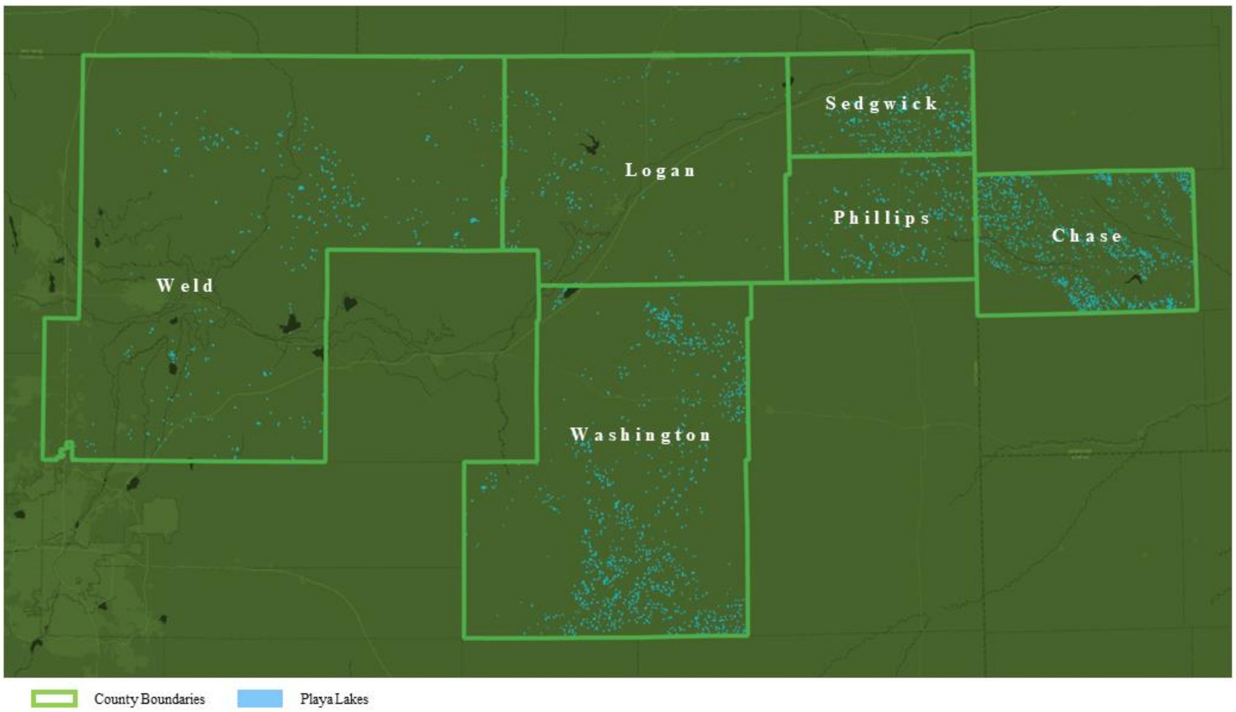

Figure 4. Distribution of playa lakes within the six counties in the study area: Chase, Logan, Phillips, Sedgwick, Weld, and Washington.

The PLJV database provides numerous variables related to the characteristics of each playa such as size, soil composition, integrity, and proximity to roads. The playas within the study area range in size from 60 to 1,000,000 m^2 (0.015 acres to 247 acres). Most of the playas were less than 1 hectare (n=2,395; 57%) with 78% of these falling between 0.5-1 hectare. A total of 1,604 playas were within the 1 to 5-hectare range, representing 34% of all playas. Only 13 playas were larger than 20 hectares, with only 3 of these ranging between 51 to 100 hectares.

While the original dataset does not include the roundness of playas, both size and roundness are significant to this research as variables known to correlate with longer and more frequent wet periods (Sabin and Holliday 1995; Venne et al. 2012). The increased periods of moisture also correlate to increased species richness and diversity, especially in avian species and some flora (Cariveau and Johnson 2007). Additionally, Venne et al. (2012) found that the area of playa was more of a predictor of species richness and diversity that playa depth. The following will provide an overview of the general shape and size of all playas within Chase, Logan, Phillips, Sedgwick, Weld, and Washington Counties.

The relative circularity was manually calculated using the basic equation for roundness:

$$Circularity = \frac{4\pi A}{P^2}$$

This equation calculates the relative circularity or roundness of each playa and produces a value which determines how closely the shape resembles a mathematical circle, by multiplying 4 by π (3.14) and dividing this value by p (perimeter) squared. A value of 1 signifies a perfect circle and a value near 0 signifies a linear polygon. Figure 5 provides a visual example of the range of variation in playa circularity in a small section of Phillips County.

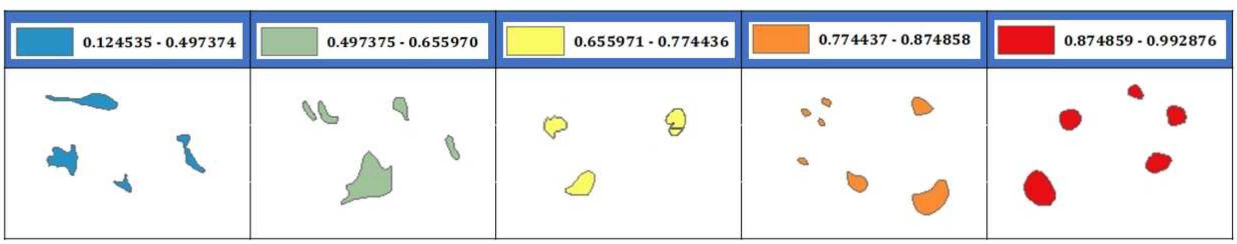

Figure 5. Examples of the variation within each circularity value range. The blue column indicating values closest to 0, representing linearly shaped playas, and the red column indicating values closes to 1, representing the most circular playas.

As most geologic and hydrologic definitions of playas indicate circularity to be a key component of playa formation, most of the playas in the South Platte River Basin are relatively circular; with 82% having a value of 0.66 and above, and 33% of these being above the values of 0.87. On average, these playas have a circular value of 0.79. The shape and size of the playas within the study area indicate that they are morphologically conducive for supporting a diverse population of flora and fauna (Sabin and Holliday 1995; Venne et al. 2012). Given that the size and shape have not changed significantly, and that many of these water basins were formed in the Late Pleistocene, researchers can use this modern playa data to examine the potential of these landscapes for ancient hunter-gatherers (Haukos and Smith 1994; Holliday et al. 1996).

The Playa Lakes Joint Ventures data reveal that there are at least 8,049 playas within the state of Colorado, but little is known about the archaeology surrounding them. The sites in the Southern Plains demonstrate that there is great potential to test whether playas in the Central Plains were also utilized by ancient peoples of the past. The following sub-section will compare the known playa locations with the total recorded playa sites within the Colorado state database and investigate the gaps in the archaeological record.

Recorded Sites in the State Database

To get a baseline for the presence of playa archaeology generally within the South Platte River Basin, an initial search was carried out within the site records of the Office of Archaeology and Historic Preservation (OAHP) in Colorado. Figure 6 shows this contrast of archaeological research across the state, with a large number of sites recorded in the central and western portion of the state, and very few sites recorded in the northeast corner. The frequency and distribution of recorded sites across the state is a reflection of modern-day land holdings and the lack of CRM or academic endeavors in certain regions. As of 2019, when this search was initiated, a total of 2,912 prehistoric and historic sites were recorded within the database of the Colorado OAHP in the five counties of Logan, Phillips, Sedgwick, Washington, and Weld. Analysis of recorded sites in Chase County, Nebraska were omitted due to different OAHP standards and procedures. At least 88% of the total sites within the five counties were recorded in Weld County (n=2565). The remaining 12% of prehistoric sites are distributed throughout Logan (n=221; 7.8%), Phillips (n=6; 0.2%), Sedgwick (n=61; 2%), and Washington (n=59; 2%) counties, respectively. Especially striking in this data is the absence of sites in Phillips County, which has less than ten total recorded sites, the lowest recorded in any county in the entire state.

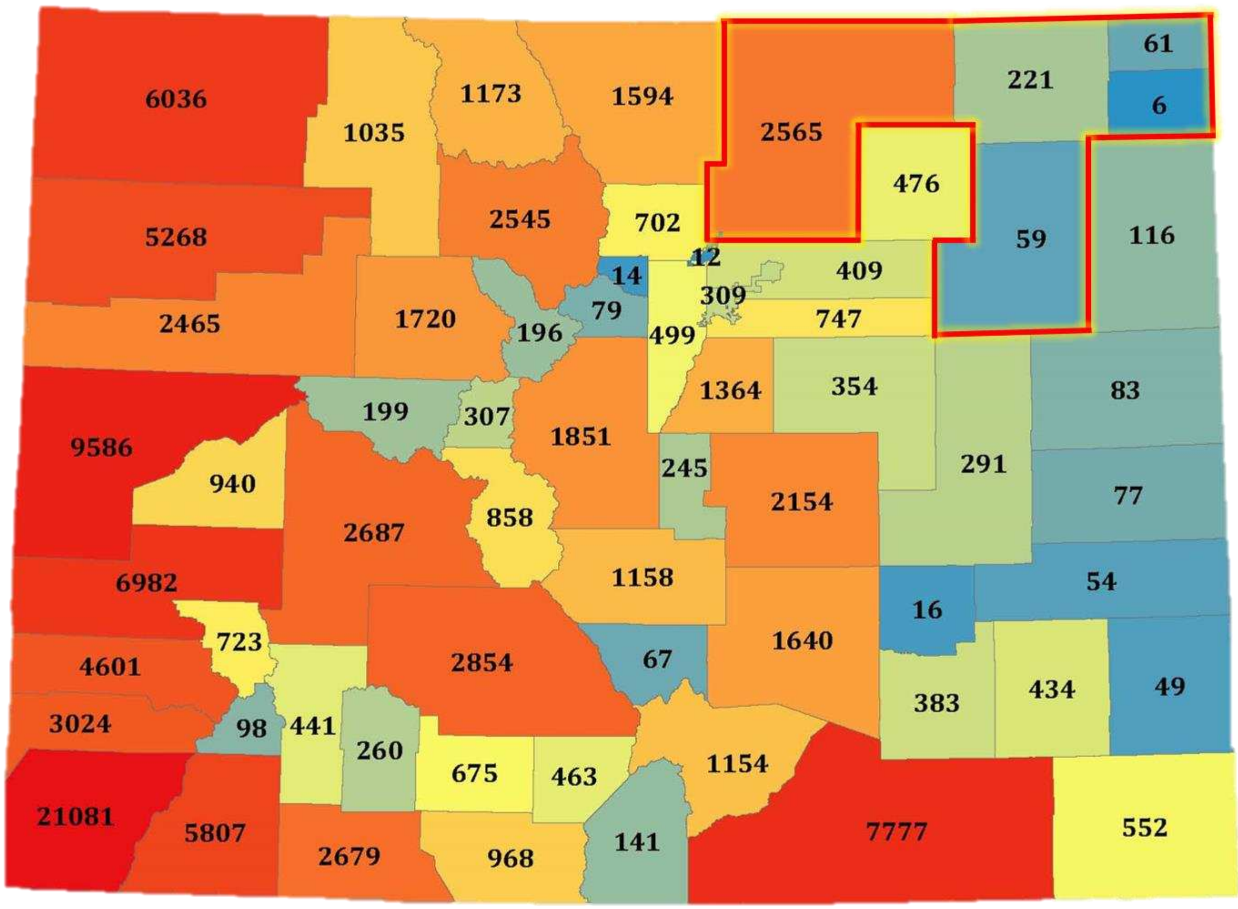

Figure 6. The number of archaeological prehistoric sites recorded in each county in the state of Colorado as of 2019 (data from the OAHP). The highlighted area indicates the counties which are in the study area, Logan, Phillips, Sedgwick, Washington, and Weld Counties, respectively.

To get a broader understanding of playa sites in Colorado, further investigation into the OAHP was instigated for this research. This included a keyword search of all prehistoric sites, site form evaluation, and analysis of topographical maps. The keyword search request consisted of both colloquial and local terms for playas. The searched words included: playas, lakes, ponds, lacustrine, wetlands, lagoons, watering hole, buffalo wallow, and prairie pothole. Following this search, sites were verified through a detailed analysis of site forms. The qualifications for this secondary analysis included sites that had a prehistoric component, a site that is less than 1000 meters from the rim of a playa, and a clear topographical depression that is recognizable from aerial images and topographic maps as established in playa identification methodologies (Bowen et al. 2010; Holliday 1997; Sabin and Holliday 1995). This keyword search and site form analysis resulted in only one prehistoric site in Kit Carson County, the Witzel site (5KC225). However, there are at least three other previously known playa sites that did not surface during this analysis (these will be discussed in the coming section). This issue calls attention to the difficulties of using large data sets as such from the OAHP, but also the potential problems with the current structure of site recording and limited understandings of playa landscapes.

The Witzel site (5KC225) in Kit Carson County, Colorado is a Cody Complex bison bonebed that soil surveyors detected in the 1970s (Cassells 1983; LaBelle and Holen 2005). Investigation by archaeologist Dennis Stanford shortly following the initial findings and reported several Cody complex tools within a large playa basin that measured 741 acres and a depth of 12 meters. Additionally, a large bison bone was dated to 7160 ± 135 radiocarbon years B.P., further supporting the material culture identified as being part of the Cody Complex (Cassells 1983; LaBelle and Holen 2005). In a more recent site revisit, LaBelle and Holen (2005) established communication with current landowners which revealed an additional scraper that had eroded from the cut bank since the original investigations.

Although the OAHP search resulted in only one recorded playa site in Colorado, there are several that are known within the archaeological literature. During a Class III survey near the Witzel site, LaBelle and Holen (2005) also recorded an additional site (5KC224) and isolated flake (5KC218) both in close proximity to a playa. Site 5KC224 was recorded as a prehistoric open lithic camp southeast of a playa. This artifact assemblage comprises of 40 flakes, two bifaces, one scraper, one bison leg bone fragment, and one bison molar. The site was situated, at the time, on an active agricultural field which propelled exposure of the faunal remains and lithic artifacts (LaBelle and Holen 2005). Around the same time as Dennis Stanford's visit to the Witzel site, he also visited the Dutton (5YM37) and Selby (5YM36) sites in Yuma County, Colorado (Cassells 1983; Stanford 1979). Both the Dutton and Selby sites are situated within separate playa basins that had been developed into gravel pits and much of the recorded archaeology is notably out of context. Both sites contain the remains megafauna including mammoth, horse, bison, and camel, some of which have been dated to pre-Clovis times. Although the mammoth bones were not found in direct association with any material culture, the bones were observed to have human caused breaking, flaking, and percussive marks. Additionally, a chert flake and a single Clovis point were found amongst the construction debris at the Dutton site, further connecting ancient peoples to this site (Stanford 1979). The sites in Kit Carson County and the Dutton and Selby sites suggest that playas in Colorado were utilized and are likely a part of larger landscape use within the region.

Potential Playa Sites in Colorado

With few results from the OAHP data and no known playa sites recorded within the five counties, a secondary analysis was done to determine whether there are potential playa sites within the study area. Using playa polygons from the Playa Lakes Joint Ventures (2019) data set, a concentric buffer was placed 1000 meters around each playa (from the edge), maintaining the 1-kilometer perimeter established by research in the Southern Plains. All 2,912 prehistoric sites in Logan, Phillips, Sedgwick, Weld, and Washington Counties were then clipped within the 1000-meter buffer to assess the number of potential playa sites in these counties (Figure 7). The results of this analysis are presented in Table 3.

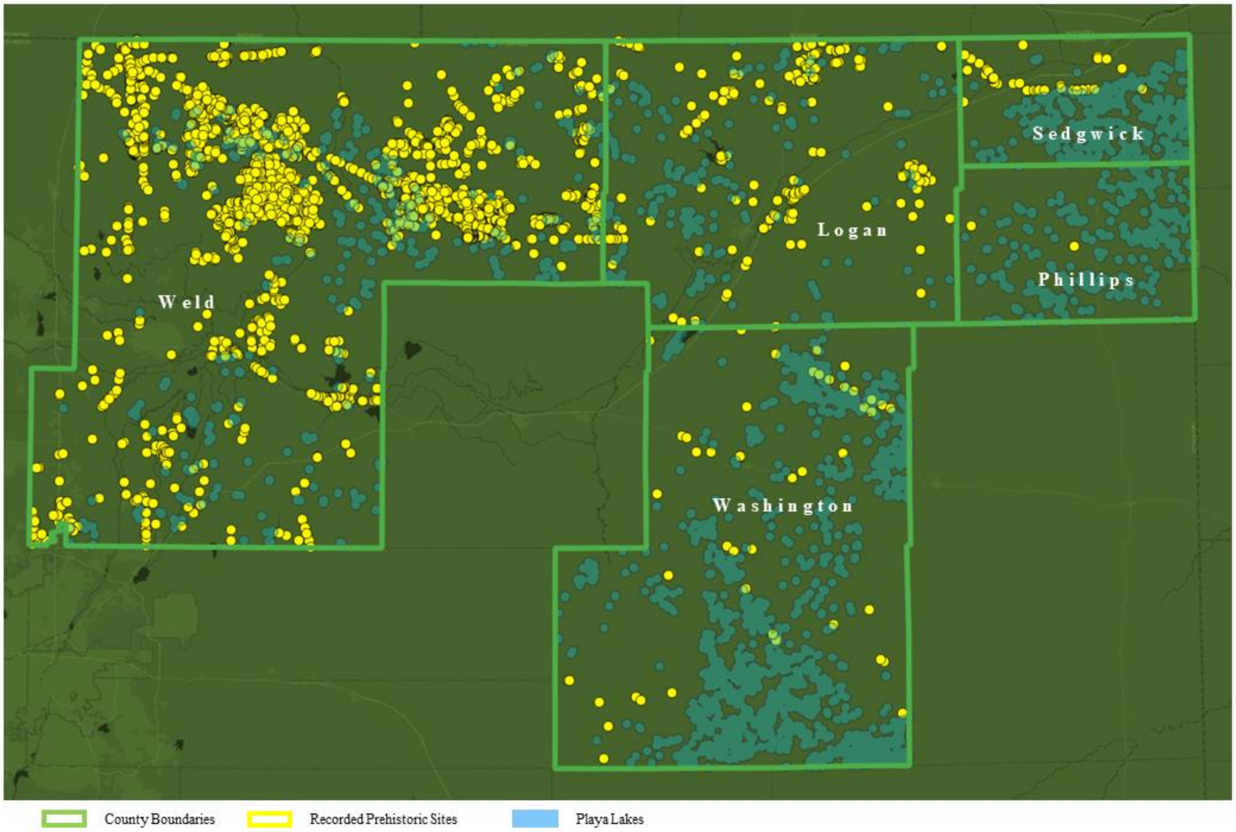

Figure 7. Distribution of the total recorded sites in the study area within the Colorado OAHP database and with an overlay of the one-kilometer playa buffer.

Table 3. Results from the buffer analysis on all 2,912 sites within the counties of Logan, Phillips, Sedgwick, Washington, and Weld.

Counties	**Logan**	**Phillips**	**Sedgwick**	**Weld**	**Washington**	**Total**
Total Sites	221	6	61	2565	59	2912
Sites within 1 kilometer of a playa rim	11	0	14	321	17	363
Percentage of sites within 1 km of a playa	5%	0%	23%	13%	39%	12%

A total of 363 sites were found to be within one kilometer of a playa of a playa rim, representing 12% of the total sites recorded within the study area. The county with the most potential playa sites is Weld county (n=321), making up 88% of the total sites near playas. This result is relatively consistent with representation of all Weld County sites (n=2,565; 88%) within the entire population of prehistoric sites in the five counties. Washington county has a total of 17 sites, which is 39% of the total sites within that county, followed by Sedgwick which has 14 sites (23%) that fall within the playa buffer. The county with the least potential playa sites is Logan county, with only 11 sites (5%) and Phillips county, which had no recorded sites within one kilometer of a playa.

The results of the playa buffer suggest that there is potential for the 363 sites to give further insight into the occupation and utilization of playas in the ancient past. Unfortunately, individual analysis of 363 site forms and maps is incredibly difficult and time consuming, all of which are major research limitations. This highlights the importance of the format of site recording and data organization. In states such as Wyoming, environmental associations like playas are established within the site form itself, making it easy for prospective big data analysis. Colorado would benefit from such a categorization, not limited to playa landscapes, this would also be helpful for associations with rock shelters, hilltops, or river terraces, to name a few.

Discussion

Throughout the ancient history of the plains, playas continued to play a major role for hunter-gatherers in the region as isolated uplands that offer diverse and predictable resources (Johnson 2008). This is well established in the Southern Plains with a high frequency of recorded sites in proximity to playas, but as the OAHP data in Colorado show, less is known about these wetland landscapes in the Central Plains.

The paucity of information regarding playa occupation, and more generally the hunter-gatherer lifeways in the South Platte River Basin, is stark compared to the known archaeology of the rest of the state of Colorado. The Witzel and the Dutton and Selby sites show that there is potential in focusing on playa landscapes across the state (Cassells 1983; LaBelle and Holen

2005; Stanford 1979). Unfortunately, most, if not all, of the playas within the state are located in areas where landownership is private, and little academic or professional work has been undertaken. Therefore, working with local collectors and avocational archaeologists is critical to accomplishing a playa study to create a more representative understanding of ancient culture and lifeways in the South Platte River Basin.

Further, the Witzel site also demonstrates the importance of such collaboration with local landowners and residents as new tools and faunal remains have surfaced since the original investigations in the 1970s (Cassells 1987; LaBelle and Holen 2005). The lack of accessible property (and therefore sites) leads this research to take a non-traditional approach working with a local avocational archaeologist, Mike Toft. He has identified at least 18 playa sites within the six counties of Sedgwick, Weld, Washington, Logan, Phillips, and Chase. There are likely countless other local residents, similar to Mr. Toft and even the landowners of the Witzel site, that have their archaeological collections hidden in basements and left unseen, perpetuating the "blank spots" of human history that we see across the eastern half of the state.

CHAPTER FOUR: TOFT COLLECTIONS

This chapter details the results of the analysis of 5,052 artifacts from Mike Toft's private collections. Mike Toft is a local avocational archaeologist that has been collecting in the region for the past 50 years. He has assisted in the excavation and archaeological endeavors at many sites within the state including Nelson, Claypool, Jones-Miller, Donovan, Dutton, and Frasca sites (Personal communication Mike Toft, 3/7/2019). He currently serves on the board of the George C. Frison Institute at the University of Wyoming. This experience and expertise are well reflected in his methodologies and practices of data collection.

At each site visit, Toft assigns individual artifacts a unique number and delineates a specific collection area, which correlate to a hand-drawn, 7.5-minute topographic map location. All sites have been visited on more than one occasion, sometimes yearly or even seasonally. The discovery of these sites and the collected artifacts assemblages are a culmination of many years of work; thus, the methodologies have also evolved over time and in more recent years, GPS coordinates are available for collected artifacts. In addition to provenience data, Toft has also archived notes regarding the site location, his personal naming system, distribution of artifacts, past collectors, and any other pertinent information to the site. This following section will provide an overview of the 18 lithic and ceramic assemblages collected within one kilometer of a playa by Mike Toft in the six counties of Chase County, Nebraska, and Logan, Phillips, Sedgwick, Washington, and Weld County, Colorado (Figure 8). In addition to chipped stone tools, ground stone, and ceramics artifacts, thousands of fragments of debitage and debris were also collected and recorded by Mike Toft. Due to the volume of debitage and time constraints, these were not analyzed in this thesis and will not be discussed in the following sections.

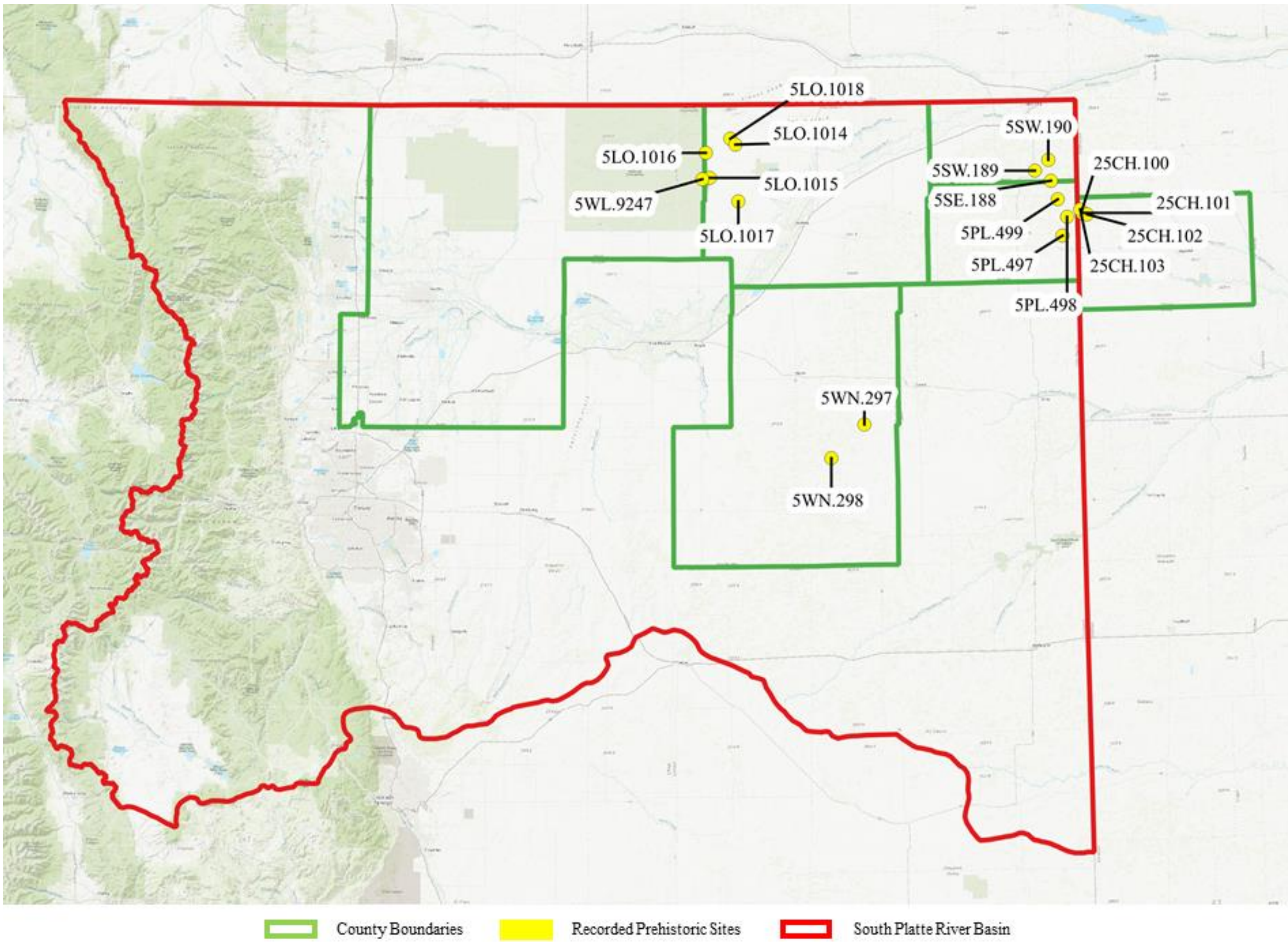

Figure 8. Location of all 18 playa sites recorded by Mike Toft within the South Platte River Basin.

Setting

The 18 playa sites recorded by Mike Toft are clustered within the northeastern region of the South Platte River Basin. Several sites are technically within the state of Nebraska but as they are only within a few miles of the modern-day Colorado state border, they are included within this study.

The South Platte River Basin is located within the northeastern quarter of Colorado and is positioned along the western extent of the Central Great Plains. It is situated on the Colorado Piedmont, which is dissected by the South Platte and the Arkansas Rivers. The Colorado Piedmont is centered between the High Plains region to the north and east and the Raton region to the south (United States Geologic Survey 2006). The vegetation consists of shortgrass prairie, cactus, various wildflowers, and native shrubs. Temperature and weather patterns fluctuate considerably, with winter lows as cold as -20 degrees Fahrenheit and summer highs over 100 degrees Fahrenheit (Benedict 2008; Haukos 1997). The primary water source within the region is the South Platte River, as well as ephemeral springs and playa lakes. Although it is the largest river within the area, its water levels vary throughout the year and at times has run dry as it moves farther from its headwaters near South Park, Colorado (Mehis 1984).

The paleoenvironment within the region has changed during its 13,000-year human history (Cassels 1987; Gilmore et al. 1999; LaBelle 2012). The South Platte River Valley was formed during several climatic episodes when temperatures severely fluctuated, the most transformative climactic period propelling a deglaciation event around 14,000 – 13,000 calibrated years B.P (LaBelle 2012). Following the formation of the South Platte River Valley, several other warming and cooling events occurred but none that altered the landscape as much as the deglaciation of 14,000 calibrated years B.P. (LaBelle 2012). Today, the region is primarily known as Colorado's agricultural sector where playas play an important role as stock ponds and water catchments for irrigation (Playa Lakes Joint Ventures 2019).

This thesis provides a site by site overview of the 18 artifacts assemblages associated with a playa. This analysis will include aspects such as where the site is situated in relation to the playa, whether there are one or more playas, the characteristics and frequency of the lithic and ceramic assemblages, and an overview of the temporal chronology of the site.

Site: 25CH.100

Toft Site Number: 15.7

Toft Common Name: Goldie's Hill

Temporal Span: Late Archaic – Middle Ceramic (3,000 – 410 B.P.)

Relation to Playa: Site is east of playa

Distance to Playa: 240 meters

Playa Size: 3.53 acres

Site 25CH.100 is located in western Chase County, Nebraska just east of the Colorado state line. The site is positioned 240 meters east of a small 3.53-acre playa. Site 25CH.100 sits on a low-lying, northwest-southeast trending ridge. The nearest mapped alternative water source is Sand Creek, located 3.31 kilometers to the east, and an unnamed drainage 924 meters to the south. It shares the same ridge as two other archaeological sites, 25CH.103 and 25CH.101.

The assemblage comprises 77 artifacts. This consists of chipped stone tools and ground stone. The most numerous artifact type are bifaces (n=25). The remainder of the assemblage includes cores (n=2), edge modified flakes (n=6), scrapers (n=22), and projectile points (n=17). The earliest period of occupation is represented by a single non-diagnostic Early Archaic point, but because of the lack of certainty in point type (absence of diagnostic notching) it was not included within the temporal span at the site. Of the 17 projectile points, the most represented period is the Late Archaic. Within the Late Archaic, the Pelican Lake point type is the most prevalent, representing at least 41% of the projectile point assemblage. The Early and Middle Ceramic are represented by just six projectile points. Compared to many of the other nearby sites, the assemblage is relatively small, likely due to impacts from other local collectors as it is easily accessible from a road.

Table 4. Total assemblage size by artifact type from site 25CH.100.

Element	Total
Biface	25
Core	2
Edge Modified Flake	6
End Scraper	16
Hand stone	3
Misc. Ground stone	2
Misc. Scraper	6
Projectile Point	17
Site Total	**77**

Table 5. Temporal chipped stone artifacts from site 25CH.100.

Temporal Age	Type	Total
Archaic		**(11)**
Non-diagnostic Early Archaic	n/a	*1*
Late Archaic	Pelican Lake	*7*
Non-diagnostic Late Archaic	n/a	*3*
Late Prehistoric		**(6)**
Early Ceramic	Small corner-notched	*2*
Middle Ceramic	Avonlea	*1*
	Plains side-notched	*2*
	Unnotched	*1*
	Site Total	**17**

Site: 25CH.101

Toft Site Number: 15.13

Common Name: Dirk's Nob

Temporal Span: Late Paleoindian – Middle Ceramic (10,000 – 410 B.P.)

Relation to Playa: Site is west of playa

Distance to Playa: 660 meters

Playa Size: 9.3 acres

Site 25CH.101 is located in western Chase County, Nebraska. The nearest mapped alternative water sources are an unnamed drainage, located 640 meters to the south, and Sand Creek, located 3.08 kilometers to the east. It is south of site 25CH.103 on the same northwest-southeast trending ridge. The site is 660 meters west of a 9.3-acre playa, with at least eight small (less than 1-acre) ponds within the immediate vicinity.

The total assemblages from 25CH.101 consists of 178 artifacts. The assemblage is comprised of chipped stone tools and ground stone. Bifaces (n=63) make up the majority of this assemblage followed by projectile points (n=53). Of the 53 projectile points, 51 are temporally diagnostic. The site has one proximal portion of a Paleoindian point, although it was too fragmentary to determine a specific type. Most of the projectile points are from the Middle to Late Archaic (n=35). Only 10 points were Middle Archaic types including, McKean (n=4) and Duncan-Hanna (n=6). The most represented point type within the Archaic are Pelican Lake types (n=15). One Late Archaic Yonkee point (n=1) is also present. The remainder of the points are from the Late Prehistoric era (n=15), with small corner-notched points being the most predominant (n=6). The ground stone assemblage is comprised of hand stones (n=15), netherstones (n=2), and hammerstones (n=2).

Table 6. Total assemblage size by artifact type from site 25CH.101.

Element	Total
Biface	63
Drill	3
Edge Modified Flake	11
End Scraper	15
Hammerstone	2
Hand stone	15
Misc. Scraper	12
Netherstone	2
Preform	1
Projectile Point	53
Side Scraper	1
Site Total	**178**

Table 7. Temporal chipped stone artifacts from site 25CH.101.

Temporal Age	Type	Total
Paleoindian		**(1)**
Non diagnostic Late Paleoindian	n/a	*1*
Archaic		**(35)**
Middle	Duncan-Hanna	*6*
	McKean	*4*
Late	Yonkee	*1*
	Pelican Lake	*15*
Non-diagnostic Late Archaic	n/a	*9*
Late Prehistoric		**(15)**
Early Ceramic	Small corner-notched	*6*
Middle Ceramic	Avonlea	*4*
	Small side-notched	*4*
	Small tri-notched	1
	Site Total	51

Site: 25CH.102

Toft Site Number: 15.22

Toft Common Name: Stretsky Section

Temporal Span: Early Paleoindian – Middle Ceramic (12,000 – 410 B.P.)

Relation to Playa: Site is within the basin; south; northeast of playa

Distance to Playa: 0; 275; 284 meters

Playa Size: 2.61; 6.96; 5.45 acres

Site 25CH.102 is located in western Chase County, Nebraska. The nearest mapped alternative water sources are an unnamed drainage, located 610 meters to the south and Sand Creek, located 1.5 kilometers to the northeast. Site 25CH.102 is within a small 2.61-acre playa and also sits between two additional playas, one 275 meters to the south and another 284 meters to the northeast. Site 25CH.101 is located only 1.8 kilometers northwest of site 25CH.102.

The assemblage consists of 416 artifacts, including ground stone and various chipped stone tools. The most predominant artifact type are bifaces (n=81) followed by end scrapers (n=71). The ground stone is comprised of hand stones (n=7) and netherstones (n=1). Of the 58 projectile points, all but one is associated with a temporal period. The Paleoindian period is represented by 15 chipped stone tools. Tools from the Early Paleoindian period include, one Clovis point, two gravers, and one preform. The Middle Paleoindian is represented by two points, and nine points are from the late Paleoindian period. Points from the Archaic were the most prevalent (n=33) with 29 being from the Late Archaic, both Besant (n=3) and Pelican Lake (n=26) types. The Late Prehistoric is represented with 13 projectile points.

Table 8. Total assemblage size by artifact type from site 25CH.102.

Element	Total
Biface	81
Core	27
Convergent Scraper	26
Drill	2
Edge Modified Flake	55
End Scraper	71
Graver	2
Hafted Knife	3
Hand stone	7
Misc. Scraper	39
Netherstone	1
Projectile Point	58
Preform	7
Side Scraper	37
Site Total	**416**

Table 9. Temporal chipped stone artifacts from site 25CH.102.

Temporal Age	Type	Total
Paleoindian		**(15)**
Early	Clovis	*1*
Non-diagnostic Early/Middle Paleoindian	n/a*	*3*
Middle	Folsom	*1*
	Goshen	*1*
Late	Agate Basin	*3*
	Angostura	*1*
	Hell Gap	*1*
Non-diagnostic Late Paleoindian	n/a	*4*
Archaic		**(33)**
Early	Mount Albion	*1*
Middle	McKean	*1*
Late	Besant	*3*
	Pelican Lake	*26*
	Yonkee	*2*
Late Prehistoric		**(13)**
Early Ceramic	Small corner-notched	*5*
	Hogback corner-notched	*5*
Middle Ceramic	Plains side-notched	*1*
	Upper Republican	*1*
	Small side-notched	*1*
	Site Total	**61**

*Comprised of two gravers and one preform presumed to be Early/Middle Paleoindian

Site: 25CH.103

Toft Site Number: 15.24

Toft Common Name: Stretsky ½ Section

Temporal Span: Early/Middle Paleoindian – Middle Ceramic (11,000 – 410 B.P.)

Relation to Playa: Site is southwest of playa

Distance to Playa: 640 meters

Playa Size: 9.37 acres

Site 25CH.103 is located in western Chase County, Nebraska. The site is the northernmost site on a northwest-southeast trending ridge. This ridge is shared with sites 25CH.100 and 25CH.101. The site is situated 640 meters southwest of a 9.37-acre playa. The nearest mapped alternative water sources are an unnamed drainage, located 1.4 kilometers to the south, and Sand Creek, located 4 kilometers to the southeast. Compared to its neighboring sites, it has the largest assemblage at a total of 600 artifacts.

The site has a diverse assemblage with fragments of ceramic, ground stone, and various chipped stone tools. The most predominant artifact type are projectile points (n=163) followed by bifaces (n=138). All ceramic pieces were cord-marked save for one fragment that was too eroded to identify any exterior modification. The vessel portions represented include body fragments (n=40) and one rim fragment. Based upon the variation in cord-marking, it is estimated that the assemblage represented at least 1 vessel. The ground stone is comprised of hand stones (n=26), netherstones (n=8), hammerstones (n=2) and other miscellaneous ground stone fragments (n=7). Of the 163 projectile points, 147 were temporally diagnostic, with the Early Ceramic being the most represented (n=62).

Table 10. Total assemblage size by artifact type from site 25CH.103.

Element	Total
Biface	138
Ceramic	43
Core	2
Convergent Scraper	2
Drill	9
Edge Modified Flake	61
End Scraper	72
Graver	2
Hafted Knife	3
Hammerstone	2
Hand stone	26
Misc. Ground stone	7
Misc. Scraper	28
Netherstone	8
Projectile Point	163
Preform	14
Side Scraper	19
Spokeshave	1
Site Total	**600**

Table 11. Temporal chipped stone artifacts from site 25CH.103.

Temporal Age	Type	Total
Paleoindian		**(10)**
Non-diagnostic Early/Middle Paleoindian	n/a	*1*
Late	Alberta	*1*
	Angostura	*1*
	James Allen	*2*
Non-diagnostic Late Paleoindian	n./a	*5*
Archaic		**(60)**
Early	Mount Albion	*5*
Middle	Duncan-Hanna	*2*
	McKean	*20*
Non-diagnostic Middle Archaic	n/a	*2*
Late	Besant	*9*
	Pelican Lake	*20*
Non-diagnostic Late Archaic	n/a	*2*
Late Prehistoric		**(77)**
Early Ceramic	Small corner-notched	*39*
	Hogback corner-notched	*23*
Middle Ceramic	Avonlea	*1*
	Plains side-notched	*4*
	Prairie side-notched	*4*
	Small side-notched	*5*
	Tri-notched	*1*
	Site Total	**147**

Site: 5LO.1014

Toft Site Number: 38.178

Toft Common Name: Hatch Lake

Temporal Span: Late Paleoindian – Middle Ceramic (10,000 – 410 B.P.)

Relation to Playa: Site is within the playa basin

Distance to Playa: 0 meters

Playa Size: 5.33 acres

Site 5LO.1014 is located in northwestern Logan County, Colorado. The site is situated within the basin of a playa. The nearest named alternative water source is George Creek, located 1.81 kilometers to the southwest. There site is surrounded by several other smaller playas 2 kilometers to the south and west.

The assemblage consists of 97 total artifacts, including chipped stone tools and ground stone. The most prevalent artifact type are projectile points (n=24). Out of the total projectile points, 22 of them fit within a temporal typology. Only one point was identified as Paleoindian, which was a base of an Angostura point type. The Late Archaic was the most represented with a total of 13 points, 12 of which were Pelican Lake point types. The Late Prehistoric is represented by 8 projectile points, with the majority being Early Ceramic point types (n=5). The ground stone is comprised of hand stones (n=4), netherstones (n=17), hammerstones (n=2), and other miscellaneous ground stone fragments (n=21). The rest of the assemblage is comprised of drills (n=2), scrapers (n=6), and bifaces (n=20).

Table 12. Total assemblage size by artifact type from site 5LO.1014.

Element	Total
Biface	20
Drill	2
Edge Modified Flake	1
End Scraper	3
Hammerstone	2
Hand stone	4
Misc. Ground stone	21
Misc. Scraper	2
Netherstone	17
Projectile Point	24
Side Scraper	1
Site Total	**97**

Table 13. Temporal chipped stone artifacts from site 5LO.1014.

Temporal Age	Type	Total
Paleoindian		**(1)**
Late	Angostura	*1*
Archaic		**(13)**
Late		*1*
	Pelican Lake	*12*
Late Prehistoric		**(8)**
Early Ceramic	Small corner-notched	*5*
Middle	Small side-notched	*3*
	Site Total	**22**

Site: 5LO.1015

Toft Site Number: 38.264

Toft Common Name: House Prints

Temporal Span: Early/Middle Paleoindian – Middle Ceramic (11,000 – 410 B.P.)

Relation to Playa: Site is southwest of playa

Distance to Playa: 120 meters

Playa Size: 3.69 acres

Site 5LO.1015 is located in central western Logan County, Colorado. The site is situated on flat terrain 120 meters west of a 3.69-acre playa. The nearest alternative water source is Spring Creek, 2.15 kilometers to the southwest, and Brush Creek, 4.88 kilometers to the west.

The assemblage from the site consists of 368 total artifacts, including chipped stone tools, ground stone, and ceramics. The ceramics are comprised of primarily body fragments (n=24) and unidentified sherds (n=11). All fragments save for one were cord-marked. It is estimated based upon the variation of the cord-marking and morphology that the assemblage represents at least 1 vessel. The ground stone is comprised of hand stones (n=3), netherstones (n=89), and miscellaneous ground stone fragments (n=62). Many of the ground stone fragments are small, averaging 3-4 cm. Overall, chipped stone represented the majority of the assemblage, especially prominent were bifaces (n=77) and cores (n=33). The rest of the chipped stone is comprised of projectile points (n=25), edge modified flakes (n=10), one hafted knife, drills (n=2), gravers (n=2), scrapers (n=27), and preforms (n=2). Although no points are present from the Paleoindian, 2 gravers were analyzed within this assemblage which have been found in other stratified contexts dating to the Early and Middle Paleoindian period. Of the 25 projectile points, all 25 points were identified to fit within a temporal type. The Archaic is the most represented, with

Mount Albion (n=1), Duncan-Hanna (n=3), McKean (n=3), Yonkee (n=1), and Besant point types (n=1). The remainder of the points are Early Ceramic points (n=11).

Table 14. Total assemblage size by artifact type from site 5LO.1015.

Element	Total
Biface	77
Ceramic	35
Core	33
Drill	2
Edge Modified Flake	10
End Scraper	14
Graver	2
Hafted Knife	1
Hand stone	3
Misc. Ground stone	62
Misc. Scraper	10
Netherstone	89
Projectile Point	25
Preform	2
Side Scraper	3
Site Total	**368**

Table 15. Temporal chipped stone artifacts from site 5LO.1015.

Temporal Age	Type	Total
Paleoindian		**(2)**
Non-diagnostic Early/Middle Paleoindian	n/a*	*2*
Archaic		**(13)**
Early	Mount Albion	*1*
Middle	Duncan-Hanna	*3*
	McKean	*3*
Non-diagnostic Middle Archaic	n/a	*1*
Late Archaic	Besant	*1*
	Yonkee	*1*
Non-diagnostic Late Archaic	n/a	*3*
Late Prehistoric		**(11)**
Early Ceramic	Hogback corner-notched	*3*
	Small corner-notched	*8*
	Site Total	**24**

*Comprised of two gravers presumed to be Early/Middle Paleoindian

Site: 5LO.1016

Toft Site Name: 38.320

Toft Common Name: Cervi 1 ala Tom Pomeroy

Temporal Span: Early Archaic – Protohistoric (7,500 – 90 B.P.)

Relation to Playa: Site is west of playa

Distance to Playa: 280 meters

Playa Size: 8 acres

Site 5LO.1016 is located in northwestern Logan County, Colorado. The site is situated on a low hill slope within a relatively topographically diverse area with several hills and ridges. The site is 280 meters west of an 8-acre playa. The nearest alternative water sources are Cedar Creek, located 0.61 kilometers to the north and Two-mile Creek, located 1.83 kilometers to the southwest.

The assemblage from the site consists of 318 total artifacts. It is comprised of chipped stone tools and ground stone. The most prevalent artifact type are bifaces (n=67). Other chipped stone tools include cores (n=2), scrapers (n=77), drills (n=3), edge modified flakes (n=9), hafted knives (n=2), projectile points (n=57), and preforms (n=9). Of the 57 projectile points, the most represented period is the Middle Archaic (n=38); McKean type points (n=12) are especially predominant. The site also has the only Protohistoric metal point out of the 18 playa sites. The ground stone assemblage is comprised of hammerstones (n=3), hand stones (n=31), miscellaneous ground stone fragments (n=23), and netherstones (n=29).

Table 16. Total assemblage size by artifact type from site 5LO.1016.

Element	Total
Biface	67
Core	2
Convergent Scraper	3
Drill	3
Edge Modified Flake	9
End Scraper	60
Hafted Knife	2
Hammerstone	3
Hand stone	31
Misc. Ground stone	23
Misc. Scraper	15
Netherstone	29
Projectile Point	57
Preform	9
Side Scraper	5
Site Total	**318**

Table 17. Temporal chipped stone artifacts from site 5LO.1016.

Temporal Age	Type	Total
Archaic		**(38)**
Early	Mount Albion	*2*
Middle	Duncan-Hanna	*4*
	McKean	*12*
Late	Besant	*3*
	Pelican Lake	*10*
	Yonkee	*1*
Non-diagnostic Late Archaic	n/a	*6*
Late Prehistoric		**(11)**
Early Ceramic	Small corner-notched	*11*
Protohistoric		***(1)***
	Metal	*1*
	Site Total	**50**

Site: 5LO.1017

Toft Site Number: 38.343

Toft Common Name: Wild Horse Lake

Temporal Span: Middle Archaic – Middle Ceramic (5,000 – 410 B.P.)

Relation to Playa: Site is southwest of playa

Distance to Playa: 650 meters

Playa Size: 86 acres

Site 5LO.1017 is located in western Logan County, Colorado. The site is situated 650 meters southwest of a large 85-acre playa on flat, open terrain. The playa is presently known as Wild Horse Lake and is fed by Wild Horse Creek. Several other playas are present within a 3-kilometer radius from the site. The site is situated in an area of topographic relief where there are many ephemeral creeks and drainages, most prominently Pawnee Creek 6 kilometers to the southwest.

The assemblage at the site consists of 69 total artifacts, including chipped stone tools and ground stone. The ground stone artifacts are comprised of hand stones (n=10), netherstones (n=6), hammerstones (n=2), and miscellaneous ground stone fragments (n=10). Overall, chipped stone represented the majority of the assemblage, especially by edge modified flakes (n=15) and scrapers (n=12). The rest of the chipped stone is comprised of bifaces (n=7), drills (n=5), and projectile points (n=2). Both the projectile points fit within a temporal type. The Late Archaic is represented by one Yonkee point and the Late Prehistoric is represented by one small tri-notched point.

Table 18. Total assemblage size by artifact type from site 5LO.1017.

Element	Total
Biface	7
Convergent Scraper	1
Drill	5
Edge Modified Flake	15
End Scraper	5
Hammerstone	2
Hand stone	10
Misc. Ground stone	10
Misc. Scraper	4
Netherstone	6
Projectile Point	2
Side Scraper	2
Site Total	**69**

Table 19. Temporal chipped stone artifacts from site 5LO.1017.

Temporal Age	Type	Total
Archaic		**(1)**
Late	Yonkee	*1*
Late Prehistoric		**(1)**
Middle	Small tri-notched	*1*
	Site Total	**2**

Site: 5LO.1018

Toft Site Number: 38.428

Toft Common Name: Thiessen's

Temporal Span: Late Paleoindian – Early Ceramic (10,000 – 800 B.P.)

Relation to Playa: Site is southeast and north of playa

Distance to Playa: 230; 190 meters

Playa Size: 3.54; 7.22 acres

Site 5LO.1018 is located in northwestern Logan County, Colorado. The site is situated between two small playas, one 190 meters to the northwest and another 230 meters to the south. The playa to the northwest is 3.54 acres and the playa to the south is 7.22 acres. The two playas are connected by an ephemeral, possibly historically manufactured, drainage. The nearest alternative water source is George Creek, located 2.43 kilometers to the north and east.

The site assemblage consists of 1,829 artifacts comprised of chipped stone tools, ground stone, and ceramics. The most prevalent artifact type are ceramic fragments (n=703). All ceramic pieces were cord-marked body fragments and were very small (average of 2 grams). All vessel portions were represented with body fragments being the most prevalent (n=681), followed by rim (n=14), and base fragments (n=8). Two types of exterior modifications are present including cord-marking and plainware. At least 45% (n=316) of the ceramic assemblage were cord marked while only 27% (n=190) exhibited no exterior decoration or modification. The remainder of the ceramic pieces were too fragmentary for identification. Based upon the variation in exterior decoration and rim fragments, it is estimated that the assemblage represents at least two vessels based upon the presence of two distinct exterior decorations. The ground stone is comprised of hand stones (n=72), netherstones (n=299), hammerstones (n=27), and other miscellaneous ground stone fragments (n=244). Only 11 hand stones and 4 netherstones were complete and the rest were small fragments, ranging from 1 – 5 centimeters. Of the 126 projectile points, the most represented period is the Late Prehistoric (n=69). Within the Late Prehistoric period, the Early Ceramic was the most prevalent (n=59). This temporal span is represented by Hogback point types (n=29) and other small corner-notched varieties (n=30). The Middle Ceramic was represented by Plains side-notched (n=8) and unnotched points (n=2).

Table 20. Total assemblage size by artifact type from site 5LO.1018.

Element	Total
Biface	217
Ceramic	703
Convergent Scraper	6
Drill	5
Edge Modified Flake	40
End Scraper	36
Hafted Knife	3
Hammerstone	27
Hand stone	72
Misc. Ground stone	244
Misc. Scraper	19
Netherstone	299
Projectile Point	126
Preform	22
Side Scraper	9
Spokeshave	1
Site Total	**1,829**

Table 21. Temporal chipped stone artifacts from site 5LO.1018.

Temporal Age	Type	Total
Paleoindian		**(2)**
Non-diagnostic Late Paleoindian	n/a	*2*
Archaic		**(50)**
Non-diagnostic Early Archaic	n/a	*2*
	Mount Albion	*3*
Middle	Duncan-Hanna	*4*
	McKean	*4*
Late	Besant	*1*
	Pelican Lake	*28*
Non-diagnostic Late Archaic	n/a	*8*
Late Prehistoric		**(69)**
Early Ceramic	Small corner-notched	*30*
	Hogback corner-notched	*29*
Middle	Plains side-notched	*8*
	Unnotched	*2*
	Site Total	**121**

Site: 5PL.497

Toft Site Number: 48.15

Toft Common Name: Herman's Hill

Temporal Span: Early/Middle Paleoindian – Middle Ceramic (11,000 – 410 B.P.)

Relation to Playa: Site is south of playa

Distance to Playa: 700 meters

Playa Size: 1.4 acres

Site 5PL.497 is located in eastern-central Phillips County, Colorado. The site is situated 700 meters south of a 1.4-acre playa. The nearest alternative water source is Wildhorse Creek 2.53 kilometers to the north and Frenchman Creek 4.17 kilometers to the south. There are several smaller playas within 2 kilometers of the site.

The assemblage at site 5PL.497 consists of 52 artifacts, including chipped stone tools, ground stone, and ceramics. Only one ceramic sherd is present within the assemblage. The sherd is a body fragment with no exterior modification or decoration. The ground stone is comprised of hand stones (n=2), netherstones (n=1), and other miscellaneous ground stone fragments (n=1). Overall, chipped stone represented the majority of the assemblage, especially by scrapers (n=26). The rest of the chipped stone is comprised of bifaces (n=7), one channel flake, one drill, edge modified flakes (n=3), one graver, one hafted knife, and projectile points (n=7). Although no points from the Paleoindian period were observed, the presence of a channel flake and graver indicate that ancient people inhabited the site in some capacity during that period. All seven projectile points fit within a specific type, with the Archaic being the most represented (n=4). Points from the Early Ceramic period include small corner-notched (n=2) and one small side-notched point types.

Table 22. Total chipped stone assemblage by artifact type from site 5PL.497.

Element	Total
Biface	7
Ceramic	1
Channel Flake	1
Convergent Scraper	3
Drill	1
Edge Modified Flake	3
End Scraper	15
Graver	1
Hafted Knife	1
Hand stone	2
Misc. Ground stone	1
Misc. Scraper	4
Netherstone	1
Projectile Point	7
Side Scraper	4
Site Total	**52**

Table 23. Temporal chipped stone artifacts from site 5PL.497.

Temporal Age	Type	Total
Paleoindian		**(2)**
Non-diagnostic Early/Middle Paleoindian	n/a*	*2*
Archaic		**(4)**
Middle	Duncan-Hanna	*1*
Non-diagnostic Late Archaic	n/a	*3*
Late Prehistoric		**(3)**
Early Ceramic	Small corner-notched	*2*
Middle	Small side notched	*1*
	Site Total	**9**

*Comprised of one graver and one channel flake presumed to be Early/Middle Paleoindian

Site: 5PL.498

Toft Site Number: 48.16

Toft Common Name: Weber's Hill

Temporal Span: Early Paleoindian – Middle Ceramic (12,000 – 410 B.P.)

Relation to Playa: Site is south of playa

Distance to Playa: 220 meters

Playa Size: 24.27 acres

Site 5PL.498 is located in northeastern Phillips County, Colorado. The site is situated 220 meters south of a 24.27-acre playa that is split in half by a road. Several smaller playas are also found less than one kilometer away. The nearest mapped alternative water source is Wildhorse Creek, located 4.19 kilometers to the south, and an unnamed drainage 924 meters also to the south.

The assemblage comprises 245 artifacts, consisting of chipped stone tools and ground stone. The ground stone includes hand stones (n=6), netherstones (n=3), and one hammerstone. Overall, chipped stone tools represented the majority of the assemblage, especially by bifaces (n=79) and scrapers (n=63). The remaining chipped stone is comprised of projectile points (n=47), cores (n=6), drills (n=3), edge modified flakes (n=14), a hafted knife (n=1), preforms (n=4), and a graver. Of the 47 projectile points, 40 were diagnostic of a temporal type. The Paleoindian period is represented by a Folsom preform and a graver. The Late Paleoindian point types include an Eden point (n=1) and James Allen points (n=2). The Archaic is represented by the Early, Middle and Late point types including, Duncan-Hanna (n=5), Besant (n=6), and Pelican Lake points (n=3). Only four point did not fit within a specific typology, although the neck robusticity and overall morphology most closely resembled that of an Archaic point. The

Late Prehistoric is the most prevalent, with Hogback corner-notched (n=11) and Plains side-notched types (n=8).

Table 24. Total assemblage size by artifact type from site 5PL.498.

Element	Total
Biface	79
Ceramic	17
Core	6
Convergent Scraper	1
Drill	3
Edge Modified Flake	14
End Scraper	39
Graver	1
Hafted Knife	1
Hammerstone	1
Hand stone	6
Misc. Scraper	23
Netherstone	3
Projectile Point	47
Preform	4
Site Total	**245**

Table 25. Temporal chipped stone artifacts from 5PL.498.

Temporal Age	Type	Total
Paleoindian		**(5)**
Non-diagnostic Early/Middle Paleoindian	n/a*	*2*
Late	Eden	*1*
	James Allen	*2*
Archaic		**(18)**
Non-diagnostic Early Archaic	n/a	*4*
Middle	Duncan-Hanna	*5*
Late	Besant	*6*
	Pelican Lake	*3*
Late Prehistoric		**(19)**
Early Ceramic	Hogback corner-notched	*11*
Middle Ceramic	Plains side-notched	*8*
	Site Total	**42**

*Comprised of one graver and one preform presumed to be Early/Middle Paleoindian

Site: 5PL.499

Toft Site Number: 48.54

Toft Common Name: Dirk's Colorado Hill

Temporal Span: Middle Archaic – Middle Ceramic (5,000 – 410 B.P.)

Relation to Playa: Site is southeast and southwest of playa

Distance to Playa: 440; 350 meters

Playa Size: 12; 7 acres

Site 5PL.499 is located in the northeast corner of Phillips County, Colorado. The site is situated south of two playas, one that is 12 acres and another that is 7 acres in size. Both playas are found 440 and 350 meters of the playa rim. The nearest alternative water source is an unnamed drainage 3.31 kilometers to the north and another unnamed drainage 2.41 kilometer to the south.

The assemblage comprises 70 artifacts, including chipped stone tools, ground stone, and ceramics. The ceramics consist of primarily body fragments (n=36) and one rim fragment. All fragments save for four sherds are cord-marked. These four fragments did not exhibit any exterior modification or decoration. It is estimated based upon the variation of the cord-marking and morphology that the assemblage represents one vessel. The ground stone is comprised of hand stones (n=6) and miscellaneous ground stone fragments (n=2). Overall, chipped stone represents the majority of the assemblage, especially by projectile points (n=10). The rest of the chipped stone is comprised of bifaces (n=8), edge modified flakes (n=4), scrapers (n=2), and one preform. The projectile point types ranged from the Middle Archaic to the Middle Ceramic. The Archaic is the most represented, by one Duncan-Hanna, Pelican Lake (n=3), and non-specific

Late Archaic point types (n=2). Points from the Late Prehistoric include small corner-notched (n=2) and small side-notched point types (n=2).

Table 26. Total assemblage size by artifact type from site 5PL.499.

Element	Total
Biface	8
Ceramic	37
Edge Modified Flake	4
End Scraper	1
Hand stone	6
Misc. Ground stone	2
Misc. Scraper	1
Preform	1
Projectile Point	10
Site Total	**70**

Table 27. Temporal chipped stone artifacts from site 5PL.499.

Temporal Age	Type	Total
Archaic		**(6)**
Middle	Duncan-Hanna	*1*
Late	Pelican Lake	*3*
Non-diagnostic Late Archaic		*2*
Late Prehistoric		**(4)**
Early Ceramic	Small corner-notched	*2*
Middle	Small side-notched	*2*
	Site Total	**10**

Site: 5SW.188

Toft Site Number: 58.16

Toft Common Name: Derby Hill

Temporal Span: Late Paleoindian – Middle Ceramic (10,000– 410 B.P.)

Relation to Playa: Site is southeast of playa

Distance to Playa: 780 meters

Playa Size: 6 acres

Site 5SW.188 is located in the southeastern corner of Sedgwick County, Colorado. The site is situated 780 meters southeast of a 6-acre playa lake. Several smaller playas are also found less than 2 kilometers away. The nearest alternative water sources are two unnamed drainages 1.10 kilometers to the northeast and 2.75 kilometers to the southwest.

The assemblage at the site comprises 51 artifacts, including chipped stone tools, ground stone, and ceramics. Only one ceramic sherd is present within the assemblage. The sherd is a body fragment with no exterior modification or decoration. The ground stone is comprised of hand stones (n=8) and netherstones (n=2). The chipped stone represented the majority of the assemblage, especially by projectile points (n=18). The rest of the chipped stone assemblage includes bifaces (n=7), edge modified flakes (n=3), scrapers (n=9), preforms (n=18), and one hafted knife. A total of 18 projectile points fit within specific point type. The Paleoindian period is represented by one Angostura point. Points from the Archaic period include Duncan-Hanna (n=2), Besant (n=1), Pelican Lake (n=3), and non-diagnostic Archaic point types (n=1). Of the 18 projectile points, the most represented period is the Late Prehistoric, with small corner-notched (n=8), small side-notched (n=1), and Upper Republican points (n=1).

Table 28. Total assemblage size by artifact type from site 5SW.188.

Element	Total
Biface	7
Ceramic	1
Edge Modified Flake	3
End Scraper	5
Hafted Knife	1
Hand stone	8
Misc. Scraper	2
Netherstone	2
Projectile Point	18
Preform	2
Side Scraper	2
Site Total	**51**

Table 29. Temporal chipped stone artifacts from site 5SW.188.

Temporal Age	Type	Total
Paleoindian		**(1)**
Late	Angostura	*1*
Archaic		**(7)**
Middle	Duncan-Hanna	*2*
Late	Besant	*1*
	Pelican Lake	*3*
Non-diagnostic Late Archaic	n/a	*1*
Late Prehistoric		**(10)**
Early Ceramic	Small corner-notched	*8*
Middle	Small side-notched	*1*
	Upper Republican	*1*
	Site Total	**18**

Site: 5SW.189

Toft Site Number: 58.59

Toft Common Name: N/A

Temporal Span: Middle Archaic – Middle Ceramic (5,000 – 410 B.P.)

Relation to Playa: Site is southeast of playa

Distance to Playa: 60 meters

Playa Size: 4 acres

Site 5SW.189 is located in the southeastern corner of Sedgwick County, Colorado. The site is situated 60 meters southeast of a 4-acre playa. The nearest alternative water sources are two unnamed drainages one 1.85 kilometers to the northeast and another 480 meters to the south.

The site comprises a total of 78 artifacts, including chipped stone tools and ground stone. The ground stone consists solely of hand stones (n=4). Chipped stone represented the majority of the assemblage, especially dominated by bifaces (n=24). The rest of the chipped stone is comprised of projectile points (n=15), scrapers (n=22), hafted knives (n=2), one drill, and one preform. All 15 projectile points fit within a temporal period, with the Archaic being the most represented. The Archaic period consists of one non-specific Late Archaic, Duncan-Hanna (n=2), and Pelican Lake point types (n=6). The Late Prehistoric period is represented by small corner-notched (n=2), one Avonlea, and small side-notched points (n=3).

Table 30. Total assemblage size by artifact type from site 5SW.189.

Element	Total
Biface	24
Convergent Scraper	2
Drill	1
Edge Modified Flake	8
End Scraper	10
Hafted Knife	3
Hand stone	4
Misc. Scraper	8
Projectile Point	15
Preform	1
Side Scraper	2
Site Total	**78**

Table 31. Temporal chipped stone artifacts from 5SW.189.

Temporal Age	Type	Total
Archaic		**(9)**
Middle	Duncan-Hanna	*2*
Late	Pelican Lake	*6*
Non-diagnostic Late Archaic	n/a	*1*
Late Prehistoric		**(6)**
Early Ceramic	Small corner-notched	*2*
Middle	Avonlea	*1*
	Small side-notched	*3*
	Site Total	**15**

Site: 5SW.190

Toft Site Number: 58.9

Toft Common Name: Hodges Hill

Temporal Span: Early Paleoindian – Middle Ceramic (11,000 – 410 B.P.)

Relation to Playa: Site is northeast of playa

Distance to Playa: 850 meters

Playa Size: 10 acres

Site 5SW.190 is located in the southeastern corner of Sedgwick County, Colorado. The site is situated on a low hilltop, 850 meters northeast of a 10-acre playa. The nearest alternative water source is Sand Creek, located one kilometer to the northeast.

The sits assemblage comprises a total 152 artifacts, including chipped stone tools, ground stone, and ceramics. The two ceramic sherds have no exterior decoration or modification and are relatively small (4 and 4.5 gm). Each represented different portions of the vessel including a base and body fragment, but both are likely from a single vessel. The ground stone is comprised of hand stones (n=21), netherstones (n=6), hammerstones (n=2), and one miscellaneous ground stone fragment. Overall, chipped stone represented the majority of the assemblage, especially by projectile points (n=43) and bifaces (n=45). The rest of the chipped stone is comprised of scrapers (n=12), one drill, and preforms (n=8). Of the 43 projectile points, 42 fit within a temporal type. One Paleoindian point is identified based upon the fine flaking and basal grounding, although the exact type is unknown. The Archaic is represented by non-specific Archaic points (n=5), Mount Albion (n=1), Duncan-Hanna (n=2), Besant (n=4), and Pelican Lake points (n=2). The Late Prehistoric is the most predominant with types including small corner-notched (n=9), Hogback points (n=13), small side-notched (n=4), and Upper Republican points (n=1)).

Table 32. Total assemblage size by artifact type from site 5SW.190.

Element	Total
Biface	45
Ceramic	2
Drill	1
Edge Modified Flake	11
End Scraper	9
Hammerstone	2
Hand stone	21
Misc. Ground stone	1
Misc. Scraper	2
Netherstone	6
Projectile Point	43
Preform	8
Side Scraper	1
Site Total	**152**

Table 33. Temporal chipped stone artifacts from site 5SW.190.

Temporal Age	Type	Total
Paleoindian		**(1)**
Non-diagnostic Early Paleoindian	n/a	*1*
Archaic		**(14)**
	Mount Albion	*1*
Non-diagnostic Early Archaic	n/a	*5*
Middle	Duncan-Hanna	*2*
Late	Besant	*4*
	Pelican Lake	*2*
Late Prehistoric		**(27)**
Early Ceramic	Small corner-notched	*9*
	Hogback corner-notched	*13*
Middle	Small side-notched	*4*
	Upper Republican	*1*
	Site Total	**42**

Site: 5WN.297

Toft Site Number: 61.63-61.71

Toft Common Name: Snyder Lake

Temporal Span: Middle Archaic – Middle Ceramic (5,000 – 410 B.P.)

Relation to Playa: Site is northwest of playa

Distance to Playa: 120 meters

Playa Size: 29.27 acres

Site 5WN.297 is located in east central Washington County, Colorado. The site is situated 120 meters northwest of a large playa. The nearest alternative water source is Hell Creek, located 2.8 kilometers to the northwest. The playa is 29.27 acres in size, is irregularly shaped, and is split by a road. Although the site is near several ephemeral drainages, it is isolated from any other playas. The site is also situated at the contact of the plains and the Sand Hills. Notes from the original recording of the site indicate at least three separate collection localities. Additional notes state that another collector found a Clovis point near or likely at this location (Mike Toft, personal communication 2019). This point was not analyzed in this thesis.

The site assemblage consists of 104 artifacts, comprised of chipped stone tools, ground stone, and ceramics. The ground stone includes hand stones (n=1), netherstones (n=9), and other miscellaneous ground stone fragments (n=2). Only one plainware ceramic body fragment was analyzed. The most prevalent artifact type are projectile points (n=30). Of the 20 points, the most represented period is the Late Archaic, with 15 Pelican Lake point types.

Table 34. Total assemblage size by artifact type from site 5WN.297.

Element	Total
Biface	29
Ceramic	1
Convergent Scraper	2
Drill	1
Edge Modified Flake	4
End Scraper	18
Hand stone	1
Misc. Ground stone	2
Misc. Scraper	7
Netherstone	9
Projectile Point	30
Site Total	**104**

Table 35. Temporal chipped stone artifacts from site 5WN.297.

Temporal Age	Type	Total
Archaic		**(23)**
Middle	Duncan-Hanna	*1*
	McKean	*1*
Late	Besant	*2*
	Pelican Lake	*15*
	Yonkee	*2*
Non-diagnostic Late Archaic	n/a	*2*
Late Prehistoric		**(1)**
Middle	Unnotched	*1*
	Site Total	**24**

Site: 5WN.298

Toft Site Number: 61.78

Toft Common Name: Snyder Sprinkler Corner

Temporal Span: Early/Middle Paleoindian – Middle Ceramic (11,000 – 410 B.P.)

Relation to Playa: Site is northwest of playa

Distance to Playa: 70 meters

Playa Size: 26.99 acres

Site 5WN.298 is located in central Washington County, Colorado. The site is situated 70 meters southeast of a large 26.99-acre playa. Several smaller playas are also found less than 2 kilometers away. The nearest alternative water sources are several unnamed drainages, the closest being 330 meters northwest, and Jack Creek, located 6.52 kilometers to the southeast.

The site assemblages comprise a total 233 artifacts, including chipped stone tools, ground stone, and ceramics. The most prevalent artifact type is ceramic fragments (n=55). All ceramic pieces are cord-marked, body fragments and are relatively small (average of 3.5 g). Although no rim fragments were observed, based upon the variation in cord-marking, it is estimated that the assemblage represents approximately 1-2 vessels. The ground stone is comprised of hand stones (n=10), netherstones (n=24), hammerstones (n=4), and other miscellaneous ground stone fragments (n=13). Overall, chipped stone represented the majority of the assemblage, especially by projectile points (n=48) and bifaces (n=40). The Early/Middle Paleoindian period is represented by a single graver. Projectile points ranged in age from the Late Archaic to the

Middle Ceramic. The most prevalent point is from Late Archaic period, with 11 Pelican Lake type points. Of the 48 projectile points, the most represented period is the Early Ceramic (n=21).

Table 36. Total assemblage size by artifact type from 5WN.298.

Element	Total
Biface	40
Ceramic	55
Convergent Scraper	1
Edge Modified Flake	10
End Scraper	19
Graver	1
Hafted Knife	1
Hammerstone	4
Hand stone	10
Misc. Ground stone	13
Misc. Scraper	1
Netherstone	24
Projectile Point	48
Preform	5
Side Scraper	1
Site Total	**233**

Table 37. Temporal chipped stone artifacts from site 5WN.298.

Temporal Age	Type	Total
Paleoindian		**(1)**
Non-diagnostic Late Paleoindian	n/a*	*1*
Archaic		**(20)**
Non-diagnostic Early Archaic	n/a	*1*
Middle	Duncan-Hanna	*2*
	Mallory	*1*
Late	Besant	*4*
	Pelican Lake	*11*
	Yonkee	*1*
Late Prehistoric		**(22)**
Early Ceramic	Small corner-notched	*21*
Middle	Small side-notched	*1*
	Site Total	**43**

*Comprised of one graver presumed to be Early/Middle Paleoindian

Site: 5WL.9247

Toft Site Number: 62.96

Toft Common Name: Cervi South Lake

Temporal Span: Middle Archaic – Middle Ceramic (5,000 – 410 B.P.)

Relation to Playa: Site is south and southwest of playa

Distance to Playa: 760; 1,080 meters

Playa Size: 4; 10 acres

Site 5WL.9247 is located in eastern Weld County, Colorado. The site is situated south of two playas, one 760 meters and the other 1,080 meters away. The two playas sit within active cultivated fields. The nearest alternative water source is Spring Creek 60 meters to the south and Cottonwood Creek 5 kilometers to the south. Although the site is close in proximity to Spring Creek, the assemblage size is moderate and are much smaller than other isolated playa sites such as 5LO.1018.

This site assemblage consists of 115 artifacts, including chipped stone tools and ground stone. The ground stone is comprised of hand stones (n=10), netherstones (n=11), and miscellaneous ground stone fragments (n=22). Overall, chipped stone represented the majority of the assemblage, especially by projectile points (n=18) and bifaces (n=28). The rest of the chipped stone is comprised of scrapers (n=17), edge modified flakes (n=8), and one hafted knife. Of the 18 projectile points, 15 fit within a temporal type. The Archaic is the most represented, with Duncan-Hanna (n=2), Yonkee (n=1), and Pelican Lake point types (n=5). The Late Prehistoric is represented by small corner-notched (n=5) and side-notched point types (n=2).

Table 38. Total assemblage size by artifact type from site 5WL.9247.

Element	Total
Biface	28
Convergent Scraper	1
Edge Modified Flake	8
End Scraper	11
Hafted Knife	1
Hand stone	10
Misc. Ground stone	22
Misc. Scraper	4
Netherstone	11
Projectile Point	18
Side Scraper	1
Site Total	**115**

Table 39. Temporal chipped stone artifacts from site 5WL.9247.

Temporal Age	Type	Total
Archaic		**(8)**
Middle	Duncan-Hanna	*2*
Late	Pelican Lake	*5*
	Yonkee	*1*
Late Prehistoric		**(7)**
Early Ceramic	Small corner-notched	*5*
Middle	Small side-notched	*2*
	Site Total	**15**

Summary

Of the 18 sites, four sites were located in Chase County, Nebraska, five sites in Logan County, three sites in Phillips County, three sites in Sedgwick County, two sites in Washington County, and one site in Weld County. Of these, the data is especially significant for Phillips County as the information from this chapter increase the overall county site records numbers by 50%. What becomes abundantly clear is that the current OAHP records of all archaeological sites in the state of Colorado, represents only a small fraction of the reality of the history of the region. The size, diversity, and chronology of these sites indicate that ancient indigenous people occupied the playas landscapes in the South Platte River Basin for over 12,000 years. This is in stark contrast to the other playa sites in the Southern Plains. The following chapters will provide detailed discussions and analyses of the assemblages regarding their composition, relation to playa, chronology, and diversity.

CHAPTER FIVE: ANALYSIS—SITE LOCATION AND PLAYA MORPHOLOGY

Hunter-gatherer groups select site locations (campsites, hunting sites, task specific sites, etc.) based on a wide variety of factors including task type, local culture, tradition, geography, and environment (Kelly 2013). As laid out in chapter two, the Southern Plains appear to have some patterns regarding site location near playa lakes. First, across the seven southern Great Plains sites, localities were found to be clustered along the northern perimeters (north and northwest) or were situated within the basin itself. Second, the playas near archaeological sites were found to be relatively small, less than 800 meters in diameter. It is unknown whether these or other patterns are present throughout the plains, and in particular within the South Platte River Basin.

This chapter will analyze in detail several environmental and geographical characteristics of the 18 study area playa sites to investigate if early peoples preferred certain topographical, environmental, or playa characteristics. Table 40 presents a summary of the data, including playa size, distance from site to playa, landform, cardinal direction, and potential alternative water sources for each of the 18 sites. The Playa Lakes Joint Ventures (PLJV) (2019) database provided the values for size, that were also used to calculate playa shape. While site distance was calculated using distance computations through Geographic Information Systems (GIS). The final variable of site topography was determined through topographic maps and satellite imagery. This qualitative topographical analysis comprised of an assessment of contour lines, especially focusing on identifying subtle changes in elevation. Table 41 provides a written description of each landform type and identifies seven landforms as follows: playa, lunette, hilltop, ridge, terrace, slope, and plain.

Table 40. Environmental and morphologic data from the playas associated with the 18 Toft sites. Data include site number, size of playa, distance of nearest secondary playa, the landform where the site is situated, the cardinal direction from playa to site, and the distance to the nearest alternative water source.

Site	Size of playa (acres)	Nearest playa (meters)	Landform	Direction from playa to site	Nearest alternative water source
25CH.100	3.53	240	Ridge	East	Unnamed drainage – 924 m Sand Creek – 3.31 km
25CH.101	9.3	660	Ridge	West	Unnamed drainage – 640 m Sand Creek – 3.08 km
25CH.102	2.61 6.96 5.45	0 275 284	Playa	Basin South Northeast	Unnamed drainage – 610 m Sand Creek – 1.5 km
25CH.103	9.37	640	Ridge	Southwest	Unnamed drainage – 1.43 km Sand Creek – 4 km
5LO.1014	5.33	0	Playa	Basin	George Creek – 1.81 km
5LO.1015	3.69	120	Hilltop	Southwest	Spring Creek – 2.15 km Brush Creek – 4.88 km
5LO.1016	8	280	Hilltop	West	Cedar Creek – 610 m Two-mile Creek – 1.83 km
5LO.1017	86	650	Low slope	Southwest	Pawnee Creek – 6 km
5LO.1018	3.54 7.22	230 190	Plain	Northwest South	George Creek – 2.43 km
5PL.497	1.4	700	Hilltop	South	Wildhorse Creek – 2.53 km Frenchman Creek – 4.17 km
5PL.498	24.27	220	Hilltop	South	Unnamed Creek – 924 m Wildhorse Creek – 4.19 km
5PL.499	12 7	440 350	Hilltop	Southeast Southwest	Unnamed drainage – 2.41 km Unnamed drainage – 3.31 km
5SW.188	6	780	Plain	Southeast	Unnamed drainage – 1.10 km Unnamed drainage – 2.75 km
5SW.189	4	60	Plain	Northeast	Unnamed drainage – 1.85 km Unnamed drainage – 480 m
5SW.190	10	850	Hilltop	Northeast	Sand Creek – 1 km
5WN.297	29.27	120	Low lunette	Northwest	Hell Creek – 2.8 km
5WN.298	26.99	70	Plain	Northwest	Unnamed drainage – 330 m Jack Creek – 6.52 km
5WL.9247	4 10	760 1,000	Terrace bench	South Southwest	Spring Creek – 60 m Cottonwood Creek – 5 km

Table 41. Qualitative description of landforms identified within the study area.

Landform	Description
Hilltop	An isolated earthen raise. Elevation should be relatively higher compared to the surrounding plain.
Lunette/dune	Often crescent or linear shaped rise in elevation near a playa lake.
Plain	Terrain with little to no elevation change.
Playa	A relief in topography, creating a circular basin that acts as a water catchment.
Ridge	A long, linear, and narrow landform that is higher than the surrounding plain.
Slope	A gradual relief or increase in elevation.
Terrace	A sudden rise in elevation typically above a drainage, river, or stream.

Size

Of the 18 archaeological sites, a total of 23 playas were found to be within a 1-kilometer radius. The playas ranged in size from 1.4 to 86 acres. Most playas were relatively small; out of the 23 playas, 16 (78%) were under 10 acres although there were four large playa outliers. The smaller playas also are clustered near other playas, which were associated with sites 25CH.102, 5LO.1018, 5WL.9247, and 5PL.499. Each of these sites have at least two or more playas associated with them that are less than 10 acres. The box and whisker plot shown in Figure 9 depicts the data in four quartiles that represent the distribution of playa size in 25% segments. The figure illustrates that three of the four quartiles fall below 10 acres, while several outliers on the upper end include three playas that were 20 to 30 acres and one 86-acre playa. The dots that fall outside of the box and whisker plot represent statistical outliers of the overall population. As seen in Figure 9, the median size, symbolized by the center line, is 7 acres while the average is 13, symbolized by the x, falling just outside of the fourth quartile mark. Most of the playas were 4 to 11 acres in size, representing 57% the playa population.

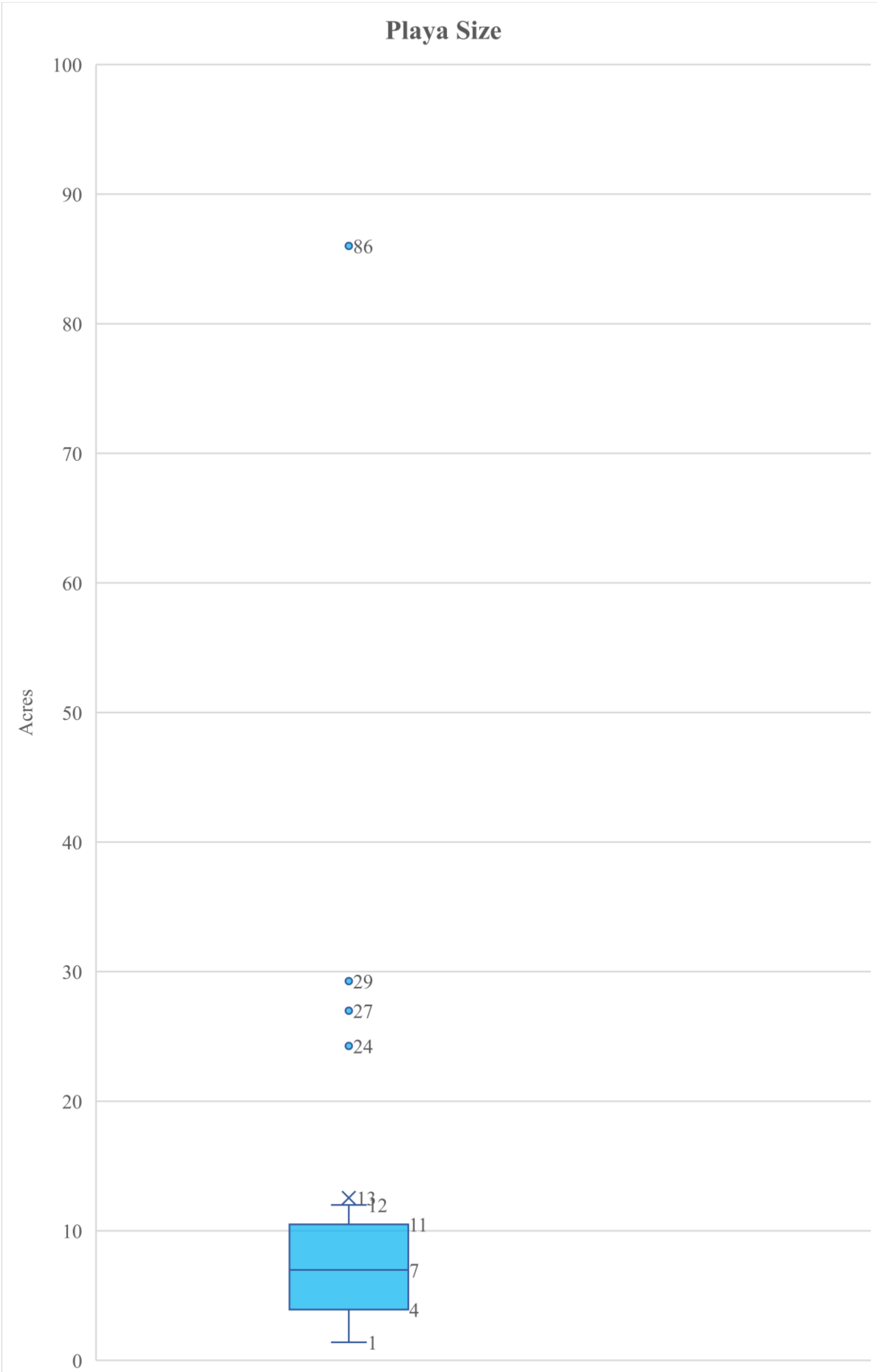

Figure 9. Box and whisker plot of playa acreage for all playas associated with 18 Toft playa sites.

Comparing this to the general population of playas in the study area discussed in chapter three, the playas with archaeological sites are somewhat larger overall. The general population of playas range in size from 60 to 1,000,000 meters^2 (0.015 acres or 247 acres) (Playa Lakes Joint Ventures 2019). Most of the playas were less than 3 acres (n=2,395; 57%) with 78% of these falling in between 1-2.5 acres in size. A total of 1,604 playas were between 3 and 12 acres, representing 34% of the playas. Only 13 playas were larger than 20 hectares, with only 3 between 51 to 100 hectares As seen in Table 42, the data show that the PLJV playa average is 3.9 acres whereas the average size of the archaeological playas are 12 acres. The comparison of the median size of playas is also similar, with a difference of 6 acres (1.84 acres for the general population and 7 acres for those associated with archaeological sites). While this does support the general notion that larger playas are more desirable because of their increased biodiversity and resources (see chapter one), there were still many larger playas in the area that groups could have occupied. This leads to further questions about site optimization and provides a reminder that more than resource size determines usage patterns and further investigation of the presence or absence of archaeology at these larger playas would be pertinent to establish whether this pattern is truly present.

Table 42. Comparative table of general population of playas (PLJV) and archaeological playa sites (18 Toft sites).

	Playa Lakes Joint Ventures n = 2,444		**Archaeological Playa Sites n = 23**	
Sample Statistics	*Circularity*	*Acres*	*Circularity*	*Acres*
Average	0.79	3.9	0.77	12.43
Median	0.82	1.84	0.79	7
Max	0.99	248.59	0.95	86
Min	0.12	0.02	0.28	1.4
Standard Deviation	0.15	7.88	0.16	6.92

Distance from Site to Playa

Across the 18 sites, the distance from site to playa ranged from 0 meters (including sites within the playa basin) to the maximum of 1000 meters or 1 kilometer. The majority of the sites were within 800 meters from a playa (n=16; 89%); 60 percent of these sites were within a short 600-meter radius from a playa. Whereas eight sites, 35% of all sites, were located at the farthest distances of 640 meters or more. Within this subsample of distance from site to playa, only two (9%) sites, 5SW.190 and 5WL.9247, were farther than 800 meters. Sites 25CH.102 and 5LO.1014 were the only sites that were situated within the playa basin itself. In terms of relative isolation to other playas, at least four sites had more than one playa within the 1-kilometer radius, 25CH.102, 5LO.1018, 5PL.499, and 5WL.9247, respectively. Figure 10 shows site 5LO.1018 and its association with two playas. All other sites did not have any other playas within a 1-kilometer radius.

Sites that are situated within a 1-kilmeter radius of one or more playas is significant, as research has found that clustered playas in particular have higher biodiversity than isolated playas (Cariveau and Johnson 2007; Venne et al. 2012). Cariveau and Johnson (2007) found that the diversity of bird species in particular, increased in playa clustered areas when compared to single playa habitats. For ancient hunter-gatherers, these same areas would have been enticing in terms of resource acquisition as they could position themselves near several playas instead of being limited to a single resource base.

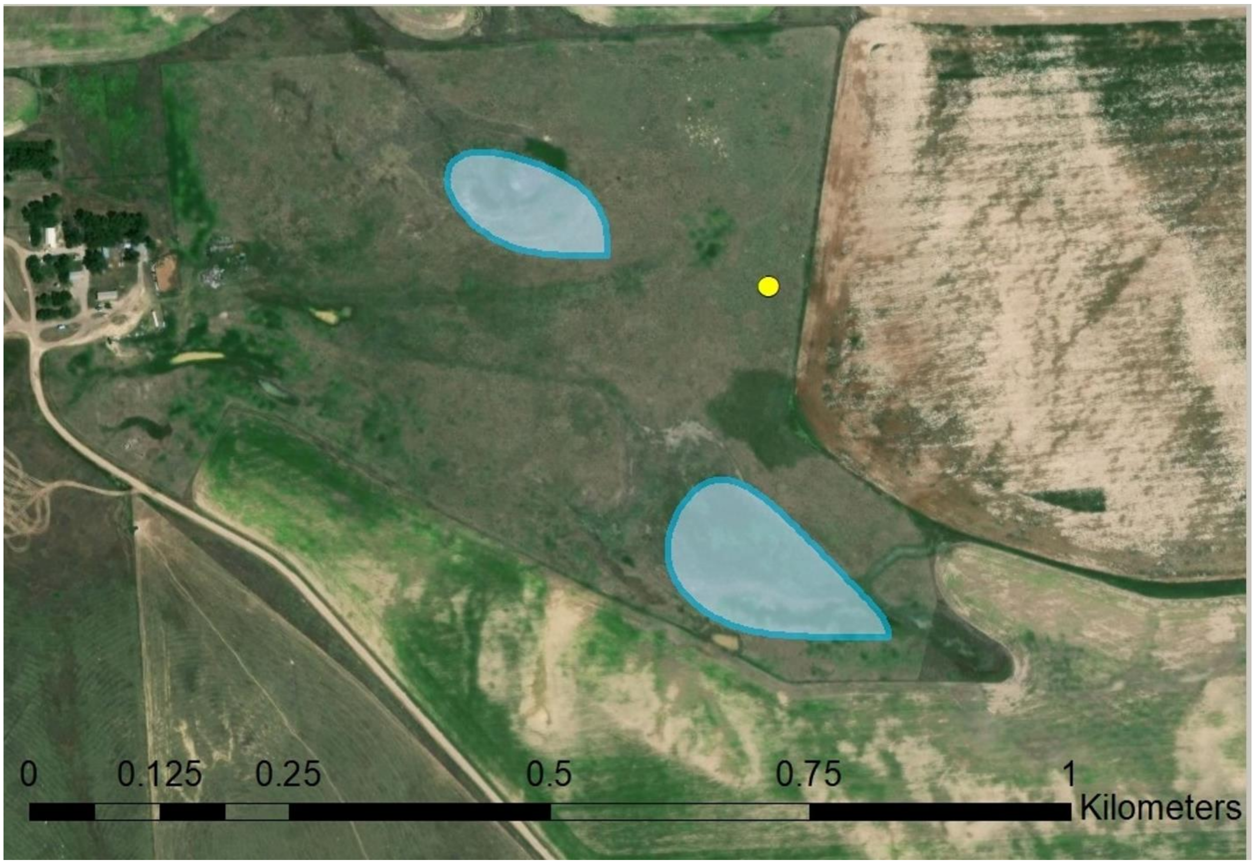

Figure 10. An example of a site with more than one associated playa, site 5LO.1018 in Logan County, Colorado.

The box and whisker plot shown in Figure 11 displays a summary of the distribution of the distance from playa to the 18 archaeological sites. The median distance from site to playa, symbolized by the center line, is 278 meters, while the average distance is 367, signified by the x. Unlike the analysis of playa size, no statistical outliers are present within this sample. The second and third quartile show that 50 percent of the sites were between 120 and 633 meters from a playa. Analysis of distance from playa to site in the South Platte River Basin expose several differences from the Southern Plains.

First, the data show that 60% of sites were within 600 meters of the playa and those that fell outside of this range were relatively close behind, especially three sites in the 700 to 780-meter range. This indicates that most sites were closer to playas than the 1-kilometer boundary that is suggested by research in New Mexico (Judge 1973) and Texas (Hurst 2010). With so many sites seemingly clustered within 600 – 700-meter distance, this implies that ancient people preferred to be closer than 1 kilometer. Second, compared to the seven prominent playa sites highlighted in chapter two, there are far fewer sites within the playa basin. Across the seven Southern Plains and Kansas sites, 60% (n=4) were within the playa basin and were interpreted as bison/mammoth kill sites, while only 10% (n=2) of the 18 sites collected by Toft were situated in a playa basin. These two differences in site location reveal that there is potentially a localized and differential use of playas in the South Platte River Basin that contrasts with these hunting sites in the Southern Plains. Whether these 18 sites and assemblages represent ephemeral or stable occupations will be analyzed in the following sections.

Figure 11. Box and whisker plot of distance from 18 Toft archaeological sites to playas.

Cardinal Direction

In the Central Rio Grande Valley of New Mexico, researchers found that many playa-associated sites are located south of playa basins (Judge 1973), while in the Southern Plains, sites have been observed to be primarily along the northern perimeters (Holliday 1997). One possible explanation for such patterns are related to predominant wind direction. Judge (1973) found that the location of playa sites were positioned in a way that avoided the predominant wind direction during that specific period of occupation. The data from the 18 playa sites in this study show similar patterning in the direction from playa to site. Over 50% of sites (n=12) are located south of a playa. The remaining cardinal directions were only sparsely represented. Only one site, 25CH.100, is east of a playa. The northwest and northeast directions both have two sites, while no sites were directly north of a playa (Figure 12).

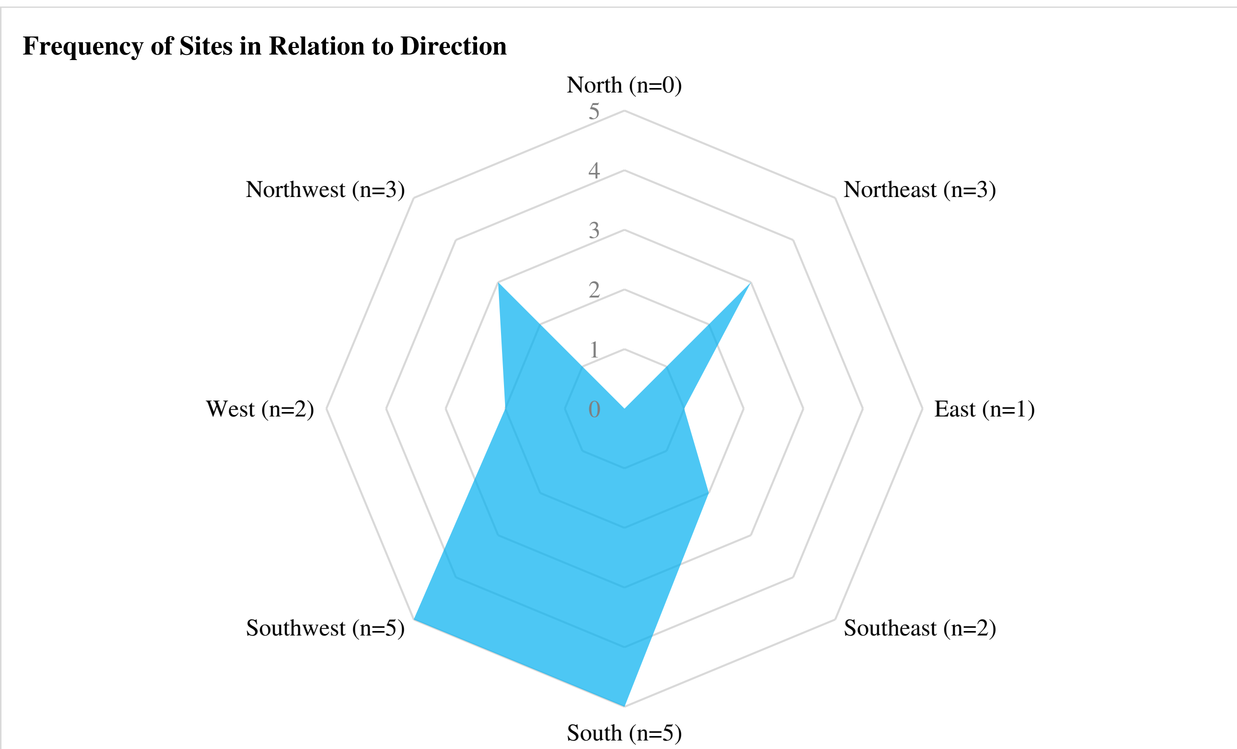

Figure 12. Depiction of the cardinal direction from playa to the 18 Toft sites.

The Great Plains have seasonal wind patterns that vary from year to year and have shifted over decades and millennia, implying that modern wind direction is not always a direct proxy for the ancient past (Halfen and Johnson 2013). However, Halfen and Johnson (2013) have found that the morphology of aeolian dunes, specifically in the Central Plains, suggests that wind direction has not markedly changed for at least several thousand years. The aeolian dunes and lunettes, which formed during periods of aridity by winds that blow sediment and accumulate, provide evidence for these wind patterns. The placement and morphology of these aeolian landforms indicate that winds have been generally northwesterly for some time within the study area (Halfen and Johnson 2013; Holliday et al. 1996; Muhs and Holliday 2001).

In the Central Plains, wind direction in the winter is predominately from the northwest while the summer winds blow in from the south (Halfen and Johnson 2013). The sites located south of the playa may indicate potential fall/winter occupations, as being downwind from a playa, opposite the prevailing winds could be a logistical hunting strategy as to not give off one's scent. This type of strategy is used in contemporary hunting tactics. An example from high altitude caribou drives in the Canadian Arctic have demonstrated that caribou have the ability to smell predators from as far as 1.6 kilometers away if the predators are situated upwind from them (Brink 2005). Furthermore, Brink (2005) also found that both historical and contemporary game drives in the region are deliberately constructed downwind of the predominant wind patterns to decrease their chances of being detected which increases the group's hunting success.

Landform

Observations from playa sites throughout the plains indicate that lunettes and hilltops are the most preferred by ancient hunter-gatherers (Brown 1999b; Hogue 1999). Within this analysis, seven different landforms were identified including: ridges, plains, hilltops, lunettes, terrace benches, slopes, and playa basins. Although most of the identified landforms are self-explanatory and are presented in Table 41, lunettes and hilltops will be further differentiated and discussed as they are significant to playa landscapes generally.

Lunettes are sand dunes that form during periods of aridity and become stabilized over time (Muhs and Holliday 2001). They appear as low, often crescent shaped hilltops that are adjacent to playa basins. The proximity to the basin is also diagnostic, as playas and lunettes are geologically formed in tandem through aeolian processes which deflate playas in order to form lunettes (Holliday and Sabin 1995). A hilltop, although topographically similar to that of a lunette, is not found neighboring a playa and instead is a standalone geographic feature. Across the 18 sites playa sites, only one site is on a lunette (Figure 13). A total of six sites are on hilltops, thus being the most predominant landform within the sample.

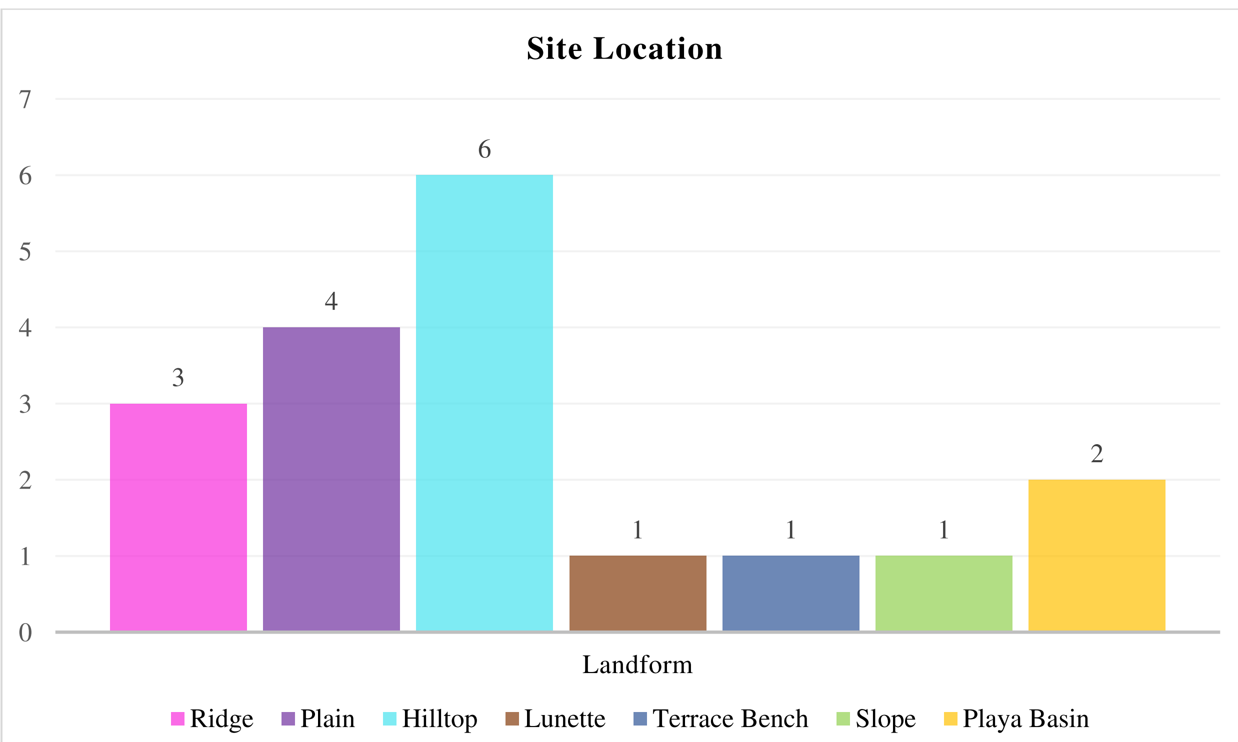

Figure 13. Topographical location of 18 Toft playa sites.

The next most common landform is flat plains, with no topographic relief, with four sites. The remaining sites are located on ridges (n=3), playa basins (n=2), a terrace bench (n=1) and a slope (n=1). A total of 16 sites are situated on the highest elevation landform nearest the playa. In cases where sites are on flat terrain, these areas also did not have any nearby hilltops, lunettes, or terraces within the 1-kilometer distance of the playa. The landform results show that hunter-gatherers of the past made a diversity of topographical choices not necessarily focused upon the highest elevation points as has been observed at other playa sites (Hogue 1999).

Discussion

This chapter reveals a total of 23 playas associated with the 18 archaeological sites. Most sites were within 1 kilometer of only one playa, but four sites (25CH.102, 5LO.1018, 5PL.499, and 5WL.9247) had two or more playas within the vicinity. Most of the playas associated with the archaeological sites are relatively small, less than 10 acres in size. Although comparison with the average of the general population of playas within the study area show that the archaeological playas almost 4 times larger, they were by no means the largest within the region. The median PLJV playa size is 1.84 acres compared to the average archaeological playa of 7 acres. There are at least 800 general playas (PLJV) in the study area that are larger than 7 acres, and until these larger playas are surveyed for archaeology, it is difficult to determine whether hunter-gatherer groups would have preferentially chosen the largest playas within an area for occupation because of increased resource access.

The data also show that there is a preference for past peoples to choose sites along the southern perimeters of a playa, as over 50% of sites in the study area are located in this direction. This is likely related to predominant wind patterns as it is an important factor to consider in hunting strategies (Brink 2005). The location of the 18 sites have a relatively low frequency within playa basins as compared to other regions; at least 60% of the prominent Southern Plains sites were found within the basin compared to the 11% of the Toft sites. This could be for the simplistic reason of having a small Southern Plains site sample site. However, this could also be due to differential playa use, as all four of the Southern Plains basin sites were also association with bison mammoth remains and had small, chipped stone assemblages. In comparison, the assemblages of the two sites within the basin are extremely large, and their diversity signatures (as will be discussed in chapter eight) suggest a short to long term campsite rather than an opportunistic or task based site. Although hunter-gatherers of the 18 sites most often chose to occupy hill tops, it was closely followed by sites on the plains, potentially suggesting that there is not a strong topographical preference. Instead, if high elevation areas were present these areas seem to have been preferred, but landform did not seem to be the primary factor in site selection. Lastly, the majority of the sites were 600-700 meters or less from a playa, while only one site was at the maximum distance of 1 kilometer.

These findings have both similarities and differences from other regional playa landscape studies. Johnson (2008) did not observe any topographical preference on the Llano Estacado in Texas, while other research in eastern New Mexico suggest that topography and cardinal location of sites were distinct and changed over time (Judge 1973). Findings from the 18 sites show that at least 50% are situated along the southern perimeter of playas. Research by Hogue (1999) found that the largest concentrations of artifacts were almost always found at high points on hills and lunettes near playas. Across the 18 Toft collected sites, only 20% of sites were located on a hill or lunette, although the sites that were not located on a high point also did not have a high point nearby. Regarding the distance from site to playa, several researchers suggest a 1-kilometer range for playa occupation, however, the 18 playa sites indicate that at least in the Central Plains, indigenous peoples seem to have preferred to be closer, within 700 meters (Hurst 2010; Judge 1973).

With the data from this thesis and in comparisons to other regional playa data, it seems that local signatures likely prevail over broader regional trends. On a basic level, just as any location is chosen, the results found of this analysis suggests that there is at least a basic relationship between playa and site, meaning that hunter-gatherers chose to occupy that space specifically because of the playa. While the plains are a vast, accessible space, people chose to stay near a playa lake, likely for reasons related to resources availability and familiarity. As the frequency of sites in this study far outnumber those recorded elsewhere in the plains, it could be the case that further landscape reconnaissance in these areas may reveal similar patterns.

CHAPTER SIX: ANALYSIS—ASSEMBLAGE CHARACTERISTICS

In total, there are 5,052 artifacts from the 18 sites within Mike Toft's playa site collections. Assemblage size ranged from as little as 51 total artifacts to as many as 1,829 artifacts. The smallest assemblage is from site 5SW.188 and is comprised of 40 chipped stone tools, 10 ground stone fragments, and one ceramic sherd. The largest assemblage is site 5LO.1018 and consist of 484 chipped stone tools, 642 ground stone fragments, and 703 ceramic sherds. The assemblage characteristics of these sites are vastly different from other playa sites elsewhere in the plains, especially when comparing assemblage size. As was previously established in chapter two, many of the Southern Plains sites had assemblages less than ten total artifacts are were limited to formal chipped stone tools.

Table 43 Table 43 presents a summary of the assemblage size and composition for each of the 18 playa sites. All sites contained chipped stone and ground stone and 55% of sites contained ceramics. The most prominent artifact class across the 18 sites are chipped stone tools (n=2,956), followed by ground stone (n=1,201). The chipped stone artifacts have the most recognized types including bifaces, cores, drills, edge modified flakes, end scrapers, convex scrapers, side scrapers, miscellaneous scrapers, hafted knifes, projectile points, preforms, and gravers. Ground stone artifacts were limited to four different types including hammerstones, hand stones, netherstones, and miscellaneous/indeterminate fragments. Ceramic artifacts were not split into specific types but were identified by vessel portion such as body, rim, and base.

Table 43. Assemblage composition of 18 Toft sites showing the total counts (percentage) of each artifact type.

Site	Chipped Stone	Ground Stone	Ceramics	Site Total
25CH.100	72 (94%)	5 (6%)	-	**77**
25CH.101	159 (89%)	19 (11%)	-	**178**
25CH.102	408 (98%)	8 (2%)	-	**416**
25CH.103	514 (86%)	43 (7%)	43 (7%)	**600**
5LO.1014	53 (55%)	44 (45%)	-	**97**
5LO.1015	179 (49%)	154 (42%)	35 (9%)	**368**
5LO.1016	232 (73%)	86 (27%)	-	**318**
5LO.1017	41 (69%)	28 (41%)	-	**69**
5LO.1018	484 (27%)	642 (35%)	703 (38%)	**1829**
5PL.497	47 (90%)	4 (8%)	1 (2%)	**52**
5PL.498	218 (89%)	10 (4%)	17 (7%)	**245**
5PL.499	25 (36%)	8 (11%)	37 (53%)	**70**
5SW.188	40 (78%)	10 (20%)	1 (2%)	**51**
5SW.189	74 (95%)	4 (4%)	-	**78**
5SW.190	120 (79%)	30 (20%)	2 (1%)	**152**
5WN.297	91 (87%)	12 (12%)	1 (1%)	**104**
5WN.298	127 (54%)	51 (22%)	55 (24%)	**233**
5WL.9247	72 (63%)	43 (37%)	-	**115**
Artifact Class Total	**2956**	**1201**	**895**	***5052***

Chipped Stone

Chipped stone artifacts were present in all 18 sites. The chipped stone artifact class is the most prevalent type within each assemblage, representing an average of 73% of the artifacts at any given site. There are at least 12 different identified chipped stone types. All chipped stone tools and the percentage across all 18 sites is shown in Figure 14. Bifaces, edge modified scrapers, end scrapers, miscellaneous scrapers, and projectile points were present at all 18 playa sites. Several items, such as channel flakes, gravers, and spokeshaves were the least common. Channel flakes are particularly rare and were only present at site 5PL.497. Gravers are present at six sites (Sites 25CH.103, 25CH.102, 5LO.1015, 5PL.498, 5PL.497, and 5WN.298) and spokeshaves are present at two sites (Sites 25CH.103 and 5LO.1018). Cores are also relatively rare, being present at 30% of the sites. Drills were at over 70% of sites, while preforms were found in lesser quantities and at 65% of sites. All 18 sites have a high frequency of morphologically distinct scrapers including 60% of sites with convergent scrapers, 70% with side scrapers, and 100% of sites had both end and miscellaneous scraper types.

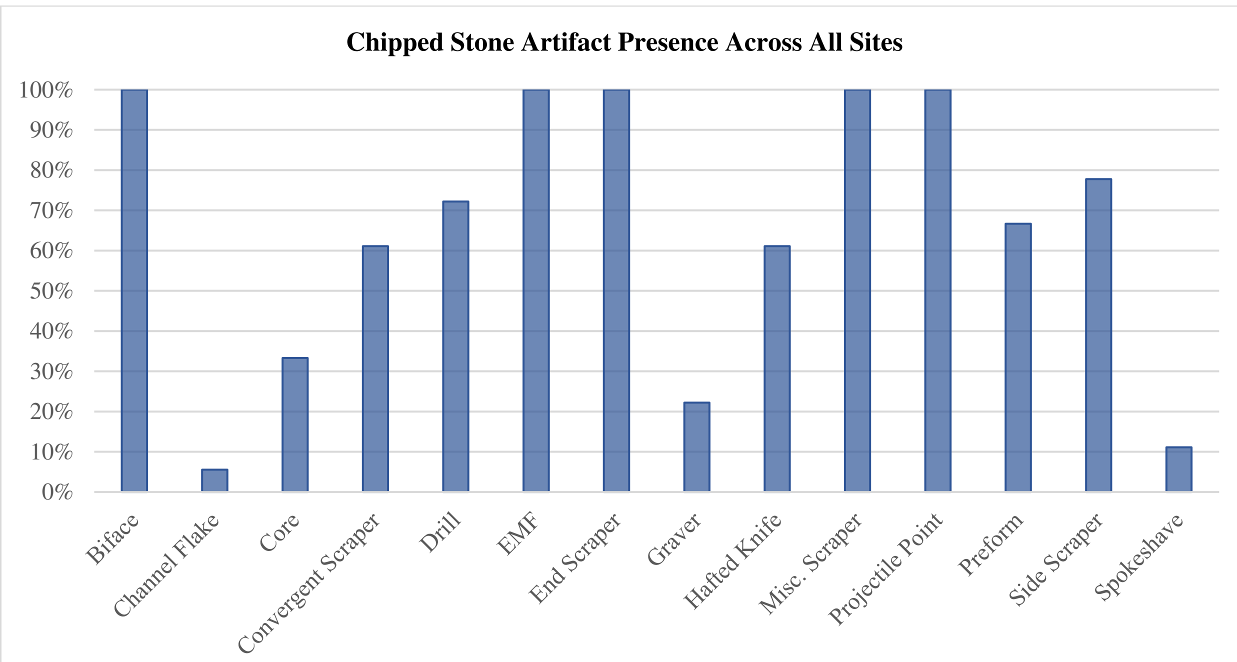

Figure 14. The presence of all chipped stone artifacts including biface, channel flake, core, all scraper types, drill, edge modified flake, graver, knife, projectile point, preform, and spokeshave tools at all 18 playa sites.

The chipped stone assemblages depict a diversity of activities and a focus on formal tool technology over expedient technologies. The low presence of cores indicate several aspects of mobility, including distance from raw material sources and that formalized bifaces were preferred over expedient core technology (Parry and Kelly 1987). The high frequency and percentage of sites with scrapers and knives suggests that occupants were participating in specialized scraping and cutting activities, demonstrated by the morphologically distinct and variable scraping tools (end scraper, side scraper, and convergent scrapers). In addition to the chipped stone too assemblage, Toft also collected hundreds of thousands of flakes from each of the 18 playa sites. Although not analyzed as part of this thesis due to time constraints, the mere presence of debitage indicate behaviors of tool manufacturing, retooling, and raw material reduction. Compared to other chipped stone assemblages from playa lakes, the 18 sites represent a much larger and diverse collection of tools. Few sites, including Nall, Miami, and Tahoka-Walker, had any representation of scrapers or drills (Holliday et al. 1994; Hurst et al. 2010; LaBelle et al. 2003). Most Southern Plains site assemblages were limited to several projectile points, flakes, and bifaces. The diversity of these chipped stone tools will be further analyzed in chapter eight.

Ground Stone

Ground stone artifacts were present at all 18 sites, as seen in Figure 15. Out of all the ground stone types, hand stones were the most prevalent (at 100% of sites), followed by netherstone fragments (83%). However, in terms of the frequency of specimens, hand stones represented only 20% (n=239) of all ground stone. The type with the highest frequency were netherstone, representing 52% (n=507) of the overall ground stone artifacts, with the fewest being hammerstones (n=45; 4%). The second most ubiquitous ground stone artifact is indeterminate/miscellaneous fragments. These are pieces of stone that had ephemeral grinding, typically small, and lacked any diagnostic characteristics to identify a specific tool type. These represented 34% (n=410) of the overall ground stone assemblage.

Playa lakes provide annual and perennial resources including several species within the Chenopodium, Amaranth, Liliaceae, and Pontederia family (Rowell 1971). These herbaceous and seedy plants are native to the Great Plains (USDA 2021). The seeds and leaves are edible and are well known ethnobotanically (USDA 2021). The macrobotanical remains of these plant species have also been observed at archaeological sites in association with ground stone artifacts (Yoder et al. 2010). The high prevalence of these ground stone artifacts suggests that these plant resources were important aspects of life for ancient occupants of playa lakes.

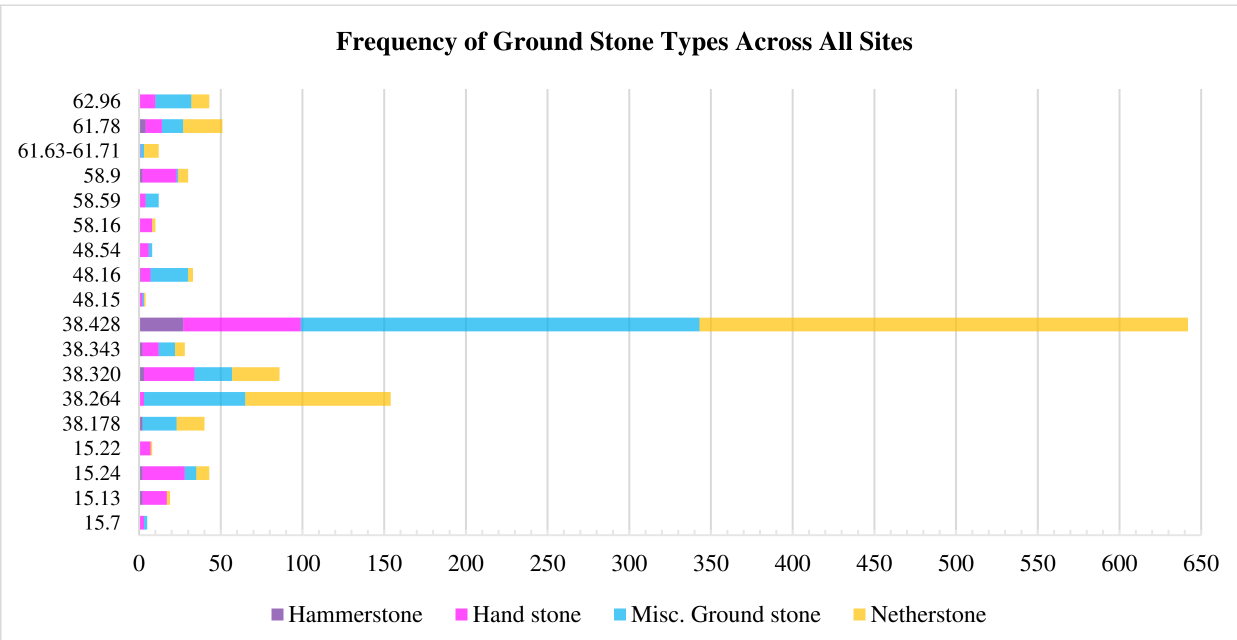

Figure 15. Bar graph of the frequency of ground stone across all 18 sites and the representation of each type within the assemblage. Types include hammerstone, hand stone, misc. ground stone, and netherstone.

A total of eight sites have all four ground stone types within its assemblage. These sites vary greatly in terms of assemblage size and composition. For example, two of the sites have relatively large assemblages, sites 5LO.1018 (n=642) and 5LO.1016 (n=86), respectively. However there are several sites including 5SW.190 (n=30), 25CH.103 (n=43), and 5LO.1014 (n=44), that have a comparatively small total ground stone assemblage size, although all four ground stone types are present. Similar to the overall ground stone population, within these sites the least represented are hammerstones, followed by hand stones, and miscellaneous ground stone fragments are the most represented. The sites with the least ground stone artifacts are 25CH.102 and 5SW.188, which have less than ten specimens and are represented only by hand stones and netherstones. Once again, like the chipped stone, the site with the highest frequency of ground stone artifacts is 5LO.1018. This assemblage is comprised of all types including hammerstones (n=27), hand stones (n=72), misc. ground stone (n=244), and netherstones (n=299).

The presence of ground stone characteristically qualifies sites to be within the campsite category according to Colorado state recording regulations (OAHP/SHPO). If this is the case, all 18 sites would qualify as campsites, suggesting a completely different playa occupation than the single hunting sites in the Southern Plains. Additionally, the high frequency of ground stone at playa sites is rare as only the Ryan site, has any mention of this artifact class on the Southern Plains, with only three total fragments recovered (Hartwell 1995). The site with the fewest ground stone artifacts within this study, 5SW.189, had a total of four fragments. The average ground stone assemblage is 67 fragments, suggesting that ground stone related activities including grinding plants, dried meat, or minerals were important aspects of daily life for occupants at the 18 playa sites within the study area.

In total the 18 sites within the South Platte River Basin have a combined 1,201 ground stone artifacts. This suggests that playas in the South Platte River Basin likely provided a resource that was not particularly utilized in other regions of the plains. This data also indicates that the raw materials particularly used for ground stone were more readily available than at the other sites within the plains.

Ceramics

Ceramic artifacts were present at 55% of sites (n=10). Fragments were identified by vessel portion including body, base, and rim fragments. The most prevalent vessel portion were body sherds, followed by rim sherds. Additionally, a large portion of the fragments were deemed unidentifiable, as the sherds were too small to determine their placement with a vessel. Overall, the number of fragments do not represent near complete ceramic vessels. Individual vessels were delineated based upon the presence of specific vessel portions (such as rims) and exterior decoration (plainware or differential cord-marking). Using these methodologies, no more than two vessels are likely present at any of the ceramic sites within this assemblage.

The most prevalent exterior decoration across the 18 sites were cord-marked fragments. A total of 612 (68%) ceramics were identified as having this exterior modification. The remaining fragments had no exterior modification (n=234; 26%) or were deemed indeterminate (n=49; 5%) due to their fragmentary nature. Additionally, many of the non-diagnostic/indeterminate fragments were those that were either too small or poorly preserved, and where it was not possible to differentiate the exterior or interior surface. A combined total of 895 fragments were found across the 18 playa sites. In comparison to the Southern Plains, only the San Jon site recorded any presence of ceramics (Hill et al. 1995). Ceramic artifacts are most often associated with residential sites with less mobile subsistence strategies (Brown 1985). As most of the sites within the Southern Plains are not residential/camp sites, the absence of ceramics there is perhaps not a surprise. However, the presence of such domestic signatures across the 18 sites in the South Platte River basin is surprising, especially within a regional context as few sites have been recorded to have ceramics and even more few sites are known to have more than 300-400 sherds (Ellwood 2002; Gilmore 1999).

Discussion

The 5,052 total artifacts from the 18 assemblages represent a contrasting perspective on playa occupation. In consideration of assemblage size, the playa sites within the study area represent either a wider variety of function, longer period of occupations, or reoccupations of playas. Figure 16 presents the total assemblage data of all 18 sites recorded by Mike Toft compared to the seven prominent playa sites in the Great Plains.

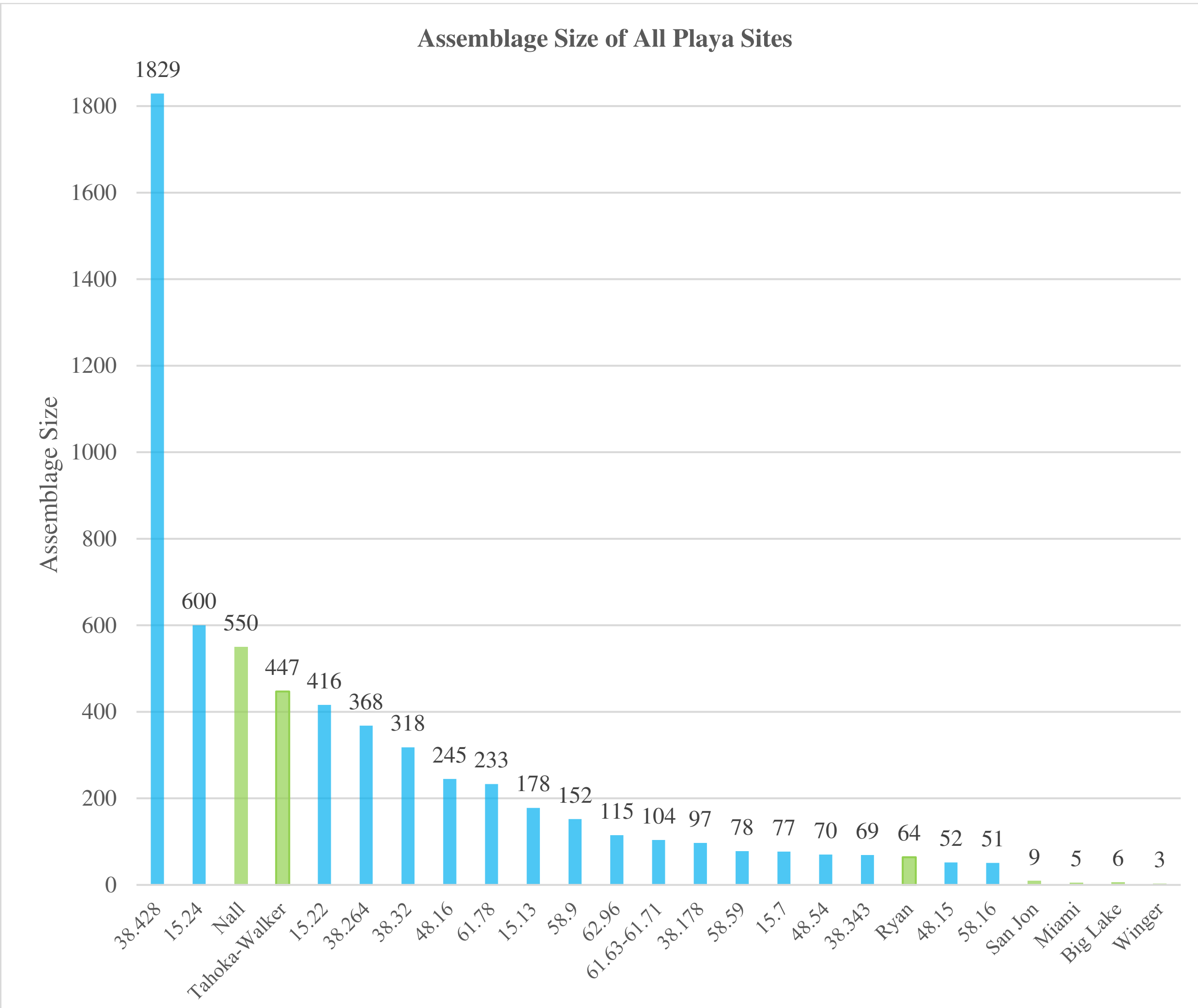

Figure 16. Assemblage size of Toft playa sites within the South Platte River Basin (blue) and prominent sites in the Southern and Central Plains (green). Southern and Central Plains tool counts are derived from chapter three.

When compared to other assemblage sizes throughout the region, the sheer quantity of artifacts at each site depicts an extreme contrast. Most notable are the absence of small sites like the San Jon and Winger, both of which have assemblages with less than ten total artifacts. The largest site in this comparative analysis is site 5LO.1018, with a total of 1,829 items. This is closely followed by two Southern Plains sites, the Tahoka-Walker (n=447) and Nall (n=550) sites. These three are the only assemblages that have over 600 artifacts. Site 5LO.1018 assemblage in particular is much larger than the other sites partly because the ground stone and ceramic artifacts were extremely fragmentary, possibly conflating its relative size compared to the other sites. Still, this fragmentation does not account for the entirety of the size differential, as it is almost 50% larger than the next biggest site, 25CH.103, which has only 600 artifacts.

The summary of assemblage size and general artifact composition in the South Platte River Basin show that the 18 sites represent a much larger assemblage size than playa sites in other parts of the Great Plains. Such findings propose the question: why do the playa sites within the South Platte River have such large artifact assemblages? Several possibilities rise to the forefront. First, it is possible that the occupation of playas in the South Platte River Basin are more intense than other regions and the overall playa landscape served as relatively stable place for reoccupation. This is in contrast to the Southern Plains, where the majority are single event, hunting sites with small assemblages, that were used short term and for opportunistic hunting purposes (Holliday et al. 1994; Mandel and Hofman 2003; Turpin et al. 1997).

The second possibility is related to collector behavior. Shott (1995) discusses both survey intensity and individual variability as prominent factors in the discovery of surface records. Both factors are pertinent to this study, as Mike Toft himself is not only extremely familiar with the landscape, but he also visited these sites over several occasions and thus has more experience and familiarity with overall area. Unlike CRM surveys, which are typically 10-30 meter spaced linear transects, collector surveys and Mike Toft's surveys are less systematic. Collector surveys and reconnaissance are based upon positive discovery and thus the same area may be visually assessed numerous times. This survey method changes the visibility of the surface record immensely and results in more artifacts than systematic linear surveys (Shott 1995). Further, Banning et al. (2011) has found that surveyor ability, familiarity, and even time of day were key components of site discovery. These reasons could be a primary issue and reason for the assemblage discrepancy of the generally smaller sites within the Southern Plains as most have been analyzed through excavations limited to a small area or single visit transect surveys. Supporting this potential theory is that the few sites with larger assemblages in the Southern Plains are accumulations of both private and professional surface/subsurface assessments, including the Nall and Tahoka-Walker sites (Hurst et al. 2010; LaBelle et al. 2003).

The third possibility is related to taphonomic processes and post depositional effects, especially related to depositional setting and subsequent erosion in the Central Plains. Similar to Seebach's (2006) argument for Paleoindian discoveries during droughts, a similar phenomenon could be occurring in terms of exposing playa assemblages. Much of the known oldest Paleoindian record in the Great Plains is largely due to discoveries made during periods of drought that cause sites to erode from aeolian processes (Seebach 2006). The Dust Bowl, one of the most famous aeolian events, also concomitantly exposed many archaeological sites. This incident is a proponent of why many of the artifacts from the Nall Site were exposed and collected by local geologist William Baker (LaBelle et al. 2003; Seebach 2016). Seebach (2006) found that out of 75 Paleoindian sites, over 50% of these were discovered in areas of aeolian deflation and that the time of discovery correlated with drought periods. Most of the sites that were discovered during periods of drought were found near playas, draws, and dune fields (Seebach 2006). Within this research, Seebach (2016) specifically notes that playas are highly susceptible to aeolian deflation. Taking such post depositional processes into consideration, the playas discovered within the South Platte River Basin were collected over a 50-year period, during several drought years, that likely propelled the exposure of more artifacts (Seebach 2016). It could be that the other sites in the Southern and Central Plains also have large assemblages, but due to the nature of the research, sites were typically only visited once or twice, thus potentially resulting in less recovered artifacts.

In addition to natural erosion, all 18 sites within the South Platte River Basin are on land that has either recently or historically experienced cultivation. Shott (1995) has found that cultivated fields should be visited numerous times before a representative assessment of the archaeological record can be made. He also found that agriculture practices affected the frequency and composition of artifact assemblages more than the horizontal distribution and positioning (Shott 1995). Navazo and Diez (2008) found that cultivation not only brings artifacts to the surface, but the removal of vegetation alone can expose sites. However, within the same study, they also discovered that depending on the size, shape, and mass of artifacts, that plowing has the potential to bury up to 80 – 90% of a site (Navazo and Diez 2008). Leach's (1998) research has revealed that plowed fields suffer from additional disturbances, especially related to irrigation, which increase the rates of horizontal transport of artifacts. Similarly, Shott et al. (2002) argues that after rainfall, larger artifacts were more likely to become exposed, whereas small artifacts in both irrigation and rainfall were less likely to be affected.

The research in cultivated fields has had mixed results. Some advocate for these areas to be high priority due to high exposure rates and others have found that cultivation disturbs and buries sites (Leach 1998; Navazo and Diez 2008). The sites within the Southern Plains suffer from the same taphonomic issues located in and near playas which are extremely prone to aeolian processes (Seebach 2006). Additionally, many of them are also situated on agricultural landscapes. Given this, it is likely that the large assemblage sizes in the South Platte River Basin are due to collection methodologies, especially the revisiting of sites, by Mike Toft.

CHAPTER SEVEN: ANALYSIS—PLAYA OCCUPATION THROUGH TIME

The 18 archaeological assemblages presented in this thesis are restricted to discoveries from surface. This absence of stratigraphic context is undoubtedly a limitation for discussions regarding time and occupation intensity. Nevertheless, this section aims to distinguish temporal patterns across the 18 playa sites using projectile point typologies and other index artifacts as a proxy for occupation period and length.

Similar to paleontological index fossils, artifacts with distinct characteristics in dated stratigraphic contexts are also used as chronological indicators in archaeological settings (Urban and Schortman 2012). In this way, the temporal range of artifacts that appear on the surface by post-depositional processes can still be analyzed and determined to be from a broad time frame. This type of analysis is a culture historical approach, focusing heavily on material traits, and is used in this thesis as a basic chronological model rather than to understand cultural processes (Mitchell 2006). For example, the distribution of fluted points, found from Paleoindian aged stratigraphies, are proxies to cross examine geographically distant sites that have morphologically similar points (Prasciunas 2011). Sites like the Hell Gap site in Wyoming help narrow down time frames, as numerous Paleoindian points from different periods were all found in situ at one site (Kornfeld et al. 2010; Irwin-Williams et al. 1973).

The typologies used in this analysis are based upon regional morphology and metrics of projectile points and darts in the South Platte River Basin (Gilmore et al. 1999). Additionally, other regional literature was also used in the "typing" of projectile points specific to each period and type, as seen in Table 1 in chapter one.

The Paleoindian literature is the most robust, as it has the greatest morphological variety of projectile points. References include Boldurian (2008), Metlzer et al. (2002), and Wilmsen and Roberts (1979) for the Early and Middle Paleoindian period, and Frison (1984), Guarina (2018), Irwin-Williams et al. (1973), and Kornfeld (2013), for the Late Paleoindian period. The Archaic period references include Benedict and Olson (1978), Davis and Keyser (1999), Kornfeld et al. (1995), Betzen (1962), Todd et al. (2001), and Bubel (2014). The Late Prehistoric period references are Kehoe (1966), Perlmutter (2015), and Somer (1997). In addition to type-specific literature, broad regional scholarships, including Gilmore et al. (1999), Kornfeld et al. (2010), and Peck (2011), were also used for the classification of projectile points and other chipped stone tools.

In cases where the projectile point "type" under question did not fit within the exact morphology or within the currently agreed upon variety, the specimen is placed within a more generic temporal range. For example, corner-notched arrows that are larger than the average Late Prehistoric corner-notched point, but does not quite fit the morphology of a Pelican Lake point, were placed within a Late Archaic context; as the robusticity of the neck indicates that it was a dart point likely manufactured prior to the transition to bow and arrow technology (Shott 1997).

The following sections provides an overview of the temporal occupations at the 18 Toft playa sites in the South Platte River Basin. This chronologic analysis of these sites reveals a long history of occupation spanning from the Paleoindian period to the Protohistoric.

The Paleoindian Period

Paleoindian material culture is well known for its large, fluted spear points. Relatedly, channel flakes from these fluted spears and Folsom preforms are another morphologically and temporally diagnostic item associated with the Early and Middle Paleoindian periods (Sellet

2013). Other artifacts such as gravers have also been found in Paleoindian contexts, especially related to Folsom activities (Amick 1999). Across the 18 total playa sites, 11 of the sites have evidence of Paleoindian occupation (Paleoindian:12,000 – 7,500 B.P.). A summary of the points from the Paleoindian period are present in Table 44.

Figure 17 presents a sample image of the diagnostic Paleoindian points. The earliest point type and earliest evidence for playa occupation within the 18 sites is the presence of a Clovis base from site 25CH.102. An additional single Clovis point is also potentially known from site 5WN.297. This point was collected by another local avocational archaeologist but because it was not verified, it is not included as part of the data in this analysis. Another non-diagnostic point, with Clovis-like overshot flaking and basal grinding is present from site 5SW.190.

Figure 17. A sample of Paleoindian points from site 25CH.102. From left to right, Folsom, Goshen/Plainview, Hell Gap, Agate Basin and Angostura types.

The Middle Paleoindian (11,000 – 10,000 B.P.) is represented at six sites. Site 25CH.102 had the densest concentration of artifacts from the Middle Paleoindian period, including a Folsom and Goshen point, Folsom preform, and several gravers. Other Middle Paleoindian sites include assemblages with gravers (sites 25CH.103, 25CH.102, 5PL.498, 5PL.497, 5WN.298, and 5LO.1015) and a channel flake recovered from site 5PL.497. The Late Paleoindian (10,000-

7,500 B.P.) is represented at five sites. The Late Paleoindian presence is largely dominated by non-specific Late Paleo points (n=12) and the Angostura (n=4) and James Allen (n=4) point types. Site 25CH.102 has the largest assemblage of Late Paleoindian points with point types including Agate Basin (n=3), Angostura (n=1), and Hell Gap (n=1). Another Late Paleoindian site with point type diversity is 25CH.103, with point types including Alberta (n=1), Angostura (n=1), and James Allen (n=2). Overall, although the mere presence of this period is significant, the Paleoindian period was the least represented temporal span across the 18 site assemblages. This perhaps points to less reliance for playa resources. Alternatively, other factors are more likely including site exposure and burial issues related to natural taphonomic processes.

Table 44. Presence of Paleoindian occupation at playa sites. All numbers reference the total number of Paleoindian projectile point types unless otherwise stated as reference to a graver (grv), channel flake (chf), or preform (pre).

Site	**Early Paleoindian (12,000 – 11,000 B.P.)**		**Middle Paleoindian (11,000 – 10,000 B.P.)**			**Late Paleoindian (10,000 – 7,500 B.P)**								
	Clovis	*Non-diagnostic*	*Folsom*	*Goshen*	*Non-diagnostic*	*Agate Basin*	*Alberta*	*Angostura*	*Eden*	*Hell Gap*	*James Allen*	*Scottsbluff*	*Non-diagnostic*	**Site Total**
25CH.100														—
25CH.101													1	**1**
25CH.102	1		1	1	3 (grv; pre)	3		1		1			4	**15**
25CH.103					3 (grv)		1	1			2		5	**12**
5LO.1014								1						**1**
5LO.1015					2 (grv)									**2**
5LO.1016														—
5LO.1017														—
5LO.1018													2	**2**
5PL.497					2 (chf; grv)									**2**
5PL.498					2 (grv; pre)				1		2			**5**
5PL.499														—
5SW.188								1						**1**
5SW.189														—
5SW.190		1												**1**
5WN.297	1*													*1**
5WN.298					1 (grv)									**1**
5WL.9247														—
Total	**1**	**11**	**1**	**1**	**3**	**3**	**1**	**4**	**1**	**1**	**4**	—	**12**	***43***

*Was not verified as it is part of a separate private collection and not part of the overall artifact totals.

The Archaic Period

Unlike the preforms and gravers from the Paleoindian period, the Archaic temporal range of 7,500– 1,800 B.P. do not have temporally diagnostic tool types besides projectile points (Tate 1999). Seven specific projectile-point types are present within the Archaic period in the South Platte River Basin (Kornfeld et al. 2010; Peck 2011; Tate 1999). These include Mount Albion points from the Early Archaic; McKean, Duncan-Hanna, and Mallory points from the Middle Archaic; and Besant, Pelican Lake, and Yonkee types from the Late Archaic.

All 18 analyzed playa sites have robust evidence of Archaic occupations. A summary of the points from the Archaic era are present in Table 45.

Figure 18 presents a sample of the diagnostic Archaic point types. The Early Archaic (7,500 – 5,000 B.P.) is present at eight of these sites. At least six of the eight sites have Mount Albion point types, while the five other Early Archaic sites have evidence linking them to this time period as the points were large and robust but lacked any diagnostic characteristics to place the specimen within a specific type. The Middle Archaic (5,000 – 3,000 B.P) points are present at 16 sites, with the Duncan-Hanna point being the most common. All but one playa site has a Late Archaic (3,000– 1,800 B.P.) signature, with Pelican Lake points present at 15 of the sites. Almost all sites had at least one or more Archaic point types except for 5LO.1014 and 5LO.1017. Site 5LO.1014 has only a Late Archaic presence, dominated by Pelican Lake point types and other larger corner-notched points. Site 5LO.1017 has only a single Late Archaic, Yonkee point.

Figure 18. A sample of Archaic points from site 25CH.102. From left to right, Yonkee, Pelican Lake, Non-diagnostic Archaic, Besant and McKean point types.

Table 45. Presence of Archaic occupation at playa sites.

Site	**Early Archaic (7,500 – 5,000 B.P.)**		**Middle Archaic (5,000 – 3,000 B.P.)**				**Late Archaic (3,000 B.P. – 1,800 B.P)**				
	Mount Albion	*Non-diagnostic*	*Duncan-Hanna*	*Mallory*	*McKean*	*Non-diagnostic*	*Besant*	*Pelican Lake*	*Yonkee*	*Non-diagnostic*	**Site Total**
25CH.100		1						7		3	**11**
25CH.101			6		4			15	1	9	**35**
25CH.102	1				1		3	26	2		**33**
25CH.103	5		2		20	2	9	20		2	**60**
5LO.1014								12		1	**13**
5LO.1015	1		3		3	1	1		1	3	**13**
5LO.1016	2		4		12		3	10	1	6	**38**
5LO.1017										1	**1**
5LO.1018	3	2	4		4		1	28		8	**50**
5PL.497			1							3	**4**
5PL.498		4	5				6	3			**18**
5PL.499			1					3		2	**6**
5SW.188			2				1	3		1	**7**
5SW.189			2					6		1	**9**
5SW.190	1	5	2					4	2		**14**
5WN.297			1		1		2	15	2	2	**23**
5WN.298		1	2	1			4	11	1		**20**
5WL.9247			2					5	1		**8**
Total	**13**	**13**	**37**	**1**	**45**	**3**	**30**	**168**	**11**	**42**	***363***

The Late Prehistoric and the Protohistoric

Two major technological and cultural transitions mark the shift from the Late Archaic (3,000 – 1,000 B.P.) to the Late Prehistoric (800 – 410 B.P.): the introduction of the bow and arrow and ceramic technology (Gilmore et al. 1999). The change in hunting is evident by the shift from dart-sized projectiles with robust neck widths to smaller arrows with narrower neck widths. This technological, and consequently morphological change has been observed around the same time in lithic projectile assemblages throughout the Great Plains (Shott 1997). In Colorado, ovoid corner-notched points are locally known as Hogback corner-notched. These Hogback points are often serrated and are also found in association with ovoid preforms or blanks (Lindsay 1971). If applicable, points were typed Hogback if they depicted these traits, otherwise they are typed as a generic Late-Prehistoric corner-notched point.

The introduction of ceramics in the South Platte River Basin is much later than areas like the American Southwest (Cordell and McBrinn 2012). The earliest, and the most prevalent ceramics within the study area are typically large pots/vessels that are made using a paddle and anvil, finished with exterior cord-marking. These are locally identified as cord-marked Woodland pottery (Ellwood 2002). Examples of complete vessels indicate that Woodland vessels had tall walls, a cone shaped base, often without a rim, and no handles. This is morphologically distinct from local ceramics in the greater region, such as Upper Republican ceramics which have collared or flared rims and are short and wide (Scheiber and Reher 2007). Although there are many examples of these ceramic vessels, the presence of ceramics in northeastern Colorado is relatively uncommon, especially compared to the American Southwest (Ellwood 2002; Cordell and McBrinn 2012).

Table 46 shows the presence of ceramic artifacts, which are present at 55% (n=10) of sites. A total of 895 ceramic sherds were present across all 18 sites. Site 5LO.1018 has the largest ceramic assemblage with 703 fragments, this is followed by site 5WN.298 with a total of 55 fragments. Several sites including 5SW.188, 5PL.497, 5WN.297, and 5SW.190 had 2 or less ceramic sherds. The next major temporal transition period is the Protohistoric (410 – 90 B.P.); this is the period of European and Euro-American contact (indirect and direct) and expansion into the western United States. This change is delineated by the introduction of a diverse array of new artifacts and technologies. The most common at indigenous sites are items such as glass beads and an array of metal artifacts including horse paraphernalia (Clark 1999). A single metal point from site 5LO.1016 is the only representation from this period across all 18 sites.

Table 46. Prevalence of pottery at the 18 playa sites.

Site	Cord-Marked	Plainware	Indeterminate	Site Total
25CH.100	-	-	-	—
25CH.101	-	-	-	—
25CH.102	-	-	-	—
25CH.103	38	-	5	43
5LO.1014	-	-	-	—
5LO.1015	34	-	1	35
5LO.1016	-	-	-	—
5LO.1017	-	-	-	—
5LO.1018	480	186	37	703
5PL.497	-	1	-	1
5PL.498	5	10	2	17
5PL.499	-	33	4	37
5SW.188	-	1	-	1
5SW.189	-	-	-	—
5SW.190	-	2	-	2
5WN.297	-	1	-	1
5WN.298	55	-	-	55
5WL.9247	-	-	-	—
Total	**612**	**234**	**49**	***895***

Like the Archaic, the Late Prehistoric period is found at all 18 sites. Evidence from the Early and Middle Ceramic (1,800 – 410 B.P.) was present at 16 sites. A summary of the points from the Late Prehistoric are present in Table 47.

Figure 19 presents a sample of the diagnostic points from the Late Prehistoric to the Protohistoric.Small corner-notched points were the most numerous across all Late Prehistoric point types (n=173), followed by Hogback points (n=63). Site 25CH.103 (n=77) and 5LO.1018 (n=69) had the highest frequency of Late Prehistoric points. Two sites, 61.63-61-71 and 5LO.1017, had only one Late Prehistoric point, both of which were from the Middle Ceramic period. Site 5LO.1016 is the only site with definitive evidence for a Protohistoric occupation with one metal projectile point. The site also has an earlier component of small corner-notched points. When comparing 5LO.1016 to the other Early Ceramic sites, it has the smallest assemblage and the fewest occupation periods. The sites with less than 10 points also had either none or only one ceramic sherd within the assemblage and sites with the highest ceramic frequencies also had the highest projectile point frequencies.

Figure 19. A sample of Late Prehistoric Hogback points from site 25CH.102.

Table 47. Presence of Late Prehistoric to Protohistoric occupation at playa sites.

Site	**Early Ceramic (1,800 – 800 B.P.)**		**Middle Ceramic (800 – 410 B.P.)**							**Protohistoric (410 – 90 B.P.)**	
	Hogback corner-notched	*Small corner-notched*	*Avonlea*	*Plains side-notched*	*Prairie side-notched*	*Upper Republican*	*Unnotched*	*Small side-notched*	*Small tri-notched*	*Metal Point*	**Site Total**
25CH.100		2	1	2			1				**6**
25CH.101		6	4					4	1		**15**
25CH.102	5	5		1		1		1			**13**
25CH.103	23	39	1	4	4			1	1		**73**
5LO.1014		5						3			**8**
5LO.1015	3	8									**11**
5LO.1016		11								1	**12**
5LO.1017									1		**1**
5LO.1018	29	30		8			2				**69**
5PL.497		2						1			**3**
5PL.498	11			8							**19**
5PL.499		2						2			**4**
5SW.188		8				1		1			**10**
5SW.189		2	1					3			**6**
5SW.190	13	9				1		4			**27**
5WN.297							1				**1**
5WN.298		21						1			**22**
5WL.9247		5						2			**7**
Total	**84**	**155**	**7**	**23**	**4**	**3**	**4**	**23**	**3**	**1**	***307***

Discussion

The temporal analysis of the 18 sites represent a long and continuous history of regional playa utilization. The period with the most evidence of indigenous occupation is the Late Archaic (3,000 – 1,800 B.P.) represented at all 18 sites with a total of 251 projectile points. The least represented period is the Early Paleoindian (12,000 – 11,000 B.P.), with occupation evidence from only one site, 25CH.102, and potentially another, from site 5WN.297 (although this was not verified in this thesis). The overall temporal representation found in these 18 sites is inconsistent with the archaeological trends throughout the greater region, especially the high frequency of the artifacts from the Archaic (Holladay 1997; Judge 1979). The Archaic, especially the Early Archaic, is generally argued to be the least represented period in the Great Plains archaeological record (Johnson 2008; Sheehan 1995; Tate 1999). On the Llano Estacado of Texas, there are only a handful of excavated sites with Early Archaic occupations, one being the San Jon playa site (Hill et al. 1995; Johnson 2008). In contrast, the Paleoindian presence in the Southern Plains is extremely high, with a significant decrease in the Archaic and the Late Prehistoric periods. However, the opposite trend appears within this study area.

Figure 20 displays the minimum number of occupations within each period. This chart shows that playa use gradually increased over time, peaking during the Late Archaic and Early Ceramic periods with a drop during the Protohistoric. There are many reasons why this trend might be present within this regional sample. First, and most simply, the post depositional processes are conducive for the most recent artifacts to be shallowly buried and or exposed. General archaeological theories state that earlier periods are generally more underrepresented, as they are buried further below the modern surface (Palumbo 2015). Second, the increase in playa occupation from the Middle to Late Archaic could be concomitant with environmental conditions. The paleoenvironment during the Archaic is known to have had least two separate altithermal drought episodes from 7,000 – 5,500 calibrated years B.P (Wood 1998; Meltzer 1999). During the Middle Archaic, temperatures were hot and the overall climate in the Plains was dry; playa basins would have been particularly desirable as a water resource (Johnson 2008). In some cases, during the Early Archaic, water was so scarce that people began to dig wells down into the water table (Meltzer 1991). Another possible reason for this increase in playa occupation is paleodemography. Regional research suggests that populations increased during the Middle Archaic, especially spiking in the Early Ceramic. Thus, increased populations would result in more areas, or in this case playas, occupied across the plains during this time (Gilmore 2008).

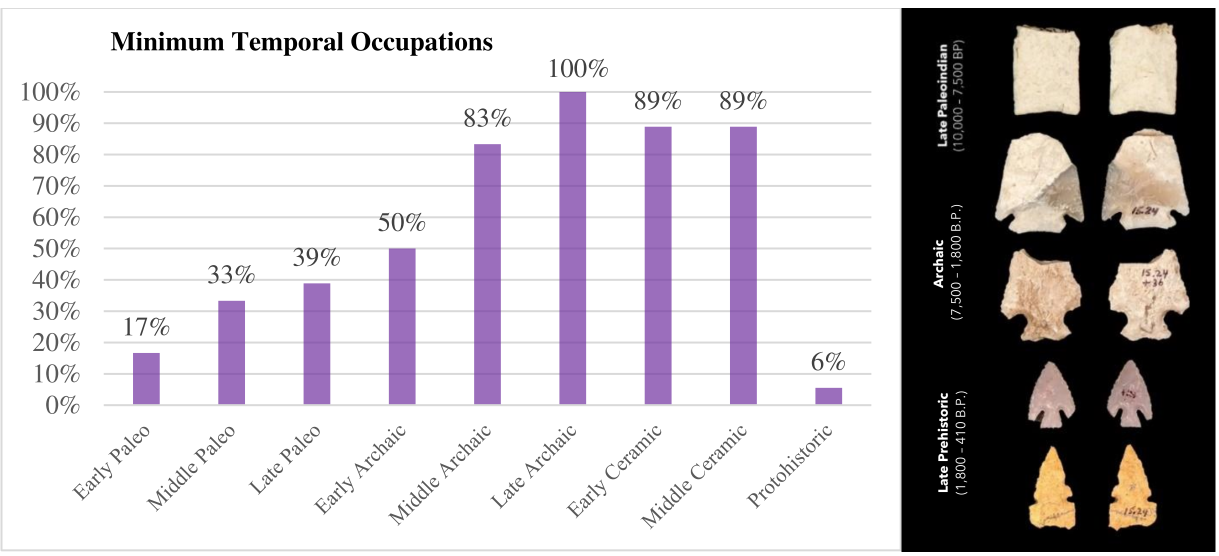

Figure 20. The percentage of occupations during each temporal span from all 18 playa sites.

Several sites stand out within this temporal assessment including sites 5LO.1016, 25CH.102, and 5SW.190. Site 5LO.1016 is the only assemblage with a Protohistoric component. Although site 5LO.1016 has the most recent occupation, when the site is compared to the other playa sites in this study it has only a minimal Late Prehistoric signature with 11 Early Ceramic points. The average number of projectile points from Early and Middle Ceramics periods is 17.

This suggests that the site was not heavily used in the Early and Middle Ceramic, which differs greatly from the rest of the assemblages. Site 25CH.102 has the longest and the most temporally continuous assemblage with projectile points from each period from the Early Paleoindian to the Middle Ceramic. The site also has the most diverse representation of the Paleoindian era, with Clovis, Folsom, Goshen, Agate Basin, Angostura, and Hell Gap point types. Site 5SW.190 has the largest temporal gap within the assemblage. It has only one Early Paleoindian point base and points from the Early Archaic, with no other representation from the Paleoindian Era. Several other sites have temporal gaps, but none as large as this 3,500-year hiatus observed at site 5SW.190.

It is significant that all 18 playa sites are temporally multicomponent. When directly compared to other regional playa sites, the 18 sites represent a longer and more consistent occupation of playas. The utilization of playas throughout time suggests that these 18 sites are quite different from playa site in other regions, where they have been observed to be largely single occupations or single hunting episodes (Holliday 1997; Judge 1973). In fact, the signature within the South Platte River Basin gathered from this small sample of sites shows that playa lakes have been an extremely important aspect of hunter-gatherer settlement systems for as long as people have occupied northeastern Colorado.

CHAPTER EIGHT: ANALYSIS—ASSEMBLAGE DIVERSITY

Most of contemporary archaeological work is from surface assemblages identified through cultural resource management surveys (Banning et al. 2011). Looking at the collections found in cultivated landscapes, Shott (1995) proposes three primary ways to analyze surface assemblages: abundance, composition, and distribution. Similarly, this chapter will analyze the abundance (richness) and composition (evenness) of the archaeological assemblages from the 18 playa sites collected from the surface, using the Shannon-Weaver Diversity Index. Leonard and Jones (1989) define diversity as the way in which certain quantities of artifacts are distributed across an assemblage, and most relevant to this research, assesses both richness and evenness. The diversity index of an assemblage can shed light onto the types of activities that may have occurred at an archaeological site, specifically the length of time a site may have been occupied, or the frequency of reoccupation.

The Shannon-Weaver Index

The Shannon-Weaver Index is a mathematical calculation of heterogeneity. It examines the numerical relationship between the richness and evenness of any given assemblage. The index has its origins within communication theory but was quickly adopted into the scientific community to calculate and assess the distribution of biological diversity within a single ecological community (Spellerberg and Fedor 2003). Within the discipline of archaeology, the index has been used to calculate the statistical relationship between different artifacts, specifically the richness (the number of distinct artifact types) and the evenness (the frequency of each distinct artifact type) independent of the assemblage sample size (Meltzer et al. 1992). This value, representing the diversity of artifacts or raw materials are then utilized to interpret the length of occupation, whether reoccupation occurred, or to assess specific types of behaviors at archaeological sites (Binford 1980; Kelly 2013; Reckin and Todd 2020; Shott 1986). For example, the more specialized activities that people were engaged in, the lower the diversity of the assemblage would be, as the number of tools needed to accomplish a specialized task is limited (Veth 2006). Binford (1980) found that amongst the Nunamiut peoples, special-task-oriented camps had an overall lower tool diversity index than basecamps. Conversely, at a campsite or basecamp, any number of activities would occur over longer periods and thus the number of tools and types of tools used at a site would increase, resulting in a higher diversity index (Andrefsky 2005; Binford 1980).

The Shannon-Weaver Index calculates not only the mere number of represented artifact types but assesses how equitable the quantity of that artifact class is (Shott et al. 1989). The formula is as follows:

$$H' = -\sum_{i=l}^{s} p_i(\ln[p_i])$$

where H' equals the sum of p_i, which is the relative abundance of each group of artifacts. The "relativity" of the sum represents the equitability of each artifact class, meaning that it assesses the evenness of each artifact type relative to the richness of that particular assemblage. The power of the Shannon-Weaver index is that the calculation does not compare across assemblage sizes and thus the overall frequency of total tools is not relative to other assemblages within the entire sample. Table 48 presents the diversity index results and the presence or absence of ground stone and ceramics from the 18 playa assemblages. The calculations were made based upon the chipped stone assemblage size, omitting both the frequency of ground stone and ceramics. These artifact classes were not included as to limit potential inflation of diversity.

Because of the nature of the raw material of ground stone and ceramics, these artifacts often break in higher frequencies and are more fragmented than chipped stone tools. Thus, the totals of these artifact classes represent the distinct number of fragments, rather than the actual presence of the number of whole artifacts. This would severely skew the representation of tool diversity, as the number of chipped stone tools are based upon individual specimens. For example, site 25CH.103 has a total of 43 ceramic fragments but this likely represents only one vessel.

Table 48. Chipped stone (CS) assemblage size, number of chipped stone (CS) tool types and H'/diversity index of all 18 playa sites.

Site	CS Assemblage Size	Number of CS Tool Types	GS	Ceramics	H'
25CH.100	72	6	×	-	4.74
25CH.101	159	8	×	-	4.37
25CH.102	408	12	×	-	8.39
25CH.103	514	13	×	×	6.06
5LO.1014	53	7	×	-	3.62
5LO.1015	179	11	×	×	5.58
5LO.1016	232	11	×	-	5.81
5LO.1017	41	8	×	-	6.02
5LO.1018	484	11	×	×	4.94
5PL.497	47	11	×	×	7.61
5PL.498	218	11	×	×	5.61
5PL.499	25	6	×	×	4.10
5SW.188	40	8	×	×	4.53
5SW.189	74	10	×	-	6.56
5SW.190	120	8	×	×	4.38
5WN.297	100	7	×	×	4.37
5WN.298	127	10	×	×	4.64
5WL.9247	72	8	×	-	4.87

Across the 18 chipped stone assemblages, the diversity index values range from 3.62 to 8.39. Roughly 55% of the sites' diversity indices are less than 5 (n=10), most of which have a H' value of 4 to 5 (n=9). The higher end of the diversity index comprises of sites that fall within an

H' value range of 5 – 6 (n=3; 17%), 6 – 7 (n=3; 17%) and 7 – 9 (n=2; 11%). The median index value is 4.9. All sites have ground stone but only nine sites (50%) have ceramics within their assemblages. When comparing the H' values with the sites that have ceramic artifacts, there are no stark trends. The range of diversity of these sites (with ceramics) are similar to that of the overall population, with H' values of 4.1 – 7.61, and a median value of 4.64. To better understand the results of the H' values, Figure 21 is a model created using fictious archaeological assemblages of various site types. The small table above the line graph shows the composition of the theoretical site type, including the number of tools and tool types.

Theoretical Site Type	Artifact Type (Count)	Artifact Type (Count)	H'
Task Oriented Site	PP (7), BF (2)	9	1.70
Lithic Reduction Site	PRE (11), CORE (10), BF (7)	28	2.04
Short Term Campsite	BF (8), PP (5), EMF (10), ES (4), MISC.G (7)	34	4.7
Campsite	BF (15), CORE (30), EMF (15), ES (20), MAN (27), MET (10), KF (8), PP (10)	135	7.25

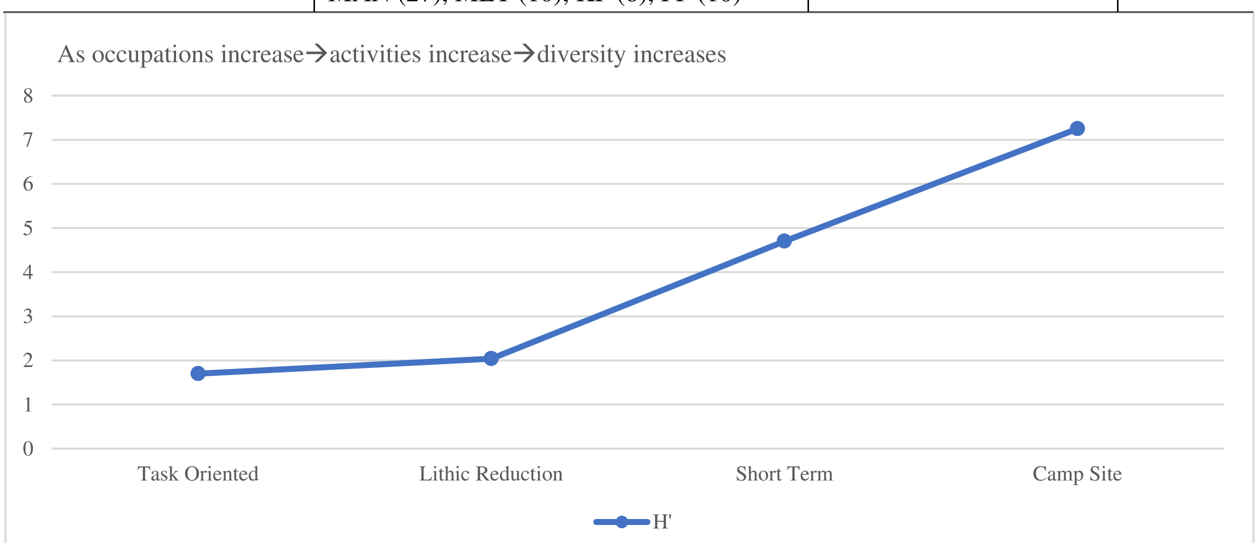

Figure 21. Theoretical examples of the measure of assemblage diversity using the Shannon-Weaver index. The associated table provides artifact frequencies and diversity index results. This example shows the hypothetical interpretation of diversity indices, with task-oriented sites having less artifact types/lower diversity index and camp sites having more artifact types/higher diversity index. The artifact composition of the fictious site types are based upon the Southern Plains literature and CO SHPO site types and identification.

If the 18 playa assemblages are compared to this theoretical model, the sites clearly depict diversity levels that fall on the higher end of the spectrum. The median diversity index of 4.9 within this 18-site study is closest to the short-term campsite example, which has a diversity index of 4.7. While 50% of the 18 sites are within the 4 -5 value range sitting in between the short-term campsite and long-term campsite values. Even the lowest index value within the sample, with a H' value of 3.62 (Site 5LO.1014) is still closest to the short-term campsite value and no sites are close to the assemblage values of a lithic reduction or task-oriented site. The two most diverse sites were 25CH.102 and 5PL.497. Site 25CH.102 has the highest H' value of 8.39, with 23 different tool types across 408 chipped stone tools. Site 5PL.497 has a H' value of 7.61 with 11 tool types across 47 chipped stone tools. These two sites have higher values than the campsite in Figure 21 and indicate the longest term/heavily reoccupied locations.

Discussion

The artifact assemblages ranged in size from 51 to 1,829 total artifacts, with a median assemblage size of 133. Projectile points, ground stone fragments, and ceramic sherds make up the bulk of the largest assemblages. Overall, across all sites, the most ubiquitous were chipped stone tools, especially bifaces, projectile points, scrapers, and edge modified flakes. Aside from chipped stone and, in lesser quantities, ceramics and ground stone artifacts such as netherstones, hand stones, hammerstones, and unidentified ground stone fragments were also present. Figure 22 shows an example of the assemblage diversity from site 25CH.103. The site with the least diverse number of chipped tools represented is site 25CH.100 with only six tool types, while the site with the greatest tool variety is site 25CH.103 with a total of 13 different tools types. The median number of tool types is 9. In terms of H' values, which omit both ground stone and ceramics, the site with the lowest value is site 5LO.1014 (H'=3.62), while the highest is site

25CH.102 (H’=8.39). The large assemblage size and high diversity of tools found across all 18 sites is unprecedented, as most assemblages at playas throughout the larger Central and Southern Plains region have only a few numbers of projectile points, some processing tools, and debitage.

Figure 22. An example of artifact diversity from a sample of artifacts from site 25CH.103. The first row, from left to right, is comprised of a drill tip, drill midsection, and four end scrapers. The second row, from left to right, is comprised of a hafted knife and four fragments of cord-marked ceramics. The final two artifacts on the third row are preforms.

Several interpretations can be gleaned from these results, including diverse occupation types and the reoccupation of playas in the South Platte River Basin. First, the diversity indices indicate that a wide range of activities occurred at the 18 playa sites. These playas are not simply lithic scatters or single episode occupations such as has been recorded in the Southern Plains (Holliday 1997). Instead, indigenous peoples seem to have inhabited these sites and participated in an array of activities including hunting, plant, and animal processing, hide working, ceramic production, and chipped stone manufacture. Although the latter activity is one that is prevalent at hunter-gatherer sites, the presence of ceramics is relatively uncommon in this region (Elwood 2002). Within the South Platte River Basin specifically, few pottery sites have more than 400 sherds and most have only a handful of fragments (Gilmore 1999). The assemblage composition of the 18 sites do not represent this regional trend. For example, 38% of site 5LO.1018's assemblage is comprised of ceramic fragments, with a total of 703 pieces. The high presence of ceramics is significant not only to playa use, but also in expanding our general understanding of hunter-gatherer lifeways and how highly mobile ceramic producing groups subsisted in northeastern Colorado. The presence of ceramics at playa sites outside the study area in the southern and eastern Plains is also rare. Out of the seven other Southern Plains playa sites, only the San Jon Site has any ceramic artifacts (Hill et al. 1995), compared to the 50% of sites within the South Platte River Basin.

A second interpretation from these results pertains to the H' values indicating reoccupation of sites over a long period. Specifically, the sites may represent activities that occurred repeatedly within the same space or area over generations (Mitchell 2008). This type of approach is known as palimpsest theory and has been used as a way to approach time at sites with little deposition or mixed chronologies (Dooley 2008; Mitchell 2008) Another such diachronic approach to understanding human landscapes, time perspectivism theory, states that landscape use is influenced by the ways that prior settlements might have used that same landscape (Bailey 2007; Dooley 2008). For example, Dooley (2008) found that in an analysis of stone circles, that the material remains from previous hunter-gatherers were sometimes reused or assisted in the decision-making process when new groups came to settle within that same area. In this context, hunter-gatherer occupations would temporally stack on top of each other, creating a single large and diverse accumulation of artifacts (Dooley 2008). Similarly, Johnson (2008) argues that playa landscapes have a unique geographic, cultural, and resource anchor for persistent use. This has been especially pertinent on the Llano Estacado in Texas, a major landform within the region where people have traversed for thousands of years. Johnson (2008) argues that the dynamic ecological and hydrological landform has long been an important landscape from indigenous Clovis times to Anglo-American cattle ranchers and settlers in the 1800s. As playas are well distributed throughout the region, these provided ample stopping points for people and animals throughout human history (Johnson 2008). Although the sites are much smaller with less diverse tools, evidence from an assessment of several large surveys on the Llano Estacado supports this theory, as sites are observed to be particularly clustered around specific playas and draws (Johnson 2008).

Within the South Platte River Basin, it is likely that a similar type of landscape use, or persistent occupation, occurred. Although playas are seasonal, the analyzed sites reflect the type of diversity seen at aggregation sites near permanent and perennial water sources (Veth 2006). The assemblages show that the occupants of these playas had longer-term plans or intentions to return to the area, as they invested time and effort into procuring ground stone and making ceramic vessels, both of which are difficult to carry and are not typically associated with highly mobile groups (Brown 1985; Kelly 2013; Hodder 2018). Hodder (2018) argues that grinding stones were part of the package of cultural traits that bound people to a more sedentary lifestyle. Ceramics especially have been disassociated with hunter-gatherer groups, so much so that Brown (1985) has deemed the technology as “incompatible” and unnecessary for mobile peoples, especially those who are not agriculturalists. Nevertheless, both ceramics (55%) and ground stone (100%) are prevalent across the 18 assemblages. Although few ground stone artifacts are known in direct association with playa sites, Johnson (2008) notes that regional collectors on the Llano Estacado have observed that playas in particular had a higher frequency of manos and metates, suggesting that such high-cost procurement items would have been left for returning generations to use.

Overall, the frequency and diversity of artifacts present at the sites indicate that these were places were more than opportunistic hunting or retooling places. The data from this analysis show that playas not only have been occupied for millennia, but the diversity of assemblages indicates that playas provided a stable living environment for over 12,000 years. The following chapter will analyze whether specific areas were more frequented than others and whether certain playas were more stable for longer term occupations. Chapter nine will analyze the three variables of time, space, and diversity of the 18 playa site assemblages in the South Platte River Basin.

CHAPTER NINE: PLAYA OCCUPATION IN NORTHEASTERN COLORADO

This chapter unites the data from the variables discussed in the previous three chapters. It will examine potential patterns between environmental and geographical factors of the playas themselves and compare them to the chronology and composition of each archaeological assemblage. Based upon the theoretical frameworks of playa biodiversity and the examples of playa sites throughout the Great Plains, we can expect playas in northeastern Colorado to also be important landscape markers for indigenous peoples in the past. This thesis has laid out the three variables of time, space, and diversity, which will be analyzed in this chapter guided by the following hypotheses:

I. As playa landscapes provide necessary biological resources for hunter-gatherers, and as increased size of habitats correlates with an increase in resources, larger playas are likely occupied for longer periods than smaller playas.

II. Similarly, larger playas also are likely to have more diverse assemblages due to longer occupation spans.

III. Based upon playa site signatures throughout the region, larger and more diverse assemblages are likely farther away from playa basins than smaller and less diverse sites.

The following sections will analyze each hypothesis, comparing occupation span, playa size, assemblage composition, and site location. The data from the 18 Toft sites will then be compared and contextualized to key sites within the Southern Plains and beyond to identify similar or differential patterns in playa landscape use.

Occupation Span and Playa Size

In terms of choosing specific playa lakes there are several expectations that can be made based upon theoretical frameworks of biodiversity and hunter-gatherer lifeways (Binford 1980; Kelly 2013). First, as larger playas provide more habitat and a stable water source for various species, we can expect that this might have been an important consideration for hunter-gatherers that rely on the animal and vegetal life surrounding these wetlands (Cariveau and Johnson 2007; Connor and McCoy 1979; Hill 2007; Venne et al. 2012).

In analyzing this hypothesis using the 18 playa sites, few trends can be extracted (Table 49). The largest playa of 86 acres (site 5LO.1017) has one of the shortest and least continuous occupation spans. This site, as well as the lack of correlation generally, contradicts many of the general expectations that larger playas would have longer and more continuous occupations due to diverse natural resources that would have been available there. The next three largest playas (ranging from 20-30 acres) have temporal spans from the Late Paleoindian to the Middle Ceramic, although they vary in terms of continuous occupation and represented ages. Notably, none of the larger playas have an Early or Middle Paleoindian occupation. The remainder of the playa sites have a diverse representation of time periods with seemingly no distinct patterning. The smallest playa of 1.4 acres (5PL.497), has at least one occupation during the Middle Paleoindian and from the Middle Archaic to the Late Prehistoric. The site with the longest occupation (5LO.1016), from the Middle Paleoindian to the Protohistoric is nearest a relatively small 8-acre playa when compared to the general population of playas. In summary, there is little to no correlation between the size of a playa and the length of time that it was occupied. While this sample size is small, it explicitly shows that other considerations not related to the potential of resources were important variables for hunter-gatherers within the region.

Table 49. Data assessing playa size and occupation period across all 18 playa sites. The blue lines delineate playa size increments of five acres (1 – 4.9 acres, 5 – 9.9 acres, etc.).

Site	Size of playa (acres)	Paleoindian			Archaic			Late Prehistoric		
		Early	*Middle*	*Late*	*Early*	*Middle*	*Late*	*Early*	*Middle*	*Protohistoric*
5PL.497	1.4		×			×	×	×	×	
25CH.100	3.53				×		×	×	×	
5LO.1015	3.69				×	×	×	×		
5SW.189	4					×	×	×	×	
5LO.1014	5.33			×			×	×	×	
5SW.188	6			×		×	×	×	×	
25CH.102	2.61 5.45 6.96	×	×	×	×	×	×	×	×	
5LO.1018	3.54 7.22			×	×	×	×	×	×	
5LO.1016	8		×		×	×	×	×		×
25CH.101	9.3			×		×	×	×	×	
25CH.103	9.37		×	×	×	×	×	×	×	
5SW.190	10	×			×	×	×	×	×	
5WL.9247	4 10					×	×	×	×	
5PL.499	7 12					×	×	×	×	
5PL.498	24.27		×	×	×	×	×	×	×	
5WN.298	26.99		×		×	×	×	×	×	
5WN.297	29.27	×				×	×		×	
5LO.1017	86						×		×	

Playa Size and Assemblage Composition

Similar to the hypothesis regarding playa size and occupation span, we can also expect that larger playas also have more diverse assemblages if they are occupied for longer periods. The scatter chart shows that regardless of playa size, the majority of the sites (n=9; 50%) fall within the 4 – 5 H' value range (Figure 23). Across these nine sites, the size of the playas varies, with one site (11%) below 5 acres, three sites (33%) between 5 – 9 acres, three sites (33%) between 10 – 19 acres, and two sites (22%) between 2 – 30 acres. Site 5WN.297, is nearest the second to largest playa at 29.27 acres and has a relatively low H' assemblage value of 4.87.

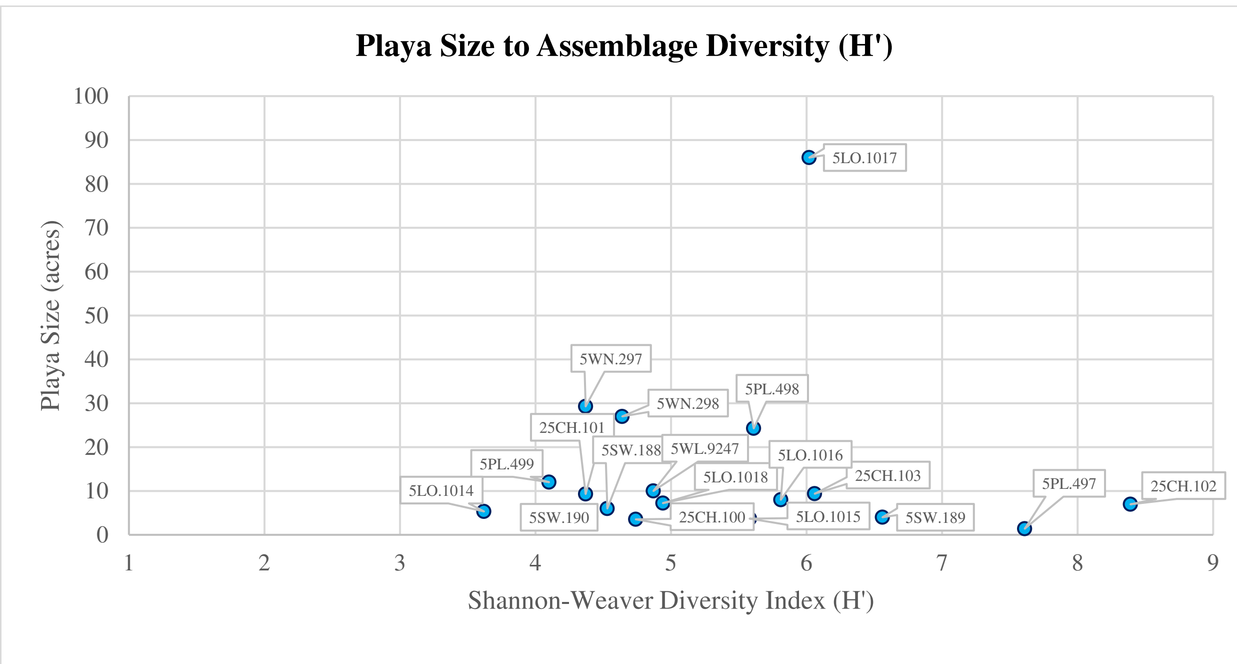

Figure 23. Scatter chart comparing playa size (y-axis) to by Shannon-Weaver diversity index (H') (x-axis). Analysis results show no distinct pattern between these two variables.

Regarding the site with the highest diversity index of 8.39, site 25CH.102 also does not fit within the expected pattern and is associated with a playa that is less than 10 acres. Site 5LO.1017 is the only site that corresponds within the expectation of the hypothesis. This assemblage has a moderately high diversity index of 6.02 and it situated nearest the largest playa of 86 acres. However, as discussed previously, it has the shortest occupation period represented and has the lowest number of tools, with only two projectile points, including a Late Archaic Yonkee point and a Middle Ceramic tri-notched point. The data show that sites are largely clustered around the 4-6 H' index range and from 0 – 20 acres in playa size, but the expected trend is not present. There is no distinct pattern or correlation when comparing size with assemblage diversity.

Site Location and Assemblage Composition

The regional playa archaeology and literature has shown that sites nearest playas, or sometimes within the basin of a playa, have smaller assemblage sizes than sites that are more distant. This is largely due to the occupation type (opportunistic, single event site) and the logistical positioning based upon the specific activities (hunting) that occurred at and around the site. Using the playa sites across the Southern Plains and elsewhere as a foundation, we can expect that a similar pattern would be present within the South Platte River Basin; specifically, that larger and more diverse assemblages would be positioned farther away from playa basins (but still within the 1-kilometer range) than smaller and less diverse sites, as assemblage size and diversity indicate specific playa occupation types.

In consideration of site location and assemblage composition, there are two sites that stand out: site 5LO.1014 and 25CH.102. These were the only sites situated within a playa basin. Examples of playa basin sites such as the Winger, Big Lake, and Miami have distinct signatures of large game hunting (Holliday et al. 1994; Mandel and Hofman 2003; Turpin et al. 1997). The assemblages from the Winger, Big Lake, and Miami sites contain few projectile points, even fewer flakes, and some with flake tools. Holliday et al. (1994) suggests that megafauna hunting is based upon opportunistic "scavenging" and that these playas would have been frequented in times of environmental stress by both people and animals (e.g. drought). In this type of opportunistic event, there would be few projectile points and tools deposited in the record. The artifacts and faunal record within the basin indicate that water levels were likely low (Holliday 1997). During these periods, playas would have been some of the last surface water available on the Plains, thus increasing their resource potential. Mammoth in particular are known to have frequented playas with low water levels (Haynes 2012). Compared to the Winger, Big Lake, and Miami sites, both sites 25CH.102 and 5LO.1014 have large, diverse artifact assemblages beyond that of a single hunting episode.

Further evaluation of both sites 25CH.102 and 5LO.1014 suggests a more complex playa occupation (Figure 24 and Figure 25). Site 25CH.102 has a total assemblage size of 416 artifacts with a diversity index of 8.39. Site 5LO.1014 has a total assemblage size of 97 artifacts, with a diversity index of 3.62. Both sites are within relatively small playas and have proportionally large projectile point representation within the assemblage. Unfortunately, the diversity of artifacts cannot be parsed out by time, but it is significant that there are multiple occupations and various activities occurring within the vicinity, as most playa basin sites elsewhere are single component (Holliday 1997). However, the assemblages from both sites 5LO.1014 and 25CH.102 depict activities related to not only hunting, but also lithic manufacturing with the presence of preforms and cores, processing of meat, hide, and plants, indicated by drills, gravers, ground stone, and a variety of scrapers.

The Big Lake site, in Texas, does share some similarities with sites 25CH.102 and 5LO.1014 in several ways. First, although this bison kill site is single component, there are numerous other sites found along the northern rim and within 1 kilometer of the Big Lake playa, which show that the larger playa area was used throughout time, at least until the Middle

Ceramic period. These other sites surrounding Big Lake also had diverse and larger assemblages than that of a typical single event or hunting episode (Turpin et al. 1997). In contrast, neither 25CH.102 nor 5LO.1014 are in large playas (both are less than 10 acres) but have more temporal representation from all periods when compared to the other 16 playa sites within this sample.

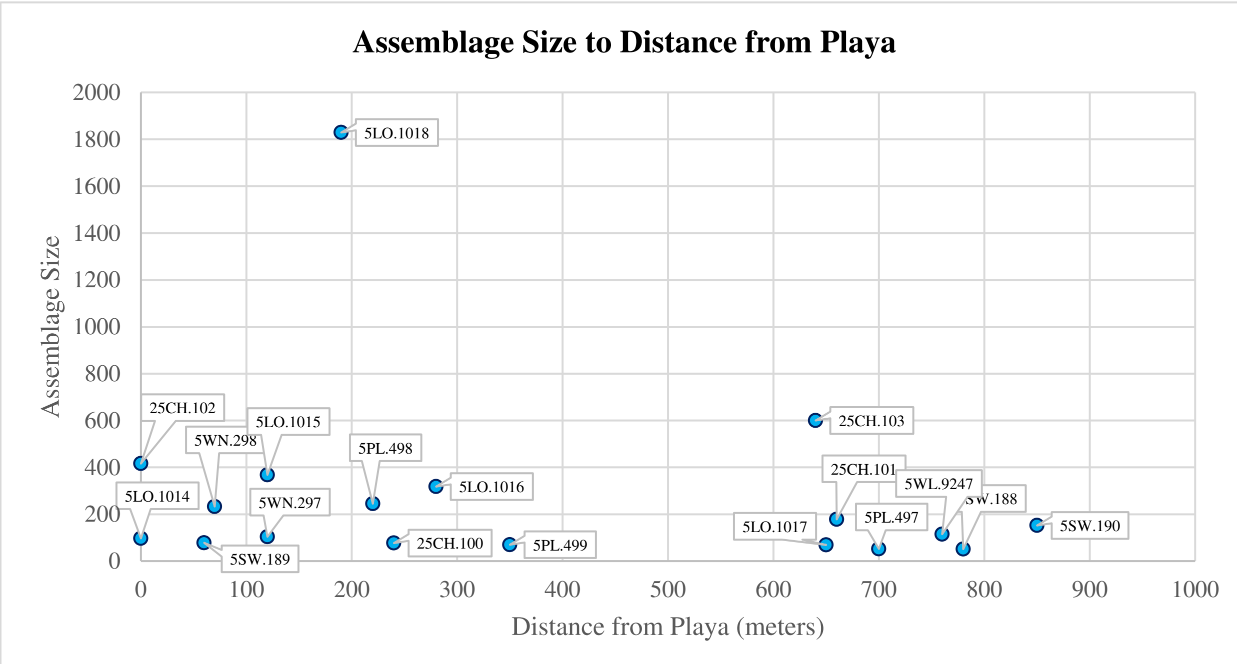

Figure 24. Scatter chart comparing total assemblage size (y-axis) to distance from playa (x-axis). The results indicate that no pattern is present between these two variables.

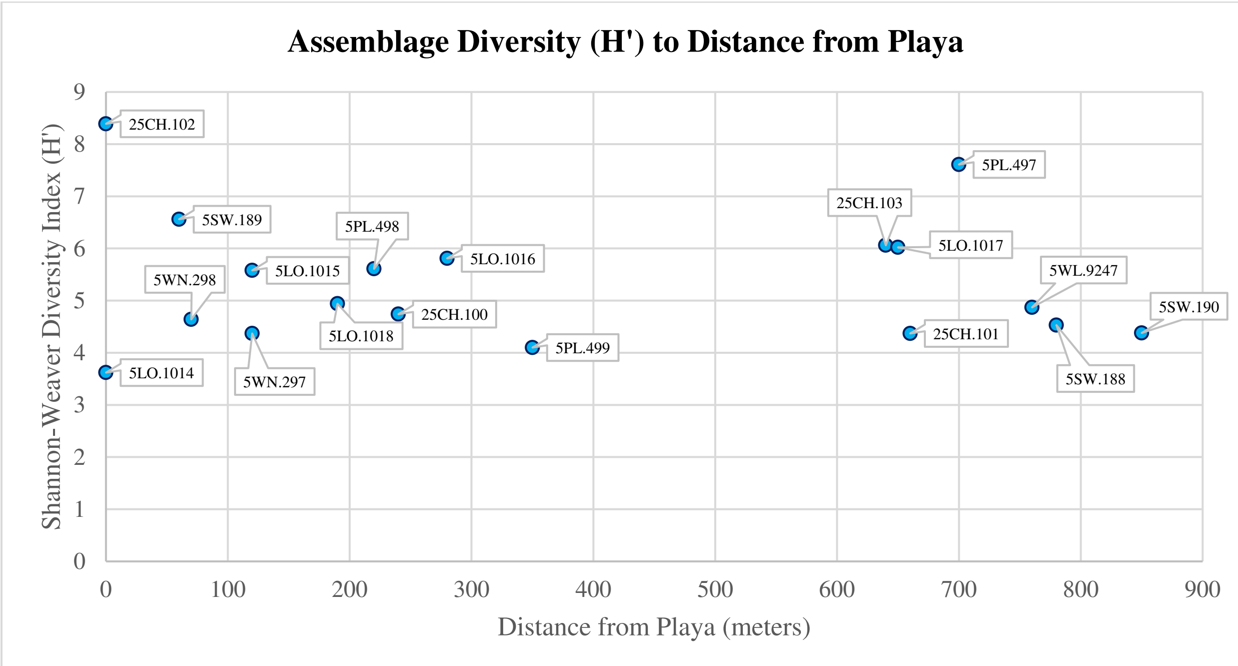

Figure 25. Scatter chart comparing the Shannon-Weaver Diversity Index (H') (y-axis) to distance from playa (x-axis). Similar to the comparison of the values in Figure 24, no pattern is present between these two variables.

Discussion

The analysis of the 18 assemblages reveal significant patterns of indigenous land use in the past that on the surface appears to be much more intense than playa sites elsewhere in the plains. But, of course, we must also consider the realities of archaeological visibility, which are affected by the methodologies of surface surveys, and differential erosion and taphonomic processes, as discussed in chapter six.

Other large-scale studies of playa landscapes shed light on whether the South Platte River Basin is as much as an anomaly as it seems. Investigations by Brosowske and Bement (1998) conducted in Oklahoma, found resoundingly similar results in terms of the lack of occupational patterns but recorded much smaller artifact assemblages. Their study of 13 playa sites found no correlations with occupation type, temporal length, or distance from playa. Similar to the data in this thesis, the results of Brosowske and Bement (1998) lithic analysis determined that assemblages were also diverse, with tools and debitage indicating activities related to hunting, butchering, processing, tool production, and maintenance. However, in contrast to findings in from the 18 playa sites in this study, no ceramics were found at any site within their survey (Brosowske and Bement 1998). This is a dramatic contrast to the South Platte River Basin, as there are over 800 sherds of cord-marked pottery found at 55% of all Toft playa sites.

What seems to be the trend in other locations of small artifact assemblage size is not seen within this study area. The artifacts assemblages in the South Platte River Basin are extremely large, ranging from 51 to 1,829 total specimens, while most of the sites elsewhere have assemblages as small as ten or less artifacts, with a few large outliers. The sites within the South Platte River Basin depict a more intense and diverse use of playas when compared to sites in the Southern Plains. Additionally, although there are clear patterns and site occupation signatures at other regional playa sites, the data in this thesis do not depict similar results. The comparative analysis of playa size, chronology, and diversity did not support the hypotheses laid out at the beginning of this chapter. In summary, the results are as follows:

I. Larger playas were not occupied for longer periods than smaller playas. The data show that no patterns are present between site chronology and playa size. However, the 18 Toft sites do appear to be at larger sized playas than the regional sample examined in the PLJV dataset.

II. Larger playas did not have more diverse site assemblages. The data show that all sites, regardless of playa size, had diverse artifact assemblages.

III. Larger and more diverse assemblages were not found to be farther away from playa basins than smaller and less diverse sites. The data show that distance to playa had no significant relationship with diversity or size of assemblage.

The above results show that the hypothetical expectations regarding playa preference seem to have little to no bearing on hunter-gatherer site choice. Instead, it appears that playa landscapes on a broader geographic level were important places for indigenous groups living on the Great Plains.

Although environmental parameters, especially the absence or availability of resources are a critical aspect of human life, this research shows that a sole focus on the environment does not consider societal, and generational aspect of human choice. Numerous factors are considered in hunter-gatherer site selection—geography, environment, biology, culture, and history—these choices are also made in tandem with other more nuanced considerations of cultural and generation knowledge such as: time of day, group relation, and day-to-day experiences and events (Scheiber and Clark 2008). Many of the factors and variables are inherently difficult to study due to the nature of the archaeological record of these ancient sites. Thus, analysis of ancient hunter-gatherers on any given landscape can sometimes result in the absence of the discussion of human agency and the depiction of the environment as a passive backdrop (Bamforth 2009; Hegmon 2003; Mitchell 2006). Archaeological research, especially hunter-gatherer research, is often fixated on environmental variables as the main proponents of site choice. This is in large part due to the absence of preserved artifacts and materials that allows archaeologists to analyze more diverse elements of culture. As with this thesis, due to post-depositional processes and preservation, most of the hunter-gatherer records on the Great Plains is comprised primarily of chipped stone tools. When archaeologists focus on this artifact class, it is easy for ancient humans to be depicted as passive agents that have little autonomy.

Many researchers have tried to amend these issues, and there has been increasing attention on the mutual and active relationship between people and environmental landscapes, such as ideas related to palimpsests and landscape affordances (Bailey 2007; Dooley 2008; Kempf 2020). Because the sites are spatially bounded but the artifacts present are from various temporal periods, this illustrates a persistent use of place, or a cumulative palimpsest (Bailey 2007). Along similar lines, the specific area is likely chosen due to the feedback between the choices made by previous hunter-gatherers and with environment factors (Dooley 2008; Kempf 2020). Kempf (2020) identifies this type of behavior as a type of generational, societal decision-making that is molded, but not constrained, by specific resources that a landscape might provide. Although it is difficult to disentangle what exactly brought these people to this space and when, the large and diverse artifact assemblages validate that these playas were chosen repetitively over many generations.

CHAPTER TEN: DISCUSSION AND CONCLUSIONS

The primary objective of this thesis is to establish a foundation for future playa research through the analysis of private collections gathered in the South Platte River Basin in eastern Colorado. Although there have been a number of playa studies in the Southern Plains (Hill et al. 1995; Holliday et al. 1994; Holliday 1997; LaBelle et al. 2003; Litwinionek et al. 2003), the general lack of such focused research in the region has perpetuated the notion of the Eastern Plains as “flyover country,” as it has been long overlooked as a place of archaeological prominence. This perception was highlighted by the Great Plains scholar Waldo Wedel. In several of his works he states that the Great Plains is depicted as a desert of resources and that the landscape has been long neglected and underestimated (Wedel 1947, 1963).

Due to the lack of known recorded archaeology within the Plains and the low population of modern residents within this region, this stereotype still persists. Further perpetuating this discourse are issues with land access, lack of resource development and the absence of cultural resource management (CRM) projects, which presently is the primary avenue of professional site discovery. These issues create an underrepresented historical record of indigenous land use over the past 12,000 years for most of the South Platte River Basin of Colorado. The data presented in this thesis aim to combat this notion of a deficient landscape, with 18 sites that depict diverse and intensive use of playa lakes, highlighting just one type of settlement on the plains (Figure 26). The archaeology of playas in Colorado sheds light on overall hunter-gatherer lifeways of the Great Plains, places more “dots on the map”, and provides an opportunity to educate and promote stewardship of cultural resources with non-professionals.

Figure 26. Artist depiction of playa landscape use in the South Platte River Basin by Elena Haverluk. Indigenous groups of the past occupied near and around playas in various ways. This image portrays hunters overlooking a playa and a family sitting back at camp.

Through this thesis research I analyzed 18 playa sites and answered four primary questions:

I. *How many archaeological playa sites are recorded in Colorado?*

Although there are over 8,000 playas within the South Platte River Basin, an analysis of the state of Colorado's archaeological database revealed only five recorded sites associated with a playa, the Dutton, Selby, Witzel, 5KC224, and 5KC218 sites. This thesis recorded 14 sites in Colorado and four sites in Nebraska officially within the State Historic Preservation Office (SHPO). In addition to these playa sites, GIS analysis revealed over 300 sites within 1-kilometer of a playa lake indicating the potential for more playa sites within the study area. With such little representation of playa use, this thesis shows that it is imperative that research be accomplished through collaborative approaches, as the *official* archaeological record does not tell the full story. The recording of the 18 sites and the potential of over 300 more playa sites suggest that ancient playa landscape use has great potential.

II. *What do the lithic assemblages from the 18 playa sites represent, specifically concerning time and tool diversity?*

Regarding temporal occupation, trends from the published archaeological literature show that playa use during the Paleoindian period was substantial. While instead, playa use decreased from the Early to Late Archaic period and then increased once again in the Early Ceramic (Holliday 1997; Litwinionek et al.2003). The results from the analysis of the privately collected 18 sites show a differing trend of continuous utilization throughout time, especially distinct is the large increase during the Middle Archaic through the Middle Ceramic periods. The composition of each of the 18 assemblages were relatively diverse and robust. All site assemblages were indicative of camp sites that were either long term and/or reoccupied over thousands of years suggesting a persistent use of place.

III. *What are the morphological and geographic characteristics of the 18 playas?*

Most of the associated playas were less than 10 acres, although several outliers of 20-30 acres, and one 86-acre playa was present. The geographic positioning of the sites in relation to the playas varied more than expected. The topographical positioning of sites also varied, although most site (30%) were on hilltops. Over 50% of sites were found on the southern perimeters, which contrasts with the Southern High Plains sites which were primarily along the northern portions of a playa.

IV. Are there distinguishable relationships between playa size, morphology, and associated cultural use of playas?

Although this analysis hoped to parse out patterns of playa use throughout time, it instead presented great diversity and persistence across the landscape. The plains of the South Platte River Basin are vast and the presence of reoccupation specifically at these playa sites is compelling in that site choice is not topographically or spatially constrained. There are millions of acres in the Plains, yet ancient hunter-gatherer groups continued to choose to occupy the spaces surrounding playas over millennia.

In the Southern Plains, Wood et al. (2002) suggests that the quality and quantity of playas indicate that occupations were merely "the occasional lucky find", meaning that playas were only happened upon by chance but were not resources in which people could confidently depend on. While this could possibly be the case in the Southern Plains, as the archaeological data show many ephemeral assemblages (Brosowske and Bement 1998; Hill et al 1995; Holliday et al. 1994), the robust assemblage data presented in this thesis contradicts any notion of playa usage as "lucky finds" in Colorado. The persistent, multicomponent assemblages found within this small sample of 18 sites in six Colorado and Nebraska counties show that these were not sites that were visited by chance, but places that people continued to return to consciously and deliberately. Playas were likely used as known stopping points during both foraging trips and base camp moves that would have been important to indigenous groups living across the Great Plains (Johnson 2008).

Future Directions

This thesis established only the baseline of research for the 18 sites within the South Platte River Basin. All of the sites have great future potential, including an analysis of the debitage, spatial analysis of the distribution of tools, further survey, and excavation. In terms of spatial analysis, each of the artifacts are provenienced to either a GPS point or collection area. This information could be parsed out to identify and examine whether there are specific locations around the playa that have clusters of tools types or projectile point types. Further, survey and excavation could examine specific site-based questions and provide stratigraphic context to the projectile point chronology that has already been established in this research.

Playa landscapes are not only attractive places to camp and hunt because of water resources, but for several other potential reasons that were not discussed in this thesis. Future research of playa landscapes should also consider the availability of other resource types like chipped and ground stone materials. Johnson (2008) found that the geology near playas were conducive areas for tool stone formation, especially silicified cherts. Additionally, playas are often near ephemeral drainages, which are known to have secondary cobbles of chert and petrified wood that have been carried from farther sources. The ample supply of raw materials could also add to playa landscapes resources (Johnson 2008).

Now that playa utilization has been established within the South Platte River Basin, these wetlands should be sought out as part of a larger landscape survey similar to Brosowske and Bement's (1998) reconnaissance work in Oklahoma. Over a 5,520-acre area, Brosowske and Bement (1998) found that 93% of the playas surveyed within their study area had an archaeological site. This type of work would be relevant in the Colorado Plains, to identify whether these 18 sites analyzed in this thesis are anomalies. Especially pertinent for future analysis are the 363 archaeological sites within the counties of Logan, Phillips, Sedgwick, Washington, and Weld that were found to be within 1-kilometer of a playa basin. As the 18 sites in this analysis showed that over 60% of sites were within 600 kilometers of a playa, a large-scale reconnaissance should also examine the distance from site to playa and establish whether the 1-kilometer buffer is too far. Large-scale survey could also identify whether sites are situated in high biodiversity zones, where playas are clustered together, rather than at isolated playa areas. Analysis of the larger playa landscape would add to our understanding of larger hunter-gatherer movement across the plains.

Another potential direction of playa research is to move away from broad patterns of resource use and instead focus on local playa use practices. In an analysis of human wetland use, Kviat (1991) found that out of 157 culture traits across 19 different non-industrial groups, no specific occupation patterns were found at wetland sites. Instead, groups occupying these landscapes were found to be highly flexible and their strategies varied based upon specific, culturally appropriate strategies and their local spatial and temporal positioning. Similar to Kviat (1991) analysis of wetlands around the world, Kelly (1997) also found that wetland utilization in the Great Basin region is locally distinct, especially concerning the presence of specific artifacts, such as duck decoys and bone fishhooks which have only been found within a small locality (Kelly 1997). Future research could focus on inter-site analysis of stone tools, ceramics and groundstone, in order to identify possible local hunting and gathering trends in the plains.

This thesis also highlights the importance of, and calls for continuing future collaboration with, avocational archaeologists in playa research. As a discipline, archaeology has had an ongoing, complicated relationship with collectors, avocational researchers, and looters. There is a fine and often ambiguous line between promoting stewardship and enabling the illegal collecting and even marketing of artifacts (Zimmer et al. 2003). One issue many archaeologists identify with private collections is the limited provenience, especially as most are relegated to the surface. Regardless of this, surface assessment is still the most commonly employed practice within archaeology through Cultural Resource Management (CRM) (Banning et al. 2011). Often, a single visit is thought to be an adequate representation and CRM decisions are quickly made based upon this methodology. In an assessment of sites within cultivated and disturbed contexts, Shott (1995) discovered that 16% more artifacts were discovered on surfaces at each subsequent revisiting episode. This study suggests that multiple visits to a location is necessary, but this continues to be unobtainable in CRM due to the costs of time and labor. Given this predicament, I believe that there is great potential in CRM professional to work in tandem with avocationals who have already collected with an area. However, there should always be ethical and moral considerations to partnerships with certain types of artifact collectors—especially those who purposefully and knowingly destroy the archaeological record for personal and/or monetary gain (Pitblado 2014). I do not advocate for collaborations with all collectors but stress the importance of partnering with those that align with our professional and ethical values. It is through these relationships that I propose archaeologists invite and create a space for avocational archaeologists, such as Mike Toft, to enable the recording and publishing of unknown archaeological sites.

Another potential for collaborative research involves playa conservation. The eastern Plains of Colorado are abundant in natural resources like natural gas and wind. In an assessment for wind development, Fargione et al. (2012) suggests that large playas be avoided when building sustainable energy infrastructure to reduce wildlife impacts. The results of this thesis and other playa archaeological studies show that a study of cultural resources could help aid in protecting these important biological and cultural landscapes. Such a cross-disciplinary collaboration could help improve community conservation efforts, both ecological and archaeological, this would also help to create a more representative archaeological record across the Great Plains.

This thesis had two major goals. It aimed to establish a baseline of playa archaeology in northeastern Colorado and to provide a better understanding of hunter-gatherer use and temporal occupation of playas within the Central Plains. The results of this thesis show that there are at least 18 more playa sites in addition to the five that are known in the state. Overall, there is still very little research on the cultural landscape of playas in the Central Plains. This research contributes to this history, with the 18 sites depicting at least 12,000 years of diverse playa occupation by ancient peoples. Although this thesis focused on environmental concerns, especially the availability of water; we must always remember that the cultural aspects, generational knowledge, and spiritual connection to the landscape are all variables by which people make choices. Although not explicit from this analysis, the concept of playas as a persistent place of occupation encompass all these different factors. Playas were likely part of a larger and multigenerational strategy of indigenous landscape use throughout the Plains. And although the Native Americans who lived on the Great Plains were forcefully removed from these lands, the bits of stone tools and ceramics left behind help piece together these histories, one fragment at a time.

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APPENDIX A: METADATA FOR LITHIC ANALYSIS

Attribute	Code (if applicable)	Description
Specimen Number	#	The number assigned to the artifact at the time of collection by Mike Toft-this number can be found written on the physical artifact.
CMPA Number	#	The number assigned to the artifact for analysis by Marie Taylor for thesis research; this number is also written on a plastic bag that houses each artifact in the CMPA
Artifact Class		The broad material type or functional category of the artifact
Bead	BE	
Bone	BO	
Ceramic	CR	
Chipped Stone	CS	
Ground stone	GS	
Shell	SH	
Wood	WO	
Artifact Element		The specific morphological category of the artifact
Angular Debris	ANG	
Awl	AWL	
Biface	BF	
Core	CORE	
Drill	DR	
Edge Modified Flake	EMF	
End Scraper	ES	
Convex Scraper	CV	
Side Scraper	SS	
Misc. Scraper	MS	
Misc. Ground stone	GRD	
Hammerstone	HAM	
Hafted Knife	HK	
Mano (Hand stone)	MAN	
Metate (Netherstone)	MET	
Not Applicable	NAP	Does not have an element
Other	O	Specify in comments
Projectile Point	PP	
Preform	PRE	
Shaft Abrader	SA	
Graver	GRV	
Mass (g)	#	Weight of the artifact in grams
Raw Material		Geologic or mineral composition of the artifact.
Chert	CH	Chert
Chalcedony	CY	Chalcedony
Metaquartzite	MQ	Metaquartzite
Obsidian	OB	Obsidian
Quartzite	QZ	Quartzite
Quartz	QU	Quartz
Petrified Wood	PW	Petrified Wood
Basalt	B	Basalt
Sandstone	SA	Sandstone
Granite	GR	Granite

Attribute	Code (if applicable)	Description
Not Determined	ND	Raw material is difficult to identify
Other	O	Specify in comments
Cortex	y = yes n = no	The absence/presence of cortex (outer rind of rock).
Temporal Age		
Early Paleoindian	EP	12,000 – 11,000 B.P.
Middle Paleoindian	MP	11,000 – 10,000 B.P.
Late Paleoindian	LP	10,000 – 7,500 B.P.
Early Archaic	EA	7,500 – 5,000 B.P.
Middle Archaic	MA	5,000 – 3,000 B.P.
Late Archaic	LA	3,000 B.P. – A.D. 150
Early Ceramic	EC	A.D. 150 – 1150
Middle Ceramic	MC	A.D. 1150 – 1540
Protohistoric	PH	A.D. 1540 – 1840
Type		Type name in which temporal age is based upon
	Clovis	
	Folsom	
	Agate Basin	
	Alberta	
	Angostura	
	Cody Knife	
	Eden	
	Hell Gap	
	James Allen	
	Scottsbluff	
	Mount Albion	
	Duncan-Hanna	
	Mallory	
	McKean	
	Yonkee	
	Besant	
	Pelican Lake	
	Hogback corner-notched	
	Avonlea	
	Plains side-notched	
	Prairie side-notched	
	Upper Republican	
	Metal	
Portion		The segment of the tool that is present/intact. If multiple portions are present list them in comma delineated format (ex. D, M)
Distal	D	If a tool is vertically oriented, the distal portion is the top. Distal portions are most often identified by the tip of lithics.
Tip	T	The extreme distal end, especially used to identify the top of a projectile point.
Medial	M	The medial portion is the middle of a tool.
Proximal	P	If a tool is vertically oriented, the proximal portion is the bottom. In lithics this is

Attribute	Code (if applicable)	Description
		identifiable by platforms, platform prepping, the shape of the haft element, etc.
Mostly Complete	MC	The tools are mostly complete with only few parts missing, missing portions should be listed in a comma delineated format in parenthesis (ex. D, M)
Complete	C	The entire tool is complete, with no missing fragments.
Not determined	ND	Portion is too incomplete to determine, or tool type is not conducive to portion analysis.
Comments		Any additional relevant data.
Other Coding		
Not Applicable/Available	n/a	Data is missing or unavailable

APPENDIX B: CHRONOLOGY OF THE SOUTH PLATTE RIVER BASIN

Stage Name	Period	Type	Date Range (RCYBP)
Paleoindian			12,000 – 7,500 B.P.
	Early Paleoindian	Clovis	12,000 – 11,000 B.P.
	Middle Paleoindian	Folsom	11,000 – 10,000 B.P.
		Goshen	
	Late Paleoindian		10,000 – 7,500 B.P.
		Agate Basin	
		Alberta	
		Angostura	
		Cody Knife	
		Eden	
		Hell Gap	
		James Allen	
		Scottsbluff	
Archaic			7,500 – 1,800 B.P.
	Early Archaic		7,500 – 5,000 B.P.
		Mount Albion	
	Middle Archaic		5,000 – 3,000 B.P.
		Duncan-Hanna	
		Mallory	
		McKean	
	Late Archaic		3,000 – 1,800 B.P.
		Yonkee	
		Besant	
		Pelican Lake	
Late Prehistoric	Early Ceramic		1,800 – 800 B.P.
		Hogback corner-notched	
	Middle Ceramic		800 – 410 B.P.
		Avonlea	
		Plains side-notched	
		Prairie side-notched	
		Upper Republican	
		Unnotched	
Protohistoric			410 – 90 B.P.
		Metal point	

Modified from Gilmore et al. (1999).

APPENDIX C: ARTIFACT PHOTOGRAPHS FROM SITES 25CH.102, 25CH.103, 5LO.1017, 5LO.1018, AND 5PL.498

Figure C.1. Site 25CH.102, Early Paleoindian projectile points.

Figure C.2. Site 25CH.102, Late Paleoindian projectile points.

Figure C.3. Site 25CH.102, Paleoindian projectile point.

Figure C.4. Site 25CH.102, Archaic projectile points.

Figure C.5. Site 25CH.102, Late Archaic, Pelican Lake projectile points.

Figure C.6. Site 25CH.102, Early Ceramic corner-notched, Hogback projectile points.

Figure C.7. Site 25CH.102, Middle Ceramic, side-notched projectile point.

Figure C.8. Site 25CH.102, Middle Ceramic, unnotched projectile point.

Figure C.9. Site 25CH.102, preforms.

Figure C.10. Site 25CH.102, bifaces.

Figure C.11. Site 25CH.102, hafted knives.

Figure C.12. Site 25CH.102, drills.

Figure C.13. Site 25CH.102, scrapers.

Figure C.14. Site 25CH.103, Archaic projectile points.

Figure C.15. Site 25CH.102, Middle Archaic, McKean projectile points.

Figure C.16. Site 25CH.103, Middle Archaic, Duncan-Hanna projectile points.

Figure C.17. Site 25CH.103, Late Archaic, Pelican Lake projectile points.

Figure C.18. Site 25CH.103, Middle Ceramic projectile points.

Figure C.19. Site 25CH.103, Early Ceramic corner-notched, Hogback projectile points.

Figure C.20. Site 25CH.103, preforms.

Figure C.21. Site 25CH.103, hafted knives.

Figure C.22. Site 25CH.103, drills and drill tips.

Figure C.23. Site 25CH.103, scrapers.

Figure C.24. Site 5LO.1017, Late Paleoindian projectile points.

Figure C.25. Site 5LO.1017, Middle Archaic, Mallory projectile points.

Figure C.26. Site 5LO.1017, Middle Archaic, McKean projectile points.

Figure C.27. Site 5LO.1017, Late Archaic projectile points.

Figure C.28. Site 5LO.1017, Late Archaic, Pelican Lake projectile points.

Figure C.29. Site 5LO.1017, bifaces.

Figure C.30. Site 5LO.1017, large bifaces and knives.

Figure C. 31. Site 5LO.1017, drills.

Figure C.32. Site 5LO.1017, scrapers.

Figure C.33. Site 5LO.1018, Folsom preform.

Figure C.34. Site 5LO.1018, Late Paleoindian projectile points.

Figure C.35. Site 5LO.1018, Early Archaic, Mount Albion projectile points.

Figure C.36. Site 5LO.1018, Middle Archaic, Duncan-Hanna projectile points.

Figure C.37. Site 5LO.1018, Middle Archaic, McKean projectile points.

Figure C.38. Site 5LO.1018, Late Archaic, Besant projectile points.

Figure C.39. Site 5LO.1018, Late Archaic, Pelican Lake projectile points.

Figure C.40. Site 5LO.1018, Early Ceramic corner-notched projectile points.

Figure C.41. Site 5LO.1018, Middle Ceramic side-notched projectile points.

Figure C.42. Site 5LO.1018, Middle Ceramic, unnotched projectile point.

Figure C.43. Site 5LO.1018, preforms.

Figure C.44. Site 5LO.1018, bifaces.

Figure C.45. Site 5LO.1018, hafted knives.

Figure C. 46. Site 5LO.1018, drills and drill tips.

Figure C.47. Site 5LO.1018, spokeshave.

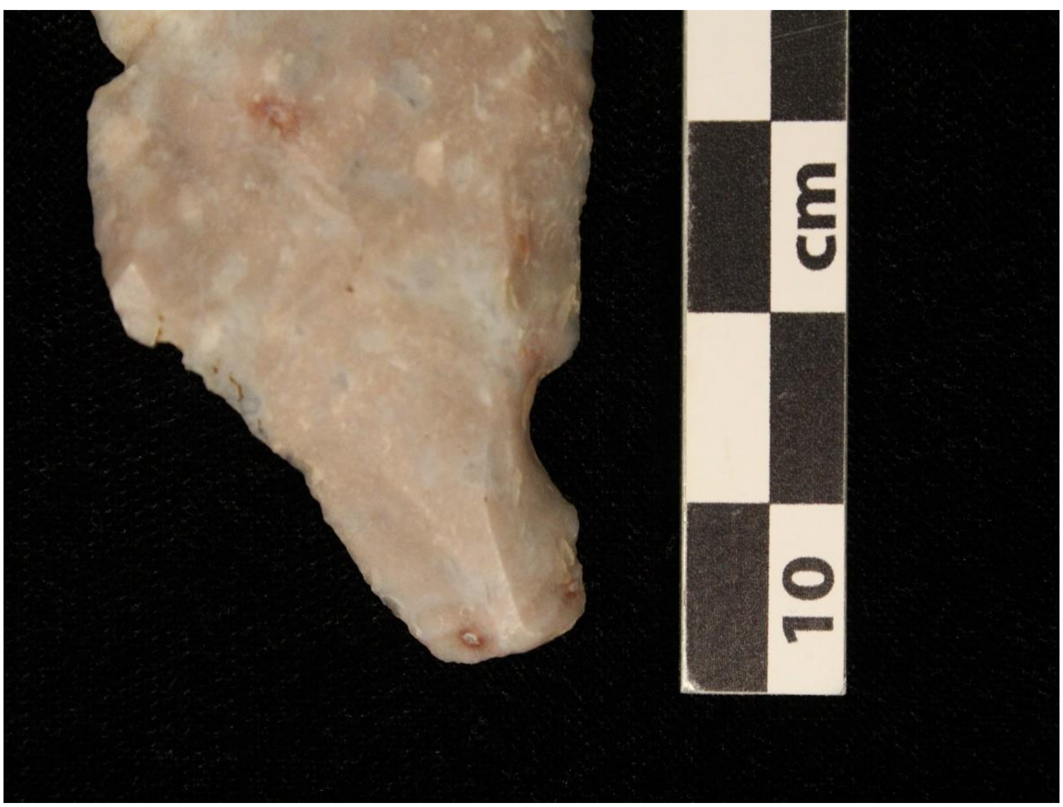

Figure C.48. Site 5LO.1018, detail of spokeshave.

Figure C.49. Site 5LO.1018, scrapers.

Figure C.50. Site 5LO.1018, hafted scraper.

Figure C.51. Site 5LO.1018, ceramic fragments.

Figure C.52. Site 5PL.498, Late Paleoindian projectile points.

Figure C.53. Site 5PL.498, Middle to Late Archaic projectile points.

Figure C.54. Site 5PL.498, Early Ceramic corner-notched projectile points.

Figure C.55. Site 5PL.498, Middle Ceramic side and tri-notched projectile points.

Figure C.56. Site 5PL.498, preforms.

Figure C.57. Site 5PL.498, bifaces.

Figure C.58. Site 5PL.498, hafted knives.

Figure C. 59. Site 5PL.498, drills.

Figure C.60. Site 5PL.498, graver.

Figure C.61. Site 5PL.498, scrapers.

Figure C.62. Site 5PL.498, ceramic fragments.

APPENDIX D: METRIC AND OBSERVATIONAL DATA
FROM 18 LITHIC AND CERAMIC ASSEMBLAGES

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
15.22	356	A	1	CS	PRE	0.4	CH	n	n/a	n/a	P, M	minus
15.22	257	A	2	CS	BF	0.6	CH	n	n/a	n/a	C	minus
15.22	258	A	3	CS	BF	0.4	CH	n	n/a	n/a	D	minus, made on a flake blank
15.22	259	A	4	CS	BF	0.5	CH	n	n/a	n/a	D	minus
15.22	260	A	5	CS	PP	0.7	CH	n	MC	Plains side-notched	MC (T)	minus
15.22	261	A	6	CS	PP	0.4	CH	n	EC	Hogback	M	minus
15.22	263	A	7	CS	PP	0.6	PW	n	EC	Hogback	C	minus
15.22	262	-	8	CS	BF	0.3	CH	n	n/a	n/a	ND	minus
15.22	264	-	9	CS	PP	0.5	CH	n	EC	Hogback	D, M	minus, made on a flake blank
15.22	265	A	10	CS	PP	0.9	CH	n	LA	Pelican Lake	D, M	minus
15.22	266	A	11	CS	PP	1	CH	n	EC	Hogback	MC (T)	minus
15.22	268	A	12	CS	PP	0.9	CH	n	EC		C	minus
15.22	269	A	13	CS	BF	0.6	CH	n	n/a	n/a	D	minus
15.22	29	-	14	CS	PP	1	CH	n	LA	Pelican Lake	C	plus
15.22	77	-	15	CS	PP	1.6	CH	n	LA	Pelican Lake	MC (T)	plus
15.22	19	-	16	CS	PP	1.8	PW	n	LA	Pelican Lake	MC (T,P)	minus
15.22	234	C	17	CS	PP	1.5	CH	n	LA	Pelican Lake	C	minus, made on a flake blank
15.22	235	A	18	CS	PP	1.5	CH	n	LA	Pelican Lake	P, M	minus
15.22	236	A	19	CS	PP	1.9	CH	n	LA	Pelican Lake	MC (T,P)	minus
15.22	237	C	20	CS	PP	1.5	CH	n	LA	Pelican Lake	MC (T, P)	minus
15.22	255	AN	21	CS	PP	1.2	CH	n	LA	Pelican Lake	MC (T)	minus, made on a flake blank
15.22	232	C	22	CS	PP	1	CH	n	EC	Hogback	MC (P)	minus
15.22	240	A	23	CS	PP	1.5	PW	n	LA	Pelican Lake	MC (T)	minus
15.22	241	A	24	CS	PP	1.5	CH	n	LA	Pelican Lake	P, M	minus
15.22	242	AE	25	CS	PP	2	CH	n	LA	Pelican Lake	M	minus
15.22	243	C	26	CS	PP	1.8	CH	n	LA	Pelican Lake	M	minus
15.22	249	C	27	CS	PP	1.6	CH	n	LA	Pelican Lake	MC (T)	minus
15.22	245	A	28	CS	PP	1.2	CH	n	LA	Pelican Lake	M	minus
15.22	246	A	29	CS	PP	1.6	CH	n	LA	Pelican Lake	P, M	minus, made on a flake blank
15.22	247	C	30	CS	PP	1.7	CH	n	LA	Pelican Lake	P, M	minus
15.22	248	A	31	CS	PP	2.2	CH	n	EA	Mount Albion	P, M	minus
15.22	249	C	32	CS	PP	1.4	CH	n	LA	Pelican Lake	D, M	minus, made on a flake blank
15.22	250	A	33	CS	PP	1.5	CH	n	LA	Pelican Lake	M	minus, made on a flake blank
15.22	251	A	34	CS	PP	2.4	CH	n	LA	Pelican Lake	MC (T)	minus
15.22	239	A	35	CS	PP	1.6	CH	n	LA	Pelican Lake	C	minus
15.22	253	AN	36	CS	PP	1.2	CH	n	LA	Pelican Lake	P, M	minus, made on a flake blank
15.22	294	A	37	CS	PP	1.2	CH	n	LA	Pelican Lake	MC (P)	minus
15.22	69	-	38	CS	PP	0.6	CH	n	EC	n/a	MC (P)	plus, made on a flake blank

15.22	238	G	39	CS	PP	1.5	CH	n	LA	Pelican Lake	C	minus
15.22	298	A	40	CS	BF	0.3	CH	n	n/a	n/a	ND	minus
15.22	261	A	41	CS	PP	1.2	CH	n	EC	n/a	D, M	minus
15.22	271	AN	42	CS	BF	6.7	CY	n	n/a	n/a	D, M, P	minus
15.22	272	JE	43	CS	PP	4.2	CY	n	LA	Besant	P, M	minus
15.22	233	AE	44	CS	PP	5.5	CH	n	MA	Yonkee	D, M	minus
15.22	232	D	45	CS	PP	7.4	CH	n	LA	Besant	P, M	minus
15.22	273	A	46	CS	PP	3	CH	n	LA	Besant	P, M	minus, made on a flake blank
15.22	270	B	47	CS	PP	1.7	CH	n	LP	Unnotched	C	minus
15.22	74	A	48	CS	PP	2	PW	n	MA	McKean	C	plus
15.22	274	E	49	CS	PP	1.5	CH	n	LA	Pelican Lake	C	minus
15.22	275	A	50	CS	PP	0.9	CH	n	EC	n/a	D, M	minus
15.22	206	A	51	CS	PP	4	CH	n	EP	Clovis	P	plus, "ETB", alibates
15.22	207	AC	52	CS	PP	5.3	CH	n	LP	n/a	MC (T)	minus
15.22	205	C	53	CS	BF	12.4	CH	n	n/a	n/a	D, M	minus, "T.B."
15.22	201	A	54	CS	PP	19.4	PW	n	EP	n/a	M	minus, overshot flakes
15.22	202	A	55	CS	HK	13.8	CH	n	n/a	n/a	D, M	minus, "S.T.S."
15.22	203	A	56	CS	BF	9.6	CH	y	n/a	n/a	D, M	minus possible knife
15.22	204	C	57	CS	PP	5.7	CH	n	LP	Hell Gap	C	minus, small/resharpened many times
15.22	208	AS	58	CS	PP	2.9	CH	n	LP	n/a	P	plus
15.22	209	A	59	CS	PP	2.3	CH	n	LP	Angostura	P	minus
15.22	22	A	60	CS	PP	2.3	CH	n	LP	Goshen/Plainview	P	plus
15.22	210	E	61	CS	PRE	3.1	CH	y	EP	Folsom	M	minus, possible Folsom preform, failed flute present on one side
15.22	67	B	62	CS	BF	1.7	CH	n	n/a	n/a	D, M	minus
15.22	214	A	63	CS	BF	1.6	CH	n	n/a	n/a	M, P	minus, no diagnostic base but grinding is present--likely paleo age
15.22	211	B	64	CS	PP	1.9	CH	n	LP	Agate Basin	P	minus
15.22	212	E	65	CS	PP	3	CH	n	LP	Agate Basin	P	minus, "T.B."
15.22	215	E	66	CS	PP	3.4	CH	n	LP	n/a	P	minus
15.22	213	AE	67	CS	PP	3	QZ	n	LP	Agate Basin	P	minus
15.22	231	AE	68	CS	PP	6.9	CH	n	MA	Yonkee	C	minus
15.22	31	-	69	CS	BF	0.8	CH	n	n/a	n/a	D	plus
15.22	35	-	70	CS	BF	0.8	CH	n	n/a	n/a	D	plus
15.22	63	-	71	CS	PRE	1.4	CH	n	n/a	n/a	M	plus
15.22	216	C	72	CS	BF	2.1	CH	n	n/a	n/a	D	minus
15.22	290	A	73	CS	BF	0.8	CH	n	n/a	n/a	P	minus
15.22	66	-	74	CS	BF	0.4	CH	n	n/a	n/a	M	plus
15.22	278	D	75	CS	PP	3.3	QZ	n	n/a	n/a	M	minus
15.22	281	A	76	CS	BF	1.7	CH	n	n/a	n/a	P, M	plus

15.22	289	A	77	CS	BF	1.2	CH	n	n/a	n/a	P	minus
15.22	228	A	78	CS	BF	1.2	CY	n	MC	n/a	C	minus, reworked projectile point
15.22	285	J	79	CS	BF	1	CH	n	n/a	n/a	D	minus, possible tip of an eden point (distinct medial ridge and fine parallel lateral flaking)
15.22	287	C	80	CS	BF	1.4	CH	n	n/a	n/a	M	minus
15.22	299	A	81	CS	PP	0.5	CH	n	n/a	n/a	D, M	minus, made on a flake blank
15.22	288	A	82	CS	BF	0.5	CH	n	n/a	n/a	D	minus
15.22	291	C	83	CS	PP	0.9	CH	n	EC	n/a	M	minus
15.22	294	A	84	CS	BF	0.8	CH	n	n/a	n/a	M	minus
15.22	293	E	85	CS	BF	0.9	CH	n	n/a	n/a	C	minus, possible broken preform but subsequently worked on all edges
15.22	292	C	86	CS	BF	0.5	CH	n	n/a	n/a	M	minus
15.22	296	A	87	CS	BF	0.8	CH	n	n/a	n/a	M	minus
15.22	297	F	88	CS	BF	0.6	CH	n	n/a	n/a	M	minus
15.22	40	-	89	CS	BF	4.7	CH	n	n/a	n/a	M	plus
15.22	277	-	90	CS	BF	2.5	CH	n	n/a	n/a	D	minus
15.22	279	E	91	CS	BF	2.6	CH	n	LP	n/a	D	minus
15.22	280	B	92	CS	PP	1.5	CH	n	LA	Pelican Lake	M	minus, made on a flake blank
15.22	282	C	93	CS	BF	1.3	CH	n	n/a	n/a	M	minus
15.22	284	A	94	CS	BF	1.1	CH	n	n/a	n/a	M	minus, patenated
15.22	286	C	95	CS	BF	1.3	CY	n	n/a	n/a	D	minus, tip is crookedly worked
15.22	220	A	96	CS	BF	6.5	PW	n	n/a	n/a	D, M	minus
15.22	283	A	97	CS	BF	0.8	CH	n	n/a	n/a	D	minus
15.22	2	F	98	CS	BF	13.7	CH	n	n/a	n/a	D, M	plus
15.22	295	E	99	CS	BF	0.6	CH	n	n/a	n/a	D	minus
15.22	221	A	100	CS	BF	8	CH	n	n/a	n/a	D, M	minus
15.22	217	A	101	CS	BF	30.2	CH	n	n/a	n/a	D,M	minus, overshot flakes, retouch on one lateral side
15.22	218	I	102	CS	HK	40.9	CH	n	n/a	n/a	C	minus
15.22	229	-	103	CS	DR	4.9	CH	y	n/a	n/a	D, M, P	minus
15.22	230	B	104	CS	DR	4.3	CH	n	n/a	n/a	MC (T)	minus
15.22	219	A	105	CS	BF	11.8	CH	n	n/a	n/a	M	minus
15.22	222	A	106	CS	BF	8.1	CH	n	n/a	n/a	P	minus
15.22	223	G	107	CS	BF	13.4	CH	n	n/a	n/a	P, M	minus
15.22	224	A	108	CS	PRE	4.4	CH	n	n/a	n/a	C	minus, made on a flake blank
15.22	225	E	109	CS	PRE	2.7	CH	n	n/a	n/a	MC (T)	minus, made on a flake blank
15.22	226	BW	110	CS	PRE	6.2	QZ	n	n/a	n/a	C	minus
15.22	227	A	111	CS	PRE	2.5	CH	n	n/a	n/a	P, M	minus
15.22	276	A	112	CS	BF	18.3	CH	n	n/a	n/a	C	minus

15.22	13	E	113	CS	EMF	0.5	CH	n	n/a	n/a	ND	plus
15.22	73	-	114	CS	SS	1	CH	n	n/a	n/a	ND	plus
15.22	7	A	115	CS	BF	9.3	CH	n	n/a	n/a	M	plus
15.22	468	A	116	CS	EMF	33.7	CH	n	n/a	n/a	C	minus
15.22	12	-	117	CS	BF	8.2	CH	n	n/a	n/a	P	plus
15.22	5	A	118	CS	CV	5	CH	n	n/a	n/a	MC (M)	plus
15.22	60	A	119	CS	ES	2.3	CH	n	n/a	n/a	D	plus
15.22	449	C	120	CS	ES	7.5	CH	n	n/a	n/a	D	minus
15.22	62	-	121	CS	CV	2.9	PW	n	n/a	n/a	D, M	plus
15.22	445	C	122	CS	SS	33.3	QZ	n	n/a	n/a	MC (P)	minus
15.22	6	A	123	CS	SS	0.8	CH	y	n/a	n/a	ND	plus
15.22	72	E	124	CS	ES	6.7	CH	n	n/a	n/a	D	plus
15.22	474	A	125	CS	EMF	1.8	CH	n	n/a	n/a	P	minus
15.22	473	D	126	CS	SS	2.5	CH	n	n/a	n/a	ND	minus
15.22	472	A	127	CS	EMF	0.5	CH	n	n/a	n/a	P	minus
15.22	470	A	128	CS	ES	2	CH	n	n/a	n/a	C	minus
15.22	478	A	129	CS	BF	3.4	CH	n	n/a	n/a	ND	minus
15.22	469	B	130	CS	SM	8.5	PW	n	n.a	n/a	ND	minus
15.22	477	E	131	CS	ES	3.6	CH	n	n/a	n/a	C	minus
15.22	476	A	132	CS	SM	1.1	CH	n	n/a	n/a	ND	minus
15.22	482	A	133	CS	BF	2.3	CH	n	n/a	n/a	ND	minus
15.22	458	E	134	CS	EMF	1	CH	n	n/a	n/a	ND	minus
15.22	459	E	135	CS	ES	2.7	CH	n	n/a	n/a	D	minus
15.22	450	A	136	CS	SS	4.6	CH	n	n/a	n/a	C	minus
15.22	460	DN	137	CS	BF	1.8	CH	n	n/a	n/a	M	minus
15.22	465	-	138	CS	SM	3.1	CH	n	n/a	n/a	ND	minus
15.22	479	C	139	CS	ES	1.1	CH	n	n/a	n/a	P	minus
15.22	481	A	140	CS	BF	1.7	CH	y	n/a	n/a	ND	minus
15.22	484	A	141	CS	EMF	4	CH	n	n/a	n/a	ND	minus
15.22	480	A	142	CS	EMF	0.6	CH	n	n/a	n/a	ND	minus
15.22	475	B	143	CS	ES	1.2	CH	n	n/a	n/a	D	minus
15.22	483	E	144	CS	BF	1.9	CH	n	n/a	n/a	M	minus, "SE"
15.22	471	B-	145	CS	EMF	1.7	CH	n	n/a	n/a	M	minus
15.22	467	AN	146	CS	ES	3.3	CH	n	n/a	n/a	C	minus
15.22	464	E	147	CS	CV	3.3	CY	n	n/a	n/a	C	minus
15.22	461	G	148	CS	CV	2.5	CH	n	n/a	n/a	MC (M)	minus
15.22	451	-	149	CS	BF	1.7	CH	y	n/a	n/a	M	minus
15.22	442	AN	150	CS	SS	8.1	CH	n	n/a	n/a	M	minus
15.22	443	C	151	CS	SS	4.6	CH	n	n/a	n/a	P	minus
15.22	452	A	152	CS	SM	1.8	CH	n	n/a	n/a	D	minus

15.22	444	A	153	CS	CV	1.8	CH	n	n/a	n/a	D, M	minus
15.22	454	A	154	CS	EMF	0.9	CH	n	n/a	n/a	D	minus
15.22	453	A	155	CS	EMF	0.8	CH	n	n/a	n/a	M	minus
15.22	455	A	156	CS	BF	1.9	CH	n	n/a	n/a	D	minus, made on a large flake blank
15.22	462	A	157	CS	ES	1	CH	n	n/a	n/a	D	minus
15.22	456	A	158	CS	BF	0.8	CY	n	n/a	n/a	M	minus
15.22	447	A	159	CS	EMF	2.6	CH	n	n/a	n/a	ND	minus
15.22	448	A	160	CS	SM	1.8	CH	n	n/a	n/a	ND	minus
15.22	457	E	161	CS	BF	5.6	CH	n	n/a	n/a	M	minus
15.22	435	C	162	CS	EMF	19.8	CH	y	n/a	n/a	C	minus
15.22	436	C	163	CS	CV	27.8	CH	n	n/a	n/a	C	minus
15.22	3	-	164	CS	CV	8.4	QZ	n	n/a	n/a	MC (D)	plus
15.22	61	A	165	CS	SS	18.7	CH	n	n/a	n/a	D, M	plus
15.22	437	A	166	CS	BF	4.9	CH	n	n/a	n/a	D	minus
15.22	9	-	167	CS	SM	5.6	CH	n	n/a	n/a	D	plus
15.22	438	J	168	CS	CV	5	CH	n	n/a	n/a	D	minus
15.22	439	AE	169	CS	ES	2	CH	n	n/a	n/a	D	minus
15.22	64	-	170	CS	SS	0.3	CH	n	n/a	n/a	ND	plus
15.22	1	F	171	CS	SS	19.4	QZ	n	n/a	n/a	C	plus
15.22	70	-	172	CS	ES	3.6	CH	n	n/a	n/a	D	plus
15.22	71	E	173	CS	SS	2.5	CH	y	n/a	n/a	M	plus
15.22	33	-	174	CS	EMF	1.3	CH	n	n/a	n/a	M	plus
15.22	28	-	175	CS	SS	4.3	CH	n	n/a	n/a	C	plus
15.22	-	EE	176	CS	SS	64.4	CH	y	n/a	n/a	C	"T.T."
15.22	-	C	177	CS	SM	32	CH	n	n/a	n/a	C	possible spokeshave
15.22	-	F	178	CS	ES	17.1	CH	n	n/a	n/a	C	
15.22	-	C	179	CS	SM	35.8	CH	n	n/a	n/a	C	
15.22	-	C	180	CS	CORE	99.5	CH	n	n/a	n/a	C	
15.22	-	C	181	CS	CORE	171	CH	n	n/a	n/a	C	elongate, shaped like a blade core but lacks repeated platform striking
15.22	-	B	182	CS	CORE	16	CH	n	n/a	n/a	C	
15.22	-	A	183	CS	CORE	30.2	CH	n	n/a	n/a	C	
15.22	58	C	184	CS	CORE	45	CH	n	n/a	n/a	C	plus
15.22	-	C	185	CS	CORE	44.9	CH	y	n/a	n/a	C	
15.22	-	BW	186	CS	ES	45.9	CH	n	n/a	n/a	C	
15.22	-	C	187	CS	SM	19.2	CH	n	n/a	n/a	C	
15.22	-	A	188	CS	CORE	25.1	CH	n	n/a	n/a	C	minus
15.22	426	A	189	CS	CV	18.7	CH	n	n/a	n/a	C	
15.22	428	C	190	CS	ES	12.6	CH	n	n/a	n/a	C	minus
15.22	427	C	191	CS	ES	6.9	CH	n	n/a	n/a	C	minus

15.22	429	J	192	CS	ES	13	CH	y	n/a	n/a	C	minus, slightly serrated
15.22	430	EE	193	CS	ES	3.8	CH	n	n/a	n/a	C	minus
15.22	431	A	194	CS	CV	15.8	CH	n	n/a	n/a	C	minus
15.22	432	A	195	CS	CV	10.9	CH	y	n/a	n/a	C	minus, "WTB"
15.22	433	C	196	CS	SS	4.8	CH	n	n/a	n/a	P	minus
15.22	424	A	197	CS	SM	1.5	CH	n	n/a	n/a	ND	minus
15.22	423	A	198	CS	EMF	3.7	CH	n	n/a	n/a	C	minus
15.22	422	A	199	CS	SM	3.6	CH	n	n/a	n/a	ND	minus
15.22	421	B	200	CS	CV	2.4	CH	n	n/a	n/a	D	minus
15.22	420	A	201	CS	SS	4.7	CH	n	n/a	n/a	D	minus
15.22	419	A	202	CS	SM	1.7	CH	n	n/a	n/a	M	minus
15.22	418	D	203	CS	SS	9	CY	n	n/a	n/a	D	minus
15.22	417	A	204	CS	ES	4.6	CH	n	n/a	n/a	D	minus
15.22	434	A	205	CS	EMF	3.4	CH	n	n/a	n/a	C	minus
15.22	415	E	206	CS	ES	1.3	CY	n	n/a	n/a	C	minus, recycled PP base
15.22	416	A	207	CS	ES	1.3	CH	n	n/a	n/a	C	minus, recycled PP base
15.22	408	A	208	CS	SS	11.5	CH	n	n/a	n/a	C	minus
15.22	409	A	209	CS	ES	9.5	CH	n	n/a	n/a	C	minus
15.22	410	B	210	CS	SM	13.4	CH	n	n/a	n/a	P	minus
15.22	411	A	211	CS	ES	11.7	CH	n	n/a	n/a	D	minus
15.22	412	A	212	CS	SM	6.4	CH	n	n/a	n/a	P	minus
15.22	414	B	213	CS	ES	2.3	CH	n	n/a	n/a	D	minus
15.22	43	-	214	CS	ES	5.8	PW	n	n/a	n/a	D	plus
15.22	406	A	215	CS	SS	3.3	CH	n	n/a	n/a	P	minus
15.22	413	A	216	CS	ES	5.9	CH	n	n/a	n/a	C	minus, possible gravers
15.22	425	A	217	CS	ES	5.2	CH	y	n/a	n/a	C	minus
15.22	397	CN	218	CS	SS	10.5	CH	n	n/a	n/a	P	
15.22	378	A	219	CS	ES	5	CH	n	n/a	n/a	C	minus
15.22	398	AS	220	CS	SS	9.4	CH	y	n/a	n/a	M	minus
15.22	399	E	221	CS	ES	7.3	CH	n	n/a	n/a	C	minus
15.22	400	BE	222	CS	SM	18.2	CH	n	n/a	n/a	P	minus
15.22	401	A	223	CS	SS	8.6	CH	n	n/a	n/a	ND	minus
15.22	402	C	224	CS	CV	10.4	CH	n	n/a	n/a	D	minus
15.22	403	A	225	CS	ES	4.8	PW	n	n/a	n/a	D	minus
15.22	404	SW	226	CS	BF	2.3	CH	y	n/a	n/a	M	minus
15.22	405	B	227	CS	ES	4.5	CH	n	n/a	n/a	D	minus
15.22	407	A	228	CS	SM	2.2	CH	y	n/a	n/a	ND	minus
15.22	25	-	229	CS	CV	7.5	CH	n	n/a	n/a	D	plus
15.22	391	A	230	CS	GRV	9.5	CH	y	EP	n/a	C	minus
15.22	392	C	231	CS	SS	9	CH	n	n/a	n/a	C	minus

15.22	393	B	232	CS	ES	7.5	CH	n	n/a	n/a	C	minus
15.22	387	E	233	CS	EMF	3.1	QZ	n	n/a	n/a	ND	minus
15.22	394	A	234	CS	EMF	3.4	CH	y	n/a	n/a	ND	minus
15.22	395	AS	235	CS	EMF	2.3	CH	n	n/a	n/a	ND	minus
15.22	389	A	236	CS	SM	2.5	CH	n	n/a	n/a	ND	minus
15.22	396	A	237	CS	CV	8.7	CH	n	n/a	n/a	C	minus
15.22	388	J	238	CS	CV	8.7	CH	n	n/a	n/a	C	minus
15.22	382	E	239	CS	ES	2	CH	n	n/a	n/a	D	minus
15.22	383	A	240	CS	SM	5.2	CH	n	n/a	n/a	D	minus, refits to CMPA #241
15.22	384	A	241	CS	SM	7.3	CH	n	n/a	n/a	P	minus, refits to CMPA #240
15.22	385	C	242	CS	HK	14.2	CH	y	n/a	n/a	C	minus, possibly a Cody Complex knife
15.22	386	C	243	CS	EMF	5	CH	n	n/a	n/a	C	minus, blade
15.22	390	A	244	CS	EMF	2.9	CH	n	n/a	n/a	ND	minus
15.22	374	B	245	CS	ES	5.6	CH	n	n/a	n/a	D	minus
15.22	381	AS	246	CS	CV	5.9	CY	n	n/a	n/a	C	minus
15.22	380	A	247	CS	ES	4	CH	n	n/a	n/a	D	minus
15.22	379	C	248	CS	CV	7.4	CH	n	n/a	n/a	C	minus
15.22	377	C	249	CS	CV	5.4	CH	n	n/a	n/a	C	minus
15.22	49	-	250	CS	CV	4.6	CH	n	n/a	n/a	C	plus
15.22	376	A	251	CS	ES	2.4	CH	n	n/a	n/a	C	minus
15.22	378	A	252	CS	ES	2.7	CY	n	n/a	n/a	C	minus
15.22	373	E	253	CS	ES	15.1	CH	n	n/a	n/a	C	minus
15.22	372	C	254	CS	CV	11.9	CH	n	n/a	n/a	C	minus
15.22	371	A	255	CS	ES	18.9	CH	n	n/a	n/a	C	minus
15.22	370	D	256	CS	ES	21.5	CH	n	n/a	n/a	D	minus
15.22	369	E	257	CS	ES	7.4	CH	n	n/a	n/a	C	minus
15.22	368	C	258	CS	CV	10.6	CH	n	n/a	n/a	C	minus
15.22	367	C	259	CS	ES	13	CH	n	n/a	n/a	C	minus
15.22	308	A	260	CS	CV	10.9	CH	n	n/a	n/a	C	minus
15.22	307	B	261	CS	CV	10.2	CH	n	n/a	n/a	C	minus
15.22	306	A	262	CS	ES	12	CH	n	n/a	n/a	C	minus
15.22	305	A	263	CS	ES	8.3	CH	n	n/a	n/a	C	minus
15.22	304	A	264	CS	CV	19.7	CH	n	n/a	n/a	C	minus
15.22	303	AS	265	CS	ES	10.8	CH	n	n/a	n/a	C	minus
15.22	302	A	266	CS	ES	10.2	CH	y	n/a	n/a	C	minus
15.22	301	C	267	CS	ES	11.7	CH	n	n/a	n/a	C	minus
15.22	315	A	268	CS	ES	4.9	CH	n	n/a	n/a	D	minus
15.22	314	E	269	CS	ES	5	CH	n	n/a	n/a	D	minus
15.22	313	A	270	CS	ES	10.2	CH	n	n/a	n/a	C	minus
15.22	312	E	271	CS	ES	4.4	CH	n	n/a	n/a	C	minus

15.22	311	C	272	CS	ES	11.2	CH	n	n/a	n/a	D	minus
15.22	310	C	273	CS	ES	10.4	CH	n	n/a	n/a	D	minus
15.22	309	C	274	CS	CV	9.1	CH	n	n/a	n/a	C	minus, one graver looking piece
15.22	317	C	275	CS	SS	15.6	CH	n	n/a	n/a	MC (D)	minus
15.22	318	C	276	CS	SS	18.8	CH	n	n/a	n/a	MC (D)	minus
15.22	319	A	277	CS	ES	3.1	CH	n	n/a	n/a	MC (D)	minus
15.22	325	B	278	CS	ES	6.9	CH	n	n/a	n/a	MC (P)	minus
15.22	320	B	279	CS	ES	4.4	CH	n	n/a	n/a	D	minus
15.22	326	A	280	CS	ES	4	CH	n	n/a	n/a	D	minus
15.22	31	-	281	CS	ES	4.6	CH	n	n/a	n/a	D	plus
15.22	327	A	282	CS	ES	5.9	CH	n	n/a	n/a	MC (P)	minus
15.22	321	-	283	CS	SS	7.4	CH	y	n/a	n/a	C	minus
15.22	10	A	284	CS	EMF	2.9	CH	n	n/a	n/a	ND	plus
15.22	322	A	285	CS	ES	4.1	CH	n	n/a	n/a	D	minus
15.22	328	A	286	CS	ES	4.3	CH	n	n/a	n/a	D	minus
15.22	323	C	287	CS	ES	3.6	CH	n	n/a	n/a	D	minus
15.22	324	A	288	CS	ES	3	CH	n	n/a	n/a	D	minus
15.22	17	DE	289	CS	EMF	3.5	CH	n	n/a	n/a	ND	plus
15.22	329	A	290	CS	EMF	6.6	CH	n	n/a	n/a	ND	minus
15.22	45	-	291	CS	SM	3.5	CH	n	n/a	n/a	D	plus
15.22	50	-	292	CS	ES	7.2	CH	n	n/a	n/a	C	plus
15.22	330	AS	293	CS	SS	9.3	CH	n	n/a	n/a	C	minus
15.22	337	A	294	CS	SS	5.5	CH	n	n/a	n/a	M	minus, refits with CMPA #294
15.22	331	A	295	CS	SS	2.7	CH	n	n/a	n/a	D	minus, refits with CMPA #295
15.22	21	-	296	CS	EMF	3.4	CH	n	n/a	n/a	ND	plus
15.22	332	B	297	CS	EMF	2	CH	n	n/a	n/a	ND	minus
15.22	333	A	298	CS	SS	6	PW	n	n/a	n/a	ND	minus
15.22	336	C	299	CS	GRV	6.6	CH	n	EP	n/a	D	minus
15.22	68	-	300	CS	EMF	4.7	CH	n	n/a	n/a	ND	minus
15.22	20	-	301	CS	ES	7.2	CH	n	n/a	n/a	C	plus
15.22	338	A	302	CS	EMF	5.4	CH	n	n/a	n/a	ND	minus
15.22	335	A	303	CS	SM	2.5	CH	n	n/a	n/a	M	minus
15.22	338	C	304	CS	SM	7.5	CH	n	n/a	n/a	P, M	plus
15.22	339	A	305	CS	SM	6.6	CH	n	n/a	n/a	P, M	minus
15.22	48	G	306	CS	SM	8.7	CH	n	n/a	n/a	ND	plus
15.22	340	B	307	CS	SM	4.1	CH	n	n/a	n/a	D	minus
15.22	341	A	308	CS	SS	5.7	CH	n	n/a	n/a	D	minus, blade
15.22	334	B	309	CS	SM	4.4	CH	n	n/a	n/a	P	minus
15.22	342	B	310	CS	SM	4.5	CH	n	n/a	n/a	P	minus
15.22	343	B	311	CS	SS	3.1	PW	n	n/a	n/a	P	minus

15.22	345	B	312	CS	EMF	1.7	CH	n	n/a	n/a	P	minus
15.22	344	A	313	CS	SM	4.1	CH	n	n/a	n/a	P	minus
15.22	345	C	314	CS	SM	3.8	CH	n	n/a	n/a	P	minus
15.22	346	A	315	CS	SM	2.5	CH	n	n/a	n/a	P	minus
15.22	347	A	316	CS	SM	5.6	CH	n	n/a	n/a	P	minus
15.22	18	AB	317	CS	SS	7.2	CH	n	n/a	n/a	P, M	plus
15.22	75	-	318	CS	ES	9.9	CH	n	n/a	n/a	C	plus
15.22	348	-	319	CS	SM	6.2	CH	n	n/a	n/a	P	minus
15.22	350	C	320	CS	SM	4.2	CH	n	n/a	n/a	P	minus
15.22	351	C	321	CS	SM	13.2	CH	n	n/a	n/a	P	minus
15.22	352	C	322	CS	ES	9.5	CH	n	n/a	n/a	C	minus
15.22	359	AS	323	CS	EMF	7.7	CH	n	n/a	n/a	ND	minus
15.22	360	B	324	CS	EMF	9.3	CH	n	n/a	n/a	ND	minus
15.22	353	A	325	CS	EMF	3.3	CH	n	n/a	n/a	C	minus
15.22	361	A	326	CS	ES	5.9	CH	n	n/a	n/a	D	minus
15.22	354	A	327	CS	SS	6.6	CH	n	n/a	n/a	P, M	minus
15.22	362	AN	328	CS	SM	7.9	CH	n	n/a	n/a	ND	minus
15.22	355	A	329	CS	ES	3.1	CH	n	n/a	n/a	D	minus
15.22	363	AN	330	CS	EMF	5.2	CH	n	n/a	n/a	ND	minus
15.22	364	C	331	CS	SS	13.6	CH	n	n/a	n/a	P, M	minus
15.22	356	A	332	CS	ES	2.2	CH	n	n/a	n/a	D	minus
15.22	365	C	333	CS	SS	13.9	CH	n	n/a	n/a	C	minus
15.22	357	A	334	CS	ES	2.3	CH	n	n/a	n/a	C	minus
15.22	366	A	335	CS	SM	3.6	CH	n	n/a	n/a	D	minus
15.22	86	C	336	CS	SM	5.6	CH	n	n/a	n/a	ND	plus
15.22	-	A	337	GS	MAN	467	QU	n	n/a	n/a	D, M	2 ground lateral edges
15.22	-	A	338	GS	MAN	244	QU	n	n/a	n/a	C	
15.22	-	A	339	GS	MAN	125	SA	n	n/a	n/a	M	
15.22	-	A	340	GS	MET	144.2	SA	n	n/a	n/a	ND	1 ground edge
15.22	-	E	341	GS	MAN	1189	QU	n	n/a	n/a	C	3 lateral ground edges
15.22	4	F	342	GS	MAN	43.3	SA	n	n/a	n/a	ND	
15.22	-	F	343	GS	MAN	88	ND	n	n/a	n/a	ND	
15.22	-	F	344	GS	MAN	48.7	SA	n	n/a	n/a	ND	
15.22	-	E	345	CS	EMF	4.2	PW	y	n/a	n/a	ND	
15.22	-	E	346	CS	SM	7.7	CH	n	n/a	n/a	M	
15.22	-	E	347	CS	BF	11	QZ	n	n/a	n/a	C	
15.22	-	E	348	CS	EMF	7.3	QZ	n	n/a	n/a	M	
15.22	-	E	349	CS	BF	9	PW	n	n/a	n/a	ND	possible base of a tool based on morphology
15.22	-	E	350	CS	BF	11.6	PW	n	n/a	n/a	P	
15.22	-	E	351	CS	EMF	3.1	CH	n	n/a	n/a	ND	

15.22	-	E	352	CS	EMF	1.3	CH	n	n/a	n/a	ND	
15.22	-	E	353	CS	CORE	11.9	CH	n	n/a	n/a	ND	
15.22	-	E	354	CS	EMF	3.9	CH	n	n/a	n/a	ND	
15.22	-	E	355	CS	EMF	11.3	PW	y	n/a	n/a	ND	
15.22	-	E	356	CS	EMF	5.7	QZ	n	n/a	n/a	ND	
15.22	-	E	357	CS	EMF	2	CH	n	n/a	n/a	M	
15.22	-	E	358	CS	BF	3.3	CH	n	n/a	n/a	ND	
15.22	-	E	359	CS	EMF	2.7	CH	n	n/a	n/a	M	
15.22	-	D	360	CS	EMF	1.9	CH	n	n/a	n/a	C	
15.22	-	G	361	CS	BF	23.7	PW	n	n/a	n/a	P	
15.22	-	G	362	CS	EMF	4.5	CH	n	n/a	n/a	ND	
15.22	-	G	363	CS	BF	7.6	CH	n	n/a	n/a	P	
15.22	-	G	364	CS	SM	9.2	PW	n	n/a	n/a	ND	
15.22	-	G	365	CS	BF	8.5	CH	y	n/a	n/a	M	
15.22	-	AE	366	CS	EMF	4.2	CH	n	n/a	n/a	ND	
15.22	-	AE	367	CS	SS	5.1	CH	n	n/a	n/a	ND	
15.22	-	J	368	CS	EMF	6.3	CH	n	n/a	n/a	M	
15.22	-	A	369	CS	CORE	33.5	CH	n	n/a	n/a	ND	
15.22	-	J	370	CS	EMF	3.6	CH	n	n/a	n/a	M	possible spokeshave
15.22	-	J	371	CS	EMF	2.6	CH	n	n/a	n/a	M	
15.22	-	F	372	CS	CORE	13.4	CH	n	n/a	n/a	ND	"V.A.R."
15.22	-	J	373	CS	SS	17.2	PW	n	n/a	n/a	M	"V.A.R."
15.22	-	-	374	CS	EMF	4.6	CH	n	n/a	n/a	ND	"V.A.R."
15.22	-	A	375	CS	CORE	51.7	CH	n	n/a	n/a	ND	"SHSC"
15.22	-	A	376	CS	CORE	21.4	CH	n	n/a	n/a	ND	"SHSC"
15.22	-	A	377	CS	CORE	44.2	CH	n	n/a	n/a	ND	
15.22	-	A	378	CS	CORE	19.9	PW	n	n/a	n/a	ND	
15.22	-	A	379	CS	CORE	17.4	PW	n	n/a	n/a	ND	
15.22	-	A	380	CS	CORE	15.7	CH	y	n/a	n/a	ND	
15.22	-	A	381	CS	CORE	8.1	CH	n	n/a	n/a	ND	
15.22	-	A	382	CS	BF	14.9	CH	n	n/a	n/a	C	"PMG"
15.22	-	A	383	CS	CORE	21.2	CH	y	n/a	n/a	C	
15.22	-	A	384	CS	CORE	23	CH	y	n/a	n/a	C	
15.22	-	A	385	CS	CORE	15.2	CH	n	n/a	n/a	C	
15.22	-	A	386	CS	CORE	22.3	CH	n	n/a	n/a	C	
15.22	-	F	387	CS	BF	16.3	CH	y	n/a	n/a	C	
15.22	-	C	388	CS	BF	2.9	CH	n	n/a	n/a	ND	
15.22	-	C	389	CS	BF	16.1	CH	n	n/a	n/a	ND	
15.22	-	C	390	CS	BF	71.1	CH	n	n/a	n/a	ND	
15.22	-	C	391	CS	BF	15.1	CH	n	n/a	n/a	ND	

15.22	-	C	392	CS	BF	2.3	CH	n	n/a	n/a	ND	
15.22	-	C	393	CS	BF	23.2	CH	n	n/a	n/a	ND	
15.22	-	C	394	CS	EMF	3.8	CH	n	n/a	n/a	ND	
15.22	-	C	395	CS	EMF	2.4	CH	n	n/a	n/a	ND	
15.22	-	B	396	CS	BF	21.3	PW	n	n/a	n/a	C	
15.22	-	B	397	CS	BF	14.9	CH	n	n/a	n/a	ND	
15.22	-	B	398	CS	EMF	4.3	CH	n	n/a	n/a	ND	
15.22	-	EN	399	CS	CORE	19.2	CH	n	n/a	n/a	C	
15.22	-	A	400	CS	BF	3.8	CH	n	n/a	n/a	ND	"HV"
15.22	-	A	401	CS	BF	7.9	CH	n	n/a	n/a	ND	"HV"
15.22	-	A	402	CS	BF	2	CH	n	n/a	n/a	ND	"HV"
15.22	-	A	403	CS	BF	6.7	CH	n	n/a	n/a	ND	HV"
15.22	-	A	404	CS	EMF	3.2	CH	n	n/a	n/a	ND	"HV"
15.22	-	A	405	CS	CORE	13.5	CH	n	n/a	n/a	C	"HV"
15.22	-	A	406	CS	BF	48.8	CH	n	n/a	n/a	ND	"HV"
15.22	-	A	407	CS	BF	24.4	CH	n	n/a	n/a	ND	"HV"
15.22	-	C	408	CS	CORE	17.9	CH	n	n/a	n/a	ND	
15.22	-	B	409	CS	EMF	2.5	CH	n	n/a	n/a	ND	
15.22	-	B	410	CS	EMF	2.6	CH	n	n/a	n/a	ND	
15.22	-	B	411	CS	BF	4.7	CH	n	n/a	n/a	M	
15.22	-	B	412	CS	BF	3.2	CH	n	n/a	n/a	M	
15.22	-	B	413	CS	CORE	16.5	CH	y	n/a	n/a	ND	
15.22	-	B	414	CS	CORE	17	CH	n	n/a	n/a	C	
15.22	-	B	415	CS	CORE	11.3	CH	y	n/a	n/a	C	
15.22	83	-	416	CS	EMF	0.9	CH	n	n/a	n/a	ND	plus

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
38.264	-	B	1	CR	NAP	9.6	O	n	EC	n/a	n/a	clay, cord marked, slightly oxidized, "D"
38.264	-	B	2	CR	NAP	3.5	O	n	EC	n/a	n/a	clay, cord marked
38.264	44	-	3	CR	NAP	2.5	O	n	EC	n/a	n/a	clay, cord marked, plus
38.264	-	-	4	CR	NAP	3.3	O	n	EC	n/a	n/a	clay, cord marked, interior is burned
38.264	-	-	5	CR	NAP	5.7	O	n	EC	n/a	n/a	clay, cord marked, interior is burned
38.264	-	-	6	CR	NAP	1	O	n	EC	n/a	n/a	clay, cord marked
38.264	-	B	7	CR	NAP	2.6	O	n	EC	n/a	n/a	clay, cord marked, "D"
38.264	-	-	8	CR	NAP	1.5	O	n	EC	n/a	n/a	clay, cord marked
38.264	-	B	9	CR	NAP	2.8	O	n	EC	n/a	n/a	clay, cord marked, interior is burned
38.264	-	A	10	CR	NAP	1.6	O	n	EC	n/a	n/a	clay, cord marked, exterior and interior is burned
38.264	35	-	11	CR	NAP	4.9	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	12	CR	NAP	4.8	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	13	CR	NAP	3.8	O	n	EC	n/a	BO	clay, cord marked, plus, interior is burned
38.264	35	-	14	CR	NAP	5	O	n	EC	n/a	BO	clay, cord marked, plus, oxidized
38.264	35	-	15	CR	NAP	8.7	O	n	EC	n/a	BO	clay, cord marked, plus, obliterated
38.264	35	-	16	CR	NAP	1.2	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	17	CR	NAP	4.9	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	18	CR	NAP	3	O	n	EC	n/a	BO	clay, slightly eroded cord marked, plus,
38.264	35	-	19	CR	NAP	4.4	O	n	n/a	n/a	BO	clay, interior and exterior burned, plus, no exterior decoration
38.264	35	-	20	CR	NAP	3.7	O	n	EC	n/a	BO	clay, cord marked, plus, interior is burned
38.264	35	-	21	CR	NAP	1.3	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	22	CR	NAP	4.1	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	23	CR	NAP	4.1	O	n	EC	n/a	BO	clay, cord marked, plus, lateral portion is burned
38.264	35	-	24	CR	NAP	2.3	O	n	EC	n/a	BO	clay, cord marked, plus, oxidized
38.264	35	-	25	CR	NAP	3.8	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	26	CR	NAP	1.6	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	27	CR	NAP	2.3	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	28	CR	NAP	2.3	O	n	EC	n/a	BO	clay, cord marked, plus, interior is burned
38.264	35	-	29	CR	NAP	3	O	n	EC	n/a	BO	clay, cord marked, plus
38.264	35	-	30	CR	NAP	4	O	n	EC	n/a	BO	clay, cord marked, plus, lateral portion is burned
38.264	35	-	31	CR	NAP	3.3	O	n	EC	n/a	BO	clay, cord marked, plus, lateral portion is burned and interior is oxidized
38.264	35	-	32	CR	NAP	3.2	O	n	EC	n/a	BO	clay, cord marked, plus,
38.264	35	-	33	CR	NAP	3.5	O	n	EC	n/a	BO	clay, cord marked, plus

38.264	35	-	34	CR	NAP	2.1	O	n	EC	n/a	BO	clay, plus, no exterior decoration, interior is oxidized
38.264	35	-	35	CR	NAP	0.9	O	n	EC	n/a	n/a	clay, plus, no exterior decoration
38.264	-	B	36	CS	PP	0.9	CH	n	EC	Hogback	C	
38.264	-	A	37	CS	PP	3	CH	n	LA	Besant	C	
38.264	-	B	38	CS	PP	1.1	CH	n	EC	Hogback	C	made on a flake blank
38.264	-	C	39	CS	PP	3.1	CH	n	MA	Yonkee	C	
38.264	-	-	40	CS	ES	16.3	PW	n	n/a	n/a	C	
38.264	-	B	41	CS	PRE	0.8	CH	n	n/a	n/a	C	
38.264	-	A	42	CS	PP	0.4	CH	n	EC	n/a	P	
38.264	12	-	43	CS	PP	0.6	CH	n	EC	n/a	C	plus
38.264	-	BN	44	CS	PP	0.6	CH	n	EC	n/a	MC (M)	
38.264	4	-	45	CS	PP	1.3	CH	n	EC	n/a	C	plus
38.264	46	-	46	CS	PP	1	QZ	n	EC	Hogback	C	plus, serrated
38.264	-	A	47	CS	PP	1	QZ	n	EC	n/a	MC (D)	
38.264	-	B	48	CS	PP	0.7	CH	n	n/a	n/a	M, D	
38.264	0	B	49	CS	PP	0.7	CH	n	EC	n/a	MC (M)	
38.264	37	-	50	CS	PP	0.6	CH	n	EC	n/a	M	plus
38.264	27	-	51	CS	PP	0.6	PW	n	EC	n/a	MC (P)	plus
38.264	-	C	52	CS	PP	2.7	CH	n	LA	n/a	MC (D)	
38.264	-	B	53	CS	PP	2.4	CH	n	LA	n/a	M	
38.264	38	-	54	CS	PP	5.1	CH	n	LA	n/a	M	plus, "D"
38.264	28	-	55	CS	PP	2.1	CH	n	MA	McKean	C	plus
38.264	-	-	56	CS	PP	1.4	CH	n	MA	Duncan-Hanna	C	
38.264	-	B	57	CS	PP	2.1	QZ	n	MA	McKean	P	
38.264	-	B	58	CS	BF	3	CH	n	n/a	n/a	P, M	
38.264	20	-	59	CS	PP	2.7	CH	y	MA	McKean	P, M	plus
38.264	54	-	60	CS	BF	2	CH	n	n/a	n/a	M	plus
38.264	-	A	61	CS	PP	2.9	CH	n	MA	n/a	C	
38.264	-	A	62	CS	PP	2.1	CY	n	EA	Mount Albion	C	
38.264	-	AN	63	CS	BF	2.5	CH	n	n/a	n/a	C	
38.264	-	-	64	CS	BF	0.8	CH	n	n/a	n/a	D	
38.264	-	C	65	CS	BF	1.4	CH	n	n/a	n/a	C	
38.264	31	-	66	CS	PP	2.8	CH	n	MA	Duncan-Hanna	P	plus, "D"
38.264	-	B	67	CS	PP	1.4	CH	n	MA	Duncan-Hanna	P	
38.264	-	B	68	CS	BF	2.2	CH	n	n/a	n/a	M	
38.264	2	-	69	CS	BF	1	CH	n	n/a	n/a	P	
38.264	-	A	70	CS	ES	2.6	CH	y	n/a	n/a	C	
38.264	-	B	71	CS	ES	1.4	CH	n	n/a	n/a	D	
38.264	-	B	72	CS	PRE	3.7	CH	n	n/a	n/a	MC (D)	

38.264	7	-	73	CS	BF	1.8	CY	n	n/a	n/a	M	plus
38.264	8	-	74	CS	BF	1.2	CY	n	n/a	n/a	C	plus
38.264	11	-	75	CS	BF	1.2	QZ	n	n/a	n/a	D	plus
38.264	-	-	76	CS	BF	0.9	CH	n	n/a	n/a	MC (M)	a question mark is next to the site #
38.264	-	-	77	CS	BF	2.3	CH	n	n/a	n/a	D	
38.264	-	B	78	CS	BF	3.2	CH	n	n/a	n/a	M	"D"
38.264	29	-	79	CS	BF	0.5	CH	n	n/a	n/a	ND	plus
38.264	18	-	80	CS	BF	1.9	CH	n	n/a	n/a	M	plus
38.264	-	B	81	CS	BF	2	CH	n	n/a	n/a	D	
38.264	-	A	82	CS	BF	0.4	CH	n	n/a	n/a	D	made on a flake blank
38.264	53	-	83	CS	BF	2.1	CH	y	n/a	n/a	D	plus
38.264	-	A	84	CS	BF	10.1	QZ	n	n/a	n/a	C	in 2 pieces
38.264	49	-	85	CS	BF	2.9	QZ	n	n/a	n/a	M	plus, "D"
38.264	-	BN	86	CS	BF	7.1	QZ	n	n/a	n/a	D	
38.264	25	-	87	CS	BF	1.9	QZ	n	n/a	n/a	M	plus
38.264	-	B	88	CS	BF	4.7	CH	n	n/a	n/a	P	"D", possible PP base
38.264	-	B	89	CS	BF	9.7	QZ	n	n/a	n/a	D	
38.264	-	-	90	CS	BF	0.9	CY	n	n/a	n/a	M	
38.264	-	-	91	CS	BF	2.6	QZ	n	n/a	n/a	D, M	possible McKean base?
38.264	-	-	92	CS	EMF	3.2	CH	n	n/a	n/a	ND	
38.264	-	B	93	CS	BF	1.2	CY	n	n/a	n/a	D	
38.264	-	A	94	CS	MS	1	CH	n	n/a	n/a	ND	
38.264	-	-	95	CS	MS	4.7	QZ	n	n/a	n/a	D	
38.264	-	B	96	CS	EMF	1.1	CH	n	n/a	n/a	ND	
38.264	57	-	97	CS	BF	7.8	CH	n	n/a	n/a	P	plus
38.264	5	-	98	CS	EMF	7.9	CH	y	n/a	n/a	ND	plus
38.264	9	-	99	CS	BF	4	CH	n	n/a	n/a	M	plus
38.264	52	-	100	CS	BF	19.7	QZ	n	n/a	n/a	P, M	plus
38.264	-	A	101	CS	BF	14.4	CH	n	n/a	n/a	D, M	"D", raw material has lots of inclusions
38.264	27	-	102	CS	BF	13.2	CH	n	n/a	n/a	P	plus
38.264	-	A	103	CS	DR	1.2	CH	n	n/a	n/a	M	refits with CMPA #104
38.264	-	B	104	CS	DR	1.5	CH	n	n/a	n/a	M	refits with CMPA #103
38.264	21	-	105	CS	BF	4.1	CH	y	n/a	n/a	C	
38.264	-	B	106	CS	BF	5	CH	n	n/a	n/a	C	
38.264	-	C	107	CS	BF	7	CH	n	n/a	n/a	P	
38.264	-	B	108	CS	MS	9.8	CH	n	n/a	n/a	D	
38.264	-	-	109	CS	MS	5.4	CH	n	n/a	n/a	P	plus
38.264	-	B	110	CS	BF	4.4	QZ	n	n/a	n/a	P	
38.264	-	B	111	CS	MS	2.4	CY	n	n/a	n/a	MC (D)	
38.264	-	A	112	CS	MS	6.6	CH	y	n/a	n/a	ND	

38.264	6	-	113	CS	BF	4.3	CH	n	n/a	n/a	P	plus
38.264	-	BN	114	CS	SS	5.5	CH	n	n/a	n/a	C	
38.264	40	-	115	CS	ES	3.5	CH	n	n/a	n/a	C	plus
38.264	-	A	116	CS	BF	7.1	CH	n	n/a	n/a	P	
38.264	-	-	117	CS	ES	17.6	CH	n	n/a	n/a	D	
38.264	10	-	118	CS	ES	3.9	CH	n	n/a	n/a	P	
38.264	13	-	119	CS	ES	4.3	CH	n	n/a	n/a	C	plus
38.264	3	-	120	CS	MS	18	QZ	n	n/a	n/a	C	plus
38.264	47	-	121	CS	ES	4.4	CH	n	n/a	n/a	C	plus
38.264	32	-	122	CS	BF	3.5	QZ	n	n/a	n/a	P	plus, "D"
38.264	-	B	123	CS	MS	5.2	CH	n	n/a	n/a	ND	a question mark is next to the site #
38.264	50	-	124	CS	SS	3.7	CH	n	n/a	n/a	C	plus
38.264	-	A	125	CS	ES	3.8	CH	n	n/a	n/a	D	
38.264	-	B	126	CS	SS	22.2	QZ	n	n/a	n/a	P, M	
38.264	-	A	127	CS	ES	11.2	QZ	n	n/a	n/a	C	
38.264	58	-	128	CS	ES	10.1	CH	n	n/a	n/a	D	plus, "D"
38.264	-	B	129	CS	ES	3.4	CH	n	n/a	n/a	C	
38.264	17	-	130	CS	EMF	3.6	CH	n	n/a	n/a	ND	plus
38.264	-	A	131	CS	EMF	4.3	CH	n	n/a	n/a	P	
38.264	-	B	132	CS	GRV	7.4	CH	n	n/a	n/a	C	
38.264	-	B	133	CS	HK	20.7	CH	n	n/a	n/a	C	
38.264	51	-	134	CS	GRV	2.7	CH	y	n/a	n/a	C	plus, "D"
38.264	-	A	135	CS	CORE	25.9	QZ	n	n/a	n/a	C	
38.264	-	A	136	CS	BF	16.7	QZ	n	n/a	n/a	ND	
38.264	-	A	137	CS	BF	12.5	CH	n	n/a	n/a	M	
38.264	-	A	138	CS	BF	25.9	CH	n	n/a	n/a	M	
38.264	-	A	139	CS	BF	16.6	CH	n	n/a	n/a	M	
38.264	-	A	140	CS	BF	5.6	CH	n	n/a	n/a	P	
38.264	-	C	141	CS	CORE	12.4	CH	y	n/a	n/a	C	
38.264	-	C	142	CS	CORE	16.7	CH	n	n/a	n/a	C	
38.264	-	C	143	CS	CORE	29.3	QZ	n	n/a	n/a	ND	
38.264	-	C	144	CS	CORE	37.5	QZ	n	n/a	n/a	C	
38.264	-	C	145	CS	CORE	25.2	CH	n	n/a	n/a	C	
38.264	-	C	146	CS	EMF	41.5	QZ	n	n/a	n/a	ND	
38.264	-	R	147	CS	BF	32.6	CH	n	n/a	n/a	C	
38.264	-	X	148	CS	EMF	20.9	QZ	n	n/a	n/a	ND	
38.264	-	-	149	CS	BF	8.7	CH	n	n/a	n/a	P	
38.264	-	B	150	CS	EMF	8.4	QZ	n	n/a	n/a	C	
38.264	-	B	151	CS	CORE	106.2	CH	y	n/a	n/a	ND	
38.264	-	B	152	CS	BF	78.4	QZ	n	n/a	n/a	C	

38.264	-	B	153	CS	BF	8.3	CH	n	n/a	n/a	P	
38.264	-	B	154	CS	BF	12.1	CH	n	n/a	n/a	P	
38.264	-	B	155	CS	BF	6.5	CH	n	n/a	n/a	M	
38.264	-	A	156	CS	BF	44.5	CH	n	n/a	n/a	P	
38.264	-	A	157	CS	BF	26.5	CH	n	n/a	n/a	MC (D,M)	
38.264	-	A	158	CS	BF	18.4	CH	n	n/a	n/a	P	
38.264	-	A	159	CS	BF	25.1	CH	n	n/a	n/a	M	
38.264	-	A	160	CS	CORE	36.5	CH	n	n/a	n/a	C	
38.264	24	A	161	CS	EMF	9.5	CH	y	n/a	n/a	C	"plus"
38.264	-	A	162	CS	MS	42	CH	n	n/a	n/a	D	
38.264	-	C	163	CS	BF	15.7	QZ	n	n/a	n/a	C	
38.264	-	C	164	CS	BF	14.8	CH	n	n/a	n/a	M	
38.264	-	C	165	CS	MS	37.9	CH	y	n/a	n/a	C	
38.264	-	B	166	CS	BF	4.9	CH	n	n/a	n/a	ND	
38.264	-	B	167	CS	CORE	12	CH	n	n/a	n/a	ND	
38.264	-	B	168	CS	CORE	30.5	CH	n	n/a	n/a	C	
38.264	-	B	169	CS	CORE	63.1	QZ	n	n/a	n/a	ND	
38.264	-	B	170	CS	CORE	114.8	QZ	y	n/a	n/a	C	
38.264	-	B	171	CS	CORE	70.1	QZ	n	n/a	n/a	C	
38.264	-	A	172	CS	BF	20.5	CH	y	n/a	n/a	ND	
38.264	-	A	173	CS	CORE	17.5	CH	y	n/a	n/a	ND	
38.264		A	174	CS	CORE	117.3	QZ	n	n/a	n/a	C	
38.264	-	A	175	CS	CORE	21.3	CH	n	n/a	n/a	ND	
38.264	-	A	176	CS	CORE	35.6	CH	y	n/a	n/a	C	
38.264	-	A	177	CS	CORE	46.9	CH	n	n/a	n/a	C	
38.264	-	A	178	CS	CORE	21.5	QZ	n	n/a	n/a	ND	
38.264	-	A	179	CS	CORE	42.5	CH	n	n/a	n/a	C	
38.264	-	A	180	CS	CORE	83.5	CH	n	n/a	n/a	C	likely just a tested cobble
38.264	-	B	181	CS	BF	12.6	CH	n	n/a	n/a	C	
38.264	-	B	182	CS	BF	47.4	QZ	n	n/a	n/a	P	
38.264	-	B	183	CS	BF	28.6	CH	n	n/a	n/a	P	
38.264	-	B	184	CS	CORE	36.3	CH	y	n/a	n/a	C	
38.264	-	B	185	CS	CORE	71	QZ	y	n/a	n/a	C	
38.264	-	B	186	CS	CORE	77.8	QZ	y	n/a	n/a	C	
38.264	-	B	187	CS	CORE	89.4	CH	y	n/a	n/a	C	
38.264	-	B	188	CS	CORE	280	QZ	y	n/a	n/a	C	
38.264	-	B	189	CS	BF	83.9	QZ	y	n/a	n/a	C	
38.264	-	B	190	CS	CORE	52.2	QZ	n	n/a	n/a	C	
38.264	-	B	191	CS	CORE	29.5	CH	n	n/a	n/a	C	
38.264	-	B	192	CS	BF	9.6	CH	n	n/a	n/a	P	

38.264	-	B	193	CS	BF	10.6	CH	n	n/a	n/a	P
38.264	-	B	194	CS	BF	18.5	CH	n	n/a	n/a	C
38.264	-	B	195	CS	BF	20.8	CH	n	n/a	n/a	M
38.264	-	B	196	CS	BF	4.4	CH	n	n/a	n/a	M
38.264	-	B	197	CS	CORE	18.5	QZ	n	n/a	n/a	M
38.264	-	B	198	CS	BF	37.8	QZ	n	n/a	n/a	C
38.264	-	B	199	CS	CORE	29.9	CH	n	n/a	n/a	ND
38.264	-	B	200	CS	BF	20	CH	n	n/a	n/a	C
38.264	-	B	201	CS	BF	37.9	CH	n	n/a	n/a	M
38.264	-	B	202	CS	BF	15.2	CH	n	n/a	n/a	M
38.264	-	-	203	CS	EMF	2.2	CH	n	n/a	n/a	ND
38.264	-	-	204	CS	BF	9.9	CH	n	n/a	n/a	P
38.264	-	-	205	CS	BF	3.4	CH	n	n/a	n/a	P
38.264	-	-	206	CS	BF	6	QZ	n	n/a	n/a	P
38.264	-	-	207	CS	BF	2.6	CH	n	n/a	n/a	P
38.264	-	-	208	CS	BF	19.3	QZ	n	n/a	n/a	P
38.264	-	-	209	CS	CORE	24.1	CH	n	n/a	n/a	C
38.264	-	-	210	CS	CORE	45.5	QZ	n	n/a	n/a	C
38.264	-	-	211	CS	CORE	67.6	QZ	n	n/a	n/a	C
38.264	-	A	212	CS	ES	56.9	QZ	n	n/a	n/a	C "W"
38.264	-	B	213	CS	ES	30.2	CH	y	n/a	n/a	C
38.264	-	B	214	CS	BF	5.9	CH	n	n/a	n/a	P
38.264	-	A	215	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	216	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	217	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	218	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	219	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	220	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	221	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	222	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	223	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	224	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	225	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	226	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	227	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	228	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	229	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	230	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	231	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	A	232	GS	MISC	-	SA	n	n/a	n/a	L

38.264	-	A	233	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	234	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	235	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	236	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	237	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	238	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	239	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	240	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	241	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	242	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	243	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	244	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	245	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	246	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	247	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	248	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	249	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	250	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	251	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	252	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	253	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	254	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	255	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	256	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	257	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	258	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	259	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	260	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	A	261	GS	MAN	-	SA	n	n/a	n/a	L
38.264	-	C	262	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	263	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	264	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	265	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	266	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	267	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	268	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	C	269	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	270	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	271	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	272	GS	MET	-	SA	n	n/a	n/a	L

38.264	-	C	273	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	274	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	275	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	C	276	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	277	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	278	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	279	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	280	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	281	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	282	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	283	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	284	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	285	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	286	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	287	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	288	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	289	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	290	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	291	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	292	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	293	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	294	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	295	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	296	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	297	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	298	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	299	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	300	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	301	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	302	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	303	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	304	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	305	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	306	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	307	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	308	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	309	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	310	GS	MAN	-	SA	n	n/a	n/a	D
38.264	-	B	311	GS	MAN	-	SA	n	n/a	n/a	L
38.264	-	B	312	GS	MISC	-	SA	n	n/a	n/a	L

38.264	-	B	313	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	314	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	315	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	316	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	317	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	318	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	319	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	320	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	321	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	322	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	323	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	324	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	325	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	326	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	327	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	328	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	329	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	330	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	331	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	332	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	333	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	334	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	335	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	336	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	337	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	338	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	339	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	340	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	341	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	342	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	343	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	344	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	345	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	346	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	347	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	348	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	349	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	350	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	351	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	-	352	GS	MISC	-	SA	n	n/a	n/a	L

38.264	-	-	353	GS	MET	-	SA	n	n/a	n/a	C
38.264	26	B	354	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	355	GS	MISC	-	SA	n	n/a	n/a	L
38.264	-	B	356	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	-	357	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	358	GS	MET	-	SA	n	n/a	n/a	L
38.264	-	B	359	GS	MET	-	SA	n	n/a	n/a	L
38.264	63	-	360	GS	MET	-	SA	n	n/a	n/a	L
38.264	56	-	361	GS	MET	-	SA	n	n/a	n/a	L
38.264	61	-	362	GS	MET	-	SA	n	n/a	n/a	MC (D)
38.264	48	-	363	GS	MET	-	SA	n	n/a	n/a	L
38.264	62	-	364	GS	MET	-	SA	n	n/a	n/a	L
38.264	66	-	365	GS	MET	-	SA	n	n/a	n/a	L
38.264	26	-	366	GS	MET	-	SA	n	n/a	n/a	L
38.264	59	-	367	GS	MET	-	SA	n	n/a	n/a	L
38.264	42	-	368	GS	MISC	-	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
15.24	84	C	1	CS	EMF	3	PW	n	n/a	n/a	ND	plus
15.24	496	-	2	CS	PP	0.8	QZ	n	n/a	n/a	P	plus
15.24	498	-	3	CS	PP	0.7	CY	n	MC	n/a	P	plus
15.24	524	-	4	CS	BF	0.8	CY	n	n/a	n/a	D	plus
15.24	-	-	5	CS	BF	1.5	PW	n	n/a	n/a	M	no IDs on tool
15.24	86	-	6	CS	BF	1.6	PW	n	n/a	n/a	P	plus
15.24	494	-	7	CS	PP	1.5	CH	n	MC	n/a	C	plus, squat corner-notched point
15.24	508	-	8	CS	PP	2.4	CH	n	MC	n/a	M, P	plus, only the tip is missing
15.24	517	-	9	CS	BF	1.6	QZ	n	n/a	n/a	D	plus
15.24	213	-	10	CS	PP	0.4	CH	n	EC	n/a	P	plus, "D"
15.24	-	-	11	CS	PP	5.4	CH	n	MA	Duncan-Hanna	C	
15.24	510	-	12	CS	BF	2.2	CH	n	n/a	n/a	ND	plus
15.24	515	-	13	CS	BF	0.3	CH	n	n/a	n/a	D	plus
15.24	509	-	14	CS	BF	0.4	CH	n	n/a	n/a	ND	plus
15.24	504	-	15	CS	SS	6.9	CH	y	n/a	n/a	ND	plus
15.24	519	-	16	CS	PP	7.8	CH	n	MA	Duncan-Hanna	C	plus
15.24	528	-	17	CS	BF	5	CH	n	n/a	n/a	D, M	plus
15.24	503	-	18	CS	SS	1.4	CH	y	n/a	n/a	ND	plus
15.24	511	-	19	CS	PP	0.2	CH	n	n/a	n/a	D	plus
15.24	507	-	20	CR	NAP	0.5	O	n	EC	n/a	ND	
15.24	520	-	21	CS	GRV	4	CH	n	n/a	n/a	ND	plus, paleo
15.24	518	-	22	CS	MS	4	CH	n	n/a	n/a	ND	
15.24	493	-	23	CS	BF	2.8	CH	n	n/a	n/a	M	plus
15.24	500	-	24	CR	NAP	1.4	O	n	EC	n/a	ND	plus
15.24	521	-	25	CS	EMF	2.1	CH	n	n/a	n/a	ND	plus
15.24	492	-	26	CS	MS	8	CH	n	n/a	n/a	ND	plus
15.24	495	-	27	CS	EMF	9	QZ	n	n/a	n/a	ND	plus
15.24	505	-	28	CS	CORE	32.8	CH	y	n/a	n/a	ND	plus
15.24	523	-	29	GS	MET	19.9	SA	n	n/a	n/a	ND	plus
15.24	514	-	30	CS	CORE	8.1	PW	n	n/a	n/a	C	plus
15.24	499	-	31	CS	GRV	2.5	CY	n	n/a	n/a	C	plus, paleo?
15.24	81	-	32	CS	PP	2.8	PW	n	LA	Besant/Outlook	C	plus
15.24	-	-	33	CS	PP	2	QZ	n	MA	McKean	C	
15.24	392	-	34	CS	PP	1.2	CH	n	MA	McKean	P	plus
15.24	104	-	35	CS	PP	1.8	CH	n	MA	McKean	P, M	plus, no site number is found on tool but found within the same frame as all 15.24 tools
15.24	113	-	36	CS	PP	1.4	CH	n	MA	McKean	C	plus
15.24	334	-	37	CS	PP	2.7	QZ	n	MA	n/a	C	plus

15.24	63	-	38	CS	PP	2	CH	n	MA	n/a	P, M	plus
15.24	443	-	39	CS	HK	14.1	CH	y	n/a	n/a	C	plus
15.24	455	-	40	CS	HK	9.4	PW	n	n/a	n/a	MC (P)	plus
15.24	108	-	41	CS	PP	3	CH	n	MA	McKean	C	plus
15.24	-	-	42	CS	BF	3.4	CH	n	n/a	n/a	C	
15.24	304	-	43	CS	PP	3	CH	n	MA	McKean	C	plus
15.24	54	-	44	CS	PP	4.5	CH	n	LP	Angostura	C	plus, in 2 pieces
15.24	295	-	45	CS	ES	1.3	CH	n	n/a	n/a	C	plus, recycled McKean point
15.24	117	-	46	CS	ES	1.8	PW	n	n/a	n/a	C	plus, recycled McKean point
15.24	-	-	47	CS	PP	2.6	CH	n	MA	McKean	C	
15.24	-	-	48	CS	BF	3.6	CH	n	n/a	n/a	D, M	
15.24	186	-	49	CS	PP	1.9	CH	n	MA	McKean	P, M	plus
15.24	326	-	50	CS	PP	0.8	PW	n	MA	McKean	P	plus
15.24	-	-	51	CS	PP	1.6	CH	n	MA	McKean	P, M	
15.24	-	-	52	CS	MS	1.9	CH	n	n/a	n/a	D, M	could be a broken point?
15.24	-	-	53	CS	BF	2	QZ	n	n/a	n/a	M	
15.24	-	-	54	CS	ES	2.7	CH	n	n/a	n/a	C	recycled Mount Albion?
15.24	-	-	55	CS	PP	2.2	PW	n	EA	Mount Albion	C	
15.24	-	-	56	CS	PP	2.7	CH	n	MA	McKean	C	made on a flake blank
15.24	-	-	57	CS	PP	2.2	PW	n	MA	McKean	C	
15.24	137	-	58	CS	HK	6.5	PW	n	n/a	n/a	MC (D)	plus, in two pieces
15.24	-	-	59	CS	BF	8.2	CH	n	n/a	n/a	C	Angostura biface?
15.24	461	-	60	CS	PP	1.2	CH	n	MC	n/a	MC (P)	made on a flake blank
15.24	-	-	61	CS	PP	1.3	QZ	n	LA	n/a	P	
15.24	-	-	62	CS	BF	2.6	CH	n	n/a	n/a	C	
15.24	75	-	63	CS	BF	4.8	CH	n	n/a	n/a	D, M	plus, likely the distal end of a PP, completely patinated
15.24	457	-	64	CS	BF	1.9	CH	n	n/a	n/a	M	
15.24	-	-	65	CS	PP	1.9	CH	n	EA	Mount Albion	M	
15.24	296	-	66	CS	BF	1.1	CH	n	n/a	n/a	M	plus
15.24	307	-	67	CS	PP	1	CH	n	MA	McKean	C	plus
15.24	201	-	68	CS	PRE	1.1	CH	n	n/a	n/a	C	plus
15.24	198	-	69	CS	PRE	0.7	CH	n	n/a	n/a	C	plus, made on a flake blank
15.24	-	-	70	CS	PRE	1	CH	n	n/a	n/a	MC (D)	
15.24	-	-	71	CS	PRE	1	CH	n	n/a	n/a	C	
15.24	366	-	72	CS	PRE	2.8	PW	n	n/a	n/a	C	made on a flake blank
15.24	-	-	73	CS	PRE	2.5	CH	n	n/a	n/a	C	
15.24	152	-	74	CS	PRE	1.2	CY	n	n/a	n/a	MC (P)	
15.24	-	-	75	CS	PRE	1.1	QZ	n	n/a	n/a	MC (D)	made on a flake blank
15.24	-	-	76	CS	BF	1.2	CH	n	n/a	n/a	MC	made on a flake blank
15.24	408	-	77	CS	BF	1.4	CH	y	n/a	n/a	MC (P)	

15.24	-	-	78	CS	BF	2	CH	n	n/a	n/a	P	made on a flake blank
15.24	-	A	79	CS	DR	0.6	CH	n	n/a	n/a	D	drill tip
15.24	15	-	80	CS	DR	0.8	CH	n	n/a	n/a	D	plus, drill tip, made on a flake blank
15.24	105	-	81	CS	DR	2.9	CH	n	n/a	n/a	M	plus
15.24	178	-	82	CS	DR	0.9	CH	n	n/a	n/a	M	plus
15.24	-	-	83	CS	DR	1	CH	n	n/a	n/a	D	
15.24	107	-	84	CS	DR	1.3	CH	n	n/a	n/a	D	plus
15.24	174	-	85	CS	DR	0.2	CH	n	n/a	n/a	D	plus
15.24	406	-	86	CS	BF	6.8	QZ	n	n/a	n/a	C	plus
15.24	-	-	87	CS	PRE	0.6	CH	n	n/a	n/a	MC (D)	
15.24	-	-	88	CS	BF	1.9	QZ	n	n/a	n/a	C	
15.24	456	-	89	CS	PRE	1	CH	n	n/a	n/a	MC (D)	plus
15.24	171	-	90	CS	BF	3.3	CH	n	n/a	n/a	MC (D)	plus, "NW"
15.24	87	-	91	CS	BF	0.9	CH	n	n/a	n/a	ND	plus
15.24	460	-	92	CS	BF	1.6	CH	n	n/a	n/a	P, M	plus
15.24	169	-	93	CS	PRE	2.8	CH	n	n/a	n/a	C	plus
15.24	-	-	94	CS	PRE	1.3	CH	n	n/a	n/a	P, M	
15.24	84	-	95	CS	PRE	0.7	CH	n	n/a	n/a	MC (D)	plus
15.24	175	-	96	CS	PRE	1.7	CH	n	n/a	n/a	C	plus
15.24	445	-	97	CS	PP	0.3	CH	n	n/a	n/a	P	plus
15.24	-	-	98	CS	PP	0.3	CH	n	MC	n/a	P	only one notch is present
15.24	-	-	99	CS	PP	0.9	CH	n	MC	Plains side-notched	C	
15.24	-	-	100	CS	PP	0.8	QZ	n	MC	Plains side-notched	MC (D)	
15.24	-	-	101	CS	PP	0.6	CH	n	MC	Plains side-notched	MC (D)	
15.24	-	-	102	CS	PP	0.6	CH	n	MC	Plains side-notched	P, M	
15.24	441	-	103	CS	PP	0.3	CH	n	n/a	n/a	P	plus
15.24	438	-	104	CS	PP	0.5	CH	n	MC	Tri-notched	P	plus
15.24	-	-	105	CS	PP	0.4	CH	n	MC	Avonlea	P	made on a flake blank
15.24	55	-	106	CS	BF	0.4	CH	n	n/a	n/a	P	plus
15.24	-	-	107	CS	PP	0.3	CH	n	EC	n/a	M	
15.24	422	-	108	CS	PP	0.3	CH	n	EC	n/a	M	plus
15.24	-	-	109	CS	BF	0.8	QZ	n	n/a	n/a	M	
15.24	-	-	110	CS	PP	0.3	CH	n	EC	n/a	C	
15.24	71	-	111	CS	PP	0.4	CH	n	EC	n/a	C	plus
15.24	29	-	112	CS	PP	0.6	CH	n	EC	n/a	C	plus
15.24	-	-	113	CS	PP	0.5	CH	n	EC	n/a	P	
15.24	83	-	114	CS	PP	0.2	CH	n	EC	n/a	P	plus
15.24	-	-	115	CS	PP	0.7	CH	n	EC	n/a	M	
15.24	11	-	116	CS	PP	0.5	CH	n	EC	n/a	P, M	plus
15.24	8	-	117	CS	PP	0.8	CH	n	EC	n/a	MC (D)	plus
15.24	133	-	118	CS	PP	0.9	CY	n	EC	n/a	P, M	plus

15.24	166	-	119	CS	PP	0.3	CH	n	MC	Prairie side-notched	C	plus
15.24	-	-	120	CS	PP	0.6	QZ	n	EC	n/a	C	
15.24	340	-	121	CS	PP	0.4	CH	n	EC	n/a	M	plus
15.24	-	-	122	CS	PP	0.4	CH	n	EC	Hogback	P, M	
15.24	446	-	123	CS	PP	0.5	QZ	n	EC	n/a	C	plus
15.24	203	-	124	CS	PP	0.5	QZ	n	EC	n/a	C	plus, made on a flake blank
15.24	101	-	125	CS	PP	0.6	CH	n	EC	Hogback	C	plus
15.24	-	-	126	CS	PP	0.5	CH	n	EC	Hogback	M	
15.24	-	-	127	CS	PP	0.5	CH	n	EC	n/a	M	
15.24	199	-	128	CS	PP	0.5	QZ	n	EC	Hogback	M	plus
15.24	94	-	129	CS	PP	0.4	PW	n	EC	Hogback	P, M	plus
15.24	97	-	130	CS	PP	0.4	CH	n	EC	n/a	P, M	plus
15.24	76	-	131	CS	PP	0.6	CH	n	EC	n/a	M	plus
15.24	141	-	132	CS	PP	0.7	CH	n	EC	Hogback	M	plus
15.24	196	-	133	CS	PP	0.6	CH	n	EC	n/a	C	plus, made on a flake blank
15.24	69	-	134	CS	PP	0.6	CH	n	EC	Hogback	C	plus
15.24	-	-	135	CS	PP	0.7	CH	n	EC	Hogback	M	
15.24	377	-	136	CS	PP	0.7	CH	n	EC	Hogback	M	plus
15.24	53	-	137	CS	PP	0.8	CH	n	EC	Hogback	MC (D)	plus
15.24	-	-	138	CS	PP	0.5	CH	n	EC	n/a	C	
15.24	-	-	139	CS	PP	0.5	QZ	n	EC	n/a	C	
15.24	45	-	140	CS	PP	0.5	CH	n	EC	Hogback	C	plus
15.24	-	-	141	CS	PP	0.5	PW	n	EC	n/a	C	
15.24	-	-	142	CS	PP	0.6	CH	n	EC	n/a	MC (M)	plus
15.24	411	-	143	CS	PP	0.9	CY	n	EC	Hogback	MC (D)	plus, serrated
15.24	44	-	144	CS	PP	1.3	QZ	n	EC	Hogback	MC (M)	plus
15.24	148	-	145	CS	PP	0.8	CH	n	EC	Hogback	C	plus
15.24	176	-	146	CS	PP	0.9	CH	n	EC	Hogback	C	plus
15.24	-	S	147	CS	PP	0.7	CH	n	EC	Hogback	C	
15.24	163	-	148	CS	PP	0.9	CH	n	EC	Hogback	MC (M)	plus
15.24	64	-	149	CS	PP	0.9	CY	n	EC	Hogback	MC (D)	plus
15.24	28	-	150	CS	PP	0.7	CH	n	EC	n/a	MC (M)	plus
15.24	418	-	151	CS	PP	1.2	QZ	n	EC	n/a	C	plus, made on a flake blank
15.24	39	-	152	CS	PP	0.8	CH	n	EC	n/a	MC (M)	plus
15.24	-	-	153	CS	PP	1	CH	n	EC	Hogback	MC (M)	
15.24	41	-	154	CS	PP	1.1	CH	n	EC	n/a	MC (M)	plus
15.24	65	-	155	CS	PP	0.8	CH	n	EC	n/a	M	plus
15.24	-	-	156	CS	PP	0.7	CH	n	EC	n/a	M	
15.24	-	-	157	CS	PP	0.5	CH	n	EC	n/a	P, M	made on a flake blank
15.24	214	-	158	CS	PP	0.7	CH	n	EC	Hogback	M	plus, "D"
15.24	212	-	159	CS	PP	0.5	CH	n	EC	Hogback	P, M	plus, "D", refits with CMPA# 160

15.24	471	-	160	CS	PP	0.2	CH	n	EC	Hogback	D	plus, refits with CMPA #159
15.24	209	-	161	CS	PP	0.5	PW	n	EC	Hogback	D	plus
15.24	136	-	162	CS	PP	0.5	CH	n	EC	n/a	M	plus
15.24	138	-	163	CS	PP	0.4	QZ	n	EC	n/a	P, M	plus
15.24	35	-	164	CS	PP	0.5	QZ	n	EC	n/a	D	plus
15.24	-	-	165	CS	PP	3	CH	n	LA	Pelican Lake	MC (D)	
15.24	-	-	166	CS	PP	2.8	CH	n	LA	Pelican Lake	C	
15.24	19	-	167	CS	PP	2.4	CH	y	LA	Pelican Lake	MC (D)	plus
15.24	195	-	168	CS	PP	3.7	CH	n	LA	Pelican Lake	C	plus
15.24	-	-	169	CS	PP	2	QZ	n	LA	Besant/Outlook	MC (D)	
15.24	1	-	170	CS	PP	1.2	CH	n	LA	Besant/Outlook	MC (D)	plus, made on a flake blank
15.24	-	-	171	CS	PP	2.9	CY	n	LA	Pelican Lake	MC (D)	
15.24	-	-	172	CS	PP	1.2	CH	n	LA	Pelican Lake	P	
15.24	-	S	173	CS	PP	3.2	CH	n	LA	Pelican Lake	C	
15.24	72	-	174	CS	PP	1.8	CH	n	LA	Pelican Lake	MC (D)	plus
15.24	189	-	175	CS	PP	3.3	CH	n	LA	Pelican Lake	MC (D)	plus
15.24	331	-	176	CS	PP	2.9	PW	n	LA	Besant/Outlook	P	plus
15.24	344	-	177	CS	PP	3.5	CH	n	LA	Besant/Outlook	P, M	plus
15.24	-	-	178	CS	PP	2.2	CH	n	LA	Besant/Outlook	P	
15.24	-	-	179	CS	PP	2.4	CY	n	LA	n/a	M	
15.24	332	-	180	CS	PP	0.3	CH	n	EC	n/a	P	plus
15.24	217	-	181	CS	PP	1.7	CH	n	LA	Pelican Lake	P	plus
15.24	356	-	182	CS	PP	1.2	CH	n	LA	Pelican Lake	P, M	plus
15.24	91	-	183	CS	PP	1.7	CH	n	LA	Pelican Lake	P	plus
15.24	215	-	184	CS	PP	0.5	CH	n	EC	n/a	P	plus, "D"
15.24	129	-	185	CS	PP	0.4	CH	n	n/a	n/a	P	plus
15.24	5	-	186	CS	PP	2.4	CH	n	n/a	n/a	M	plus
15.24	-	-	187	CS	BF	1.1	CH	n	n/a	n/a	P	
15.24	210	-	188	CS	PP	0.4	CH	n	n/a	n/a	P	plus
15.24	116	-	189	CS	PP	3.1	CH	n	LA	Besant/Outlook	MC (P)	plus, made on a flake blank
15.24	350	-	190	CS	PP	2.1	CH	n	LA	Besant/Outlook	C	plus, made on a flake blank
15.24	128	-	191	CS	PP	0.6	CH	n	EC	n/a	P	plus
15.24	300	-	192	CS	PP	1.6	CH	n	LA	Pelican Lake	MC (D)	plus
15.24	191	-	193	CS	PP	1.1	CH	n	LA	Besant/Outlook	P	plus
15.24	-	-	194	CS	PP	3.6	CH	y	LA	Pelican Lake	MC (D)	made on a flake blank
15.24	205	-	195	CS	PP	1.5	CH	n	n/a	n/a	P	plus
15.24	90	-	196	CS	PP	2.2	CH	n	n/a	n/a	P	plus
15.24	4	-	197	CS	PP	3.9	CH	n	LA	Pelican Lake	MC (D)	plus, made on a flake blank
15.24	157	-	198	CS	PP	1.2	CH	n	MC	Prairie side-notched	P	plus
15.24	381	-	199	CS	PP	0.5	CH	n	EC	n/a	P	plus
15.24	139	-	200	CS	PP	2.2	CH	n	EC	n/a	MC (D)	plus

15.24	-	-	201	CS	PP	2.2	QZ	n	EA	Mount Albion	C	
15.24	424	-	202	CS	PP	0.3	OB	n	n/a	n/a	P	plus
15.24	95	-	203	CS	PP	0.6	CH	n	n/a	n/a	P	plus
15.24	364	-	204	CS	PP	1.1	CH	n	n/a	n/a	P	plus
15.24	52	-	205	CS	PP	1.2	CH	n	LA	Pelican Lake	P	plus
15.24	397	-	206	CS	PP	1	CY	n	n/a	n/a	P	plus
15.24	423	-	207	CS	PP	0.7	CH	n	MC	Prairie side-notched	P	plus
15.24	-	-	208	CS	PP	2.2	CH	n	EA	Mount Albion	P, M	
15.24	454	-	209	CS	PP	1	CH	n	n/a	n/a	P	plus
15.24	36	-	210	CS	PP	3.6	CH	n	LA	Pelican Lake	MC (D)	plus
15.24	-	-	211	CS	PP	6.5	CH	y	LA	Pelican Lake	C	
15.24	50	-	212	CS	PP	1	CH	n	MA	McKean	C	plus
15.24	-	-	213	CS	PP	1.4	CH	n	MA	McKean	C	
15.24	-	-	214	CS	PP	2.1	CH	n	EA	Mount Albion	MC (D)	
15.24	130	-	215	CS	PP	1.7	CH	y	MC	Prairie side-notched	C	plus
15.24	-	-	216	CS	BF	1.7	QZ	n	n/a	n/a	C	possible preform
15.24	-	-	217	CS	SS	1	CH	n	n/a	n/a	ND	
15.24	-	-	218	CS	SPV	1.6	CH	n	n/a	n/a	ND	
15.24	-	-	219	CS	EMF	2.8	CH	n	n/a	n/a	ND	
15.24	-	-	220	CS	MS	4.6	CH	n	n/a	n/a	ND	
15.24	-	-	221	CS	MS	1.5	PW	n	n/a	n/a	ND	
15.24	-	-	222	CS	EMF	1.3	CY	y	n/a	n/a	ND	
15.24	288	-	223	CS	EMF	2.3	CH	n	n/a	n/a	ND	plus
15.24	-	-	224	CS	EMF	1.5	CH	n	n/a	n/a	P	"D"
15.24	-	-	225	CS	MS	3.3	CH	n	n/a	n/a	ND	
15.24	-	-	226	CS	EMF	2.8	CH	n	n/a	n/a	ND	
15.24	150	-	227	CS	EMF	0.7	CH	n	n/a	n/a	ND	plus
15.24	-	-	228	CS	EMF	1.8	CH	n	n/a	n/a	ND	
15.24	-	-	229	CS	ES	0.6	CH	y	n/a	n/a	C	
15.24	7	-	230	CS	BF	1.3	CH	n	n/a	n/a	P	plus
15.24	-	-	231	CS	SS	2.3	CH	n	n/a	n/a	P	
15.24	-	-	232	CS	EMF	4.1	CH	n	n/a	n/a	ND	
15.24	93	-	233	CS	EMF	1	CH	n	n/a	n/a	D, M	plus
15.24	-	-	234	CS	EMF	2	OB	n	n/a	n/a	ND	
15.24	-	-	235	CS	CV	1.2	CH	n	n/a	n/a	D, M	
15.24	-	-	236	CS	EMF	0.5	CH	n	n/a	n/a	ND	
15.24	-	-	237	CS	EMF	2.6	CH	y	n/a	n/a	C	
15.24	207	-	238	CS	EMF	3.1	CH	n	n/a	n/a	M	plus
15.24	79	-	239	CS	EMF	2.3	CH	y	n/a	n/a	ND	plus
15.24	-	-	240	CS	EMF	1.6	PW	y	n/a	n/a	ND	
15.24	123	-	241	CS	EMF	1	CH	n	n/a	n/a	P	

15.24	-	-	242	CS	EMF	1.4	CH	n	n/a	n/a	P
15.24	42	-	243	CS	ES	10.4	QZ	n	n/a	n/a	D plus
15.24	-	-	244	CS	MS	6.6	CH	n	n/a	n/a	ND
15.24	-	-	245	CS	EMF	2.8	CH	n	n/a	n/a	ND
15.24	74	-	246	CS	EMF	8.2	CH	n	n/a	n/a	C plus
15.24	-	-	247	CS	EMF	7.9	PW	n	n/a	n/a	C
15.24	-	-	248	CS	EMF	5.3	CY	n	n/a	n/a	C
15.24	20	-	249	CS	EMF	6.1	CH	y	n/a	n/a	ND plus
15.24	-	-	250	CS	MS	13	CH	n	n/a	n/a	C
15.24	302	-	251	CS	MS	1.7	PW	n	n/a	n/a	D plus
15.24	-	-	252	CS	MS	9.3	CH	n	n/a	n/a	ND
15.24	14	-	253	CS	EMF	3.4	CH	n	n/a	n/a	ND plus
15.24	115	-	254	CS	EMF	2.6	CH	n	n/a	n/a	ND plus
15.24	85	-	255	CS	EMF	4.8	PW	n	n/a	n/a	ND plus
15.24	-	-	256	CS	SS	14.2	PW	n	n/a	n/a	C
15.24	-	-	257	CS	MS	12.8	CH	n	n/a	n/a	P, M
15.24	220	-	258	CS	ES	1.9	CH	y	n/a	n/a	C plus
15.24	-	S	259	CS	EMF	2.1	CH	n	n/a	n/a	C
15.24	-	N	260	CS	EMF	3.4	CH	n	n/a	n/a	ND
15.24	452	-	261	CS	ES	1.4	CH	n	n/a	n/a	D plus
15.24	325	-	262	CS	EMF	3.7	CH	n	n/a	n/a	ND
15.24	348	-	263	CS	EMF	12.2	CH	n	n/a	n/a	ND plus
15.24	-	-	264	CS	ES	4.9	CH	n	n/a	n/a	C
15.24	-	-	265	CS	EMF	9.5	PW	n	n/a	n/a	ND
15.24	-	S	266	CS	CV	6.6	CH	n	n/a	n/a	D, M
15.24	-	-	267	CS	ES	9.8	CH	y	n/a	n/a	C
15.24	-	-	268	CS	EMF	5	PW	n	n/a	n/a	ND
15.24	173	-	269	CS	ES	2.7	CH	n	n/a	n/a	C plus
15.24	-	-	270	CS	ES	3.8	CH	n	n/a	n/a	C
15.24	-	-	271	CS	EMF	9	CY	n	n/a	n/a	C
15.24	-	-	272	CS	ES	7.5	CH	n	n/a	n/a	D
15.24	-	-	273	CS	ES	5	CH	n	n/a	n/a	MC (M)
15.24	142	-	274	CS	ES	2.9	CH	n	n/a	n/a	C plus
15.24	62	-	275	CS	EMF	4.3	CH	n	n/a	n/a	M plus
15.24	-	-	276	CS	ES	1.1	CH	y	n/a	n/a	D
15.24	-	-	277	CS	MS	0.9	CH	n	n/a	n/a	C
15.24	128	-	278	CS	ES	2.4	PW	n	n/a	n/a	C plus
15.24	281	-	279	CS	SS	0.9	CH	n	n/a	n/a	P plus
15.24	-	-	280	CS	ES	1.2	CH	n	n/a	n/a	D
15.24	-	-	281	CS	ES	1.6	CH	n	n/a	n/a	D "D"
15.24	-	-	282	CS	ES	3.8	CH	n	n/a	n/a	C

15.24	-	-	283	CS	ES	10.4	CH	n	n/a	n/a	C	
15.24	-	-	284	CS	ES	4.9	CH	n	n/a	n/a	MC (D, M)	
15.24	-	-	285	CS	ES	4.7	CH	y	n/a	n/a	MC (P)	
15.24	290	-	286	CS	SS	15.9	CH	n	n/a	n/a	C	plus
15.24	-	-	287	CS	ES	11.2	CH	n	n/a	n/a	C	
15.24	14	-	288	CS	ES	11.3	CH	n	n/a	n/a	C	
15.24	-	-	289	CS	ES	14.9	CH	n	n/a	n/a	C	
15.24	122	-	290	CS	ES	12.5	QZ	n	n/a	n/a	C	
15.24	312	-	291	CS	ES	4.5	CH	n	n/a	n/a	D	plus
15.24	205	-	292	CS	EMF	5.5	CH	n	n/a	n/a	P	plus
15.24	-	-	293	CS	EMF	5.9	CH	n	n/a	n/a	C	
15.24	24	-	294	CS	MS	4.8	CH	n	n/a	n/a	M	plus
15.24	131	-	295	CS	MS	3.8	CH	n	n/a	n/a	P	plus
15.24	297	-	296	CS	ES	5.6	CH	y	n/a	n/a	MC (M)	plus
15.24	291	-	297	CS	ES	8.3	PW	n	n/a	n/a	D	plus
15.24	370	-	298	CS	ES	3.9	CH	n	n/a	n/a	D	plus
15.24	-	-	299	CS	ES	2.4	CH	n	n/a	n/a	C	
15.24	-	-	300	CS	EMF	1.6	CH	n	n/a	n/a	C	
15.24	-	-	301	CS	ES	2.1	CH	n	n/a	n/a	C	
15.24	282	-	302	CS	ES	1.2	CH	n	n/a	n/a	C	plus
15.24	-	-	303	CS	ES	4.6	CH	y	n/a	n/a	C	
15.24	-	-	304	CS	ES	4.8	CH	y	n/a	n/a	C	
15.24	-	-	305	CS	ES	4.1	CH	y	n/a	n/a	C	
15.24	34	-	306	CS	ES	9.1	CH	y	n/a	n/a	C	plus
15.24	49	-	307	CS	ES	1.8	CH	y	n/a	n/a	C	plus
15.24	-	-	308	CS	ES	3.8	CH	y	n/a	n/a	C	
15.24	58	-	309	CS	ES	1.4	PW	y	n/a	n/a	D	plus
15.24	-	-	310	CS	ES	2.4	PW	n	n/a	n/a	D	
15.24	180	-	311	CS	ES	2.2	CH	n	n/a	n/a	C	plus
15.24	70	-	312	CS	ES	1.8	CH	y	n/a	n/a	C	plus
15.24	-	-	313	CS	ES	1.7	CH	n	n/a	n/a	D	
15.24	111	-	314	CS	ES	2.1	CH	n	n/a	n/a	C	plus
15.24	168	-	315	CS	MS	1.5	CH	n	n/a	n/a	MC (M)	plus
15.24	-	-	316	CS	ES	1.6	CH	n	n/a	n/a	C	
15.24	208	-	317	CS	MS	0.7	CH	n	n/a	n/a	D	plus
15.24	314	-	318	CS	ES	1.1	CY	n	n/a	n/a	D	
15.24	219	-	319	CS	EMF	0.8	CH	n	n/a	n/a	C	plus
15.24	-	-	320	CS	ES	1.7	CH	n	n/a	n/a	C	
15.24	146	-	321	CS	ES	0.4	CH	n	n/a	n/a	D	plus
15.24	-	-	322	CS	ES	1.1	CH	n	n/a	n/a	D	
15.24	68	-	323	CS	ES	2.3	CH	n	n/a	n/a	C	plus

15.24	-	-	324	CS	ES	1.8	CH	n	n/a	n/a	C
15.24	92	-	325	CS	ES	3	CH	y	n/a	n/a	D plus
15.24	182	-	326	CS	ES	3.4	CH	n	n/a	n/a	M plus
15.24	16	-	327	CS	ES	3.8	CH	n	n/a	n/a	MC (M) plus
15.24	362	-	328	CS	ES	1.1	CH	n	n/a	n/a	C
15.24	-	-	329	CS	ES	3.1	CH	n	n/a	n/a	D
15.24	-	-	330	CS	ES	2.3	PW	n	n/a	n/a	D
15.24	25	-	331	CS	MS	2.4	CH	n	n/a	n/a	D plus
15.24	440	-	332	CS	ES	0.4	CH	n	n/a	n/a	D plus
15.24	-	-	333	CS	ES	2.8	CH	n	n/a	n/a	C
15.24	427	-	334	CS	ES	0.9	CH	n	n/a	n/a	C plus
15.24	156	-	335	CS	MS	1.9	CH	n	n/a	n/a	P plus
15.24	-	-	336	CS	ES	2.4	CH	y	n/a	n/a	C
15.24	315	-	337	CS	ES	2.5	CH	n	n/a	n/a	D, M plus
15.24	177	-	338	CS	EMF	1.5	CH	n	n/a	n/a	C plus
15.24	-	-	339	CS	ES	1.5	CH	n	n/a	n/a	C
15.24	-	-	340	CS	ES	1.9	PW	n	n/a	n/a	C
15.24	134	-	341	CS	EMF	1.3	CH	n	n/a	n/a	D plus
15.24	112	-	342	CS	EMF	1	CH	n	n/a	n/a	ND plus
15.24	400	-	343	CS	BF	0.2	CH	n	n/a	n/a	D plus
15.24	170	-	344	CS	BF	0.4	CH	n	n/a	n/a	M plus
15.24	218	-	345	CS	BF	0.6	CH	n	n/a	n/a	D plus
15.24	396	-	346	CS	BF	0.2	CH	n	n/a	n/a	P plus
15.24	444	-	347	CS	BF	1	CH	n	n/a	n/a	P plus
15.24	370	-	348	CS	BF	1.5	QZ	n	n/a	n/a	D plus
15.24	164	-	349	CS	BF	0.3	CH	n	n/a	n/a	P plus
15.24	369	-	350	CS	EMF	1.3	CH	n	n/a	n/a	D plus
15.24	-	-	351	CS	BF	2.8	CY	n	n/a	n/a	M
15.24	-	-	352	CS	BF	2.4	CH	n	n/a	n/a	M
15.24	349	-	353	CS	BF	0.8	CH	n	n/a	n/a	M plus
15.24	169	-	354	CS	BF	0.5	QZ	n	n/a	n/a	M plus
15.24	394	-	355	CS	EMF	0.8	CH	n	n/a	n/a	M plus
15.24	433	-	356	CS	BF	0.1	CH	n	n/a	n/a	M plus
15.24	118	-	357	CS	BF	0.9	CH	n	n/a	n/a	D plus
15.24	51	-	358	CS	BF	1.3	CH	n	n/a	n/a	P plus
15.24	18	-	359	CS	BF	2.7	QZ	n	n/a	n/a	P plus
15.24	60	-	360	CS	BF	12.3	QZ	n	n/a	n/a	M plus
15.24	17	-	361	CS	BF	1.1	CH	n	n/a	n/a	ND plus
15.24	-	-	362	CS	BF	2.2	CH	n	n/a	n/a	M
15.24	184	-	363	CS	BF	11.6	QZ	n	n/a	n/a	C plus, in 2 pieces
15.24	145	-	364	CS	BF	0.4	CH	y	n/a	n/a	D plus

15.24	-	-	365	CS	BF	0.1	CH	n	n/a	n/a	D
15.24	192	-	366	CS	BF	1	CH	n	n/a	n/a	D plus
15.24	106	-	367	CS	BF	0.8	PW	n	n/a	n/a	D plus
15.24	-	-	368	CS	BF	0.1	CH	n	n/a	n/a	M
15.24	147	-	369	CS	PP	0.3	CH	n	n/a	n/a	P plus
15.24	31	-	370	CS	BF	0.1	CH	n	n/a	n/a	D plus
15.24	410	-	371	CS	BF	0.1	CH	n	n/a	n/a	ND plus
15.24	-	-	372	CS	BF	0.8	CH	n	n/a	n/a	M
15.24	144	-	373	CS	PP	0.6	CH	n	n/a	n/a	P plus
15.24	-	-	374	CS	BF	1.3	CH	n	n/a	n/a	D
15.24	-	-	375	CS	MS	2.4	CH	n	n/a	n/a	C
15.24	56	-	376	CS	BF	0.9	CH	n	n/a	n/a	D plus
15.24	98	-	377	CS	BF	0.6	CH	n	n/a	n/a	D plus
15.24	-	-	378	CS	BF	0.8	CH	n	n/a	n/a	M
15.24	-	-	379	CS	BF	1	CH	n	n/a	n/a	D
15.24	126	-	380	CS	BF	0.8	CH	n	n/a	n/a	ND plus
15.24	26	-	381	CS	BF	0.3	CH	n	n/a	n/a	D plus
15.24	-	-	382	CS	BF	0.1	CH	n	n/a	n/a	ND
15.24	158	-	383	CS	BF	0.2	CH	n	n/a	n/a	M plus
15.24	318	-	384	CS	BF	0.2	CH	n	n/a	n/a	ND plus
15.24	179	-	385	CS	BF	1.1	CH	n	n/a	n/a	D plus
15.24	371	-	386	CS	BF	0.5	CH	n	n/a	n/a	M plus
15.24	-	-	387	CS	BF	3.5	CH	n	n/a	n/a	M
15.24	-	-	388	CS	BF	5.4	CH	n	n/a	n/a	P, M
15.24	181	-	389	CS	BF	3.2	CH	n	n/a	n/a	M plus
15.24	-	-	390	CS	BF	1.1	CH	n	n/a	n/a	M
15.24	-	-	391	CS	BF	2.8	CH	n	n/a	n/a	M, D
15.24	159	-	392	CS	BF	0.4	B	n	n/a	n/a	ND plus
15.24	293	-	393	CS	BF	2.6	B	n	n/a	n/a	C plus
15.24	187	-	394	CS	BF	2.6	CH	n	n/a	n/a	M plus
15.24	102	-	395	CS	BF	2.1	CH	n	n/a	n/a	M plus
15.24	303	-	396	CS	MS	5.9	CH	y	n/a	n/a	ND plus
15.24	96	-	397	CS	BF	1.9	CH	n	n/a	n/a	D plus
15.24	-	-	398	CS	ES	7.9	QZ	n	n/a	n/a	D, M
15.24	61	-	399	CS	BF	10.2	QZ	n	n/a	n/a	D plus
15.24	172	-	400	CS	BF	11.7	CH	n	n/a	n/a	P plus, "NN"
15.24	-	-	401	CS	BF	1.3	QZ	n	n/a	n/a	D
15.24	-	-	402	CS	BF	1.1	CH	n	n/a	n/a	MC (P)
15.24	125	-	403	CS	BF	1.3	CH	n	n/a	n/a	D plus
15.24	204	-	404	CS	BF	0.6	QZ	n	n/a	n/a	D plus
15.24	-	-	405	CS	BF	0.6	QZ	n	n/a	n/a	D

15.24	33	-	406	CS	BF	1.3	CH	n	n/a	n/a	D plus
15.24	-	-	407	CS	BF	1.5	CH	n	n/a	n/a	M
15.24	10	-	408	CS	EMF	1.4	CH	n	n/a	n/a	ND plus
15.24	46	-	409	CS	MS	2.3	QZ	n	n/a	n/a	M plus
15.24	339	-	410	CS	BF	1.6	CH	n	n/a	n/a	D plus
15.24	48	-	411	CS	BF	18.2	CH	n	n/a	n/a	C plus
15.24	140	-	412	CS	BF	0.9	PW	n	n/a	n/a	P plus
15.24	-	-	413	CS	BF	0.7	CH	n	n/a	n/a	P
15.24	294	-	414	CS	BF	1.1	CH	n	n/a	n/a	P plus
15.24	372	-	415	CS	MS	1.3	CH	n	n/a	n/a	P plus
15.24	199	-	416	CS	BF	0.9	CH	n	n/a	n/a	D plus
15.24	103	-	417	CS	BF	0.7	CH	n	n/a	n/a	D plus
15.24	-	-	418	CS	BF	1.1	CH	n	n/a	n/a	D
15.24	301	-	419	CS	BF	0.2	CH	n	n/a	n/a	D plus
15.24	-	-	420	CS	BF	1.9	CH	n	n/a	n/a	D made on a flake blank
15.24	-	-	421	CS	BF	4.5	CH	n	n/a	n/a	D
15.24	425	-	422	CS	BF	2.9	CH	n	n/a	n/a	D plus
15.24	79	-	423	CS	BF	3.1	CH	n	n/a	n/a	P plus
15.24	-	-	424	CS	BF	0.2	CH	n	n/a	n/a	M "S"
15.24	197	-	425	CS	MS	1.2	CH	n	n/a	n/a	MD
15.24	-	-	426	CS	EMF	0.8	CH	n	n/a	n/a	C
15.24	-	-	427	CS	BF	0.9	CH	n	n/a	n/a	D made on a flake blank
15.24	299	-	428	CS	BF	0.6	CH	n	n/a	n/a	M plus
15.24	-	-	429	CS	BF	2.2	CH	n	n/a	n/a	P, M
15.24	183	-	430	CS	BF	2.5	CH	n	n/a	n/a	M plus
15.24	322	-	431	CS	BF	1.1	CH	n	n/a	n/a	M plus
15.24	127	-	432	CS	BF	0.7	CH	n	n/a	n/a	M plus
15.24	284	-	433	CS	BF	1.1	CH	n	n/a	n/a	ND plus
15.24	120	-	434	CS	BF	4.8	CH	n	n/a	n/a	ND plus
15.24	-	-	435	CS	BF	4.1	CH	n	n/a	n/a	ND
15.24	389	-	436	CS	BF	3.6	CH	n	n/a	n/a	ND plus
15.24	382	-	437	CS	BF	3.6	CH	n	n/a	n/a	C plus
15.24	66	-	438	CS	BF	0.8	CY	n	n/a	n/a	D plus
15.24	283	-	439	CS	BF	1.6	CY	n	n/a	n/a	MC (P) plus
15.24	43	-	440	CS	BF	0.5	CH	n	n/a	n/a	D plus
15.24	-	-	441	CS	BF	0.3	CH	n	n/a	n/a	D
15.24	375	-	442	CS	BF	4.5	CY	n	n/a	n/a	M plus
15.24	-	-	443	CS	BF	4.7	CY	n	n/a	n/a	C
15.24	-	-	444	CS	BF	10.3	QZ	n	n/a	n/a	D
15.24	-	-	445	CS	BF	7.2	PW	n	n/a	n/a	P
15.24	12	-	446	CS	BF	9.9	CH	n	n/a	n/a	P plus

15.24	67	-	447	CS	BF	1.2	CH	n	n/a	n/a	D	plus
15.24	124	-	448	CS	BF	0.3	CH	n	n/a	n/a	ND	plus
15.24	-	-	449	CS	BF	0.5	CH	n	n/a	n/a	D	
15.24	-	-	450	CS	MS	1	CH	n	n/a	n/a	D	
15.24	-	-	451	CS	MS	0.9	CH	n	n/a	n/a	ND	
15.24	-	-	452	CS	EMF	1.6	CH	y	n/a	n/a	M	
15.24	162	-	453	CS	EMF	4.9	CH	n	n/a	n/a	ND	plus
15.24	-	-	454	CS	SS	10.2	CH	y	n/a	n/a	D	
15.24	-	-	455	CS	BF	1.3	CH	n	n/a	n/a	M	
15.24	57	-	456	CS	BF	5.5	CH	y	n/a	n/a	D	plus
15.24	337	-	457	CS	BF	0.8	CH	n	n/a	n/a	ND	plus
15.24	318	-	458	CS	BF	1	CH	n	n/a	n/a	ND	plus
15.24	-	-	459	CS	SS	14.3	CH	y	n/a	n/a	P, M	
15.24	384	-	460	CS	SS	8.8	CH	n	n/a	n/a	C	plus
15.24	194	-	461	CS	SS	4.4	CH	n	n/a	n/a	P, M	plus
15.24	420	-	462	CS	SS	6.5	CH	n	n/a	n/a	C	plus
15.24	188	-	463	CS	ES	5.8	CH	n	n/a	n/a	C	plus
15.24	319	-	464	CS	SS	14.7	QZ	n	n/a	n/a	C	plus
15.24	110	-	465	CS	BF	1.2	CH	n	n/a	n/a	M	plus
15.24	114	-	466	CS	BF	1.9	QZ	n	n/a	n/a	M	plus
15.24	462	-	467	CS	BF	2.7	CH	n	n/a	n/a	M	plus
15.24	501	-	468	CS	PP	2.2	CH	n	MA	McKean	C	plus
												plus, a question mark is next to the specimen
15.24	38	-	469	CS	PP	4.5	CH	n	MA	McKean	C	#
15.24	88	-	470	CS	PP	3.5	CH	n	MA	McKean	C	plus
15.24	-	-	471	CS	PP	7.9	CH	n	LP	James Allen	MC (D)	"D"
15.24	-	A	472	CS	PP	2.2	CH	n	MA	McKean	P	plus
15.24	488	-	473	CS	ES	5.2	CH	n	n/a	n/a	D	plus
15.24	522	-	474	CS	EMF	3.8	CH	y	n/a	n/a	M	plus
15.24	442	-	475	CS	ES	9.3	CH	y	n/a	n/a	M	plus
15.24	9	-	476	CS	SS	3.2	CH	n	n/a	n/a	P	plus
15.24	486	-	477	CS	EMF	2.7	CH	n	n/a	n/a	P	plus
15.24	357	-	478	CS	SS	4.6	CH	n	n/a	n/a	M	plus
15.24	-	N	479	CS	EMF	3.4	CH	n	n/a	n/a	ND	
15.24	354	-	480	CS	SS	15.4	CH	n	n/a	n/a	P, M	plus
15.24	-	N	481	CS	SS	2.7	CY	n	n/a	n/a	M	
15.24	38	-	482	CS	PP	1.3	CH	n	MA	McKean	P	plus
15.24	135	-	483	CS	PP	1.6	CH	n	LP	n/a	P	plus
15.24	-	S	484	CS	EMF	3.6	CH	n	n/a	n/a	C	
15.24	398	-	485	CS	EMF	0.8	CH	n	n/a	n/a	C	plus
15.24	-	S	486	CS	EMF	1.1	CH	n	n/a	na/	C	

15.24	-	-	487	CS	ES	15.5	CH	y	n/a	n/a	MC (P)	
15.24	-	-	488	CS	BF	0.5	CH	n	n/a	n/a	ND	possibly a graver
15.24	-	-	489	CS	EMF	1.5	CH	n	n/a	n/a	M	
15.24	469	-	490	CS	MS	2.4	CH	n	n/a	n/a	M	plus
15.24	-	N	491	CS	EMF	1.9	CH	n	n/a	n/a	ND	
15.24	-	-	492	CS	MS	7.5	CH	n	n/a	n/a	P, M	
15.24	-	-	493	CS	PP	2.8	CH	n	LP	n/a	P	
15.24	324	-	494	CS	PP	3.7	QZ	n	LP	n/a	P	plus
15.24	342	-	495	CS	PP	2.3	CH	n	LP	n/a	P	plus
15.24	328	-	496	CS	PP	0.7	CH	n	LP	n/a	P	plus
15.24	-	-	497	CS	SS	4.9	CH	n	n/a	n/a	D	plus
15.24	386	-	498	CS	ES	5.6	CH	n	n/a	n/a	C	plus, "D"
15.24	-	-	499	CS	SS	14.6	CH	n	n/a	n/a	M	
15.24	-	-	500	CS	PP	11	CH	n	LP	Alberta	C	
15.24	448	-	501	CS	EMF	3	CH	n	n/a	n/a	C	plus
15.24	-	A	502	CS	EMF	3.6	QU	n	n/a	n/a	C	
15.24	-	-	503	CS	ES	4.2	CH	n	n/a	n/a	C	
15.24	306	-	504	CS	DR	3.7	CH	n	n/a	n/a	P	plus, refits with CMPA #138
15.24	83	-	505	CS	DR	1.5	CH	n	n/a	n/a	D	plus, refits with CMPA #137
15.24	-	-	506	CS	BF	4.4	CH	n	n/a	n/a	M	
15.24	498	-	507	CS	PP	1.5	CH	n	LA	Pelican Lake	C	
15.24	-	N	508	CR	NAP	1	O	n	EC	n/a	BO	exterior is cord-marked
15.24	-	N	509	CR	NAP	1.5	O	n	EC	n/a	BO	exterior is cord-marked
15.24	-	N	510	CR	NAP	0.6	O	n	EC	n/a	BO	exterior is cord-marked
15.24	165	-	511	CR	NAP	3.4	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	512	CR	NAP	2.5	O	n	EC	n/a	BO	exterior is cord-marked
15.24	160	-	513	CR	NAP	3.4	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	514	CR	NAP	2.4	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	515	CR	NAP	2.3	O	n	EC	n/a	BO	exterior is cord-marked
15.24	40	-	516	CR	NAP	2.6	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	517	CR	NAP	7.1	O	n	EC	n/a	BO	exterior is cord-marked
15.24	317	-	518	CR	NAP	1.6	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	180	-	519	CR	NAP	1.5	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	159	-	520	CR	NAP	0.8	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	132	-	521	CR	NAP	2.3	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	202	-	522	CR	NAP	1.9	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	523	CR	NAP	3.6	O	n	EC	n/a	BO	exterior is cord-marked
15.24	338	-	524	CR	NAP	1	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	525	CR	NAP	2.7	O	n	EC	n/a	BO	exterior is cord-marked
15.24	100	-	526	CR	NAP	2.4	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	385	-	527	CR	NAP	2.9	O	n	EC	n/a	BO	exterior is cord-marked, plus

15.24	6	-	528	CR	NAP	2.3	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	59	-	529	CR	NAP	1	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	530	CR	NAP	0.9	O	n	EC	n/a	BO	exterior is cord-marked
15.24	380	-	531	CR	NAP	1	O	n	EC	n/a	BO	exterior is cord-marked
15.24	289	-	532	CR	NAP	1.9	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	533	CR	NAP	2.6	O	n	EC	n/a	BO	exterior is cord-marked
15.24	285	-	534	CR	NAP	1.3	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	535	CR	NAP	1.1	O	n	EC	n/a	BO	exterior is cord-marked
15.24	22	-	536	CR	NAP	0.8	O	n	n/a	n/a	BO	exterior is eroded and difficult to identify, plus
15.24	385	-	537	CR	NAP	1.3	O	n	EC	n/a	BO	exterior is cord marked, plus
15.24	333	-	538	CR	NAP	0.8	O	n	n/a	n/a	BO	exterior is eroded and difficult to identify, plus
15.24	417	-	539	CR	NAP	1.5	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	99	-	540	CR	NAP	0.9	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	415	-	541	CR	NAP	0.8	O	n	n/a	n/a	BO	exterior is eroded and difficult to identify
15.24	80	-	542	CR	NAP	2.2	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	47	-	543	CR	NAP	1.7	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	-	-	544	CR	NAP	1.3	O	n	EC	n/a	BO	exterior is cord-marked
15.24	-	-	545	CR	NAP	0.9	O	n	EC	n/a	R	exterior is cord-marked
15.24	-	-	546	CR	NAP	0.6	O	n	n/a	n/a	BO	exterior is eroded and difficult to identify
15.24	23	-	547	CR	NAP	0.4	O	n	n/a	n/a	BO	exterior is eroded and difficult to identify, plus
15.24	59	-	548	CR	NAP	2.2	O	n	EC	n/a	BO	exterior is cord-marked, plus
15.24	193	-	549	CS	BF	1.2	CY	n	n/a	n/a	D	plus
15.24	-	-	550	GR	GRD	58.8	B	n	n/a	n/a	C	
15.24	-	-	551	CS	PP	2.7	CH	n	EP	n/a	P	
15.24	-	S	552	CS	PP	3	CH	n	LP	James Allen	P	
15.24	472	-	553	CS	MS	3.3	CH	y	n/a	n/a	C	plus
15.24	-	-	554	CS	PP	1.3	CH	n	LA	Pelican Lake	C	
15.24	529	-	555	CS	EMF	1.1	CH	n	n/a	n/a	P	plus
15.24	119	-	556	CS	BF	0.5	OB	n	n/a	n/a	D	plus
15.24	190	-	557	CS	EMF	4.2	OB	n	n/a	n/a	ND	plus
15.24	185	-	558	CS	BF	1.7	OB	n	n/a	n/a	P	plus
15.24	82	-	559	CS	BF	1.6	OB	n	n/a	n/a	D	plus
15.24	153	-	560	GS	MET	-	SA	n	n/a	n/a	MC (D)	
15.24	474	-	561	CS	HAM	-	ND	n	n/a	n/a	C	
15.24	-	-	562	GS	MAN	-	SA	n	n/a	n/a	C	
15.24	3	-	563	GS	MAN	-	SA	n	n/a	n/a	C	
15.24	-	-	564	GS	MAN	-	GR	n	n/a	n/a	L	
15.24	-	-	565	GS	MAN	-	SA	n	n/a	n/a	D	

15.24	287	-	566	GS	MAN	-	AN	n	n/a	n/a	C
15.24	-	-	567	GS	MAN	-	MQ	n	n/a	n/a	MC (D)
15.24	-	-	568	GS	MAN	-	SA	n	n/a	n/a	D
15.24	-	-	569	GS	MAN	-	SA	n	n/a	n/a	L
15.24	-	-	570	GS	MAN	-	SA	n	n/a	n/a	D
15.24	-	-	571	GS	MAN	-	MQ	n	n/a	n/a	C
15.24	-	-	572	GS	MAN	-	SA	n	n/a	n/a	L
15.24	-	-	573	GS	MAN	-	SA	n	n/a	n/a	C
15.24	321	-	574	GS	MAN	-	MQ	n	n/a	n/a	L
15.24	-	-	575	GS	MAN	-	GR	n	n/a	n/a	D
15.24	383	-	576	GS	MAN	-	SA	n	n/a	n/a	D
15.24	-	-	577	GS	MAN	-	GR	n	n/a	n/a	D, L
15.24	403	-	578	GS	MET	-	SA	n	n/a	n/a	L
15.24	-	-	579	GS	GRD	-	SA	n	n/a	n/a	L
15.24	-	-	580	GS	GRD	-	SA	n	n/a	n/a	L
15.24	-	-	581	GS	MAN	-	SA	n	n/a	n/a	L
15.24	-	-	582	GS	MAN	-	SA	n	n/a	n/a	D
15.24	526	-	583	CS	HAM	-	QZ	n	n/a	n/a	D
15.24	465	-	584	GS	MAN	-	MQ	n	n/a	n/a	C
15.24	-	-	585	GS	MAN	-	SA	n	n/a	n/a	MC (D)
15.24	476	-	586	GS	MAN	-	SA	n	n/a	n/a	D
15.24	512	-	587	GS	MET	-	SA	n	n/a	n/a	L
15.24	516	-	588	GS	MET	-	SA	n	n/a	n/a	L
15.24	-	N	589	GS	MAN	-	SA	n	n/a	n/a	D
15.24	346	-	590	GS	MET	-	SA	n	n/a	n/a	L
15.24	81	-	591	GS	MAN	-	SA	n	n/a	n/a	L
15.24	436	-	592	GS	MET	-	SA	n	n/a	n/a	L
15.24	473	-	593	GS	MET	-	SA	n	n/a	n/a	L
15.24	-	-	594	GS	MAN	-	SA	n	n/a	n/a	D
15.24	413	-	595	GS	MAN	-	SA	n	n/a	n/a	D, L
15.24	-	-	596	GS	MAN	-	SA	n	n/a	n/a	D
15.24	-	-	597	GS	GRD	-	SA	n	n/a	n/a	L
15.24	-	-	598	GS	GRD	-	SA	n	n/a	n/a	L
15.24	-	-	599	GS	GRD	-	SA	n	n/a	n/a	L
15.24	-	-	600	GS	GRD	-	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
48.16	-	D	1	CS	PP	2.6	CH	n	LP	James Allen	P	
48.16	-	-	2	CS	PP	2.9	QZ	n	LP	James Allen	P	
48.16	-	A	3	CS	PP	2	CH	n	LP	Eden	P	
48.16	-	-	4	CS	PP	1.4	CH	n	LP	n/a	P	
48.16	-	C	5	CS	PP	3.6	CH	n	LP	n/a	P	
48.16	-	-	6	CS	PP	0.7	CH	n	MC	Plains side-notched	P	
48.16	-	-	7	CS	PP	0.7	CH	n	MC	Plains side-notched	C	
48.16	-	-	8	CS	PP	0.4	CH	n	MC	Plains side-notched	P	
48.16	-	A	9	CS	PP	0.3	CH	n	MC	Plains side-notched	P	
48.16	-	-	10	CS	PP	0.3	CH	n	MC	Plains side-notched	P	
48.16	-	-	11	CS	PP	0.5	CH	n	MC	Plains side-notched	P	
48.16	-	-	12	CS	PP	0.4	CH	n	MC	Plains side-notched	P	
48.16	-	-	13	CS	PP	0.4	CH	n	MC	Plains side-notched	P	
48.16	-	-	14	CS	PP	0.8	CH	y	EC	Hogback	P, M	
48.16	-	-	15	CS	PP	0.8	CH	n	EC	Hogback	P, M	
48.16	-	-	16	CS	PP	0.5	CH	n	EC	Hogback	C	
48.16	-	A	17	CS	PP	0.5	CH	n	EC	Hogback	C	
48.16	-	-	18	CS	PP	0.5	CH	n	EC	Hogback	P	
48.16	-	-	19	CS	PP	0.6	QZ	n	EC	Hogback	P, M	
48.16	-	A	20	CS	PP	0.2	CH	n	EC	Hogback	P	
48.16	-	A	21	CS	PP	0.6	CH	n	EC	Hogback	P, M	
48.16	-		22	CS	PP	0.3	CH	n	EC	Hogback	P, M	
48.16	-	-	23	CS	PP	0.4	CH	n	EC	Hogback	P, M	made on a flake blank
48.16	-	A	24	CS	PP	7.8	CH	n	EA	n/a	C	
48.16	-	-	25	CS	PP	6	PW	n	EA	n/a	P, M	
48.16	-	A	26	CS	PP	3	CH	n	EA	n/a	P	
48.16	-	-	27	CS	PP	1.9	CH	n	EA	n/a	P	
48.16	-	-	28	CS	PP	2.5	CH	n	LA	Pelican Lake	P, M	
48.16	-	-	29	CS	PP	1	CH	n	LA	Pelican Lake	P	
48.16	-	-	30	CS	PP	1.9	CH	n	LA	Pelican Lake	C	
48.16	-	-	31	CS	PP	1.1	CH	n	LA	Besant	C	
48.16	-	A	32	CS	PP	1.4	CH	n	LA	Besant	MC (T)	
48.16	-	-	33	CS	PP	1.6	PW	n	LA	Besant	C	
48.16	-	A	34	CS	PP	1.3	CH	n	LA	Besant	C	
48.16	-	A	35	CS	PP	1.4	CH	n	LA	Besant	C	
48.16	-	-	36	CS	PP	0.8	CH	n	LA	Besant	P	made on a flake blank
48.16	-	D	37	CS	PP	1.5	CH	n	MA	Duncan-Hanna	C	
48.16	-	A	38	CS	PP	2	CH	n	MA	Duncan-Hanna	C	

48.16	-	-	39	CS	PP	1	CH	n	MA	Duncan-Hanna	P	
48.16	-	-	40	CS	PP	1.2	CH	n	MA	Duncan-Hanna	P	
48.16	-	-	41	CS	PP	1.7	CH	n	MA	Duncan-Hanna	C	
48.16	-	-	42	CS	PP	3.4	CH	n	n/a	n/a	C	unnotched pp?
48.16	-	-	43	CS	PP	4.3	CH	n	n/a	n/a	C	
48.16	-	-	44	CS	PP	2.8	QZ	n	n/a	n/a	MC (T)	
48.16	-	-	45	CS	PP	3.5	CH	n	n/a	n/a	P, M	
48.16	-	-	46	CS	PP	1.6	CH	n	n/a	n/a	P	
48.16	-	-	47	CS	DR	1.6	CH	n	n/a	n/a	P	
48.16	-	A	48	CS	DR	0.6	CH	n	n/a	n/a	P	
48.16	-	A	49	CS	ES	11.6	PW	y	n/a	n/a	C	
48.16	-	-	50	CS	ES	7.8	CH	n	n/a	n/a	C	
48.16	-	-	51	CS	ES	5	CH	n	n/a	n/a	C	
48.16	-	-	52	CS	ES	11.7	CH	n	n/a	n/a	MC (P)	
48.16	-	-	53	CS	ES	12.4	CH	n	n/a	n/a	C	
48.16	-	A	54	CS	ES	4.7	CH	n	n/a	n/a	C	
48.16	-	-	55	CS	ES	11.3	B	n	n/a	n/a	C	
48.16	-	-	56	CS	ES	7.9	CH	n	n/a	n/a	C	
48.16	-	-	57	CS	ES	5.9	QZ	n	n/a	n/a	MC (P)	
48.16	-	N	58	CS	ES	6.2	CH	n	n/a	n/a	C	
48.16	-	-	59	CS	ES	6.2	CH	n	n/a	n/a	C	
48.16	-	-	60	CS	ES	5.7	CH	n	n/a	n/a	MC (P)	
48.16	-	-	61	CS	ES	4.8	CH	y	n/a	n/a	C	
48.16	-	-	62	CS	CV	2.9	CH	n	n/a	n/a	C	
48.16	-	A	63	CS	MS	2.76	CH	n	n/a	n/a	D	
48.16	-	-	64	CS	ES	3.1	CH	n	n/a	n/a	C	
48.16	-	-	65	CS	ES	4.5	CH	n	n/a	n/a	MC (P)	
48.16	-	A	66	CS	ES	1.7	CH	n	n/a	n/a	C	
48.16	-	-	67	CS	ES	2.7	CH	n	n/a	n/a	C	
48.16	-	A	68	CS	ES	4.2	CH	n	n/a	n/a	D	
48.16	-	-	69	CS	ES	6.2	PW	n	n/a	n/a	C	
48.16	-	-	70	CS	ES	4.4	CH	n	n/a	n/a	C	
48.16	-	-	71	CS	ES	2.9	PW	n	n/a	n/a	C	
48.16	-	-	72	CS	MS	3.1	CH	n	n/a	n/a	C	
48.16	-	A	73	CS	ES	1.4	CH	n	n/a	n/a	C	
48.16	-	-	74	CS	ES	1.6	CH	n	n/a	n/a	P	
48.16	-	-	75	CS	MS	3	CY	n	n/a	n/a	ND	
48.16	-	-	76	CS	ES	0.4	CH	n	n/a	n/a	D	
48.16	-	-	77	CS	ES	3.6	CH	n	n/a	n/a	C	
48.16	-	-	78	CS	MS	2.3	CH	n	n/a	n/a	ND	

48.16	-	-	79	CS	MS	1.6	CH	n	n/a	n/a	ND	
48.16	-	-	80	CS	ES	2.1	CH	n	n/a	n/a	D	
48.16	-	-	81	CS	ES	2.3	PW	n	n/a	n/a	MC (P)	
48.16	-	-	82	CS	MS	1.3	CH	y	n/a	n/a	P	
48.16	-	-	83	CS	ES	4.8	CH	y	n/a	n/a	D	
48.16	-	-	84	CS	ES	3	QZ	n	n/a	n/a	D	
48.16	-	-	85	CS	MS	3.8	QZ	n	n/a	n/a	M	
48.16	-	-	86	CS	ES	2.7	CH	n	n/a	n/a	D	
48.16	-	-	87	CS	ES	2	CY	n	n/a	n/a	C	
48.16	-	-	88	CS	ES	2	PW	n	n/a	n/a	C	
48.16	-	-	89	CS	MS	1.8	CH	n	n/a	n/a	D	
48.16	-	-	90	CS	ES	3.5	CH	n	n/a	n/a	C	
48.16	-	-	91	CS	ES	2.5	PW	n	n/a	n/a	D	
48.16	-	-	92	CS	ES	1.8	CH	n	n/a	n/a	C	
48.16	-	-	93	CS	MS	2.4	CH	n	n/a	n/a	M	
48.16	-	-	94	CS	MS	0.9	CH	n	n/a	n/a	ND	
48.16	-	-	95	CS	ES	1.5	PW	n	n/a	n/a	C	
48.16	-	-	96	CS	MS	1.2	CH	n	n/a	n/a	ND	
48.16	-	-	97	CS	ES	2.1	CH	n	n/a	n/a	C	"SE"
48.16	-	-	98	CS	MS	1	CH	n	n/a	n/a	ND	
48.16	-	A	99	CS	DR	1.3	CH	n	n/a	n/a	P	
48.16	-	-	100	CS	MS	1.5	CH	n	n/a	n/a	P	
48.16	-	-	101	CS	MS	0.5	CH	n	n/a	n/a	ND	
48.16	-	-	102	CS	ES	1.4	CH	n	n/a	n/a	D	
48.16	-	-	103	CS	MS	1.2	QZ	n	n/a	n/a	D	
48.16	-	-	104	CS	PP	0.4	CH	n	EC	Hogback	MC (T, P)	
48.16	-	-	105	CS	HK	3.7	CH	n	n/a	n/a	C	
48.16	-	-	106	CS	GRV	2.6	CH	n	EP	n/a	C	
48.16	-	-	107	CS	EMF	3	PW	n	n/a	n/a	ND	
48.16	-	A	108	CS	EMF	1.6	CH	n	n/a	n/a	ND	
48.16	-	-	109	CS	EMF	4	PW	n	n/a	n/a	ND	
48.16	-	A	110	CS	EMF	0.8	PW	n	n/a	n/a	ND	
48.16	-	-	111	CS	EMF	7.3	CH	n	n/a	n/a	ND	
48.16	-	-	112	CS	MS	4.2	CH	n	n/a	n/a	P	
48.16	-	-	113	CS	EMF	1	CH	n	n/a	n/a	ND	
48.16	-	-	114	CS	EMF	0.7	CH	n	n/a	n/a	ND	
48.16	-	-	115	CS	EMF	1.8	CH	n	n/a	n/a	ND	
48.16	-	-	116	CS	ES	2.5	CH	n	n/a	n/a	D	
48.16	-	-	117	CS	EMF	1	CH	n	n/a	n/a	ND	
48.16	-	-	118	CS	EMF	0.5	CH	n	n/a	n/a	ND	

48.16	-	-	119	CS	EMF	0.9	CH	n	n/a	n/a	ND	
48.16	-	-	120	CS	BF	0.7	CY	n	n/a	n/a	D	
48.16	-	-	121	CS	BF	0.4	CH	n	n/a	n/a	D	
48.16	-	A	122	CS	BF	1.2	CH	n	n/a	n/a	D	
48.16	-	-	123	CS	BF	1.3	CH	n	n/a	n/a	D	
48.16	-	-	124	CS	BF	7.1	CH	n	n/a	n/a	D	
48.16	-	-	125	CS	BF	5.2	PW	n	n/a	n/a	C	
48.16	-	A	126	CS	BF	3.1	CH	n	n/a	n/a	P	
48.16	-	B	127	CS	BF	3.1	CH	n	n/a	n/a	P	"SE"
48.16	-	-	128	CS	BF	2.1	CH	n	n/a	n/a	M	
48.16	-	-	129	CS	BF	0.8	CH	n	n/a	n/a	M	
48.16	-	-	130	CS	BF	1.2	QZ	n	n/a	n/a	P	
48.16	-	A	131	CS	BF	5	CH	n	n/a	n/a	C	
48.16	-	-	132	CS	BF	0.8	QZ	n	n/a	n/a	M	
48.16	-	A	133	CS	BF	0.7	CH	n	n/a	n/a	D	
48.16	-	-	134	CS	BF	0.3	CH	n	n/a	n/a	D	
48.16	-	-	135	CS	BF	5.3	CH	y	n/a	n/a	D	
48.16	-	-	136	CS	BF	1.7	CH	n	n/a	n/a	M	
48.16	-	-	137	CS	BF	1.6	PW	n	n/a	n/a	D	
48.16	-	A	138	CS	BF	0.5	CH	n	n/a	n/a	D	
48.16	-	-	139	CS	BF	1.1	QZ	n	n/a	n/a	D	
48.16	-	-	140	CS	BF	2.4	CH	n	n/a	n/a	M	
48.16	-	-	141	CS	BF	2	PW	n	n/a	n/a	D	
48.16	-	-	142	CS	BF	3.7	QZ	n	n/a	n/a	D, M	
48.16	-	-	143	CS	BF	0.6	CH	n	n/a	n/a	D	
48.16	-	-	144	CS	BF	1.2	CH	n	n/a	n/a	M	heavily patinated
48.16	-	-	145	CS	BF	0.9	CH	n	n/a	n/a	P	
48.16	-	-	146	CS	BF	0.5	CH	n	n/a	n/a	M	
48.16	-	-	147	CS	BF	1	CH	n	n/a	n/a	P	
48.16	-	A	148	CS	BF	1	CH	n	n/a	n/a	P	
48.16	-	-	149	CS	BF	0.9	CH	n	n/a	n/a	M	
48.16	-	-	150	CS	BF	1.4	CH	n	n/a	n/a	P	
48.16	-	A	151	CS	BF	0.8	CH	n	n/a	n/a	D	
48.16	-	-	152	CS	BF	1	CH	n	n/a	n/a	M	
48.16	-	-	153	CS	BF	0.9	CH	n	n/a	n/a	D	
48.16	-	-	154	CS	BF	0.7	CH	n	n/a	n/a	M	
48.16	-	-	155	CS	BF	0.5	CH	n	n/a	n/a	D	
48.16	-	A	156	CS	BF	1.1	CH	n	n/a	n/a	D	
48.16	-	-	157	CS	BF	1.2	QU	n	n/a	n/a	MC (M)	
48.16	-	A	158	CS	BF	0.5	CH	n	n/a	n/a	D	

48.16	-	-	159	CS	BF	0.7	CH	n	n/a	n/a	D	
48.16	-	A	160	CS	BF	0.4	CH	n	n/a	n/a	D	
48.16	-	A	161	CS	BF	0.2	CH	n	n/a	n/a	D	
48.16	-	A	162	CS	BF	0.2	CH	n	n/a	n/a	D	
48.16	-	-	163	CS	BF	0.5	CH	n	n/a	n/a	M	
48.16	-	-	164	CS	BF	0.2	CH	n	n/a	n/a	M	
48.16	-	-	165	CS	BF	0.2	CH	n	n/a	n/a	M	
48.16	-	-	166	CS	BF	0.2	CH	n	n/a	n/a	D	
48.16	-	-	167	CS	BF	1.1	CH	n	n/a	n/a	M	
48.16	-	-	168	CS	BF	0.5	CH	n	n/a	n/a	D	
48.16	-	A	169	CS	BF	0.7	PW	n	n/a	n/a	D	
48.16	-	A	170	CS	BF	0.9	CH	n	n/a	n/a	D	
48.16	-	-	171	CS	BF	1.3	CH	n	n/a	n/a	M	
48.16	-	A	172	CS	BF	0.2	CH	n	n/a	n/a	D	
48.16	-	-	173	CS	BF	0.3	CH	n	n/a	n/a	D	
48.16	-	A	174	CS	BF	2.2	CH	n	n/a	n/a	M	
48.16	-	-	175	CS	BF	1.2	CH	n	n/a	n/a	ND	
48.16	-	-	176	CS	BF	1.3	ND	n	n/a	n/a	MC (T)	heavily patinated
48.16	-	-	177	CS	BF	2.2	CH	n	n/a	n/a	M	
48.16	-	-	178	CS	BF	1.8	PW	n	n/a	n/a	P	
48.16	-	-	179	CS	BF	0.8	CH	n	n/a	n/a	C	
48.16	-	-	180	CS	BF	0.5	CH	n	n/a	n/a	M	
48.16	-	A	181	CS	BF	0.4	CH	n	n/a	n/a	C	possible point?
48.16	-	A	182	CS	BF	3.3	PW	n	n/a	n/a	C	
48.16	-	-	183	CS	PRE	1.6	CH	n	n/a	n/a	C	
48.16	-	-	184	CS	PRE	1.9	CH	n	n/a	n/a	C	
48.16	-	-	185	CS	PRE	2	CH	n	n/a	n/a	C	
48.16	-	A	186	CS	PRE	1.1	QZ	n	n/a	n/a	P	
48.16	-	-	187	CS	EMF	2.5	CH	n	n/a	n/a	ND	
48.16	-	-	188	CS	EMF	2.8	CH	n	n/a	n/a	ND	
48.16	-	-	189	CS	EMF	6	PW	n	n/a	n/a	ND	
48.16	-	-	190	CS	MS	20.6	CH	y	n/a	n/a	ND	
48.16	-	-	191	CS	MS	13.1	QZ	n	n/a	n/a	D	
48.16	-	-	192	CS	MS	8.9	CH	y	n/a	n/a	D	
48.16	-	-	193	CS	MS	18.2	CH	n	n/a	n/a	D	
48.16	-	-	194	CS	MS	28.2	CH	y	n/a	n/a	D	
48.16	-	-	195	CS	MS	18.8	CH	n	n/a	n/a	D	
48.16	-	-	196	CS	MS	10.3	CH	n	n/a	n/a	D	
48.16	-	-	197	CS	BF	5.4	CH	n	n/a	n/a	ND	
48.16	-	-	198	CS	BF	5.9	CH	n	n/a	n/a	ND	

48.16	-	-	199	CS	BF	7.7	CH	n	n/a	n/a	C	
48.16	-	-	200	CS	BF	1	CH	n	n/a	n/a	C	
48.16	-	-	201	CS	BF	12.1	CH	n	n/a	n/a	C	
48.16	-	-	202	CS	BF	6.9	CH	y	n/a	n/a	C	
48.16	-	-	203	CS	BF	6.3	CH	n	n/a	n/a	M	
48.16	-	-	204	CS	BF	4.6	QZ	n	n/a	n/a	P	
48.16	-	-	205	CS	BF	4.1	CH	n	n/a	n/a	M	
48.16	-	-	206	CS	BF	5.7	CH	n	n/a	n/a	ND	
48.16	-	-	207	CS	BF	5.3	CH	n	n/a	n/a	C	
48.16	-	-	208	CS	BF	1.5	CH	n	n/a	n/a	M	
48.16	-	-	209	CS	BF	32.9	CH	y	n/a	n/a	M	
48.16	-	-	210	CS	CORE	23.1	QZT	n	n/a	n/a	C	
48.16	-	-	211	CS	CORE	13	CH	n	n/a	n/a	C	
48.16	-	-	212	CS	CORE	37.4	PW	y	n/a	n/a	C	
48.16	-	-	213	CS	CORE	19.7	CH	y	n/a	n/a	ND	
48.16	-	-	214	CS	CORE	21.9	CH	y	n/a	n/a	ND	
48.16	-	-	215	CS	CORE	14.4	CH	n	n/a	n/a	ND	
48.16	-	-	216	CR	NAP	1	n/a	n	n/a	n/a	BO	plainware, oxidized
48.16	-	-	217	CR	NAP	2.5	n/a	n	n/a	n/a	BO	exterior is completely eroded
48.16	-	-	218	CR	NAP	2.4	n/a	n	EC	n/a	BO	light cord-marking, oxidized
48.16	-	-	219	CR	NAP	1.3	n/a	n	n/a	n/a	BO	exterior is completely eroded
48.16	-	-	220	CR	NAP	0.8	n/a	n	n/a	n/a	BO	plainware, oxidized
48.16	-	-	221	CR	NAP	2	n/a	n	EC	n/a	BO	light cord-marking
48.16	-	-	222	CR	NAP	2.1	n/a	n	n/a	n/a	R	plainware
48.16	-	-	223	CR	NAP	2.4	n/a	n	EC	n/a	BO	cord-marked, interior is oxidized
48.16	-	-	224	CR	NAP	0.9	n/a	n	n/a	n/a	BO	plainware
48.16	-	-	225	CR	NAP	1.3	n/a	n	n/a	n/a	BO	plainware
48.16	-	-	226	CR	NAP	0.7	n/a	n	n/a	n/a	BO	plainware, oxidized
48.16	-	-	227	CR	NAP	3.8	n/a	n	EC	n/a	BO	light cord-marking
48.16	-	-	228	CR	NAP	0.6	n/a	n	n/a	n/a	BO	plainware, oxidized
48.16	-	-	229	CR	NAP	2.7	n/a	n	EC	n/a	BO	eroded cord-marking, exterior is oxidized
48.16	-	-	230	CR	NAP	1.5	n/a	n	n/a	n/a	BO	plainware
48.16	-	-	231	CR	NAP	1.5	n/a	n	n/a	n/a	BO	plainware
48.16	-	-	232	CR	NAP	0.9	n/a	n	n/a	n/a	BO	plainware, oxidized
48.16	-	-	233	CS	BF	4.5	PW	n	n/a	n/a	M	
48.16	-	-	234	CS	BF	3.4	CH	n	n/a	n/a	M	
48.16	-	-	235	CS	BF	3.6	CH	n	n/a	n/a	P	
48.16	-	-	236	GS	MAN	420	AN	n	n/a	n/a	L	
48.16	-	-	237	GS	MET	80	SA	n	n/a	n/a	L	
48.16	-	-	238	GS	MAN	40	SA	n	n/a	n/a	L	

48.16	-	-	239	GS	MET	20	SA	n	n/a	n/a	L
48.16	-	-	240	GS	MAN	280	SA	n	n/a	n/a	C
48.16	-	-	241	GS	MAN	20	SA	n	n/a	n/a	L
48.16	-	-	242	CS	HAM	100	QZ	n	n/a	n/a	C
48.16	-	-	243	GS	MET	40	SA	n	n/a	n/a	L
48.16	-	-	244	GS	MAN	120	SA	n	n/a	n/a	L
48.16	-	-	245	GS	MAN	40	SA	n	n/a	n/a	D

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
48.15	-	-	1	CS	BF	0.7	CH	n/a	n/a	n/a	M	
48.15	-	-	2	CS	BF	1.1	BA	n/a	n/a	n/a	M	
48.15	-	-	3	CS	BF	2.5	CH	n/a	n/a	n/a	P	possible PP base
48.15	-	A	4	CS	BF	3.3	QZ	n/a	n/a	n/a	M	
48.15	-	-	5	CS	BF	2.8	QZ	n/a	n/a	n/a	D	
48.15	-	S	6	CS	BF	23.9	CH	n/a	n/a	n/a	M	
48.15	-	-	7	CS	DR	2.7	CH	n/a	n/a	n/a	P, M	
48.15	-	-	8	CS	CF	1.8	CH	n/a	MP	Folsom	P, M	
48.15	-	-	9	CS	BF	0.6	CH	n/a	n/a	n/a	ND	
48.15	-	-	10	CS	CV	5.4	CH	n/a	n/a	n/a	C	
48.15	-	-	11	CS	ES	3.2	CH	n/a	n/a	n/a	MC (L)	
48.15	-	-	12	CS	ES	4.8	CH	n/a	n/a	n/a	C	
48.15	-	-	13	CS	ES	10.5	CH	n/a	n/a	n/a	C	
48.15	-	-	14	CS	ES	1	CH	n/a	n/a	n/a	C	
48.15	-	-	15	CS	ES	5.2	CH	n/a	n/a	n/a	C	spurred
48.15	-	-	16	CS	ES	6.4	CH	n/a	n/a	n/a	C	
48.15	-	-	17	CS	CV	15.8	CH	y	n/a	n/a	C	
48.15	-	-	18	CS	ES	2.6	CY	n/a	n/a	n/a	C	
48.15	-	-	19	CS	CV	6.4	CH	n/a	n/a	n/a	C	
48.15	-	-	20	CS	MS	2.8	CH	n/a	n/a	n/a	D	
48.15	-	-	21	CS	ES	1.5	CH	n/a	n/a	n/a	C	
48.15	-	-	22	CS	ES	4.7	CH	n/a	n/a	n/a	MC (L)	
48.15	-	-	23	CS	ES	1.9	CY	y	n/a	n/a	D	
48.15	-	-	24	CS	ES	1.9	CH	n/a	n/a	n/a	C	
48.15	-	-	25	CS	ES	1.5	CH	n/a	n/a	n/a	D	
48.15	-	-	26	CS	ES	2.8	CH	n/a	n/a	n/a	C	
48.15	-	-	27	CS	ES	2.1	CH	n/a	n/a	n/a	D	
48.15	-	-	28	CS	ES	1.3	CH	n/a	n/a	n/a	D	
48.15	-	-	29	CS	MS	2.5	CH	n/a	n/a	n/a	ND	
48.15	-	-	30	CS	MS	2.1	CH	n/a	n/a	n/a	ND	
48.15	-	-	31	CS	SS	4.8	CH	n/a	n/a	n/a	M	
48.15	-	-	32	CS	SS	2.6	CH	n/a	n/a	n/a	M	
48.15	-	-	33	CS	SS	12.3	QZ	n/a	n/a	n/a	C	
48.15	-	-	34	CS	MS	2.9	CH	n/a	n/a	n/a	D	
48.15	-	-	35	CS	SS	3.1	QZ	n/a	n/a	n/a	M	
48.15	-	-	36	CS	GRV	3.5	CH	n/a	n/a	n/a	D, M	
48.15	-	-	37	CS	EMF	2	CH	n/a	n/a	n/a	ND	

48.15	-	-	38	CS	EMF	0.9	CH	n/a	n/a	n/a	P
48.15	-	-	39	CS	EMF	0.8	PW	n/a	n/a	n/a	ND
48.15	-	-	40	CS	PP	2	CH	n/a	LA	n/a	P
48.15	-	-	41	CS	PP	3.6	CH	n/a	LA	n/a	C
48.15	-	-	42	CS	PP	2	CH	n/a	LA	n/a	P, M
48.15	-	-	43	CS	PP	5.3	BA	n/a	MA	Duncan-Hanna	C
48.15	-	-	44	CS	HK	8.2	CH	n/a	n/a	n/a	P, M
48.15	-	-	45	CS	PP	1.1	CH	n/a	EC	Corner-notched	C
48.15	-	-	46	CS	PP	1	CH	n/a	EC	Corner-notched	C
48.15	-	-	47	CS	PP	0.3	CH	n/a	MC	Side-notched	P
48.15	-	-	48	CR	NAP	2.1	n/a	n/a	EC	Plainware	BO
48.15	-	-	49	GS	MET	100	SA	n/a	n/a	n/a	L
48.15	-	-	50	GS	MAN	300	SA	n/a	n/a	n/a	C
48.15	-	-	51	GS	MISC.	40	SA	n/a	n/a	n/a	L
48.15	-	-	52	GS	MAN	380	QZ	n/a	n/a	n/a	C

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
15.7	37	-	1	CS	CORE	22.1	PW	n	n/a	n/a	C	plus
15.7	28	-	2	CS	CORE	25.9	PW	n	n/a	n/a	C	plus
15.7	36	-	3	CS	ES	1.8	CH	n	n/a	n/a	D	plus
15.7	33	-	4	CS	ES	4.1	CH	n	n/a	n/a	C	plus
15.7	30	-	5	CS	ES	2.1	CH	n	n/a	n/a	C	plus
15.7	26	-	6	CS	ES	4.1	CH	y	n/a	n/a	C	plus, "D"
15.7	31	-	7	CS	ES	2	CH	n	n/a	n/a	C	plus
15.7	24	-	8	CS	ES	14.5	CH	n	n/a	n/a	MC (P)	plus
15.7	-	-	9	CS	ES	12	QZ	n	n/a	n/a	C	
15.7	23	-	10	CS	ES	3.6	CH	n	n/a	n/a	D	plus
15.7	-	-	11	CS	ES	9.6	CH	y	n/a	n/a	C	
15.7	25	-	12	CS	ES	14.3	CH	n	n/a	n/a	D	plus, "D"
15.7	1	-	13	CS	ES	13.6	CH	y	n/a	n/a	C	plus
15.7	22	-	14	CS	ES	3.9	CH	n	n/a	n/a	C	plus
15.7	14	-	15	CS	ES	2	CH	n	n/a	n/a	C	plus
15.7	38	-	16	CS	ES	7.6	QZ	n	n/a	n/a	C	plus
15.7	52	-	17	CS	ES	5.5	CH	y	n/a	n/a	C	plus
15.7	16	-	18	CS	MS	3.3	CH	n	n/a	n/a	ND	plus, "D"
15.7	-	-	19	CS	ES	2.2	CH	n	n/a	n/a	D	
15.7	39	-	20	CS	MS	4.2	CH	n	n/a	n/a	ND	plus
15.7	-	-	21	CS	MS	3.5	CH	n	n/a	n/a	ND	
15.7	11	-	22	CS	EMF	3.7	CH	y	n/a	n/a	MC (L)	plus
15.7	-	-	23	CS	MS	4.4	PW	y	n/a	n/a	P	"D"
15.7	8	-	24	CS	MS	8.7	PW	y	n/a	n/a	D	plus, "D"
15.7	49	-	25	CS	MS	4.7	PW	n	n/a	n/a	P	plus
15.7	-	-	26	CS	EMF	2	CH	n	n/a	n/a	M	
15.7	-	-	27	CS	EMF	1.2	CH	y	n/a	n/a	M	
15.7	9	-	28	CS	EMF	0.6	CH	n	n/a	n/a	M	plus
15.7	13	-	29	CS	EMF	2.3	CH	n	n/a	n/a	P	plus
15.7	-	-	30	CS	EMF	1.3	CH	n	n/a	n/a	D	
15.7	-	-	31	CS	BF	2.5	CH	n	n/a	n/a	D	
15.7	51	-	32	CS	BF	3.2	CH	n	n/a	n/a	D	plus
15.7	48	-	33	CS	BF	2.6	CH	y	n/a	n/a	D	plus
15.7	29	-	34	CS	BF	1.8	CH	n	n/a	n/a	P	plus
15.7	-	-	35	CS	BF	1.1	QZ	n	n/a	n/a	D	
15.7	59	-	36	CS	BF	15.6	QZ	n	n/a	n/a	P	plus
15.7	43	-	37	CS	BF	10.1	PW	n	n/a	n/a	P	plus

15.7	2	-	38	CS	BF	9	CH	y	n/a	n/a	P	plus
15.7	20	-	39	CS	BF	2.6	PW	n	n/a	n/a	P	plus
15.7	41	-	40	CS	BF	2.4	CH	n	n/a	n/a	P	plus
15.7	-	-	41	CS	BF	1.4	CH	n	n/a	n/a	D	
15.7	44	-	42	CS	BF	16.7	CH	n	n/a	n/a	P	plus
15.7	-	-	43	CS	BF	0.3	CH	n	n/a	n/a	D	
15.7	17	-	44	CS	BF	2.7	CH	n	n/a	n/a	M	plus
15.7	-	-	45	CS	BF	2.6	CH	n	n/a	n/a	D	
15.7	7	-	46	CS	BF	0.9	CH	n	n/a	n/a	P	plus
15.7	6	-	47	CS	BF	4.2	QZ	n	n/a	n/a	D	plus
15.7	40	-	48	CS	BF	1.6	CH	n	n/a	n/a	M	plus
15.7	-	-	49	CS	BF	0.3	CH	n	n/a	n/a	D	
15.7	-	-	50	CS	BF	4.5	CH	n	n/a	n/a	C	
15.7	-	-	51	CS	BF	3	CH	n	n/a	n/a	D	
15.7	-	-	52	CS	BF	2	CH	y	n/a	n/a	D	
15.7	56	-	53	CS	BF	1.3	CY	n	n/a	n/a	D	plus
15.7	32	-	54	CS	BF	0.3	CH	n	n/a	n/a	M	plus
15.7	57	-	55	CS	BF	1.7	CH	n	n/a	n/a	M	plus
15.7	-	-	56	CS	PP	1	CH	n	LA	n/a	P	
15.7	21	-	57	CS	PP	2.1	CH	n	EA	n/a	P	plus, "D"
15.7	18	-	58	CS	PP	2.6	CH	n	LA	n/a	MC (T)	plus
15.7	19	-	59	CS	PP	2.2	CH	n	LA	Pelican Lake	M	plus, "D"
15.7	42	-	60	CS	PP	1.7	CH	n	LA	Pelican Lake	C	plus
15.7	-	-	61	CS	PP	1.5	CH	n	LA	Pelican Lake	C	
15.7	10	-	62	CS	PP	0.7	CH	n	LA	Pelican Lake	P	plus, "D"
15.7	12	-	63	CS	PP	3.9	CH	n	LA	Pelican Lake	C	plus
15.7	15	-	64	CS	PP	4.4	CH	n	LA	Pelican Lake	MC (T)	plus
15.7	-	-	65	CS	PP	3.9	CH	n	LA	n/a	C	
15.7	9	-	66	CS	PP	4.4	CH	n	LA	Pelican Lake	M, P	plus
15.7	-	-	67	CS	PP	1.2	CH	n	MC	Avonlea	MC (T)	
15.7	-	-	68	CS	PP	1.1	CH	n	MC	Side-notched	MC (T)	
15.7	-	-	69	CS	PP	1.2	CH	n	MC	Side-notched	MC (T)	
15.7	-	-	70	CS	PP	0.7	CH	n	MC	Unnotched	MC (T)	
15.7	32	-	71	CS	PP	0.7	CH	n	EC	Corner-notched	M, P	plus
15.7	-	-	72	CS	PP	0.8	CH	n	EC	Corner-notched	MC (L)	plus
15.7	-	-	73	GS	MAN	40	SA	n	n/a	n/a	L	
15.7	-	-	74	GS	GRD	8	SA	n	n/a	n/a	L	
15.7	46	-	75	GS	MAN	340	SA	n	n/a	n/a	L	
15.7	47	-	76	GS	MAN	220	SA	n	n/a	n/a	D, L	

15.7	5	-	77	GS	GRD	160	B	n	n/a	n/a	C

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
58.59	61	-	1	CS	ES	6.9	CH	n	n/a	n/a	D	plus
58.59	66	-	2	CS	ES	11.7	CH	n	n/a	n/a	D	plus, "D"
58.59	64	-	3	CS	ES	9.9	PW	y	n/a	n/a	D, M	plus
58.59	67	-	4	CS	SS	5.9	CH	y	n/a	n/a	MC (P)	plus
58.59	44	-	5	CS	CV	41.4	QZ	n	n/a	n/a	C	plus
58.59	91	-	6	CS	CV	26.6	CH	n	n/a	n/a	C	plus, "D"
58.59	37	-	7	CS	ES	14.8	CH	n	n/a	n/a	C	plus
58.59	90	-	8	CS	ES	11.7	CH	y	n/a	n/a	C	plus, "D"
58.59	41	-	9	CS	EMF	1.6	CH	n	n/a	n/a	ND	plus, "D"
58.59	17	-	10	CS	EMF	4.9	CH	n	n/a	n/a	M	plus
58.59	11	-	11	CS	EMF	3.4	B	y	n/a	n/a	P	plus
58.59	27	-	12	CS	EMF	1.1	CH	n	n/a	n/a	P	plus
58.59	33	C	13	CS	EMF	2.6	CH	n	n/a	n/a	P	plus
58.59	42	-	14	CS	EMF	1.2	CH	n	n/a	n/a	ND	plus
58.59	63	-	15	CS	ES	3.2	CH	n	n/a	n/a	D	plus
58.59	59	-	16	CS	ES	21.2	CH	n	n/a	n/a	D	plus
58.59	54	-	17	CS	ES	18.1	CH	y	n/a	n/a	D	plus
58.59	20	-	18	CS	MS	5.4	CH	y	n/a	n/a	M	plus
58.59	15	-	19	CS	ES	15.2	CH	y	n/a	n/a	C	plus
58.59	78	-	20	CS	ES	7.2	CH	n	n/a	n/a	C	plus, "D"
58.59	21	-	21	CS	MS	9.3	CH	n	n/a	n/a	P, M	plus
58.59	19	-	22	CS	MS	22.4	CH	n	n/a	n/a	P, M	plus
58.59	39	-	23	CS	SS	12.1	CH	n	n/a	n/a	MC (P)	plus
58.59	57	-	24	CS	MS	4.1	CH	n	n/a	n/a	M	plus
58.59	70	-	25	CS	MS	10.7	CH	n	n/a	n/a	C	plus
58.59	98	-	26	CS	EMF	2.8	CH	n	n/a	n/a	M	plus
58.59	93	-	27	CS	EMF	7.6	CH	n	n/a	n/a	C	plus, "D"
58.59	69	-	28	CS	MS	4.7	CH	n	n/a	n/a	M	plus, "D"
58.59	68	-	29	CS	MS	9.6	CH	n	n/a	n/a	M	plus
58.59	83	-	30	CS	MS	4	CH	n	n/a	n/a	M	plus
58.59	84	-	31	CS	HK	12.8	CH	n	n/a	n/a	M	plus
58.59	-	-	32	CS	HK	13	CH	n	n/a	n/a	M	
58.59	35	C	33	CS	HK	12	CH	n	n/a	n/a	D	plus
58.59	5	-	34	CS	BF	3.2	CH	n	n/a	n/a	D	plus
58.59	25	-	35	CS	BF	0.8	QZ	n	n/a	n/a	D	plus
58.59	11	-	36	CS	BF	3.4	CH	n	n/a	n/a	M	plus
58.59	13	-	37	CS	BF	2.1	CH	n	n/a	n/a	D	plus

58.59	38	-	38	CS	BF	6.6	CH	n	n/a	n/a	P	plus
58.59	74	-	39	CS	BF	14.9	CH	n	n/a	n/a	P	plus
58.59	69	-	40	CS	BF	15.2	CH	n	n/a	n/a	M	plus
58.59	73	-	41	CS	BF	25.8	CH	n	n/a	n/a	M	plus
58.59	65	-	42	CS	BF	15.5	CH	y	n/a	n/a	C	plus
58.59	47	-	43	CS	DR	3.2	CH	n	n/a	n/a	P	plus
58.59	88	-	44	CS	BF	9.6	CH	n	n/a	n/a	P, M	plus
58.59	51	-	45	CS	BF	7.5	CH	n	n/a	n/a	M	plus
58.59	1	B	46	CS	BF	7.9	CH	y	n/a	n/a	MC (T)	plus
58.59	43	-	47	CS	BF	2.6	PW	n	n/a	n/a	D, M	plus, "D"
58.59	89	-	48	CS	BF	7.7	CH	n	n/a	n/a	P, M	plus, "D"
58.59	-	AE	49	CS	BF	4.3	CH	n	n/a	n/a	M	
58.59	46	-	50	CS	BF	7	QZ	n	n/a	n/a	M	plus, "D"
58.59	22	-	51	CS	PRE	2.4	CH	n	n/a	n/a	C	plus
58.59	18	-	52	CS	BF	5.4	CH	n	n/a	n/a	M	plus
58.59	81	-	53	CS	BF	2	CH	n	n/a	n/a	D	plus
58.59	16	-	54	CS	BF	5.1	CH	n	n/a	n/a	M	plus
58.59	96	-	55	CS	BF	1.4	CH	n	n/a	n/a	D	plus
58.59	4	-	56	CS	BF	5.9	CH	n	n/a	n/a	P, M	plus
58.59	82	-	57	CS	BF	1.7	CH	n	n/a	n/a	M	plus
58.59	40	-	58	CS	BF	2.4	CH	n	n/a	n/a	MC (T)	plus, "D"
58.59	62	-	59	CS	PP	1	CY	n	MA	Duncan-Hanna	P	plus, "D"
58.59	56	-	60	CS	PP	2.6	CH	n	MA	Duncan-Hanna	C	plus
58.59	50	-	61	CS	PP	4.7	CY	n	LA	Pelican Lake	C	plus
58.59	30	-	62	CS	PP	2	CH	n	LA	Pelican Lake	P	plus
58.59	87	-	63	CS	PP	4	CH	n	LA	Pelican Lake	P, M	plus
58.59	1	-	64	CS	PP	2.2	CH	n	LA	Pelican Lake	M	plus
58.59	53	-	65	CS	PP	1.5	CH	n	LA	n/a	M	plus
58.59	49	-	66	CS	PP	6.5	CH	n	LA	Pelican Lake	MC (T)	plus
58.59	29	-	67	CS	PP	4.9	CH	n	LA	Pelican Lake	C	plus, two refitting pieces
58.59	36	C	68	CS	PP	0.8	CH	n	MC	Side-notched	C	plus
58.59	2	-	69	CS	PP	1.1	CH	n	MC	Side-notched	C	plus
58.59	95	-	70	CS	PP	1	CH	n	MC	Avonlea	P	plus
58.59	28	-	71	CS	PP	1.2	CH	n	EC	Corner-notched	D, M	plus
58.59	58	-	72	CS	PP	1	CH	n	MC	Side-notched	C	plus
58.59	60	-	73	CS	PP	1.6	CH	n	EC	Corner-notched	MC (L)	plus, "D"
58.59	92	-	74	CS	BF	0.7	CH	n	n/a	n/a	M	plus
58.59	32	-	75	GS	MAN	140	SA	n	n/a	n/a	L	
58.59	85	-	76	GS	MAN	160	SA	n	n/a	n/a	L	

58.59	75	-	77	GS	MAN	400	SA	n	n/a	n/a	L
58.59	14	-	78	GS	MAN	40	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
38.428	-	A	1	CR	NAP	2.5	n/a	n/a	EC	n/a	BO	
38.428	-	A	2	CR	NAP	1.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	3	CR	NAP	2	n/a	n/a	EC	n/a	BO	
38.428	-	A	4	CR	NAP	2.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	5	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	6	CR	NAP	3.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	7	CR	NAP	3.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	8	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	9	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	10	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	11	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	12	CR	NAP	0.8	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	13	CR	NAP	2.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	14	CR	NAP	2.5	n/a	n/a	EC	n/a	BO	
38.428	-	A	15	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	28	A	16	CR	NAP	2	n/a	n/a	EC	n/a	BO	plus
38.428	-	A	17	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	18	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	19	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	20	CR	NAP	1.5	n/a	n/a	EC	n/a	BO	
38.428	-	A	21	CR	NAP	2.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	22	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	23	CR	NAP	0.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	24	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	25	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	26	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	27	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	28	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	29	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	30	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	31	CR	NAP	2.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	32	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	33	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	34	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	35	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	36	CR	NAP	1.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	37	CS	PP	2.7	CH	n/a	LP	n/a	D	
38.428	-	A	38	CS	PP	0.8	CH	n/a	LP	n/a	D	
38.428	-	C	39	CS	HK	2.7	CH	n/a	n/a	n/a	D	

38.428	88	-	40	CS	HK	6.6	CH	n/a	n/a		D, M	plus
38.428	-	B	41	CS	HK	10.5	CH	n/a	n/a	n/a	D, M	
38.428	-	A	42	CS	BF	3.1	CH	n/a	n/a	n/a	D	possible paleo base
38.428	105	-	43	CS	PP	3.2	QZ	n/a	EA	Mount Albion	D, M	plus
38.428	-	AS	44	CS	PP	5.5	CH	n/a	EA	Mount Albion	D, M	
38.428	-	A	45	CS	PP	3.7	QZ	n/a	EA	Mount Albion	D, M	
38.428	-	A	46	CS	PP	1.9	QZ	n/a	MA	Duncan-Hanna	D	
38.428	-	A	47	CS	PP	1.7	CH	n/a	MA	Duncan-Hanna	D	
38.428	-	A	48	CS	PP	1.2	CH	n/a	MA	Duncan-Hanna	D	
38.428	-	A	49	CS	PP	3.5	QZ	n/a	MA	Duncan-Hanna	MC (T)	
38.428	-	A	50	CS	PP	1	CH	n/a	MA	McKean	D	
38.428	-	AS	51	CS	PP	0.8	CH	n/a	MA	McKean	D	
38.428	169	-	52	CS	PP	1.3	CH	n/a	MA	McKean	MC (L)	plus
38.428	-	AS	53	CS	PP	3.4	QZ	n/a	MA	McKean	C	
38.428	-	A	54	CS	PP	3.2	CH	n/a	LA	n/a	D, M	
38.428	-	D	55	CS	PP	0.4	CH	n/a	LA	n/a	D	"AN"
38.428	-	-	56	CS	PP	2	CH	n/a	LA	Besant	C	"AN"
38.428	-	B	57	CS	PP	1.9	CH	n/a	LA	n/a	D, M	
38.428	-	A	58	CS	PP	3.4	CH	n/a	LA	n/a	C	
38.428	-	B	59	CS	PP	4.2	CH	n/a	LA	n/a	C	
38.428	-	B	60	CS	PP	1.5	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	-	A	61	CS	PP	1.4	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	-	B	62	CS	PP	1.6	PW	n/a	LA	Pelican Lake	D, M	
38.428	-	D	63	CS	PP	0.8	CY	n/a	LA	Pelican Lake	D	
38.428	-	A	64	CS	PP	1.4	CH	n/a	LA	Pelican Lake	C	
38.428	-	A	65	CS	PP	2.5	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	121	-	66	CS	PP	2.3	CH	n/a	LA	Pelican Lake	C	plus
38.428	-	B	67	CS	PP	1.7	CH	n/a	LA	Pelican Lake	D	
38.428	-	B	68	CS	PP	1.7	CH	n/a	LA	Pelican Lake	C	
38.428	-	AS	69	CS	PP	1.4	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	-	A	70	CS	PP	3	CH	n/a	LA	Pelican Lake	D, M	
38.428	-	A	71	CS	PP	2.6	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	-	B	72	CS	PP	3.4	CH	n/a	LA	Pelican Lake	C	
38.428	-	-	73	CS	PP	5.1	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	31	-	74	CS	PP	7.5	CH	n/a	LA	Pelican Lake	C	plus
38.428	-	A	75	CS	PP	1.4	CH	n/a	LA	Pelican Lake	C	
38.428	-	A	76	CS	PP	2.1	QZ	n/a	LA	Pelican Lake	D, M	
38.428	-	B	77	CS	PP	1.4	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	9	-	78	CS	PP	1.5	CH	n/a	LA	Pelican Lake	D, M	plus
38.428	-	D	79	CS	PP	1	CH	n/a	LA	Pelican Lake	D	"AS"
38.428	-	A	80	CS	PP	1.1	CH	n/a	LA	Pelican Lake	MC (T)	made a flake blank

38.428	-	AN	81	CS	PP	1.2	CH	n/a	LA	Pelican Lake	D	
38.428	-	A	82	CS	PP	1.8	CH	n/a	LA	Pelican Lake	D, M	
38.428	-	B	83	CS	PP	1.6	CH	n/a	LA	Pelican Lake	D, M	"D"
38.428	-	A	84	CS	PP	1.2	CH	n/a	LA	Pelican Lake	C	
38.428	-	A	85	CS	PP	1.5	CH	n/a	LA	Pelican Lake	MC (T, L)	
38.428	-	A	86	CS	PP	1.2	CH	n/a	LA	Pelican Lake	MC (T)	
38.428	-	A	87	CS	PP	2.2	CH	n/a	LA	Pelican Lake	D, M	"D", "N"
38.428	-	AS	88	CS	PP	1	CH	n/a	EC	n/a	MC	flake blank
38.428	81	D	89	CS	PP	1	CH	n/a	EC	n/a	MC (L)	plus
38.428	-	AS	90	CS	PP	1.1	CH	n/a	EC	n/a	C	
38.428	-	AS	91	CS	PP	1.4	CH	n/a	EC	n/a	C	flake blank
38.428	-	A	92	CS	PP	1.5	CH	n/a	EC	n/a	C	flake blank
38.428	-	A	93	CS	PP	0.4	CH	n/a	EC	Hogback	MC (L)	
38.428	-	A	94	CS	PP	0.5	CH	n/a	EC	Hogback	MC (L)	
38.428	-	A	95	CS	PP	1.1	CH	n/a	EC	Hogback	MC (T)	flake blank
38.428	-	A	96	CS	PP	0.9	QZ	n/a	EC	Hogback	MC (T)	
38.428	90	A	97	CS	PP	0.9	CH	n/a	EC	Hogback	MC (T)	plus
38.428	-	A	98	CS	PP	0.8	CH	n/a	EC	Hogback	MC (L)	
38.428	-	A	99	CS	PP	0.7	CH	n/a	EC	Hogback	C	flake blank
38.428	-	A	100	CS	PP	1.2	CH	n/a	EC	Hogback	MC (L, T)	
38.428	-	A	101	CS	PP	0.6	CH	n/a	EC	Hogback	C	
38.428	-	-	102	CS	PP	0.8	CH	n/a	EC	Hogback	C	
38.428	115	-	103	CS	PP	0.9	CH	n/a	EC	n/a	D, M	plus
38.428	-	B	104	CS	PP	1.6	CH	n/a	EC	Hogback	MC (D, T)	
38.428	-	AN	105	CS	PP	0.9	CH	n/a	EC	Hogback	C	
38.428	-	BM	106	CS	PP	0.9	CH	n/a	EC	Hogback	MC (T)	
38.428	-	A	107	CS	PP	0.5	CH	n/a	EC	Hogback	MC (T)	
38.428	70	-	108	CS	PP	0.7	CH	n/a	EC	Hogback	MC (T)	plus
38.428	-	A	109	CS	PP	0.6	CH	n/a	EC	Hogback	MC (L)	
38.428	124	-	110	CS	PP	1	CH	n/a	EC	Hogback	MC (D)	plus
38.428	-	A	111	CS	PP	0.5	QZ	n/a	EC	n/a	D, M	
38.428	-	A	112	CS	PP	0.6	CH	n/a	EC	n/a	D, M	
38.428	-	A	113	CS	PP	1.1	CH	n/a	EC	Hogback	MC (D)	flake blank
38.428	-	BE	114	CS	PP	0.6	CH	n/a	EC	Hogback	MC (M)	
38.428	-	A	115	CS	PP	1	CH	n/a	EC	n/a	D, M	"D"
38.428	-	A	116	CS	PP	0.9	CH	n/a	EC	Hogback	MC (T, M)	slightly serrated
38.428	-	AS	117	CS	PP	1.1	CH	n/a	EC	Hogback	MC (D)	
38.428	-	A	118	CS	PP	0.5	CH	n/a	EC	Hogback	C	
38.428	-	B	119	CS	PP	0.5	CH	n/a	EC	Hogback	D, M	"D"
38.428	-	A	120	CS	PP	0.6	CH	n/a	EC	Hogback	MC (M)	
38.428	-	B	121	CS	PP	0.7	CH	n/a	EC	Hogback	MC (T, M)	

38.428	-	A	122	CS	PP	0.6	CH	n/a	EC	Hogback	T, M	"D"
38.428	-	A	123	CS	PP	0.6	CH	n/a	EC	Hogback	T, M	
38.428	-	AS	124	CS	PP	0.6	CH	n/a	EC	Hogback	M	
38.428	-	B	125	CS	PP	1.2	CH	n/a	EC	Hogback	M	
38.428	137	-	126	CS	PP	0.7	CH	n/a	EC	n/a	MC (D)	plus
38.428	-	B	127	CS	PP	0.5	CH	n/a	EC	n/a	D, M	
38.428	86	-	128	CS	PP	0.7	CH	n/a	EC	n/a	D, M	plus
38.428	-	A	129	CS	PP	0.5	CH	n/a	EC	n/a	D, M	
38.428	-	B	130	CS	PP	0.5	CH	n/a	EC	n/a	MC (D)	
38.428	-	A	131	CS	PP	0.4	CH	n/a	EC	n/a	C	
38.428	-	A	132	CS	PP	0.6	CH	n/a	EC	n/a	C	
38.428	-	A	133	CS	PP	0.4	CH	n/a	EC	n/a	D, M	
38.428	-	B	134	CS	PP	0.4	CH	n/a	EC	n/a	MC (D)	flake blank
38.428	-	A	135	CS	PP	0.7	CH	n/a	EC	n/a	D, M	
38.428	-	A	136	CS	PP	0.5	CH	n/a	EC	n/a	C	
38.428	-	B	137	CS	PP	0.4	CH	n/a	EC	n/a	D	
38.428	-	A	138	CS	PP	0.3	CH	n/a	EC	n/a	D	
38.428	-	A	139	CS	PP	1	CH	n/a	EC	n/a	MC (T)	"D"
38.428	-	A	140	CS	PP	0.9	CH	n/a	EC	n/a	MC (T)	
38.428	-	A	141	CS	PP	0.6	CH	n/a	EC	n/a	D, M	
38.428	-	B	142	CS	PP	0.7	CH	n/a	EC	n/a	MC (T)	
38.428	-	B	143	CS	PP	1	OB	n/a	EC	n/a	C	
38.428	-	A	144	CS	PP	1	QZ	n/a	MC	Plains side-notched	MC (T, D)	
38.428	-	A	145	CS	PP	0.3	CH	n/a	MC	Plains side-notched	D	
38.428	-	A	146	CS	PP	0.3	CH	n/a	MC	Plains side-notched	C	
38.428	-	A	147	CS	PP	0.5	QZ	n/a	MC	Plains side-notched	D	
38.428	-	A	148	CS	PP	0.4	CH	n/a	MC	Plains side-notched	C	
38.428	-	A	149	CS	PP	0.8	CH	n/a	MC	Plains side-notched	C	
38.428	-	A	150	CS	PP	0.5	CH	n/a	MC	Plains side-notched	C	
38.428	-	A	151	CS	PP	1.1	PW	n/a	n/a	n/a	M	
38.428	-	A	152	CS	PP	1.2	QZ	n/a	n/a	n/a	T, M	
38.428	-	A	153	CS	BF	1.7	CH	n/a	n/a	n/a	M	
38.428	-	B	154	CS	PP	1.3	CH	n/a	n/a	n/a	M	
38.428	-	B	155	CS	PP	2.7	CH	n/a	EA	n/a	P, M	
38.428	-	A	156	CS	PP	3.8	CH	n/a	A	n/a	D, M	
38.428	-	B	157	CS	PP	3.3	CH	n/a	EA	n/a	D, M	
38.428	-	B	158	CS	PP	0.7	CH	n/a	EC	n/a	P, M	
38.428	-	A	159	CS	PP	3.6	CH	n/a	A	n/a	M	
38.428	-	A	160	CS	PP	0.6	CH	n/a	EC	n/a	M	
38.428	-	B	161	CS	PP	0.9	CH	n/a	MC	Plains side-notched	D, M	
38.428	11	-	162	CS	PP	1.3	CH	n/a	A	n/a	D	

38.428	-	B	163	CS	PP	0.5	CH	n/a	EC	n/a	D	
38.428	-	B	164	CS	PP	0.6	CH	n/a	n/a	n/a	D	
38.428	-	A	165	CS	BF	0.8	CH	n/a	n/a	n/a	D	
38.428	-	A	166	CS	PP	0.7	CH	n/a	n/a	n/a	M	
38.428	-	A	167	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	168	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	169	CR	NAP	1.4	n/a	n/a	EC	n/a	R	
38.428	-	A	170	CR	NAP	2.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	171	CR	NAP	2.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	172	CR	NAP	1.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	173	CR	NAP	2.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	174	CR	NAP	3	n/a	n/a	EC	n/a	BO	
38.428	-	A	175	CR	NAP	2.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	176	CR	NAP	1.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	177	CR	NAP	2	n/a	n/a	EC	n/a	BO	
38.428	-	A	178	CR	NAP	2.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	179	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	180	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	181	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	182	CR	NAP	2.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	183	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	184	CR	NAP	2.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	185	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	186	CR	NAP	1.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	187	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	188	CR	NAP	1.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	189	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	190	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	191	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	192	CR	NAP	1.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	193	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	194	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	195	CR	NAP	3.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	196	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	197	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	198	CR	NAP	1.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	199	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	200	CR	NAP	0.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	201	CR	NAP	0.5	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	202	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	203	CR	NAP	1.1	n/a	n/a	EC	n/a	BO	

38.428	-	A	204	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	205	CR	NAP	0.7	n/a	n/a	EC	n/a	BO	
38.428	-	A	206	CR	NAP	1.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	207	CR	NAP	1.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	208	CR	NAP	1.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	209	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	210	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	211	CR	NAP	3	n/a	n/a	EC	n/a	BO	
38.428	-	A	212	CR	NAP	0.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	213	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	214	CR	NAP	2	n/a	n/a	EC	n/a	BO	
38.428	-	A	215	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	216	CR	NAP	1.6	n/a	n/a	EC	n/a	BO	
38.428	-	A	217	CR	NAP	3.2	n/a	n/a	EC	n/a	BO	
38.428	-	A	218	CR	NAP	1.9	n/a	n/a	EC	n/a	BO	
38.428	-	A	219	CR	NAP	1.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	220	CR	NAP	2.8	n/a	n/a	EC	n/a	BO	
38.428	-	A	221	CR	NAP	1.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	222	CR	NAP	0.7	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	223	CR	NAP	2	n/a	n/a	EC	n/a	BO	
38.428	-	A	224	CR	NAP	1	n/a	n/a	EC	n/a	BO	
38.428	-	A	225	CR	NAP	1.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	226	CR	NAP	1.3	n/a	n/a	EC	n/a	BO	
38.428	-	A	227	CR	NAP	2.5	n/a	n/a	EC	n/a	BO	
38.428	-	A	228	CS	CV	11.1	CH	n/a	n/a	n/a	C	
38.428	-	B	229	CS	ES	12.1	CH	n/a	n/a	n/a	MC (M)	
38.428	-	AN	230	CS	ES	11	CH	n/a	n/a	n/a	C	
38.428	-	AN	231	CS	ES	4.2	CH	n/a	n/a	n/a	C	
38.428	-	-	232	CS	ES	4.4	CH	n/a	n/a	n/a	C	
38.428	-	B	233	CS	ES	11.6	CH	y	n/a	n/a	C	
38.428	-	A	234	CS	ES	10.6	CH	n/a	n/a	n/a	C	
38.428	-	A	235	CS	CV	10.8	CH	n/a	n/a	n/a	C	
38.428	-	B	236	CS	CV	13	QZ	n/a	n/a	n/a	C	
38.428	-	AN	237	CS	ES	8.1	CH	n/a	n/a	n/a	C	
38.428	-	B	238	CS	ES	22.3	CH	n/a	n/a	n/a	D	
38.428	77	-	239	CS	ES	11.5	CH	y	n/a	n/a	C	
38.428	-	B	240	CS	ES	5.7	CH	n/a	n/a	n/a	D	
38.428	-	A	241	CS	ES	6.7	CH	n/a	n/a	n/a	D	
38.428	-	A	242	CS	ES	4.7	CH	n/a	n/a	n/a	C	
38.428	-	A	243	CS	ES	6.2	CH	n/a	n/a	n/a	C	
38.428	-	A	244	CS	MS	7.7	CH	y	n/a	n/a	D	

38.428	-	A	245	CS	ES	11.3	CH	y	n/a	n/a	D	
38.428	-	AN	246	CS	CV	8.3	CH	n/a	n/a	n/a	C	
38.428	-	AS	247	CS	SS	9.8	CH	n/a	n/a	n/a	M	
38.428	-	AN	248	CS	ES	5.1	CH	y	n/a	n/a	D	
38.428	-	A	249	CS	SS	7.4	CH	n/a	n/a	n/a	M	
38.428	-	B	250	CS	ES	4.1	CH	n/a	n/a	n/a	C	
38.428	-	B	251	CS	ES	5.2	CH	n/a	n/a	n/a	C	
38.428	-	A	252	CS	ES	3.5	CH	n/a	n/a	n/a	D	
38.428	-	A	253	CS	ES	8.7	CH	y	n/a	n/a	C	
38.428	-	A	254	CS	MS	2	CH	n/a	n/a	n/a	D	
38.428	-	B	255	CS	CV	5	CH	n/a	n/a	n/a	C	
38.428	131	-	256	CS	ES	10.2	CH	y	n/a	n/a	C	plus
38.428	-	A	257	CS	ES	4.4	CH	y	n/a	n/a	C	
38.428	89	-	258	CS	ES	6.5	CH	y	n/a	n/a	MC (M)	plus
38.428	-	AN	259	CS	MS	6.7	CH	n/a	n/a	n/a	D	
38.428	84	-	260	CS	CV	7	CH	n/a	n/a	n/a	C	plus
38.428	-	A	261	CS	EMF	7.1	CH	y	n/a	n/a	C	
38.428	-	B	262	CS	ES	5.6	CH	y	n/a	n/a	MC (P)	"D"
38.428	-	A	263	CS	EMF	4.1	CH	n/a	n/a	n/a	M	
38.428	-	B	264	CS	ES	4	CH	n/a	n/a	n/a	D	
38.428	-	-	265	CS	MS	8.3	CH	y	n/a	n/a	P	"D"
38.428	-	A	266	CS	EMF	2.8	CH	n/a	n/a	n/a	ND	
38.428	-	A	267	CS	ES	5	CH	n/a	n/a	n/a	D	
38.428	128	-	268	CS	ES	3.4	CH	n/a	n/a	n/a	D	plus, spurred
38.428	-	A	269	CS	ES	2.1	CH	n/a	n/a	n/a	D	
38.428	-	BN	270	CS	ES	5.5	CH	n/a	n/a	n/a	D	
38.428	-	BE	271	CS	EMF	2.9	CH	n/a	n/a	n/a	C	
38.428	127	-	272	CS	EMF	8.2	QZ	n/a	n/a	n/a	ND	plus
38.428	-	A	273	CS	SS	3	CH	n/a	n/a	n/a	P	
38.428	-	A	274	CS	ES	4.7	CH	n/a	n/a	n/a	D	
38.428	-	A	275	CS	ES	9	CH	n/a	n/a	n/a	D	
38.428	-	B	276	CS	EMF	7.2	CH	n/a	n/a	n/a	C	
38.428	-	A	277	CS	ES	3.2	CH	n/a	n/a	n/a	C	
38.428	-	A	278	CS	EMF	3	CH	n/a	n/a	n/a	ND	
38.428	-	A	279	CS	EMF	2.9	CH	n/a	n/a	n/a	M	
38.428	-	A	280	CS	MS	2.3	CH	n/a	n/a	n/a	M	
38.428	-	B	281	CS	SS	4.3	CH	n/a	n/a	n/a	C	
38.428	-	A	282	CS	MS	38	CH	y	n/a	n/a	C	
38.428	-	AN	283	CS	MS	5.4	CH	n/a	n/a	n/a	D	
38.428	-	A	284	CS	SS	10.9	CH	n/a	n/a	n/a	M	
38.428	-	BS	285	CS	EMF	2.6	QZ	n/a	n/a	n/a	ND	

38.428	-	B	286	CS	ES	2.3	PW	n/a	n/a	n/a	D	
38.428	-	A	287	CS	EMF	2.5	CH	n/a	n/a	n/a	M	
38.428	-	A	288	CS	MS	4.1	CH	n/a	n/a	n/a	M, P	
38.428	-	A	289	CS	EMF	2.5	CH	n/a	n/a	n/a	P	
38.428	-	B	290	CS	SS	4	CH	y	n/a	n/a	M	
38.428	-	A	291	CS	EMF	0.7	CH	n/a	n/a	n/a	ND	
38.428	-	A	292	CS	MS	6.5	CH	n/a	n/a	n/a	C	
38.428	-	B	293	CS	MS	1.7	CH	n/a	n/a	n/a	P	
38.428	-	BE	294	CS	EMF	2.9	CH	n/a	n/a	n/a	M	
38.428	-	C	295	CS	ES	3.6	CH	n/a	n/a	n/a	C	
38.428	-	A	296	CS	EMF	3.5	CY	n/a	n/a	n/a	ND	
38.428	-	C	297	CS	MS	4.4	CH	y	n/a	n/a	M	
38.428	-	A	298	CS	MS	2	CH	n/a	n/a	n/a	D	
38.428	-	A	299	CS	EMF	3.7	CH	n/a	n/a	n/a	ND	
38.428	-	B	300	CS	EMF	1.7	CH	n/a	n/a	n/a	P	
38.428	87	-	301	CS	SS	11.2	CH	n/a	n/a	n/a	P	plus
38.428	78	-	302	CS	SS	13.9	CH	n/a	n/a	n/a	C	plus
38.428	-	A	303	CS	EMF	10.9	CH	n/a	n/a	n/a	P	
38.428	-	AN	304	CS	ES	9.8	CH	n/a	n/a	n/a	D	
38.428	-	AN	305	CS	SPV	10	CH	n/a	n/a	n/a	C	
38.428	-	A	306	CS	MS	2.3	CH	n/a	n/a	n/a	ND	
38.428	-	A	307	CS	EMF	1.9	CH	n/a	n/a	n/a	ND	
38.428	-	A	308	CS	ES	4	CH	n/a	n/a	n/a	P	recycled into a spokeshave?
38.428	104	-	309	CS	EMF	5.6	CH	n/a	n/a	n/a	ND	plus, possible spokeshave
38.428	-	A	310	CS	MS	4.6	CH	n/a	n/a	n/a	ND	
38.428	-	A	311	CS	EMF	7.2	QZ	n/a	n/a	n/a	C	
38.428	-	C	312	CS	EMF	11.6	CH	n/a	n/a	n/a	ND	
38.428	-	AS	313	CS	EMF	14.2	CH	n/a	n/a	n/a	ND	
38.428	130	-	314	CS	EMF	10.9	CH	n/a	n/a	n/a	P	plus
38.428	-	-	315	CS	EMF	16.4	CH	n/a	n/a	n/a	ND	"D"
38.428	135	-	316	CS	EMF	3.1	CH	n/a	n/a	n/a	ND	plus
38.428	-	A	317	CS	MS	2.4	CH	n/a	n/a	n/a	C	
38.428	-	A	318	CS	SS	2	CH	n/a	n/a	n/a	P, M	"D"
38.428	-	B	319	GS	MAN	240	B	n/a	n/a	n/a	D, L	
38.428	-	AS	319	CS	MS	1.1	CH	n/a	n/a	n/a	D	
38.428	-	A	320	CS	MS	5.3	CH	n/a	n/a	n/a	M	
38.428	-	B	321	CS	EMF	2.3	CH	n/a	n/a	n/a	ND	
38.428	-	B	322	CS	ES	6.7	CH	n/a	n/a	n/a	D	
38.428	-	A	323	CS	EMF	4.6	CH	n/a	n/a	n/a	ND	
38.428	-	B	324	CS	EMF	2.1	CH	n/a	n/a	n/a	ND	
38.428	-	A	325	CS	EMF	3.2	CH	n/a	n/a	n/a	ND	

38.428	-	A	326	CS	MS	0.5	CH	n/a	n/a	n/a	ND	
38.428	107	-	327	CS	EMF	4.2	CH	n/a	n/a	n/a	ND	plus
38.428	-	B	328	CS	MS	1.6	CH	n/a	n/a	n/a	P	
38.428	-	B	329	CS	EMF	1	CH	n/a	n/a	n/a	ND	
38.428	-	AS	330	CS	EMF	1.4	CH	n/a	n/a	n/a	P	"D"
38.428	129	-	331	CS	EMF	3.7	CH	n/a	n/a	n/a	P	plus
38.428	-	A	332	CS	EMF	2.3	CH	n/a	n/a	n/a	M	
38.428	-	B	333	CS	EMF	2.3	CH	n/a	n/a	n/a	ND	
38.428	-	-	334	CS	EMF	0.5	CH	n/a	n/a	n/a	ND	
38.428	-	A	335	CS	EMF	1.5	CH	n/a	n/a	n/a	ND	
38.428	-	A	336	CS	EMF	2	CH	n/a	n/a	n/a	ND	
38.428	-	A	337	CS	EMF	0.9	CH	n/a	n/a	n/a	ND	
38.428	-	A	338	CS	EMF	1.9	CH	n/a	n/a	n/a	ND	
38.428	-	A	339	CS	PRE	2	CH	n/a	n/a	n/a	C	made on a flake blank,
38.428	-	A	340	CS	PRE	1.7	CH	n/a	n/a	n/a	C	2 refitting pieces, made on a flake blank
38.428	-	A	341	CS	PRE	1	CH	n/a	n/a	n/a	C	
38.428	-	A	342	CS	PRE	2	CH	n/a	n/a	n/a	C	
38.428	-	A	343	CS	PRE	2.3	CH	n/a	n/a	n/a	C	made on a flake blank, 2 refitting pieces
38.428	-	A	344	CS	PRE	4.9	CH	n/a	n/a	n/a	C	made on a flake blank
38.428	74	-	345	CS	PRE	2.7	CH	n/a	n/a	n/a	C	plus
38.428	-	B	346	CS	PRE	1.1	CH	n/a	n/a	n/a	MC (T)	
38.428	-	A	347	CS	PRE	1.9	CH	n/a	n/a	n/a	C	
38.428	-	AN	348	CS	PRE	1.3	CH	n/a	n/a	n/a	C	
38.428	-	C	349	CS	BF	2.2	CH	n/a	n/a	n/a	C	made on a flake blank, 2 refitting pieces
38.428	-	A	350	CS	BF	2.2	CH	n/a	n/a	n/a	C	
38.428	-	B	351	CS	BF	0.5	CH	n/a	n/a	n/a	D	
38.428	-	A	352	CS	BF	2.1	CH	n/a	n/a	n/a	P	
38.428	-	A	353	CS	BF	0.7	CH	n/a	n/a	n/a	M	
38.428	-	A	354	CS	BF	0.3	CH	n/a	n/a	n/a	ND	
38.428	-	B	355	CS	BF	0.7	CH	n/a	n/a	n/a	D	
38.428	-	B	356	CS	BF	1.1	CH	n/a	n/a	n/a	M	
38.428	-	B	357	CS	BF	0.9	CH	n/a	n/a	n/a	D	
38.428	-	B	358	CS	PP	2.2	CH	n/a	MC	Unnotched	MC (T)	
38.428	-	A	359	CS	BF	0.1	CH	n/a	n/a	n/a	D	
38.428	-	C	360	CS	BF	1.6	CH	n/a	n/a	n/a	D	
38.428	-	A	361	CS	BF	1.1	CH	n/a	n/a	n/a	D	
38.428	-	A	362	CS	BF	0.5	CH	n/a	n/a	n/a	D	
38.428	-	A	363	CS	BF	0.3	CH	n/a	n/a	n/a	D	
38.428	-	A	364	CS	BF	0.8	CH	n/a	n/a	n/a	M	
38.428	-	B	365	CS	BF	1.1	CH	n/a	n/a	n/a	M	
38.428	-	A	366	CS	BF	0.3	CH	n/a	n/a	n/a	M	

38.428	-	B	367	CS	BF	1.6	CH	n/a	n/a	n/a	D	
38.428	-	AN	368	CS	BF	0.5	PW	n/a	n/a	n/a	P	
38.428	-	A	369	CS	BF	0.8	CH	n/a	n/a	n/a	P	
38.428	-	A	370	CS	BF	1.3	CH	n/a	n/a	n/a	P	
38.428	-	B	371	CS	BF	1	CH	n/a	n/a	n/a	M	
38.428	-	A	372	CS	BF	1.4	PW	n/a	n/a	n/a	D	
38.428	-	A	373	CS	BF	2.1	CH	n/a	n/a	n/a	P	
38.428	-	A	374	CS	BF	0.08	CH	n/a	n/a	n/a	ND	
38.428	-	A	375	CS	BF	3.2	QZ	n/a	n/a	n/a	C	2 refitting pieces
38.428	-	-	376	CS	BF	1.2	QZ	n/a	n/a	n/a	D	
38.428	-	B	377	CS	BF	3.4	QZ	n/a	n/a	n/a	M	
38.428	-	A	378	CS	BF	1.3	B	n/a	n/a	n/a	D	
38.428	-	A	379	CS	BF	1.6	QZ	n/a	n/a	n/a	M	
38.428	-	A	380	CS	BF	0.2	QZ	n/a	n/a	n/a	M	
38.428	-	B	381	CS	BF	2.8	QZ	n/a	n/a	n/a	D	
38.428	-	A	382	CS	BF	2.6	QZ	n/a	n/a	n/a	D	"D"
38.428	-	A	383	CS	BF	2.4	QZ	n/a	n/a	n/a	P	
38.248	-	B	384	CS	BF	3.4	QZ	n/a	n/a	n/a	M	
38.428	-	B	385	CS	BF	2.4	QZ	n/a	n/a	n/a	P	
38.428	-	A	386	CS	PRE	1.3	QZ	n/a	n/a	n/a	C	
38.428	-	A	387	CS	BF	1.8	QZ	n/a	n/a	n/a	M	
38.428	-	A	388	CS	BF	0.2	CH	n/a	n/a	n/a	P	
38.428	-	AN	389	CS	BF	2.4	CH	n/a	n/a	n/a	P	
38.428	-	A	390	CS	PP	2.8	CY	n/a	MC	Unnotched	MC (M)	
38.428	-	A	391	CS	PRE	2.1	CY	n/a	n/a	n/a	MC (T)	"D"
38.428	-	A	392	CS	BF	1.5	CY	n/a	n/a	n/a	ND	
38.428	-	B	393	CS	BF	1	QZ	n/a	n/a	n/a	P	
38.428	-	A	394	CS	BF	0.6	CH	n/a	n/a	n/a	D	"D"
38.428	-	B	395	CS	BF	1.2	CY	n/a	n/a	n/a	D	
38.428	-	A	396	CS	BF	0.8	CH	n/a	n/a	n/a	D	
38.428	-	A	397	CS	BF	1.8	CY	n/a	n/a	n/a	D	
38.428	-	B	398	CS	BF	1.1	CH	n/a	n/a	n/a	P	
38.428	-	AS	399	CS	BF	2.5	CH	n/a	n/a	n/a	M	
38.428	-	A	400	CS	BF	1.3	CH	n/a	n/a	n/a	P	
38.428	-	A	401	CS	BF	1.4	CH	n/a	n/a	n/a	P	
38.428	-	A	402	CS	BF	1	CH	n/a	n/a	n/a	M	
38.428	-	AS	403	CS	BF	3.9	CH	n/a	n/a	n/a	M	
38.428	-	A	404	CS	BF	1.6	CH	n/a	n/a	n/a	D	
38.428	-	A	405	CS	BF	0.8	CH	n/a	n/a	n/a	D	
38.428	-	B	406	CS	BF	0.8	CH	n/a	n/a	n/a	D	
38.428	-	B	407	CS	BF	1.5	CH	n/a	n/a	n/a	ND	

38.428	-	A	408	CS	PRE	0.5	CH	n/a	n/a	n/a	MC (T)	
38.428	-	A	409	CS	BF	1.1	CH	n/a	n/a	n/a	D	
38.428	-	A	410	CS	BF	0.5	CH	n/a	n/a	n/a	D	
38.428	-	A	411	CS	BF	0.1	CH	n/a	n/a	n/a	D	
38.428	-	AN	412	CS	BF	0.4	CH	n/a	n/a	n/a	M	
38.428	-	A	413	CS	BF	1.8	CH	n/a	n/a	n/a	P	
38.428	-	A	414	CS	BF	0.7	CH	n/a	n/a	n/a	D	
38.428	-	A	415	CS	BF	0.7	CH	n/a	n/a	n/a	P	
38.428	-	A	416	CS	BF	1.4	CH	n/a	n/a	n/a	P	
38.428	-	A	417	CS	BF	2.2	CH	n/a	n/a	n/a	P	
38.428	-	AN	418	CS	PRE	1	CH	n/a	n/a	n/a	P	
38.428	-	ASW	419	CS	BF	3	CH	n/a	n/a	n/a	D	
38.428	-	B	420	CS	BF	1	CH	n/a	n/a	n/a	P	
38.428	-	A	421	CS	BF	1.2	CH	n/a	n/a	n/a	ND	
38.428	122	-	422	CS	BF	1.4	CH	n/a	n/a	n/a	P	plus
38.428	-	A	423	CS	BF	0.9	CH	y	n/a	n/a	D	
38.428	-	A	424	CS	BF	0.9	CH	n/a	n/a	n/a	D	
38.428	-	AS	425	CS	BF	0.9	CH	n/a	n/a	n/a	D	
38.428	-	A	426	CS	BF	0.5	CH	n/a	n/a	n/a	D	"D"
38.428	-	A	427	CS	BF	0.4	CH	n/a	n/a	n/a	M	"D"
38.428	-	A	428	CS	BF	1.2	CH	n/a	n/a	n/a	M	
38.428	-	B	429	CS	BF	1	CH	n/a	n/a	n/a	P	
38.428	-	A	430	CS	PRE	0.8	CH	n/a	n/a	n/a	P, M	
38.428	-	A	431	CS	BF	1.2	CH	n/a	n/a	n/a	P	
38.428	-	A	432	CS	BF	1.2	CH	n/a	n/a	n/a	P	
38.428	-	AN	433	CS	BF	2.3	CH	n/a	n/a	n/a	P	
38.428	-	B	434	CS	PRE	2.1	CH	n/a	n/a	n/a	P, M	"D"
38.428	-	B	435	CS	BF	3.5	CH	n/a	n/a	n/a	D	
38.428	6	-	436	CS	BF	1.6	CH	n/a	n/a	n/a	M	"D"
38.428	-	A	437	CS	PRE	1	CH	n/a	n/a	n/a	C	
38.428	-	A	438	CS	BF	0.9	CY	n/a	n/a	n/a	D	
38.428	-	A	439	CS	BF	1.6	CH	n/a	n/a	n/a	D	
38.428	-	AS	440	CS	BF	1.4	CH	n/a	n/a	n/a	D	
38.428	-	A	441	CS	BF	0.4	CH	n/a	n/a	n/a	D	
38.428	-	A	442	CS	BF	1.2	CH	n/a	n/a	n/a	D	
38.428	-	A	443	CS	BF	1.1	CH	n/a	n/a	n/a	P, M	
38.428	-	AS	444	CS	BF	0.5	CH	n/a	n/a	n/a	P	
38.428	-	AN	445	CS	BF	0.8	CH	n/a	n/a	n/a	P	
38.428	-	A	446	CS	BF	0.9	CH	n/a	n/a	n/a	M	
38.428	-	AN	447	CS	BF	3.1	CH	n/a	n/a	n/a	P, M	
38.428	-	B	448	CS	BF	2.2	CH	n/a	n/a	n/a	D	

38.428	2	-	449	CS	BF	1.5	CH	n/a	n/a	n/a	M plus
38.428	-	A	450	CS	BF	3.3	CH	n/a	n/a	n/a	M
38.428	-	C	451	CS	BF	3.5	CH	n/a	n/a	n/a	P
38.428	-	A	452	CS	BF	0.4	CH	n/a	n/a	n/a	D
38.428	-	A	453	CS	BF	0.4	CH	n/a	n/a	n/a	D
38.428	-	A	454	CS	BF	0.5	CH	n/a	n/a	n/a	D
38.428	-	AN	455	CS	BF	0.7	CH	n/a	n/a	n/a	D
38.428	-	A	456	CS	BF	0.9	CH	n/a	n/a	n/a	D
38.428	-	A	457	CS	BF	2.5	CH	n/a	n/a	n/a	M
38.428	-	A	458	CS	BF	1.1	CH	n/a	n/a	n/a	P
38.428	-	B	459	CS	BF	1.1	CH	n/a	n/a	n/a	P
38.428	-	A	460	CS	BF	0.8	CH	n/a	n/a	n/a	P
38.428	75	-	461	CS	PRE	1.3	CH	n/a	n/a	n/a	MC (T) plus
38.428	-	A	462	CS	PRE	0.5	CH	n/a	n/a	n/a	C
38.428	-	A	463	CS	BF	0.3	CH	n/a	n/a	n/a	D
38.428	-	A	464	CS	BF	1.3	CH	n/a	n/a	n/a	D
38.428	-	A	465	CS	BF	1	CY	n/a	n/a	n/a	D
38.428	-	A	466	CS	BF	1.5	CH	n/a	n/a	n/a	M
38.428	-	A	467	CS	BF	0.5	CH	n/a	n/a	n/a	P
38.428	-	A	468	CS	BF	0.4	CH	n/a	n/a	n/a	P
38.428	-	B	469	CS	BF	0.6	CH	n/a	n/a	n/a	M
38.428	-	A	470	CS	BF	0.9	CH	n/a	n/a	n/a	P
38.428	-	AN	471	CS	BF	0.7	CH	n/a	n/a	n/a	D "D"
38.428	-	A	472	CS	BF	1.4	CH	n/a	n/a	n/a	D
38.428	-	A	473	CS	PRE	1.3	CH	n/a	n/a	n/a	P
38.428	-	B	474	CS	BF	0.6	CH	n/a	n/a	n/a	P
38.428	-	A	475	CS	BF	1.4	CH	n/a	n/a	n/a	M
38.428	115	-	476	CS	BF	3.2	CH	n/a	n/a	n/a	M plus
38.428	-	B	477	CS	BF	3.9	CH	n/a	n/a	n/a	M
38.428	-	A	478	CS	BF	0.2	CH	n/a	n/a	n/a	D
38.428	-	A	479	CS	BF	0.2	CH	n/a	n/a	n/a	D
38.428	4	-	480	CS	BF	0.8	CH	n/a	n/a	n/a	D plus
38.428	-	A	481	CS	BF	0.5	CH	n/a	n/a	n/a	D
38.248	-	A	482	CS	BF	0.6	CH	n/a	n/a	n/a	D
38.428	-	A	483	CS	BF	0.7	CH	n/a	n/a	n/a	M
38.428	-	B	484	CS	BF	0.6	CH	n/a	n/a	n/a	D
38.428	-	A	485	CS	BF	0.9	CH	n/a	n/a	n/a	M
38.428	-	A	486	CS	BF	0.8	CH	n/a	n/a	n/a	P
38.428	-	A	487	CS	BF	0.8	CY	n/a	n/a	n/a	P
38.428	-	A	488	CS	BF	0.5	CH	n/a	n/a	n/a	P
38.428	-	A	489	CS	BF	1.1	CH	n/a	n/a	n/a	P

38.428	-	A	490	CS	BF	0.6	CH	n/a	n/a	n/a	P	
38.428	-	AN	491	CS	BF	2	CH	n/a	n/a	n/a	D	
38.428	-	A	492	CS	BF	0.7	CH	n/a	n/a	n/a	M	
38.428	91	-	493	CS	BF	0.8	CH	n/a	n/a	n/a	P	plus
38.428	-	A	494	CS	BF	3.3	CH	n/a	n/a	n/a	D	
38.428	-	A	495	CS	PRE	1.2	CH	n/a	n/a	n/a	C	
38.428	-	A	496	CS	BF	0.2	CH	n/a	n/a	n/a	D	
38.428	-	A	497	CS	BF	0.5	CH	n/a	n/a	n/a	D	
38.428	-	A	498	CS	BF	0.2	CH	n/a	n/a	n/a	D	"D"
38.428	-	B	499	CS	BF	0.3	CH	n/a	n/a	n/a	M	
38.428	-	A	500	CS	BF	1.1	CH	n/a	n/a	n/a	D	
38.428	-	AS	501	CS	BF	1.9	CH	n/a	n/a	n/a	M	
38.428	-	B	502	CS	BF	0.8	CH	n/a	n/a	n/a	D	
38.428	-	A	503	CS	PRE	0.9	CH	n/a	n/a	n/a	P	
38.428	-	B	504	CS	BF	1.5	CH	n/a	n/a	n/a	P	
38.428	-	A	505	CS	BF	0.8	CH	n/a	n/a	n/a	P	
38.428	-	BE	506	CS	BF	0.7	CH	n/a	n/a	n/a	D	
38.428	-	AS	507	CS	BF	0.9	CH	n/a	n/a	n/a	P	"D"
38.428	-	A	508	CS	BF	1.4	CH	n/a	n/a	n/a	P	
38.428	-	A	509	CS	BF	2.8	CH	n/a	n/a	n/a	M	
38.428	-	A	510	CS	BF	0.6	CH	n/a	n/a	n/a	M	
38.428	-	A	511	CS	BF	0.5	CH	n/a	n/a	n/a	MC (T)	
38.428	-	A	512	CR	NAP	1.8	n/a	n/a	n/a	Plainware	R	
38.428	-	A	513	CR	NAP	1.6	n/a	n/a	n/a	Plainware	R	
38.428	-	A	514	CR	NAP	0.9	n/a	n/a	n/a	Plainware	R	
38.428	10	-	515	CR	NAP	6.6	n/a	n/a	n/a	Plainware	R	plus
38.428	-	AS	516	CR	NAP	12.7	n/a	n/a	EC	n/a	R	both interior and exterior are cord-marked
38.428	-	AN	517	CR	NAP	1.9	n/a	n/a	EC	n/a	R	
38.428	-	-	518	CR	NAP	3	n/a	n/a	EC	n/a	R	
38.428	-	A	519	CR	NAP	1.4	n/a	n/a	EC	n/a	R	
38.428	-	A	520	CR	NAP	0.8	n/a	n/a	EC	n/a	R	
38.428	-	-	521	CR	NAP	3.5	n/a	n/a	EC	n/a	BO	
38.428	-	-	522	CR	NAP	3.5	n/a	n/a	EC	n/a	BO	
38.428	-	-	523	CR	NAP	3.9	n/a	n/a	EC	n/a	BO	
38.428	-	-	524	CR	NAP	5.2	n/a	n/a	EC	n/a	BO	
38.428	-	-	525	CR	NAP	3.6	n/a	n/a	EC	n/a	BO	
38.428	-	-	526	CR	NAP	3.8	n/a	n/a	EC	n/a	BO	
38.428	-	-	527	CR	NAP	4.4	n/a	n/a	EC	n/a	BO	
38.428	-	-	528	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	A	529	CR	NAP	4.5	n/a	n/a	EC	n/a	BO	

38.428	-	-	530	CR	NAP	1.6	n/a	n/a	EC	n/a	BO
38.428	-	A	531	CR	NAP	2.6	n/a	n/a	EC	n/a	BO
38.428	-	-	532	CR	NAP	4.2	n/a	n/a	EC	n/a	BO
38.428	-	-	533	CR	NAP	2	n/a	n/a	EC	n/a	BO
38.428	-	-	534	CR	NAP	1.6	n/a	n/a	EC	n/a	BO
38.428	-	A	535	CR	NAP	4.9	n/a	n/a	EC	n/a	BO
38.428	59	-	536	CR	NAP	2	n/a	n/a	EC	n/a	BO
38.428	-	-	537	CR	NAP	2.7	n/a	n/a	EC	n/a	BO
38.428	-	-	538	CR	NAP	3.1	n/a	n/a	EC	n/a	BO
38.428	-	-	539	CR	NAP	4.1	n/a	n/a	EC	n/a	BO
38.428	-	-	540	CR	NAP	4.6	n/a	n/a	EC	n/a	BO
38.428	-	-	541	CR	NAP	4.4	n/a	n/a	EC	n/a	BO
38.428	-	-	542	CR	NAP	2.9	n/a	n/a	EC	n/a	BO
38.428	-	-	543	CR	NAP	6.3	n/a	n/a	EC	n/a	BO
38.428	-	-	544	CR	NAP	2.9	n/a	n/a	EC	n/a	BO
38.428	-	-	545	CR	NAP	2.9	n/a	n/a	EC	n/a	BO
38.428	-	-	546	CR	NAP	5.4	n/a	n/a	EC	n/a	BO
38.428	-	-	547	CR	NAP	3.2	n/a	n/a	EC	n/a	BO
38.428	-	A	548	CR	NAP	2.9	n/a	n/a	EC	n/a	BO
38.428	-	-	549	CR	NAP	3	n/a	n/a	EC	n/a	BO
38.428	-	-	550	CR	NAP	7.5	n/a	n/a	EC	n/a	BO
38.428	-	-	551	CR	NAP	3.8	n/a	n/a	EC	n/a	BO
38.428	-	-	552	CR	NAP	6.7	n/a	n/a	EC	n/a	BO
38.428	-	-	553	CR	NAP	3.4	n/a	n/a	EC	n/a	BO
38.428	-	-	554	CR	NAP	4.2	n/a	n/a	EC	n/a	BO
38.428	-	-	555	CR	NAP	2.9	n/a	n/a	EC	n/a	BO
38.428	-	-	556	CR	NAP	4.5	n/a	n/a	EC	n/a	BO
38.428	-	-	557	CR	NAP	4.2	n/a	n/a	EC	n/a	BO
38.428	-	-	558	CR	NAP	6	n/a	n/a	EC	n/a	BO
38.428	-	-	559	CR	NAP	4.1	n/a	n/a	EC	n/a	BO
38.428	-	-	560	CR	NAP	5.3	n/a	n/a	EC	n/a	BO
38.428	-	-	561	CR	NAP	4.8	n/a	n/a	EC	n/a	BO
38.428	-	-	562	CR	NAP	4.3	n/a	n/a	EC	n/a	BO
38.428	-	AN	563	CR	NAP	13.3	n/a	n/a	EC	n/a	BO
38.428	-	-	564	CR	NAP	23.1	n/a	n/a	EC	n/a	BA
38.428	-	A	565	CR	NAP	7.9	n/a	n/a	EC	n/a	BO
38.428	-	-	566	CR	NAP	11.1	n/a	n/a	EC	n/a	BO
38.428	-	-	567	CR	NAP	3.5	n/a	n/a	EC	n/a	BO
38.428	-	-	568	CR	NAP	5.7	n/a	n/a	EC	n/a	BO
38.428	-	-	569	CR	NAP	3.8	n/a	n/a	EC	n/a	BO
38.428	-	-	570	CR	NAP	2.7	n/a	n/a	EC	n/a	BO

38.428	-	-	571	CR	NAP	3.6	n/a	n/a	EC	n/a	BO	
38.428	-	-	572	CR	NAP	2.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	573	CR	NAP	3.2	n/a	n/a	EC	n/a	BO	
38.428	-	-	574	CR	NAP	4.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	575	CR	NAP	5	n/a	n/a	EC	n/a	BO	
38.428	-	-	576	CR	NAP	7.2	n/a	n/a	EC	n/a	BO	
38.428	-	-	577	CR	NAP	3.2	n/a	n/a	EC	n/a	BO	
38.428	-	-	578	CR	NAP	2.4	n/a	n/a	EC	n/a	BO	
38.428	-	-	579	CR	NAP	2.6	n/a	n/a	EC	n/a	BO	
38.428	-	-	580	CR	NAP	6.9	n/a	n/a	EC	n/a	BA	
38.428	-	-	581	CR	NAP	2.3	n/a	n/a	EC	n/a	BO	
38.428	-	-	582	CR	NAP	3.4	n/a	n/a	EC	n/a	BO	
38.428	-	-	583	CR	NAP	3.7	n/a	n/a	EC	n/a	BO	
38.428	-	-	584	CR	NAP	3.6	n/a	n/a	EC	n/a	BO	
38.428	-	-	585	CR	NAP	2.1	n/a	n/a	EC	n/a	BO	
38.428	-	A	586	CS	DR	4.5	n/a	n/a	n/a	n/a	D	
38.428	-	B	587	CS	DR	0.4	n/a	n/a	n/a	n/a	D	
38.428	-	BE	588	CS	DR	2.8	n/a	n/a	n/a	n/a	P	
38.428	-	B	589	CS	DR	2.3	n/a	n/a	n/a	n/a	C	
38.428	-	B	590	CS	BF	12.2	CH	n/a	n/a	n/a	M	
38.428	-	A	591	CS	BF	3.6	QZ	n/a	n/a	n/a	M	
38.428	-	C	592	CS	BF	10.2	QZ	n/a	n/a	n/a	P	"D"
38.428	-	A	593	CS	BF	3.8	B	n/a	n/a	n/a	D	
38.428	-	A	594	CS	BF	19.7	QZ	n/a	n/a	n/a	C	
38.428	-	B	595	CS	BF	9	CH	n/a	n/a	n/a	MC (L)	"D"
38.428	-	A	596	CS	BF	8.1	CH	n/a	n/a	n/a	C	
38.428	-	AN	597	CS	BF	6.7	CH	n/a	n/a	n/a	D	
38.428	-	AS	598	CS	BF	6.5	PW	n/a	n/a	n/a	MC (T)	
38.428	-	A	599	CS	BF	8.3	CH	n/a	n/a	n/a	P	
38.428	-	AS	600	CS	BF	6.7	CH	n/a	n/a	n/a	C	
38.428	-	A	601	CS	DR	1.1	CH	n/a	n/a	n/a	P	
38.428	-	B	602	CS	BF	4	CH	n/a	n/a	n/a	M	
38.428	-	B	603	CS	BF	6.1	CH	n/a	n/a	n/a	P	
38.428	126	-	604	CS	BF	7.6	CH	y	n/a	n/a	M	plus
38.428	-	B	605	CS	BF	4.3	CH	n/a	n/a	n/a	M	
38.428	-	AS	606	CS	BF	3.7	CH	n/a	n/a	n/a	P	
38.428	-	A	607	CS	BF	17.7	CH	y	n/a	n/a	P	
38.428	428	-	608	CS	BF	10.4	CH	n/a	n/a	n/a	P	
38.428	-	A	609	CS	BF	6.4	CH	n/a	n/a	n/a	P, M	2 refitting pieces
38.428	-	A	610	CS	BF	11.7	CH	y	n/a	n/a	M	
38.428	-	A	611	CS	BF	30.6	CH	n/a	n/a	n/a	P, M	

38.428	65	-	612	CS	BF	10.8	CH	n/a	n/a	n/a	D
38.428	-	B	613	CS	BF	8.4	CH	y	n/a	n/a	P
38.428	1	-	614	CS	BF	4.6	CH	n/a	n/a	n/a	P plus
38.428	-	AS	615	CS	BF	9.7	CH	n/a	n/a	n/a	P
38.428	-	-	616	CS	BF	11.6	CH	n/a	n/a	n/a	P "D"
38.428	-	AN	617	CS	BF	15.4	CH	n/a	n/a	n/a	C
38.428	133	-	618	CS	BF	5.2	CH	n/a	n/a	n/a	P plus
38.428	-	A	619	CS	BF	9.2	CH	n/a	n/a	n/a	P
38.428	-	B	620	CS	BF	5.6	CH	n/a	n/a	n/a	D "NE"
38.428	-	A	621	CS	BF	18.2	CH	n/a	n/a	n/a	P
38.428	-	A	622	CS	BF	4.3	CH	y	n/a	n/a	M
38.428	-	A	623	CS	BF	3.5	CY	n/a	n/a	n/a	M
38.428	-	A	624	CS	BF	3.6	CH	n/a	n/a	n/a	P
38.428	-	A	625	CS	BF	3.6	CH	n/a	n/a	n/a	P
38.428	-	A	626	CS	BF	3.8	CH	n/a	n/a	n/a	P
38.428	-	A	627	CS	BF	5.3	CH	n/a	n/a	n/a	P
38.428	-	A	628	CS	BF	6	QZ	n/a	n/a	n/a	D
38.428	-	B	629	CS	BF	10.3	QZ	n/a	n/a	n/a	MC (T)
38.428	-	A	630	CS	BF	5.2	CH	n/a	n/a	n/a	P
38.428	-	B	631	CS	BF	10	QZ	n/a	n/a	n/a	P
38.428	-	A	632	CS	BF	9.6	CH	y	n/a	n/a	P
38.428	-	A	633	CS	BF	2.3	CH	n/a	n/a	n/a	M
38.428	-	A	634	CS	BF	3	CH	n/a	n/a	n/a	P
38.428	-	A	635	CS	BF	11.4	QZ	n/a	n/a	n/a	P
38.428	-	AS	636	CS	BF	6.1	CH	n/a	n/a	n/a	C
38.428	-	A	637	CS	BF	4	CH	n/a	n/a	n/a	D
38.428	-	A	638	CS	BF	5.3	CH	n/a	n/a	n/a	D
38.428	-	A	639	CS	BF	5.2	CH	n/a	n/a	n/a	D
38.428	-	A	640	CS	BF	3.3	CH	n/a	n/a	n/a	D
38.428	-	A	641	CS	BF	2.4	CH	n/a	n/a	n/a	M "D"
38.428	-	A	642	CS	BF	0.8	CH	n/a	n/a	n/a	D
38.428	-	A	643	CS	BF	0.8	CH	n/a	n/a	n/a	D
38.428	-	A	644	CS	BF	0.8	QZ	n/a	n/a	n/a	M
38.428	-	B	645	CS	BF	6.7	CH	n/a	n/a	n/a	D
38.428	-	A	646	CS	BF	3.9	CH	n/a	n/a	n/a	P
38.428	-	A	647	CS	BF	12.8	CH	y	n/a	n/a	M
38.428	-	ASS	648	CS	BF	9.6	CH	n/a	n/a	n/a	P
38.428	113	-	649	CS	BF	8.5	CH	n/a	n/a	n/a	M plus
38.428	-	AS	650	CS	BF	8.3	CH	n/a	n/a	n/a	P
38.428	138	-	651	CS	BF	24.8	CH	n/a	n/a	n/a	C plus
38.428	-	A	652	CS	BF	5.6	CH	n/a	n/a	n/a	P

38.428	-	A	653	CS	BF	5.3	CH	n/a	n/a	n/a	P	
38.428	-	-	654	CS	BF	4.3	CH	y	n/a	n/a	P	
38.428	-	A	655	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	656	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	657	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	658	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	659	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	660	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	661	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	662	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	663	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	664	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	665	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	666	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	667	CR	NAP	1.1	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	668	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	669	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	670	CR	NAP	1	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	671	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	672	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	673	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	674	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	675	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	676	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	677	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	678	CR	NAP	2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	679	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	680	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	681	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	682	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	683	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	684	CR	NAP	2.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	685	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	686	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	687	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	688	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	689	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	690	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	691	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	692	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	693	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	

38.428	-	A	694	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	695	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	696	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	697	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	698	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	699	CR	NAP	1.1	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	700	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	701	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	702	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	703	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	704	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	705	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	706	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	707	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	708	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	709	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	710	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	711	CR	NAP	1.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	712	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	713	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	714	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	715	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	716	CR	NAP	0.5	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	717	CR	NAP	1.6	n/a	n/a	EC	Plainware	BO	
38.428	-	A	718	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	719	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	720	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	721	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	722	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	723	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	724	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	725	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	726	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	727	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	728	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	729	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	730	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	731	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	732	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	733	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	734	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	

38.428	-	A	735	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	736	CR	NAP	0.9	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	737	CR	NAP	1.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	738	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	739	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	740	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	741	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	742	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	743	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	744	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	745	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	746	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	747	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	748	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	749	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	750	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	751	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	752	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	753	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	754	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	755	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	756	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	757	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	758	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	759	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	760	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	761	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	762	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	763	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	764	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	765	CR	NAP	0.8	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	766	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	767	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	768	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	769	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	770	CR	NAP	0.4	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	771	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	772	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	773	CR	NAP	0.7	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	774	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	775	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	

38.428	-	A	776	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	777	CR	NAP	0.3	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	778	CR	NAP	0.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	779	CR	NAP	0.6	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	780	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	781	CR	NAP	0.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	782	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	783	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	784	CR	NAP	0.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	785	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	786	CR	NAP	0.3	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	787	CR	NAP	0.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	788	CR	NAP	13.6	n/a	n/a	n/a	Plainware	BO	two refitted fragments
38.428	-	A	789	CR	NAP	2.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	790	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	791	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	792	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	793	CR	NAP	3.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	794	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	795	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	796	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	797	CR	NAP	2.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	798	CR	NAP	5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	799	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	800	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	801	CR	NAP	1.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	802	CR	NAP	2.3	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	803	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	804	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	805	CR	NAP	1.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	806	CR	NAP	1.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	807	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	808	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	809	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	810	CR	NAP	1.3	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	811	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	812	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	813	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	814	CR	NAP	2.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	815	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	816	CR	NAP	1.8	n/a	n/a	n/a	Plainware	BO	

38.428	-	A	817	CR	NAP	2.1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	818	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO
38.428	-	A	819	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	820	CR	NAP	2.7	n/a	n/a	n/a	Plainware	BO
38.428	-	A	821	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	822	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	823	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO
38.428	-	A	824	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO
38.428	-	A	825	CR	NAP	1.8	n/a	n/a	n/a	Plainware	BO
38.428	-	A	826	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO
38.428	-	A	827	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	828	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	829	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	830	CR	NAP	1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	831	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO
38.428	-	A	832	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	833	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO
38.428	-	A	834	CR	NAP	2	n/a	n/a	n/a	Plainware	BO
38.428	-	A	835	CR	NAP	1.3	n/a	n/a	n/a	Plainware	BO
38.428	-	A	836	CR	NAP	1.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	837	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	838	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	839	CR	NAP	2	n/a	n/a	n/a	Plainware	BO
38.428	-	A	840	CR	NAP	1.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	841	CR	NAP	2.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	842	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	843	CR	NAP	2.3	n/a	n/a	n/a	Plainware	BO
38.428	-	A	844	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	845	CR	NAP	5.2	n/a	n/a	n/a	Plainware	BO
38.428	-	A	846	CR	NAP	2.4	n/a	n/a	n/a	Plainware	BO
38.428	-	A	847	CR	NAP	1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	848	CR	NAP	1	n/a	n/a	n/a	Plainware	BO
38.428	-	A	849	CR	NAP	3.9	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	850	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO
38.428	-	A	851	CR	NAP	1.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	852	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO
38.428	-	A	853	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO
38.428	-	A	854	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	855	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO
38.428	-	A	856	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO
38.428	-	A	857	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO

38.428	-	A	858	CR	NAP	1.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	859	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	860	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	861	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	862	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	863	CR	NAP	2.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	864	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	865	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	866	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	867	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	868	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	869	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	870	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	871	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	872	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	873	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	874	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	875	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	876	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	877	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	878	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	879	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	880	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	881	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	882	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	883	CR	NAP	0.3	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	884	CR	NAP	1.1	n/a	n/a	n/a	Plainware	R	
38.428	-	A	885	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	886	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	887	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	888	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	889	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	890	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	891	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	892	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	893	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	894	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	895	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	896	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	897	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	898	CR	NAP	1.1	n/a	n/a	n/a	Plainware	BO	

38.428	33	-	899	CR	NAP	13.7	n/a	n/a	EC	Cord-marked	BO "D", plus
38.428	76	-	900	CR	NAP	4.2	n/a	n/a	EC	Cord-marked	BO plus
38.428	-	-	901	CR	NAP	2.2	n/a	n/a	n/a	Plainware	BO
38.428	40	-	902	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO plus
38.428	10	-	903	CR	NAP	3.4	n/a	n/a	EC	Cord-marked	BA plus
38.428	67	-	904	CR	NAP	2.3	n/a	n/a	EC	Cord-marked	BO plus
38.428	67	-	905	CR	NAP	3.2	n/a	n/a	EC	Cord-marked	BO plus
38.428	42	-	906	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO plus
38.428	79	-	907	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO plus
38.428	36	-	908	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO plus
38.428	-	AE	909	CR	NAP	6.6	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	910	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	911	CR	NAP	1.6	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	912	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	913	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	914	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO
38.428	-	AE	915	CR	NAP	1	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	916	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	917	CR	NAP	2.3	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	918	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	919	CR	NAP	2.6	n/a	n/a	n/a	Plainware	BO
38.428	-	AE	920	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	AE	921	CR	NAP	0.3	n/a	n/a	n/a	n/a	BO exterior is deteriorated
38.428	-	A	922	CR	NAP	6.9	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	923	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	924	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	925	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	926	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	927	CR	NAP	3.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	928	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	929	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	930	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	931	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	932	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	933	CR	NAP	1.9	n/a	n/a	n/a	Plainware	R
38.428	-	A	934	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	935	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	936	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	937	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	A	938	CR	NAP	1.2	n/a	n/a	n/a	n/a	BO exterior is deteriorated
38.428	-	A	939	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO

38.428	-	A	940	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	941	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	942	CR	NAP	0.7	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	A	943	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	944	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	945	CR	NAP	2.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	946	CR	NAP	3.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	947	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	948	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	949	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	950	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	951	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	952	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	953	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	954	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	955	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	956	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	957	CR	NAP	0.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	958	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	959	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	960	CR	NAP	2.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	961	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	962	CR	NAP	2.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	963	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	964	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	965	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	966	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	967	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	968	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	969	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASS	970	CR	NAP	1.3	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	AS	971	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	972	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	973	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	974	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	975	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	AS	976	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	AS	977	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	ASW	978	CR	NAP	2.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	979	CR	NAP	5.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	980	CR	NAP	2.6	n/a	n/a	n/a	Plainware	BO	

38.428	-	A	981	CR	NAP	5.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	982	CR	NAP	10.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	983	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	984	CR	NAP	2.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	985	CR	NAP	4.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AS	986	CR	NAP	5.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	987	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	988	CR	NAP	11.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASW+A	989	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	ASW+A	990	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO	
38.428	5	ASW+A	991	CR	NAP	2.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AW	992	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	A	993	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	A	994	CR	NAP	1.3	n/a	n/a	n/a	Plainware	BO	
38.428	8	-	995	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	plus
38.428	-	AS	996	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	997	CR	NAP	4.8	n/a	n/a	EC	Cord-marked	BA	
38.428	-	AN	998	CR	NAP	3.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	999	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1000	CR	NAP	3.8	n/a	n/a	n/a	Plainware	BA	
38.428	-	AN	1001	CR	NAP	2.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1002	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1003	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1004	CR	NAP	2.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1005	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1006	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1007	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1008	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1009	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1010	CR	NAP	1.5	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	AN	1011	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1012	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1013	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1014	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1015	CR	NAP	2.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1016	CR	NAP	1.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	AN	1017	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1018	CR	NAP	1,7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1019	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1020	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1021	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	

38.428	-	AN	1022	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1023	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1024	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1025	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1026	CR	NAP	1.8	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	AN	1027	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1028	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1029	CR	NAP	1.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1030	CR	NAP	2.8	n/a	n/a	n/a	Plainware	BA	
38.428	-	AN	1031	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1032	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1033	CR	NAP	1.3	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1034	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1035	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1036	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1037	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1038	CR	NAP	3.1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1039	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1040	CR	NAP	2.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1041	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1042	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1043	CR	NAP	0.5	n/a	n/a	n/a	Plainware	R	
38.428	-	AN	1044	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1045	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BA	
38.428	-	AN	1046	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1047	CR	NAP	1.1	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	AN	1048	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1049	CR	NAP	2.6	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1050	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1051	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1052	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1053	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1054	CR	NAP	1.9	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1055	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	AN	1056	CR	NAP	1	n/a	n/a	EC	Cord-marked	R	
38.428	-	AN	1057	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1058	CR	NAP	2.5	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1059	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1060	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1061	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	AN	1062	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	

38.428	-	AN	1063	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1064	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO
38.428	-	AN	1065	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1066	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO
38.428	-	AN	1067	CR	NAP	1.6	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1068	CR	NAP	1.7	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1069	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1070	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1071	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1072	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1073	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1074	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1075	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO
38.428	-	AN	1076	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1077	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1078	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1079	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1080	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	AN	1081	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1082	CR	NAP	7.3	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1083	CR	NAP	19.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1084	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1085	CR	NAP	4.1	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1086	CR	NAP	1	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1087	CR	NAP	4.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1088	CR	NAP	5	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1089	CR	NAP	3.2	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1090	CR	NAP	2.6	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1091	CR	NAP	2.9	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1092	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1093	CR	NAP	2.5	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1094	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1095	CR	NAP	5.1	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1096	CR	NAP	2.1	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1097	CR	NAP	2.9	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1098	CR	NAP	2.8	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1099	CR	NAP	2.7	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1100	CR	NAP	1.5	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1101	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO
38.428	-	B	1102	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO
38.428	-	B	1103	CR	NAP	2.3	n/a	n/a	EC	Cord-marked	BO

38.428	-	B	1104	CR	NAP	1.4	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1105	CR	NAP	0.5	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1106	CR	NAP	1	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1107	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1108	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1109	CR	NAP	2.5	n/a	n/a	EC	Cord-marked	BA	
38.428	-	B	1110	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1111	CR	NAP	0.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1112	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1113	CR	NAP	0.9	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1114	CR	NAP	0.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1115	CR	NAP	0.5	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1116	CR	NAP	1.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1117	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1118	CR	NAP	0.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1119	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1120	CR	NAP	1.8	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1121	CR	NAP	1	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1122	CR	NAP	0.7	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1123	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1124	CR	NAP	2.7	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1125	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1126	CR	NAP	0.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1127	CR	NAP	0.2	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1128	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1129	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1130	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1131	CR	NAP	0.6	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1132	CR	NAP	2.2	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1133	CR	NAP	0.9	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1134	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1135	CR	NAP	1.2	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1136	CR	NAP	0.5	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1137	CR	NAP	1.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1138	CR	NAP	2	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1139	CR	NAP	0.3	n/a	n/a	n/a	n/a	BO	exterior is deteriorated
38.428	-	B	1140	CR	NAP	0.4	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1141	CR	NAP	0.6	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1142	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	
38.428	-	B	1143	CR	NAP	0.8	n/a	n/a	EC	Cord-marked	BO	
38.428	-	B	1144	CR	NAP	0.7	n/a	n/a	n/a	Plainware	BO	

38.428	-	B	1145	CR	NAP	0.3	n/a	n/a	n/a	Plainware	BO
38.428	-	-	1146	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1147	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1148	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1149	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1150	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1151	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1152	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1153	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1154	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1155	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1156	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1157	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1158	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1159	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1160	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1161	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1162	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1163	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1164	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1165	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1166	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1167	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1168	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1169	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1170	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1171	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1172	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1173	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1174	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1175	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1176	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1177	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1178	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1179	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1180	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1181	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1182	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1183	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1184	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	-	1185	CR	NAP	-	n	n/a	EC	Cord-marked	B

38.428	-	A	1186	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1187	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1188	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1189	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1190	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1191	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1192	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1193	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1194	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1195	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1196	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1197	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1198	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1199	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1200	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1201	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1202	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1203	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1204	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1205	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1206	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1207	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1208	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1209	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1210	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1211	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1212	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1213	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1214	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1215	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1216	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1217	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1218	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1219	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1220	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1221	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1222	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1223	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1224	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1225	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1226	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1227	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1228	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1229	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1230	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1231	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1232	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1233	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1234	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1235	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1236	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1237	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1238	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1239	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1240	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1241	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1242	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1243	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1244	GS	MET	-	SA	n/a	n/a	n/a	C
38.428	-	C	1245	GS	MET	-	SA	n/a	n/a	n/a	C
38.428	73	-	1246	GS	MET	-	SA	n/a	n/a	n/a	C
38.428	-	-	1247	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1248	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1249	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1250	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1251	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1252	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1253	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1254	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1255	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1256	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1257	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1258	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1259	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1260	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1261	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1262	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1263	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1264	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1265	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1266	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1267	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	B	1268	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1269	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1270	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1271	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1272	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1273	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1274	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1275	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1276	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1277	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1278	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1279	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1280	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1281	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1282	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1283	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1284	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1285	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1286	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1287	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1288	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1289	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1290	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1291	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1292	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1293	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1294	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1295	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1296	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1297	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1298	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1299	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1300	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1301	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1302	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1303	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1304	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1305	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1306	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1307	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1308	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	B	1309	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1310	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1311	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1312	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1313	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1314	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1315	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1316	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1317	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1318	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1319	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1320	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1321	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1322	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1323	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	B	1324	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1325	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1326	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1327	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1328	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1329	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1330	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1331	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1332	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1333	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1334	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1335	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1336	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1337	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1338	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1339	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1340	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1341	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1342	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1343	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1344	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1345	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1346	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1347	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1348	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1349	GS	GRD	-	SA	n/a	n/a	n/a	L

38.428	-	B	1350	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1351	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1352	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1353	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1354	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1355	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1356	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1357	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1358	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	61		1359	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	66		1360	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	14		1361	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		B	1362	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		B	1363	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		B	1364	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		B	1365	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		B	1366	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		A	1367	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		A	1368	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		A	1369	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		A	1370	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428		A	1371	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1372	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1373	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1374	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1375	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1376	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1377	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1378	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1379	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1380	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1381	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.428	-	A	1382	CS	HAM	-	SA	n/a	n/a	n/a	C
38.428	-	A	1383	CS	HAM	-	SA	n/a	n/a	n/a	C
38.428	-	A	1384	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1385	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1386	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1387	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1388	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1389	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1390	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1391	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1392	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1393	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1394	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1395	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1396	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1397	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1398	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1399	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1400	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1401	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1402	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1403	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1404	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1405	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1406	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1407	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1408	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1409	GS	MAN	-	GR	n/a	n/a	n/a	L
38.428	-	A	1410	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1411	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1412	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1413	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1414	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1415	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1416	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1417	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1418	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1419	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1420	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1421	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1422	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1423	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1424	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1425	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1426	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1427	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1428	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1429	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	-	1430	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	-	1431	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	-	1432	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	-	1433	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-		1434	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1435	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1436	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1437	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1438	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1439	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-		1440	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1441	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1442	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1443	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1444	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1445	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1446	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1447	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1448	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1449	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1450	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1451	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1452	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1453	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1454	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1455	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1456	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1457	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1458	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1459	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1460	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1461	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1462	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1463	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1464	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1465	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1466	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1467	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1468	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1469	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1470	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1471	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1472	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1473	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1474	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1475	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1476	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1477	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1478	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1479	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1480	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1481	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1482	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1483	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1484	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1485	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1486	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1487	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1488	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1489	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1490	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1491	GS	MAN	-	ND	n/a	n/a	n/a	C
38.428	-	A	1492	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	-	A	1493	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	-	A	1494	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	-	A	1495	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1496	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1497	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1498	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	-	B	1499	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1500	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1501	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	-	A	1502	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	A	1503	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	A	1504	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1505	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1506	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1507	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1508	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1509	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	B	1510	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	B	1511	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1512	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	12		1513	GS	MAN	-	MQ	n/a	n/a	n/a	D

38.428	52		1514	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	53		1515	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	93		1516	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	34		1517	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	63		1518	GS	MAN	-	MQ	n/a	n/a	n/a	L
38.428	-	B	1519	GS	MAN	-	GR	n/a	n/a	n/a	D
38.428	-	B	1520	GS	MAN	-	GR	n/a	n/a	n/a	D
38.428	-	B	1521	GS	MAN	-	ND	n/a	n/a	n/a	D
38.428	-	B	1522	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	B	1523	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1524	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1525	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1526	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1527	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1528	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1529	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1530	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1531	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	18	-	1532	GS	MAN	-	SA	n/a	n/a	n/a	C
38.428	71	-	1533	GS	MAN	-	GR	n/a	n/a	n/a	C
38.428	-	A	1534	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	A	1535	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	A	1536	GS	MAN	-	SA	n/a	n/a	n/a	D
38.428	-	A	1537	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1538	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1539	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1540	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1541	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1542	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1543	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	A	1544	GS	MAN	-	MQ	n/a	n/a	n/a	L
38.428	-	A	1545	GS	MAN	-	MQ	n/a	n/a	n/a	D, L
38.428	-	B	1546	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	B	1547	GS	MAN	-	GR	n/a	n/a	n/a	C
38.428	-	B	1548	GS	MAN	-	SA	n/a	n/a	n/a	D, L
38.428	-	A	1549	GS	MAN	-	SA	n/a	n/a	n/a	D, L
38.428	-	A	1550	GS	MAN	-	SA	n/a	n/a	n/a	D, L
38.428	-	A	1551	GS	MAN	-	SA	n/a	n/a	n/a	D, L
38.428	-	A	1552	GS	MAN	-	GR	n/a	n/a	n/a	MC (D)
38.428	23	-	1553	GS	MAN	-	GR	n/a	n/a	n/a	MC (D)
38.428	142	-	1554	GS	MAN	-	SA	n/a	n/a	n/a	L

38.428	80	-	1555	GS	GRD	-	SA	n/a	n/a	n/a	C
38.428	24	-	1556	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	106	-	1557	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	110	-	1558	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	96	-	1559	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	55	-	1560	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	47	-	1561	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	22	-	1562	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	62	-	1563	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	27	-	1564	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	46	-	1565	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	45	-	1566	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	43	-	1567	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	49	-	1568	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	93	-	1569	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	145	-	1570	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	72	-	1571	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	111	-	1572	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	123	-	1573	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	37	-	1574	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	5	-	1575	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	3	-	1576	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1577	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1578	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1579	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1580	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1581	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1582	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1583	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1584	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1585	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1586	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1587	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1588	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1589	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1590	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1591	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1592	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1593	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1594	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1595	GS	GRD	-	SA	n/a	n/a	n/a	L

38.428	-	A	1596	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1597	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1598	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1599	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1600	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1601	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1602	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1603	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1604	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1605	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1606	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1607	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1608	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1609	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1610	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1611	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1612	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1613	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1614	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1615	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1616	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1617	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1618	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1619	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1620	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1621	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1622	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1623	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1624	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1625	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1626	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1627	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1628	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1629	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1630	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1631	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1632	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1633	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1634	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1635	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1636	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1637	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1638	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1639	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1640	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1641	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1642	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1643	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1644	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1645	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1646	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1647	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1648	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1649	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1650	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1651	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1652	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1653	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1654	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1655	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1656	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1657	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1658	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1659	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1660	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1661	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1662	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1663	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1664	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1665	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1666	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1667	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1668	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1669	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1670	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1671	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1672	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1673	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1674	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1675	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1676	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1677	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1678	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1679	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1680	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1681	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1682	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1683	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1684	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1685	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1686	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1687	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1688	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1689	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1690	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1691	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1692	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1693	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1694	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1695	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1696	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1697	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1698	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1699	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1700	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1701	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1702	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1703	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1704	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1705	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1706	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1707	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1708	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1709	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1710	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1711	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1712	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1713	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1714	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1715	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1716	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1717	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1718	GS	GRD	-	SA	n/a	n/a	n/a	L

38.428	-	A	1719	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1720	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1721	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1722	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1723	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1724	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1725	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1726	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1727	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1728	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1729	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1730	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1731	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1732	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1733	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1734	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1735	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1736	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1737	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1738	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1739	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1740	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1741	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1742	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1743	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1744	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1745	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1746	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1747	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1748	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1749	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1750	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1751	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1752	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1753	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1754	GS	MET	-	SA	n/a	n/a	n/a	C
38.428	-	C	1755	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	C	1756	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	C	1757	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	C	1758	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	C	1759	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	C	1760	GS	MAN	-	SA	n/a	n/a	n/a	L
38.428	-	C	1761	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	C	1762	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	C	1763	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	C	1764	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	C	1765	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	C	1766	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	15	-	1767	CR	NAP	-	n	n/a	EC	Cord-marked	B
38.428	-	A	1768	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1769	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1770	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1771	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1772	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1773	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1774	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	B	1775	CS	HAM	-	CH	n/a	n/a	n/a	C
38.428	-	B	1776	CS	BF	-	CH	n/a	n/a	n/a	L
38.428	-	A	1777	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1778	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1779	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1780	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1781	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1782	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1783	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1784	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1785	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1786	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1787	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1788	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1789	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1790	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1791	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1792	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1793	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1794	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1795	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	D	1796	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1797	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1798	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1799	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1800	GS	MET	-	SA	n/a	n/a	n/a	L

38.428	-	A	1801	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1802	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1803	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1804	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1805	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1806	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1807	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1808	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1809	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1810	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1811	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1812	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1813	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1814	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1815	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1816	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1817	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1818	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1819	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1820	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1821	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1822	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1823	GS	MET	-	SA	n/a	n/a	n/a	L
38.428	-	A	1824	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1825	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1826	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1827	GS	GRD	-	SA	n/a	n/a	n/a	L
38.428	-	A	1828	GS	GRD	-	SA	n/a	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
38.343	-	S	1	CS	EMF	5.2	CH	n/a	n/a	n/a	C	
38.343	-	BI	2	CS	ES	8.3	CH	n/a	n/a	n/a	C	
38.343	-	A2E	3	CS	ES	14.5	CH	n/a	n/a	n/a	C	
38.343	-	BLN	4	CS	ES	13	CH	n/a	n/a	n/a	C	
38.343	-	BI	5	CS	ES	10.4	CH	n/a	n/a	n/a	C	
38.343	-	BI	6	CS	CV	7.3	CH	n/a	n/a	n/a	C	
38.343	-	B	7	CS	BF	2	CH	n/a	n/a	n/a	M	"D"
38.343	-	BZ	8	CS	EMF	3.7	CH	y	n/a	n/a	P	
38.343	-	A2	9	CS	BF	4.5	CH	n/a	n/a	n/a	P	
38.343	-	B3S	10	CS	ES	6.4	CH	n/a	n/a	n/a	D	
38.343	-	A2	11	CS	EMF	13.4	CH	n/a	n/a	n/a	P	
38.343	-	-	12	CS	SS	19.9	CH	n/a	n/a	n/a	C	
38.343	-	BI	13	CS	EMF	9.7	CH	n/a	n/a	n/a	ND	
38.343	-	A3	14	CS	EMF	11	CH	n/a	n/a	n/a	C	
38.343	-	BIE	15	CS	EMF	14.4	CH	n/a	n/a	n/a	ND	
38.343	-	AI	16	CS	EMF	5.1	CH	n/a	n/a	n/a	P	
38.343	-	BI	17	CS	EMF	8.2	CH	n/a	n/a	n/a	C	
38.343	-	A3	18	CS	BF	40.3	CH	n/a	n/a	n/a	C	
38.343	-	B3S	19	CS	EMF	6.6	CH	n/a	n/a	n/a	ND	
38.343	-	A2	20	CS	EMF	5.3	CH	n/a	n/a	n/a	ND	
38.343	-	A3	21	CS	MS	4.8	CH	n/a	n/a	n/a	D	
38.343	-	B	22	CS	EMF	3.9	CH	n/a	n/a	n/a	ND	
38.343	-	AZW	23	CS	BF	3.8	CH	n/a	n/a	n/a	D	
38.343	-	AI	24	CS	BF	4.9	CH	n/a	n/a	n/a	P	
38.343	-	B2	25	CS	EMF	4	CH	n/a	n/a	n/a	ND	
38.343	-	BE	26	CS	MS	4.3	CH	n/a	n/a	n/a	ND	
38.343	-	AIE	27	CS	EMF	7.7	CH	n/a	n/a	n/a	C	
38.343	-	BI	28	CS	EMF	6.9	CH	n/a	n/a	n/a	M	
38.343	-	BI	29	CS	MS	6.1	CH	n/a	n/a	n/a	M	
38.343	-	A2	30	CS	BF	10.6	CH	n/a	n/a	n/a	P	
38.343	-	BI	31	CS	BF	21	CH	n/a	n/a	n/a	C	
38.343	-	BIS	32	CS	MS	2.2	CH	n/a	n/a	n/a	D	
38.343	-	A2	33	CS	EMF	2.4	CH	n/a	n/a	n/a	ND	
38.343	-	B	34	CS	SS	3.9	CH	n/a	n/a	n/a	ND	
38.343	-	B2	35	CS	PP	0.7	CH	n/a	MC	Tri-notched	P	
38.343	-	BI	36	CS	DR	1.4	CH	n/a	n/a	n/a	D	

38.343	-	BI	37	CS	DR	6.7	CH	n/a	n/a	n/a	P, M
38.343	-	BI	38	CS	DR	5.3	CH	n/a	n/a	n/a	P, M
38.343	-	BIW	39	CS	DR	4	CH	n/a	n/a	n/a	P, M
38.343	-	A2	40	CS	DR	2.1	CH	n/a	n/a	n/a	P, M
38.343	-	BI	41	CS	PP	8.1	CH	n/a	MA	Yonkee	C
38.343	-	A	42	GS	MET	-	SA	n/a	n/a	n/a	MC (D)
38.343	-	A	43	GS	MAN	-	GR	n/a	n/a	n/a	D
38.343	-	A	44	GS	MAN	-	SA	n/a	n/a	n/a	D
38.343	-	A	45	GS	MAN	-	SA	n/a	n/a	n/a	C
38.343	-	A	46	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.343	-	A	47	GS	MAN	-	SA	n/a	n/a	n/a	D
38.343	-	A	48	GS	MAN	-	SA	n/a	n/a	n/a	C
38.343	-	A	49	GS	MAN	-	GR	n/a	n/a	n/a	C
38.343	-	D	50	GS	MAN	-	GR	n/a	n/a	n/a	D
38.343	-	B	51	GS	MAN	-	GR	n/a	n/a	n/a	D
38.343	-	B	52	GS	MAN	-	GR	n/a	n/a	n/a	D
38.343	-	B	53	GS	MAN	-	GR	n/a	n/a	n/a	L
38.343	-	-	54	CS	HAM	-	QZ	n/a	n/a	n/a	C
38.343	-	A	55	GS	MISC	-	Shale	n/a	n/a	n/a	L
38.343	-	A	56	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	57	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	58	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	59	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	60	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	61	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	62	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	63	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	64	GS	MISC	-	SA	n/a	n/a	n/a	L
38.343	-	A	65	GS	MET	-	SA	n/a	n/a	n/a	L
38.343	-	A	66	GS	MET	-	SA	n/a	n/a	n/a	L
38.343	-	A	67	GS	MET	-	SA	n/a	n/a	n/a	L
38.343	-	A	68	GS	MET	-	SA	n/a	n/a	n/a	L
38.343	-	A	69	GS	MET	-	SA	n/a	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
58.9	-	-	1	CS	PRE	3.5	QZ	n	n/a	n/a	C	
58.9	-	-	2	CS	PRE	2.7	PW	n	n/a	n/a	C	
58.9	-	-	3	CS	PRE	1.2	CH	n	n/a	n/a	C	
58.9	-	-	4	CS	PRE	1.8	CH	n	n/a	n/a	MC (T)	
58.9	-	-	5	CS	PRE	1.5	CH	n	n/a	n/a	C	
58.9	-	A	6	CS	PRE	0.7	CY	n	n/a	n/a	C	
58.9	-	-	7	CS	DR	0.7	QZ	n	n/a	n/a	C	
58.9	-	-	8	CS	PP	2	PW	n	MP	n/a	P	possible Midland
58.9	-	-	9	CS	PP	4.6	CH	n	EA	n/a	MC (T)	
58.9	-	-	10	CS	PP	1.8	PW	n	EA	n/a	P, M	
58.9	-	-	11	CS	PP	1.9	QZ	n	EA	n/a	P, M	
58.9	-	-	12	CS	PP	0.6	CH	n	EA	n/a	P	
58.9	-	-	13	CS	PP	1.3	CH	n	EA	Mount Albion	P	
58.9	-	-	14	CS	PP	2.1	CY	n	MA	Duncan Hanna	C	
58.9	-	-	15	CS	PP	1.1	CH	n	MA	Duncan Hanna	MC (T)	
58.9	-	-	16	CS	PP	2.1	CY	n	EA	n/a	C	
58.9	-	-	17	CS	PP	3.9	QZ	n	LA	Pelican Lake	MC (T)	
58.9	-	-	18	CS	PP	1.4	QZ	n	LA	Pelican Lake	P	
58.9	-	-	19	CS	PP	2.8	CH	n	LA	Besant	C	
58.9	-	-	20	CS	PP	1.4	CH	n	LA	Besant	C	
58.9	-	-	21	CS	PP	1.2	PW	n	LA	Besant	P	
58.9	-	-	22	CS	PP	1.1	CH	n	LA	Besant	P	
58.9	-	-	23	CS	PP	0.7	CH	n	EC	Hogback	P, M	
58.9	-	-	24	CS	PP	0.4	CH	n	EC	Hogback	C	
58.9	-	-	25	CS	PP	0.5	CH	n	EC	Hogback	C	
58.9	-	-	26	CS	PP	0.4	CY	n	EC	Hogback	MC (L)	
58.9	-	-	27	CS	PP	0.6	CH	n	EC	Hogback	C	
58.9	-	-	28	CS	PP	0.9	CH	n	EC	Hogback	C	
58.9	-	-	29	CS	PP	1	CH	n	EC	Hogback	C	
58.9	-	-	30	CS	PP	0.7	CH	n	EC	Hogback	C	
58.9	-	-	31	CS	PP	0.6	CH	n	EC	Hogback	C	
58.9	-	-	32	CS	PP	0.5	CH	n	EC	Hogback	C	
58.9	-	-	33	CS	PP	0.7	CH	n	EC	Corner-notched	C	
58.9	-	-	34	CS	PP	0.2	CY	n	EC	Corner-notched	C	
58.9	-	-	35	CS	PP	0.6	CY	n	EC	Corner-notched	C	
58.9	-	-	36	CS	PP	0.8	CH	n	EC	Corner-notched	C	
58.9	-	-	37	CS	PP	0.6	PW	n	EC	Corner-notched	C	
58.9	-	-	38	CS	PP	0.4	CY	n	EC	Corner-notched	D, M	
58.9	-	-	39	CS	PP	0.5	CH	n	EC	Corner-notched	MC (T)	

58.9	-	-	40	CS	PP	0.5	CH	n	EC	Hogback	C	
58.9	-	-	41	CS	PP	0.6	CH	n	EC	Side-notched	MC (L)	
58.9	-	-	42	CS	PP	0.5	CH	n	EC	Hogback	MC (T)	
58.9	-	-	43	CS	PP	0.5	CH	n	EC	Corner-notched	MC (T)	
58.9	-	-	44	CS	PP	0.3	PW	n	EC	Corner-notched	M, P	
58.9	-	-	45	CS	PP	0.2	CH	n	EC	Hogback	P	
58.9	-	-	46	CS	PP	0.4	CH	n	n/a	n/a	P	
58.9	-	-	47	CS	PP	0.7	CH	n	MC	Side-notched	P	
58.9	-	-	48	CS	PP	0.5	CH	n	MC	Side-notched	C	
58.9	-	-	49	CS	PP	0.4	CH	n	MC	Side-notched	MC (T)	
58.9	-	-	50	CS	PP	0.5	CH	n	MC	Unnotched	C	
58.9	-	-	51	CS	ES	10.1	PW	n	n/a	n/a	C	
58.9	-	-	52	CS	ES	7.4	CH	n	n/a	n/a	C	
58.9	-	-	53	CS	ES	5.2	CH	n	n/a	n/a	C	
58.9	-	-	54	CS	ES	2.1	PW	n	n/a	n/a	MC (L)	
58.9	-	-	55	CS	ES	1.7	CY	n	n/a	n/a	MC (L)	
58.9	-	-	56	CS	MS	0.9	CH	n	n/a	n/a	ND	
58.9	-	-	57	CS	ES	1.3	CH	n	n/a	n/a	D	
58.9	-	-	58	CS	SS	11.8	PW	n	n/a	n/a	M	
58.9	-	-	59	CS	ES	7.2	PW	n	n/a	n/a	C	
58.9	-	-	60	CS	ES	1.2	CH	y	n/a	n/a	D	
58.9	-	-	61	CS	ES	1.7	CH	n	n/a	n/a	D	
58.9	-	-	62	CS	MS	1	CH	n	n/a	n/a	C	
58.9	-	-	63	CS	EMF	2	PW	n	n/a	n/a	C	
58.9	-	-	64	CS	EMF	0.4	CY	n	n/a	n/a	ND	
58.9	-	-	65	CS	EMF	0.8	CH	n	n/a	n/a	P	
58.9	-	-	66	CS	EMF	2	PW	n	n/a	n/a	D	
58.9	-	-	67	CS	EMF	1.3	CH	n	n/a	n/a	ND	
58.9	-	-	68	CS	EMF	3.9	CH	n	n/a	n/a	M	
58.9	-	-	69	CS	EMF	0.7	CY	n	n/a	n/a	C	
58.9	-	-	70	CS	EMF	1.4	PW	n	n/a	n/a	C	
58.9	-	-	71	CS	EMF	0.8	CH	n	n/a	n/a	M	
58.9	-	-	72	CS	EMF	0.6	CY	n	n/a	n/a	ND	
58.9	-	-	73	CS	BF	1	CH	n	n/a	n/a	D	
58.9	-	-	74	CS	BF	0.8	PW	n	n/a	n/a	D	
58.9	-	-	75	CS	BF	0.9	CH	n	n/a	n/a	D	
58.9	-	-	76	CS	BF	2.9	QZ	n	n/a	n/a	M	
58.9	-	-	77	CS	BF	1.7	CH	n	n/a	n/a	M	
58.9	-	-	78	CS	BF	9.6	QZ	n	n/a	n/a	C	possible knife
58.9	-	-	79	CS	BF	7.4	QZ	n	n/a	n/a	P	
58.9	-	-	80	CS	BF	5.8	PW	n	n/a	n/a	P	

58.9	-	-	81	CS	BF	4.9	QZ	n	n/a	n/a	P
58.9	-	-	82	CS	BF	2.3	QZ	n	n/a	n/a	M
58.9	-	-	83	CS	BF	5.7	QZ	n	n/a	n/a	P
58.9	-	-	84	CS	BF	0.2	CH	n	n/a	n/a	M
58.9	-	-	85	CS	BF	1.6	CH	n	n/a	n/a	P
58.9	-	-	86	CS	BF	0.9	CH	n	n/a	n/a	P
58.9	-	-	87	CS	BF	1.1	CH	n	n/a	n/a	M
58.9	-	-	88	CS	BF	2.8	CH	n	n/a	n/a	M
58.9	-	-	89	CS	BF	0.6	PW	n	n/a	n/a	M
58.9	-	-	90	CS	BF	3.2	B	n	n/a	n/a	P
58.9	-	-	91	CS	BF	0.7	PW	n	n/a	n/a	D
58.9	-	-	92	CS	BF	0.6	CH	n	n/a	n/a	P
58.9	-	A	93	CS	BF	0.9	CH	n	n/a	n/a	P
58.9	-	A	94	CS	BF	4.7	QZ	n	n/a	n/a	M
58.9	-	-	95	CS	BF	1	PW	n	n/a	n/a	D
58.9	-	-	96	CS	BF	0.6	CY	n	n/a	n/a	D
58.9	-	-	97	CS	BF	2.2	PW	n	n/a	n/a	M
58.9	-	-	98	CS	BF	2.6	CH	n	n/a	n/a	M
58.9	-	-	99	CS	BF	3.3	QZ	n	n/a	n/a	P
58.9	-	-	100	CS	BF	1.4	PW	n	n/a	n/a	P
58.9	-	-	101	CS	BF	0.4	CH	n	n/a	n/a	D
58.9	-	-	102	CS	PRE	1.6	QZ	n	n/a	n/a	P
58.9	-	-	103	CS	BF	0.9	CH	n	n/a	n/a	D
58.9	-	-	104	CS	PRE	0.8	CH	n	n/a	n/a	P, M
58.9	-	-	105	CS	BF	0.7	CH	n	n/a	n/a	D
58.9	-	-	106	CS	BF	0.4	CH	n	n/a	n/a	D
58.9	-	-	107	CS	BF	0.8	CY	n	n/a	n/a	D
58.9	-	-	108	CS	BF	0.8	CH	n	n/a	n/a	D
58.9	-	-	109	CS	BF	1.6	CH	n	n/a	n/a	M
58.9	-	-	110	CS	BF	0.5	CY	n	n/a	n/a	D
58.9	-	-	111	CS	BF	0.4	QZ	n	n/a	n/a	D
58.9	-	-	112	CS	BF	0.7	CY	n	n/a	n/a	D
58.9	-	-	113	CS	BF	0.2	CH	n	n/a	n/a	D
58.9	-	-	114	CS	BF	0.8	QZ	n	n/a	n/a	P
58.9	-	-	115	CS	BF	0.4	CH	n	n/a	n/a	P
58.9	-	-	116	CS	BF	0.5	CH	n	n/a	n/a	P
58.9	-	-	117	CS	BF	1	CY	n	n/a	n/a	P
58.9	-	-	118	CS	BF	0.3	CH	n	n/a	n/a	M
58.9	-	-	119	CS	BF	0.7	QZ	n	n/a	n/a	M
58.9	-	-	120	CS	EMF	0.2	CH	n	n/a	n/a	ND
58.9	-	-	121	CR	NAP	4	n/a	n/a	EC	Plainware	BO

58.9	-	-	122	CR	NAP	4.3	n/a	n/a	EC	Plainware	BA
58.9	-	-	123	GS	MET	5	SA	n	n/a	n/a	L
58.9	-	-	124	GS	MAN	100	SA	n	n/a	n/a	D, L
58.9	-	-	125	GS	MAN	120	QZ	n	n/a	n/a	L
58.9	-	-	126	GS	MAN	340	SA	n	n/a	n/a	L
58.9	-	-	127	GS	MAN	40	SA	n	n/a	n/a	L
58.9	-	-	128	GS	MET	180	SA	n	n/a	n/a	L
58.9	-	-	129	GS	MAN	40	SA	n	n/a	n/a	L
58.9	-	-	130	GS	MET	120	SA	n	n/a	n/a	D, L
58.9	-	-	131	GS	MAN	140	SA	n	n/a	n/a	L
58.9	-	-	132	GS	MAN	140	SA	n	n/a	n/a	C
58.9	-	-	133	GS	MET	20	SA	n	n/a	n/a	L
58.9	-	-	134	GS	MAN	60	SA	n	n/a	n/a	L
58.9	-	-	135	GS	MET	60	SA	n	n/a	n/a	L
58.9	-	-	136	GS	MET	40	SA	n	n/a	n/a	L
58.9	-	-	137	GS	MAN	60	SA	n	n/a	n/a	L
58.9	-	-	138	GS	MISC	40	SA	n	n/a	n/a	L
58.9	-	-	139	GS	MAN	60	SA	n	n/a	n/a	D, L
58.9	-	-	140	CS	HAM	120	QZ	n	n/a	n/a	C
58.9	-	-	141	GS	HAM	200	SA	n	n/a	n/a	MC
58.9	-	-	142	GS	MAN	80	SA	n	n/a	n/a	L
58.9	-	-	143	GS	MAN	420	SA	n	n/a	n/a	D, L
58.9	-	-	144	GS	MAN	720	QZ	n	n/a	n/a	MC
58.9	-	-	145	GS	MAN	220	SA	n	n/a	n/a	D
58.9	-	-	146	GS	MAN	160	SA	n	n/a	n/a	L
58.9	-	-	147	GS	MAN	260	SA	n	n/a	n/a	L
58.9	-	-	148	GS	MAN	200	SA	n	n/a	n/a	D
58.9	-	-	149	GS	MAN	420	SA	n	n/a	n/a	D, L
58.9	-	-	150	GS	MAN	40	SA	n	n/a	n/a	L
58.9	-	-	151	GS	MAN	60	SA	n	n/a	n/a	L
58.9	-	-	152	GS	MAN	980	QZ	n	n/a	n/a	C

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
38.178	-	-	1	CS	ES	16.1	CH	n	n/a	n/a	D	
38.178	-	F	2	CS	ES	13.9	CH	y	n/a	n/a	C	
38.178	-	-	3	CS	ES	12.9	CH	y	n/a	n/a	C	
38.178	-	D	4	CS	SS	5.3	CH	n	n/a	n/a	D	
38.178	7	-	5	CS	MS	6	QZ	n	n/a	n/a	M	plus
38.178	-	B	6	CS	EMF	2	CH	n	n/a	n/a	C	
38.178	-	C	7	CS	MS	2.4	CH	n	n/a	n/a	P	
38.178	5	-	8	CS	BF	1.5	CH	n	n/a	n/a	D	
38.178	-	C	9	CS	BF	5.4	CH	n	n/a	n/a	C	
38.178	-	-	10	CS	BF	4	CH	n	n/a	n/a	M	
38.178	-	-	11	CS	BF	4.3	CH	n	n/a	n/a	M	
38.178	-	-	12	CS	BF	1.6	CY	n	n/a	n/a	D	
38.178	-	-	13	CS	BF	8.9	QZ	n	n/a	n/a	MC (D)	
38.178	3	-	14	CS	BF	10.6	CH	n	n/a	n/a	P	plus, "D"
38.178	-	A	15	CS	BF	3.5	CH	n	n/a	n/a	MC (P)	
38.178	-	-	16	CS	BF	10.5	CH	n	n/a	n/a	C	
38.178	-	-	17	CS	BF	1.4	QZ	n	n/a	n/a	M	
38.178	-	E	18	CS	BF	1.3	CH	n	n/a	n/a	M	
38.178	-	-	19	CS	BF	1.4	CH	n	n/a	n/a	D	
38.178	-	-	20	CS	BF	2.8	CH	n	n/a	n/a	D	
38.178	-	C	21	CS	BF	1.8	CH	n	n/a	n/a	D	
38.178	-	M	22	CS	BF	1.6	QZ	n	n/a	n/a	D	
38.178	-	E	23	CS	BF	0.9	CH	n	n/a	n/a	D	
38.178	-	E	24	CS	BF	1.2	CH	n	n/a	n/a	D	
38.178	-	E	25	CS	BF	0.3	CH	n	n/a	n/a	D	
38.178	-	-	26	CS	BF	0.7	CH	n	n/a	n/a	D	
38.178	-	M	27	CS	BF	1.3	CH	n	n/a	n/a	D	
38.178	-	C	28	CS	PP	3.7	CH	n	LP	Angostura	P	
38.178	-	A	29	CS	PP	1.9	CH	n	LA	n/a	C	
38.178	-	E	30	CS	PP	2.5	CH	n	LA	Pelican Lake	C	
38.178	-	A	31	CS	PP	3.7	CH	n	LA	Pelican Lake	C	
38.178	-	F	32	CS	PP	3.1	CH	n	LA	Pelican Lake	MC (P)	
38.178	-	-	33	CS	PP	3	CH	n	LA	Pelican Lake	C	
38.178	-	-	34	CS	PP	3.1	CH	n	LA	Pelican Lake	C	
38.178	-	-	35	CS	PP	3.3	CH	n	LA	Pelican Lake	MC (T)	
38.178	-	C	36	CS	PP	4	CH	n	LA	Pelican Lake	M	
38.178	-	C	37	CS	PP	5.2	QZ	n	LA	Pelican Lake	M	
38.178	-	C	38	CS	PP	4.8	QZ	n	LA	Pelican Lake	M	

38.178	-	C	39	CS	PP	2.7	CH	n	LA	Pelican Lake	C
38.178	-	C	40	CS	PP	2.9	CH	n	LA	Pelican Lake	MC (T)
38.178	-	C	41	CS	PP	0.4	CH	n	n/a	n/a	P
38.178	-	D	42	CS	PP	1.2	CH	n	LA	Pelican Lake	C
38.178	2	-	43	CS	PP	0.7	CH	n	n/a	n/a	P
38.178	-	C	44	CS	DR	4.1	CH	n	n/a	n/a	P, M
38.178	-	A	45	CS	DR	10.6	CH	y	n/a	n/a	P, M
38.178	-	D	46	CS	PP	1.5	CY	n	EC	Corner-notched	MC (T)
38.178	-	C	47	CS	PP	1.2	CH	n	EC	Corner-notched	MC (T)
38.178	-	A	48	CS	PP	0.7	CH	n	EC	Corner-notched	M, P
38.178	-	C	49	CS	PP	0.8	CH	n	MC	Side-notched	MC (T)
38.178	6	-	50	CS	PP	0.6	CH	n	MC	Side-notched	MC (T)
38.178	-	-	51	CS	PP	0.8	QZ	n	EC	Corner-notched	M, P
38.178	-	C	52	CS	PP	0.7	CH	n	EC	Corner-notched	M, P
38.178	-	E	53	CS	PP	1.2	QZ	n	MC	Side-notched	MC (T)
38.178	-	D	54	CS	HAM	-	QZ	n	n/a	n/a	C
38.178	-	D	55	CS	HAM	-	QZ	n	n/a	n/a	C
38.178	4	-	56	GS	MAN	-	SA	n	n/a	n/a	D
38.178	-	C	57	GS	MAN	-	SA	n	n/a	n/a	D
38.178	-	C	58	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	C	59	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	D	60	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	61	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	62	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	63	GS	MAN	-	MQ	n	n/a	n/a	D
38.178	-	-	64	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	65	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	66	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	67	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	68	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	69	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	70	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	71	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	72	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	73	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	74	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	75	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	76	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	77	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	78	GS	GRD	-	SA	n	n/a	n/a	L

38.178	-	-	79	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	80	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	81	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	82	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	83	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	84	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	85	GS	GRD	-	SA	n	n/a	n/a	L
38.178	-	-	86	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	87	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	88	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	89	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	90	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	91	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	92	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	-	93	GS	MET	-	SA	n	n/a	n/a	L
38.178	1	-	94	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	C	95	GS	MET	-	SA	n	n/a	n/a	L
38.178	-	D	96	GS	MAN	-	MQ	n	n/a	n/a	L
38.178	-	D	97	GS	GRD	-	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
58.16	-	-	1	CR	NAP	2.5	n/a	n	EC	Plainware	BO	
58.16	-	-	2	CS	MS	1.6	CH	n	n/a	n/a	M	
58.16	-	-	3	CS	MS	3.6	CH	n	n/a	n/a	M	
58.16	-	-	4	CS	ES	4.4	CH	n	n/a	n/a	D	
58.16	-	-	5	CS	SS	7	CH	n	n/a	n/a	D, M	
58.16	-	-	6	CS	ES	3.9	CH	n	n/a	n/a	C	
58.16	-	-	7	CS	ES	14.2	CH	n	n/a	n/a	C	
58.16	-	-	8	CS	ES	5.5	CY	n	n/a	n/a	D	
58.16	-	-	9	CS	ES	16.2	CH	n	n/a	n/a	C	
58.16	-	B	10	CS	EMF	1	CH	n	n/a	n/a	ND	
58.16	-	-	11	CS	EMF	1.4	CH	n	n/a	n/a	P	
58.16	-	-	12	CS	EMF	4.8	CH	y	n/a	n/a	C	
58.16	-	-	13	CS	SS	5.5	SS	n	n/a	n/a	C	
58.16	3	-	14	CS	BF	0.5	CH	n	n/a	n/a	D plus	
58.16	-	-	15	CS	BF	0.4	CH	n	n/a	n/a	D	
58.16	-	-	16	CS	PRE	0.9	CH	n	n/a	n/a	C	
58.16	-	-	17	CS	PRE	0.8	CH	n	n/a	n/a	C	
58.16	-	-	18	CS	BF	2.3	QZ	n	n/a	n/a	D	
58.16	2	-	19	CS	BF	6.6	CH	n	n/a	n/a	P	
58.16	-	-	20	CS	BF	9.2	CH	y	n/a	n/a	D, M	
58.16	-	-	21	CS	BF	0.5	CH	n	n/a	n/a	P	
58.16	-	-	22	CS	BF	5.1	CH	n	n/a	n/a	M	
58.16	-	-	23	CS	PP	4	CH	n	LP	Angostura	P	
58.16	-	-	24	CS	PP	2.1	CH	n	LA	Besant	C	
58.16	-	-	25	CS	PP	2.4	CH	n	MA	Duncan-Hanna	P, M	
58.16	-	-	26	CS	PP	1.9	CH	n	LA	Pelican Lake	M	
58.16	-	-	27	CS	PP	3.7	CH	n	MA	Duncan-Hanna	MC (T)	
58.16	-	-	28	CS	PP	0.7	CH	n	LA	n/a	P	
58.16	-	-	29	CS	PP	1	CH	n	LA	Pelican Lake	P	
58.16	-	-	30	CS	PP	1.1	CH	n	LA	Pelican Lake	P, M	
58.16	-	-	31	CS	PP	0.6	CY	n	EC	Corner-notched	P, M	
58.16	-	-	32	CS	PP	0.7	CY	n	EC	Corner-notched	C	
58.16	-	-	33	CS	PP	0.5	CH	n	MC	Side-notched	M	
58.16	-	-	34	CS	PP	0.8	CH	n	MC	Unnotched	C	
58.16	-	-	35	CS	PP	0.8	CH	n	EC	Corner-notched	MC (P)	
58.16	-	-	36	CS	PP	0.9	CH	n	EC	Corner-notched	C	
58.16	-	-	37	CS	PP	0.4	CH	n	EC	Corner-notched	MC (L)	

58.16	-	-	38	CS	PP	1.4	CH	n	EC	Corner-notched	MC (P)
58.16	-	-	39	CS	PP	1.5	CH	n	EC	Corner-notched	MC (T)
58.16	-	-	40	CS	PP	0.7	CY	n	EC	Corner-notched	MC (T)
58.16	-	-	41	CS	HK	13.3	PW	n	n/a	n/a	C
58.16	-	-	42	GS	MAN	900	SA	n	n/a	n/a	C
58.16	-	-	43	GS	MAN	60	SA	n	n/a	n/a	L
58.16	-	-	44	GS	MAN	160	SA	n	n/a	n/a	L, D
58.16	-	-	45	GS	MAN	40	SA	n	n/a	n/a	D
58.16	-	-	46	GS	MAN	140	SA	n	n/a	n/a	D
58.16	-	-	47	GS	MAN	140	QZ	n	n/a	n/a	L
58.16	-	-	48	GS	MAN	140	SA	n	n/a	n/a	L
58.16	-	-	49	GS	MAN	40	SA	n	n/a	n/a	L
58.16	-	-	50	GS	MET	8	SA	n	n/a	n/a	L
58.16	-	-	51	GS	MET	40	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
48.54	7	-	1	CS	PP	0.2	OB	n/a	MC	Side-notched	P, M	plus
48.54	12	-	2	CS	PP	0.5	CH	n/a	MC	Side-notched	P, M	plus
48.54	28	-	3	CS	PP	1.1	CH	n/a	EC	Corner-notched	MC (T)	plus
48.54	44	-	4	CS	PP	0.5	CH	n/a	EC	Corner-notched	MC (T)	plus
48.54	50	-	5	CS	PP	1.9	CH	n/a	LA	n/a	C	plus
48.54	3	-	6	CS	PP	2.1	CH	n/a	LA	n/a	C	plus
48.54	-	-	7	CS	PP	4.6	CH	n/a	MA	Duncan-Hanna	C	plus
48.54	2	-	8	CS	PRE	1.5	CH	n/a	n/a	n/a	C	plus
48.54	37	-	9	CS	PP	1.9	CH	n/a	LA	Pelican Lake	M	plus
48.54	6	-	10	CS	PP	1.9	QZ	n/a	LA	Pelican Lake	P	plus
48.54	1	-	11	CS	PP	1.2	CH	n/a	LA	Pelican Lake	P	plus
48.54	-	-	12	CS	BF	1.4	CH	n/a	n/a	n/a	M	
48.54	39	-	13	CS	BF	1.4	CH	n/a	n/a	n/a	M	plus
48.54	24	-	14	CS	BF	0.9	CH	n/a	n/a	n/a	D	plus
48.54	17	-	15	CS	BF	0.7	CH	n/a	n/a	n/a	D	plus
48.54	2	-	16	CS	BF	1.7	CH	n/a	n/a	n/a	M	plus
48.54	47	-	17	CS	BF	10.6	CH	n/a	n/a	n/a	P	plus, possible base of knife
48.54	-	-	18	CS	BF	1.6	CH	n/a	n/a	n/a	M	
48.54	5	-	19	CS	BF	2.2	CH	n/a	n/a	n/a	MC (P)	plus, possible preform
48.54	-	-	20	CS	EMF	1.7	CH	n/a	n/a	n/a	ND	
48.54	54	-	21	CS	EMF	0.3	CH	n/a	n/a	n/a	ND	plus
48.54	10	-	22	CS	EMF	0.7	QZ	n/a	n/a	n/a	D	plus
48.54	23	-	23	CS	ES	3.5	CH	n/a	n/a	n/a	C	
48.54	25	-	24	CS	EMF	2.5	CH	n/a	n/a	n/a	ND	plus
48.54	53	-	25	CS	MS	4.2	CH	n/a	n/a	n/a	D	plus
48.54	8	-	26	CR	NAP	6.6	n/a	n/a	EC	Cord-marked	BO	plus
48.54	8	-	27	CR	NAP	8.5	n/a	n/a	EC	Cord-marked	BO	plus
48.54	52	-	28	CR	NAP	6.5	n/a	n/a	EC	Cord-marked	BO	plus
48.54	13	-	29	CR	NAP	4.1	n/a	n/a	EC	Cord-marked	R	plus
48.54	15	-	30	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO	plus
48.54	21	-	31	CR	NAP	2.1	n/a	n/a	EC	Plainware	BO	plus
48.54	26	-	32	CR	NAP	2	n/a	n/a	EC	Cord-marked	BO	plus
48.54	34	-	33	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	plus
48.54	52	-	34	CR	NAP	2.9	n/a	n/a	EC	Cord-marked	BO	partial drill hole is present, plus
48.54	52	-	35	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO	plus
48.54	35	-	36	GS	O	9.4	B	n/a	n/a	n/a	M	plus
48.54	31	-	37	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO	plus

48.54	11	-	38	CR	NAP	2.2	n/a	n/a	EC	Cord-marked	BO plus
48.54	9	-	39	CR	NAP	2	n/a	n/a	EC	Plainware	BO plus
48.54	43	-	40	CR	NAP	1.3	n/a	n/a	EC	Cord-marked	BO plus
48.54	33	-	41	CR	NAP	2.8	n/a	n/a	EC	Cord-marked	BO plus
48.54	18	-	42	CR	NAP	2.3	n/a	n/a	EC	Cord-marked	BO plus
48.54	9	-	43	CR	NAP	1	n/a	n/a	EC	Cord-marked	BO plus
48.54	15	-	44	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO plus
48.54	40	-	45	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO plus
48.54	4	-	46	CR	NAP	0.9	n/a	n/a	EC	Cord-marked	BO plus
48.54	45	-	47	CR	NAP	1	n/a	n/a	EC	Plainware	BO plus
48.54	381	-	48	CR	NAP	1.2	n/a	n/a	EC	Cord-marked	BO plus
48.54	30	-	49	CR	NAP	0.7	n/a	n/a	EC	Cord-marked	BO plus
48.54	48	-	50	CR	NAP	1.1	n/a	n/a	EC	Cord-marked	BO plus
48.54	-	-	51	CR	NAP	2.1	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	52	CR	NAP	4	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	53	CR	NAP	4.6	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	54	CR	NAP	5.3	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	55	CR	NAP	0.4	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	56	CR	NAP	1.8	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	57	CR	NAP	2.4	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	58	CR	NAP	0.6	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	59	CR	NAP	0.5	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	60	CR	NAP	0.3	n/a	n/a	EC	n/a	BO
48.54	-	-	61	CR	NAP	1.4	n/a	n/a	EC	Cord-marked	BO
48.54	-	-	62	CR	NAP	0.1	n/a	n/a	EC	n/a	BO
48.54	-	-	63	CR	NAP	0.3	n/a	n/a	EC	Plainware	BO
48.54	42	-	64	GS	MAN	700	AN	n/a	n/a	n/a	C
48.54	20	-	65	GS	MAN	300	SA	n/a	n/a	n/a	D, L
48.54	-	-	66	GS	MAN	80	SA	n/a	n/a	n/a	L
48.54	46	-	67	GS	MAN	300	SA	n/a	n/a	n/a	D, L
48.54	51	-	68	GS	MAN	260	QZ	n/a	n/a	n/a	D, L
48.54	29	-	69	GS	MISC.	940	SA	n/a	n/a	n/a	C
48.54	55	-	70	GS	MAN	540	QZ	n/a	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
38.320	-	AE	1	CS	ES	40.5	PW	n	n/a	n/a	C	
38.320	22	-	2	CS	CORE	51.1	CH	n	n/a	n/a	C	
38.320	-	AE	3	CS	CORE	31.9	CH	n	n/a	n/a	C	
38.320	-	A	4	CS	PP	2.5	M	n	PH	Metal	D, M	
38.320	-	A	5	CS	HK	33.5	PW	n	n/a	n/a	MC (L)	
38.320	-	C	6	CS	PP	2.3	CH	n	EA	Mount Albion	P	
38.320	-	A	7	CS	PP	5.5	O	n	EA	Mount Albion	P, M	"D"
38.320	-	D	8	CS	BF	17.4	CH	y	n/a	n/a	D, M	
38.320	-	AS	9	CS	BF	2.4	CH	n	n/a	n/a	MC (L)	
38.320	-	B	10	CS	BF	5	QZ	n	n/a	n/a	MC (L)	
38.320	-	A	11	CS	BF	8.5	QZ	n	n/a	n/a	C	
38.320	-	A	12	CS	BF	7.3	QZ	n	n/a	n/a	C	
38.320	-	A	13	CS	BF	15.2	CH	n	n/a	n/a	P	
38.320	23	-	14	CS	BF	14.8	CH	n	n/a	n/a	P	plus
38.320	-	-	15	CS	BF	21	CH	n	n/a	n/a	M	
38.320	9	-	16	CS	BF	11.2	CH	n	n/a	n/a	P	plus
38.320	98	-	17	CS	BF	9	PW	n	n/a	n/a	P	plus
38.320	-	A	18	CS	BF	13.1	QZ	n	n/a	n/a	P, M	
38.320	105	C	19	CS	BF	1.3	CH	n	n/a	n/a	P	plus
38.320	-	B	20	CS	BF	1.4	CH	n	n/a	n/a	D	
38.320	17	-	21	CS	BF	4.8	CH	n	n/a	n/a	P	plus
38.320	94	-	22	CS	BF	1.6	CH	n	n/a	n/a	D	plus
38.320	63	-	23	CS	BF	7.5	QZ	n	n/a	n/a	D, M	plus, "D"
38.320	-	C	24	CS	BF	1.6	CH	y	n/a	n/a	D	
38.320	-	D	25	CS	BF	13.6	CH	n	n/a	n/a	M	
38.320	11	-	26	CS	BF	13.6	QZ	y	n/a	n/a	D	plus, "D"
38.320	114	-	27	CS	BF	13.9	CH	y	n/a	n/a	P	plus, "A"
38.320	-	B	28	CS	BF	12.8	CH	n	n/a	n/a	D	
38.320	-	B	29	CS	BF	7.2	CH	n	n/a	n/a	P, M	
38.320	-	B	30	CS	BF	1.9	CH	n	n/a	n/a	M	
38.320	-	A	31	CS	BF	2.8	CH	n	n/a	n/a	P	
38.320	-	A	32	CS	BF	1.7	CH	n	n/a	n/a	P	
38.320	-	A	33	CS	BF	1.4	CH	n	n/a	n/a	D	"D"
38.320	-	A	34	CS	BF	3.1	CH	y	n/a	n/a	D	
38.320	-	C	35	CS	BF	1.9	CH	n	n/a	n/a	D	
38.320	-	A	36	CS	BF	4	CH	n	n/a	n/a	P	
38.320	67	-	37	CS	BF	4.5	CH	n	n/a	n/a	P	plus

38.320	-	B	38	CS	BF	1.5	CY	n	n/a	n/a	M	
38.320	-	A	39	CS	BF	0.6	CH	n	n/a	n/a	P	
38.320	-	A	40	CS	BF	1.8	CH	n	n/a	n/a	D	
38.320	-	B	41	CS	BF	1	CH	n	n/a	n/a	D	
38.320	80	-	42	CS	PRE	1.2	CH	n	n/a	n/a	P, M	plus
38.320	-	A	43	CS	PRE	1.2	CY	n	n/a	n/a	P, M	
38.320	-	A	44	CS	PRE	1	CH	n	n/a	n/a	P, M	
38.320	-	B	45	CS	PRE	2.3	CH	n	n/a	n/a	P, M	
38.320	-	A	46	CS	BF	5.4	QZ	n	n/a	n/a	C	
38.320	38	-	47	CS	BF	0.3	CH	n	n/a	n/a	M	plus
38.320	71	-	48	CS	BF	7.4	QZ	n	n/a	n/a	C	plus
38.320	-	A	49	CS	BF	2.7	CH	n	n/a	n/a	D	
38.320	12	-	50	CS	BF	9.7	CH	n	n/a	n/a	D	plus
38.320	-	D	51	CS	BF	4.9	CH	n	n/a	n/a	P, M	"D"
38.320	-	A	52	CS	BF	5	CH	n	n/a	n/a	C	
38.320	-	A	53	CS	BF	0.3	CH	n	n/a	n/a	D	
38.320	-	AN	54	CS	BF	2.6	QZ	n	n/a	n/a	D	
38.320	108	-	55	CS	BF	3.7	CH	n	n/a	n/a	M	plus
38.320	-	A	56	CS	BF	1.4	CH	n	n/a	n/a	D	
38.320	-	A	57	CS	BF	3	CY	n	n/a	n/a	P	
38.320	-	A	58	CS	PRE	2.8	CH	y	n/a	n/a	C	
38.320	49	-	59	CS	BF	2.7	QZ	n	n/a	n/a	D	plus
38.320	101	-	60	CS	BF	5.7	CY	n	n/a	n/a	P, M	plus, "D"
38.320	-	A	61	CS	BF	2.2	CH	n	n/a	n/a	M	"D"
38.320	-	A	62	CS	BF	8.1	QZ	n	n/a	n/a	P	
38.320	33	-	63	CS	BF	5.2	CH	n	n/a	n/a	D	plus
38.320	-	B	64	CS	BF	2.2	QZ	n	n/a	n/a	M	
38.320	-	A	65	CS	BF	1.6	CH	n	n/a	n/a	M	
38.320	-	A	66	CS	BF	0.6	CH	n	n/a	n/a	D	
38.320	-	B	67	CS	BF	1.3	CH	n	n/a	n/a	M	
38.320	83	-	68	CS	BF	0.8	CH	n	n/a	n/a	P	plus, "D"
38.320	103	-	69	CS	BF	0.5	CH	n	n/a	n/a	D	plus
38.320	-	A	70	CS	BF	2.1	CH	n	n/a	n/a	P, M	
38.320	-	D	71	CS	BF	0.9	CH	n	n/a	n/a	D	"D"
38.320	30	-	72	CS	PP	1.6	CH	n	n/a	n/a	P	plus
38.320	-	A	73	CS	BF	1	CH	n	n/a	n/a	M	
38.320	-	B	74	CS	PRE	1	CH	n	n/a	n/a	C	
38.320	-	SW	75	CS	BF	4.8	CH	n	n/a	n/a	P	
38.320	-	D	76	CS	PRE	2.9	CH	n	n/a	n/a	P, M	

38.320	-	A	77	CS	BF	0.8	CH	n	n/a	n/a	D	"D"
38.320	42	-	78	CS	BF	1.2	CH	n	n/a	n/a	D	plus
38.320	86	-	79	CS	PRE	1.5	CH	n	n/a	n/a	P, M	plus
38.320	-	B	80	CS	BF	1.7	CH	n	n/a	n/a	M	
38.320	89	-	81	CS	BF	0.6	CH	n	n/a	n/a	D	plus, "D"
38.320	-	A	82	CS	DR	1.4	CH	n	n/a	n/a	P	"D"
38.320	-	AS	83	CS	DR	2.1	CH	n	n/a	n/a	D	
38.320	-	A	84	CS	DR	2	CH	n	n/a	n/a	D	
38.320	-	A	85	CS	PRE	0.9	CY	n	n/a	n/a	MC (T)	"D"
38.320	2	-	86	CS	BF	1.9	CH	n	n/a	n/a	P	plus
38.320	-	B	87	CS	PP	1.7	CH	n	n/a	n/a	P	
38.320	32	-	88	CS	PP	1.7	CH	n	n/a	n/a	P, M	plus
38.320	-	A	89	CS	PP	3.1	CH	n	n/a	n/a	P, M	
38.320	-	A	90	CS	PP	3.6	CH	n	n/a	n/a	MC (T)	"D"
38.320	92	-	91	CS	PP	3.3	CH	y	n/a	n/a	P, M	plus
38.320	-	B	92	CS	PP	0.8	CH	n	n/a	n/a	M	
38.320	-	B	93	CS	PP	1.1	CY	n	MA	McKean	P	
38.320	-	A	94	CS	PP	2.2	CH	n	MA	McKean	P, M	
38.320	-	B	95	CS	PP	1.5	CY	n	MA	McKean	P, M	
38.320	-	A	96	CS	PP	2.5	CH	n	MA	Yonkee	P	
38.320	60	-	97	CS	PP	2.2	CH	n	MA	Duncan-Hanna	C	plus
38.320	-	A	98	CS	PP	2.2	CH	n	MA	McKean	C	
38.320	-	B	99	CS	PP	3.8	CH	n	MA	McKean	MC (T)	"D"
38.320	-	B	100	CS	PP	3.1	CH	n	MA	McKean	MC (T)	
38.320	19	-	101	CS	PP	3.1	CH	n	MA	McKean	MC (L)	plus
38.320	-	-	102	CS	PP	4.2	QZ	n	MA	McKean	P	
38.320	39	-	103	CS	PP	1.7	CH	n	MA	Duncan-Hanna	P	plus
38.320	65	-	104	CS	PP	1.5	CY	n	MA	Duncan-Hanna	P, M	plus
38.320	-	AN	105	CS	PP	4.7	CH	n	MA	McKean	C	
38.320	31	-	106	CS	PP	1.3	CH	n	MA	McKean	C	plus
38.320	-	B	107	CS	PP	2.2	CH	y	MA	McKean	C	
38.320	-	A	108	CS	PP	0.9	CH	n	MA	Duncan-Hanna	P	
38.320	-	A	109	CS	PP	1.1	CH	n	MA	McKean	P	"D"
38.320	-	A	110	CS	PP	1.9	CH	n	LA	Besant	MC (T)	
38.320	-	A	111	CS	PP	1.5	CH	n	LA	Besant	P	
38.320	52	-	112	CS	PP	1.7	CH	n	LA	n/a	P	plus
38.320	-	A	113	CS	PP	1.5	CH	n	LA	n/a	C	
38.320	-	D	114	CS	PP	2.8	CH	n	LA	Pelican Lake	P, M	
38.320	61	-	115	CS	PP	3.9	CH	n	LA	Pelican Lake	C	

38.320	1	-	116	CS	PP	2.3	CH	n	LA	Pelican Lake	C	
38.320	-	B	117	CS	PP	2.1	CH	n	LA	Pelican Lake	MC (T)	"D"
38.320	-	A	118	CS	PP	1.7	CH	n	LA	Pelican Lake	MC (P)	
38.320	26	-	119	CS	PP	1.9	CH	n	LA	Pelican Lake	MC (T)	
38.320	-	A	120	CS	PP	1.7	CY	n	LA	n/a	C	
38.320	-	C	121	CS	PP	1.3	CH	n	LA	Pelican Lake	MC (T)	plus, "D"
38.320	-	A	122	CS	PP	3	QZ	n	LA	n/a	MC	"D"
38.320	88	-	123	CS	PP	1.4	CH	n	LA	Pelican Lake	P, M	plus
38.320	-	A	124	CS	PP	2.5	CH	n	LA	Pelican Lake	P, M	
38.320	-	A	125	CS	PP	2.8	CH	y	LA	n/a	P, M	
38.320	8	-	126	CS	PP	1.6	CH	n	LA	Besant	P, M	"D"
38.320	-	A	127	CS	BF	2.2	CH	n	n/a	n/a	D, M	
38.320	-	A	128	CS	PP	1.7	QZ	n	LA	Pelican Lake	P, M	
38.320	-	A	129	CS	PP	1.3	CH	n	LA	n/a	M	"D"
38.320	-	A	130	CS	HK	4.6	CH	n	n/a	n/a	P	
38.320	113	-	131	CS	PP	1.3	QZ	n	EC	Corner-notched	MC (P)	plus
38.320	-	A	132	CS	PP	0.7	CH	n	EC	Corner-notched	MC (T)	
38.320	55	-	133	CS	PP	0.7	CH	n	EC	Corner-notched	P, M	plus
38.320	-	-	134	CS	PP	0.5	CH	n	EC	Corner-notched	P, M	
38.320	77	-	135	CS	PP	0.7	QZ	n	EC	Corner-notched	MC (P)	plus
38.320	-	D	136	CS	PP	1.5	QZ	n	EC	Corner-notched	M	
38.320	-	B	137	CS	PP	1.3	CH	n	EC	Corner-notched	C	
38.320	62	-	138	CS	PP	0.6	CH	n	EC	Corner-notched	C	plus, "D"
38.320	-	A	139	CS	PP	1.5	CH	n	EC	Corner-notched	C	
38.320	-	A	140	CS	PP	0.7	CH	n	EC	Corner-notched	MC (T)	"D"
38.320	-	-	141	CS	PP	1.2	CH	n	EC	Corner-notched	C	
38.320	-	A	142	CS	ES	27.8	B	n	n/a	n/a	C	
38.320	36	-	143	CS	ES	13	CH	n	n/a	n/a	MC (P)	plus
38.320	74	-	144	CS	ES	13.9	CH	n	n/a	n/a	D	plus, "D"
38.320	6	-	145	CS	ES	23.9	CH	n	n/a	n/a	C	plus
38.320	-	A	146	CS	SS	10.2	CY	n	n/a	n/a	C	
38.320	-	A	147	CS	ES	19.9	QZ	n	n/a	n/a	C	
38.320	-	A	148	CS	ES	14.6	CH	n	n/a	n/a	MC (P)	
38.320	4	-	149	CS	ES	24.3	QZ	n	n/a	n/a	C	plus
38.320	29	-	150	CS	ES	7.9	CH	n	n/a	n/a	C	plus
38.320	72	-	151	CS	ES	17.4	B	n	n/a	n/a	D	plus
38.320	-	A	152	CS	ES	20.4	QZ	n	n/a	n/a	MC (P)	
38.320	-	A	153	CS	ES	10	CH	n	n/a	n/a	D	
38.320	-	A	154	CS	ES	19.8	CH	n	n/a	n/a	C	

38.320	89	-	155	CS	ES	12.8	CH	y	n/a	n/a	D	plus, "D"
38.320	3	-	156	CS	ES	15.8	CH	y	n/a	n/a	C	plus, "D"
38.320	-	B	157	CS	ES	9	CH	y	n/a	n/a	D	
38.320	39	-	158	CS	ES	15.6	CH	n	n/a	n/a	C	plus
38.320	-	B	159	CS	ES	25.2	QZ	n	n/a	n/a	C	
38.320	78	-	160	CS	ES	19.6	PW	n	n/a	n/a	C	plus
38.320	-	AB	161	CS	ES	10.1	CH	n	n/a	n/a	C	
38.320	-	A	162	CS	ES	8.7	CY	y	n/a	n/a	C	
38.320	-	D	163	CS	ES	18	QZ	n	n/a	n/a	C	
38.320	-	A	164	CS	ES	10.9	PW	n	n/a	n/a	C	
38.320	-	B	165	CS	ES	2.9	CY	n	n/a	n/a	C	
38.320	-	B	166	CS	ES	8	CH	y	n/a	n/a	MC (P)	"D"
38.320	-	A	167	CS	ES	8	CH	n	n/a	n/a	C	
38.320	-	A	168	CS	ES	5.8	PW	y	n/a	n/a	C	
38.320	111	-	169	CS	SS	14.8	QZ	n	n/a	n/a	C	plus
38.320	93	-	170	CS	ES	18.8	CH	n	n/a	n/a	MC (P)	plus
38.320	112	-	171	CS	ES	11.2	CH	n	n/a	n/a	C	plus
38.320	-	A	172	CS	ES	14.5	CH	n	n/a	n/a	MC (L)	"D"
38.320	79	-	173	CS	ES	14.5	CH	n	n/a	n/a	MC (P)	plus, "D"
38.320	25	-	174	CS	ES	14.6	PW	y	n/a	n/a	C	plus
38.320	13	-	175	CS	ES	15.6	CH	n	n/a	n/a	C	plus
38.320	-	A	176	CS	ES	11.7	CH	n	n/a	n/a	C	
38.320	-	A	177	CS	ES	21.7	CH	y	n/a	n/a	C	
38.320	41	-	178	CS	ES	16.5	CH	y	n/a	n/a	D	plus
38.320	-	A	179	CS	MS	6.5	CH	n	n/a	n/a	P	"D"
38.320	56	-	180	CS	ES	2.6	CH	n	n/a	n/a	C	plus
38.320	68	-	181	CS	ES	14.9	CH	y	n/a	n/a	C	plus
38.320	-	A	182	CS	ES	11.6	CH	y	n/a	n/a	C	
38.320	53	-	183	CS	CV	9.7	CH	n	n/a	n/a	C	plus
38.320	40	-	184	CS	MS	4.9	PW	n	n/a	n/a	P	plus
38.320	21	-	185	CS	ES	7.5	CH	y	n/a	n/a	D	plus, "D"
38.320	-	A	186	CS	ES	11.8	QZ	n	n/a	n/a	C	
38.320	57	-	187	CS	ES	15.7	CH	n	n/a	n/a	C	plus
38.320	-	A	188	CS	ES	6.3	PW	n	n/a	n/a	MC (L)	
38.320	54	-	189	CS	ES	13.1	QZ	y	n/a	n/a	C	plus, "D"
38.320	76	-	190	CS	ES	11.2	CH	y	n/a	n/a	C	plus, "D"
38.320	-	A	191	CS	CV	7.7	CH	n	n/a	n/a	C	
38.320	-	B	192	CS	MS	8	CH	n	n/a	n/a	ND	
38.320	-	A	193	CS	ES	18.1	CH	n	n/a	n/a	C	

38.320	-	A	194	CS	ES	20.8	QZ	y	n/a	n/a	C	
38.320	-	A	195	CS	MS	6	CH	n	n/a	n/a	MC (T)	
38.320	-	A	196	CS	ES	3.7	PW	n	n/a	n/a	C	
38.320	-	A	197	CS	MS	7.7	CH	n	n/a	n/a	P	
38.320	-	A	198	CS	ES	7.8	CH	n	n/a	n/a	D	
38.320	66	-	199	CS	CV	4.6	CH	n	n/a	n/a	C	plus
38.320	-	A	200	CS	ES	7.3	CH	n	n/a	n/a	D	
38.320	-	A	201	CS	SS	7.3	CH	n	n/a	n/a	C	
38.320	-	A	202	CS	ES	0.5	CH	n	n/a	n/a	D	
38.320	15	-	203	CS	EMF	3.4	CH	n	n/a	n/a	M	plus, "D"
38.320	82	-	204	CS	MS	6.8	PW	n	n/a	n/a	P	plus
38.320	-	-	205	CS	EMF	8.5	B	y	n/a	n/a	M	
38.320	48	-	206	CS	MS	10.6	CH	n	n/a	n/a	C	plus
38.320	35	-	207	CS	ES	6	CH	y	n/a	n/a	D	plus
38.320	-	-	208	CS	EMF	1.7	CH	n	n/a	n/a	P	
38.320	-	A	209	CS	SS	28.9	QZ	n	n/a	n/a	C	
38.320	-	C	210	CS	EMF	8.2	QZ	n	n/a	n/a	M	
38.320	-	A	211	CS	MS	7.3	CH	n	n/a	n/a	P, M	
38.320	-	B	212	CS	EMF	3.8	CH	n	n/a	n/a	C	
38.320	-	A	213	CS	MS	7.2	CH	n	n/a	n/a	P	
38.320	-	A	214	CS	MS	8.4	QZ	n	n/a	n/a	ND	
38.320	16	-	215	CS	ES	5.3	CH	n	n/a	n/a	C	plus
38.320	-	A	216	CS	MS	6.7	CH	n	n/a	n/a	P	
38.320	-	B	217	CS	MS	5	QZ	n	n/a	n/a	P	
38.320	-	B	218	CS	ES	2.7	CH	n	n/a	n/a	D	
38.320	-	A	219	CS	ES	2.8	CH	n	n/a	n/a	MC (L)	
38.320	-	A	220	CS	MS	5.5	B	n	n/a	n/a	P	
38.320	-	A	221	CS	EMF	3.5	CH	n	n/a	n/a	C	"D"
38.320	104	-	222	CS	ES	5.2	CH	y	n/a	n/a	D	plus, "D"
38.320	-	C	223	CS	MS	11.2	CH	n	n/a	n/a	C	
38.320	-	A	224	CS	ES	4.6	CH	n	n/a	n/a	D	
38.320	-	A	225	CS	ES	3.9	CH	n	n/a	n/a	D	"D"
38.320	-	-	226	CS	ES	4.9	CH	n	n/a	n/a	D	
38.320	-	-	227	CS	SS	5.6	CH	y	n/a	n/a	C	
38.320	-	A	228	CS	EMF	3.3	CH	n	n/a	n/a	ND	
38.320	-	A	229	CS	ES	6.6	CH	n	n/a	n/a	D	
38.320	18	-	230	CS	EMF	2.9	CH	n	n/a	n/a	ND	plus
38.320	-	A	231	CS	MS	1.5	CH	n	n/a	n/a	ND	
38.320	-	A	232	CS	EMF	1.5	CH	n	n/a	n/a	ND	"D"

38.320	-	A	233	CS	HAM	240	QZ	n	n/a	n/a	C
38.320	-	A	234	CS	HAM	320	QZ	n	n/a	n/a	C
38.320	-	A	235	GS	HAM	120	QZ	n	n/a	n/a	C
38.320	-	A	236	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	237	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	238	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	239	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	240	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	241	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	242	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	243	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	244	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	245	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	246	GS	MAN	-	SA	n	n/a	n/a	L
38.320	-	A	247	GS	MAN	-	SA	n	n/a	n/a	L
38.320	-	A	248	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	C	249	GS	MET	-	SA	n	n/a	n/a	L
38.320	115	-	250	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	251	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	252	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	253	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	254	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	C	255	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	C	256	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	C	257	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	C	258	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	C	259	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	C	260	GS	GRD	-	SA	n	n/a	n/a	L
38.320	106	-	261	GS	MAN	-	GR	n	n/a	n/a	C
38.320	37	-	262	GS	MAN	-	MQ	n	n/a	n/a	C
38.320	64	-	263	GS	MAN	-	GR	n	n/a	n/a	C
38.320	47	-	264	GS	MAN	-	MQ	n	n/a	n/a	C
38.320	-	A	265	GS	MAN	-	MQ	n	n/a	n/a	D
38.320	-	B	266	GS	MAN	-	GR	n	n/a	n/a	C
38.320	-	A	267	GS	MAN	-	MQ	n	n/a	n/a	C
38.320	-	B	268	GS	MAN	-	GR	n	n/a	n/a	D
38.320	-	A	269	GS	MAN	-	SA	n	n/a	n/a	C
38.320	-	E	270	GS	MAN	-	SA	n	n/a	n/a	L
38.320	85	-	271	GS	MAN	-	SA	n	n/a	n/a	C

38.320	84	-	272	GS	MAN	-	SA	n	n/a	n/a	D
38.320	309	-	273	GS	MAN	-	SA	n	n/a	n/a	L
38.320	-	A	274	GS	MET	-	SA	n	n/a	n/a	L
38.320	96	-	275	GS	MAN	-	SA	n	n/a	n/a	D
38.320	81	-	276	GS	MAN	-	SA	n	n/a	n/a	L
38.320	-	B	277	GS	MAN	-	SA	n	n/a	n/a	D
38.320	97	-	278	GS	MAN	-	MQ	n	n/a	n/a	L
38.320	-	A	279	GS	MAN	-	SA	n	n/a	n/a	L
38.320	90	-	280	GS	MAN	-	SA	n	n/a	n/a	D
38.320	-	A	281	GS	MAN	-	MQ	n	n/a	n/a	L
38.320	-	B	282	GS	MAN	-	GR	n	n/a	n/a	D
38.320	-	-	283	GS	MAN	-	GR	n	n/a	n/a	C
38.320	-	B	284	GS	MAN	-	SA	n	n/a	n/a	C
38.320	91	-	285	GS	MAN	-	SA	n	n/a	n/a	C
38.320	-	A	286	GS	MAN	-	SA	n	n/a	n/a	D
38.320	-	B	287	GS	MAN	-	SA	n	n/a	n/a	C
38.320	-	A	288	GS	GRD	-	SA	n	n/a	n/a	C
38.320	-	A	289	GS	MAN	-	GR	n	n/a	n/a	D
38.320	-	A	290	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	291	GS	MAN	-	GR	n	n/a	n/a	C
38.320	-	A	292	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	293	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	294	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	295	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	296	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	A	297	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	298	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	299	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	A	300	GS	GRD	-	SA	n	n/a	n/a	L
38.320	5	-	301	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	302	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	303	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	304	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	305	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	306	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	307	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	308	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	309	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	310	GS	GRD	-	SA	n	n/a	n/a	L

38.320	-	B	311	GS	GRD	-	SA	n	n/a	n/a	L
38.320	-	B	312	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	313	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	314	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	315	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	316	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	317	GS	MET	-	SA	n	n/a	n/a	L
38.320	-	B	318	GS	MAN	-	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
62.96	-	A	1	CS	MS	38.4	CH	y	n/a	n/a	C	
62.96	86	-	2	CS	BF	69.9	CH	y	n/a	n/a	C plus	
62.96	86	-	3	CS	BF	89.4	CH	y	n/a	n/a	C plus	
62.96	86	-	4	CS	BF	187.6	CH	y	n/a	n/a	C plus	
62.96	86	-	5	CS	BF	130.9	CH	y	n/a	n/a	C plus	
62.96	86	-	6	CS	BF	63.8	CH	n	n/a	n/a	C plus	
62.96	29	-	7	CS	ES	4.8	CH	n	n/a	n/a	D plus	
62.96	16	-	8	CS	ES	18.8	CH	n	n/a	n/a	C plus	
62.96	92	-	9	CS	SS	6.3	QZ	y	n/a	n/a	D plus	
62.96	50	-	10	CS	CV	19.2	CH	n	n/a	n/a	C plus	
62.96	34	-	11	CS	ES	8.1	CH	n	n/a	n/a	C plus	
62.96	7	-	12	CS	ES	6.2	CH	n	n/a	n/a	MC (T) plus	
62.96	84	-	13	CS	ES	16.7	QZ	n	n/a	n/a	C plus	
62.96	15	-	14	CS	ES	13	CH	n	n/a	n/a	C plus	
62.96	72	A	15	CS	ES	11.8	CH	n	n/a	n/a	C plus	
62.96	3	-	16	CS	ES	6.8	CY	n	n/a	n/a	D plus	
62.96	59	-	17	CS	ES	4.1	CH	n	n/a	n/a	D plus	
62.96	49	-	18	CS	BF	4.4	CH	n	n/a	n/a	P plus	
62.96	77	-	19	CS	MS	3.8	CH	n	n/a	n/a	M plus, "D"	
62.96	23	-	20	CS	ES	3.1	CH	y	n/a	n/a	D plus	
62.96	63	-	21	CS	ES	6	CH	n	n/a	n/a	D plus, "A"	
62.96	48	-	22	CS	EMF	4.6	CH	n	n/a	n/a	C plus	
62.96	1	-	23	CS	EMF	1.4	CH	n	n/a	n/a	M plus	
62.96	32	-	24	CS	MS	2.6	CH	n	n/a	n/a	M plus	
62.96	69	-	25	CS	EMF	2.6	CH	n	n/a	n/a	C plus, "A"	
62.96	41	-	26	CS	MS	4.8	CY	n	n/a	n/a	D plus	
62.96	31	-	27	CS	EMF	2.3	CH	n	n/a	n/a	ND plus	
62.96	30	-	28	CS	EMF	2.1	CH	n	n/a	n/a	ND plus	
62.96	20	-	29	CS	EMF	2.4	CH	n	n/a	n/a	ND plus	
62.96	61	-	30	CS	EMF	2	CH	n	n/a	n/a	C plus, "A"	
62.96	71	-	31	CS	BF	14.7	QZ	n	n/a	n/a	C plus, "A"	
62.96	8	-	32	CS	BF	33.5	CH	n	n/a	n/a	C plus	
62.96	93	-	33	CS	BF	7.6	CH	n	n/a	n/a	C plus	
62.96	26	-	34	CS	BF	4.6	CH	n	n/a	n/a	C plus	
62.96	60	A	35	CS	BF	7	QZ	n	n/a	n/a	P plus	
62.96	70	A	36	CS	PP	2.7	CH	n	n/a	n/a	M plus	
62.96	66	-	37	CS	BF	0.8	CH	n	n/a	n/a	D plus, "D"	

62.96	52	-	38	CS	PP	3	QZ	n	n/a	n/a	D, M plus
62.96	35	-	39	CS	PP	3.8	CH	n	n/a	n/a	M plus
62.96	40	-	40	CS	BF	2.7	QZ	n	n/a	n/a	M plus
62.96	53	-	41	CS	BF	1.8	CH	n	n/a	n/a	M plus
62.96	69	-	42	CS	BF	4.9	QZ	n	n/a	n/a	P, M plus
62.96	73	A	43	CS	BF	3	CH	y	n/a	n/a	D plus, "D"
62.96	-	B	44	CS	BF	8.6	CH	y	n/a	n/a	P "D"
62.96	58	A	45	CS	BF	4.8	QZ	n	n/a	n/a	P plus, "D"
62.96	51	-	46	CS	BF	5.1	CH	n	n/a	n/a	D plus
62.96	43	-	47	CS	BF	2.5	CY	n	n/a	n/a	M plus
62.96	1	-	48	CS	BF	4.9	CH	y	n/a	n/a	P plus
62.96	28	-	49	CS	BF	1.6	CH	y	n/a	n/a	M plus
62.96	91	-	50	CS	BF	0.6	QZ	n	n/a	n/a	D plus
62.96	27	-	51	CS	BF	1.9	CH	n	n/a	n/a	D plus
62.96	46	-	52	CS	BF	1.2	CH	n	n/a	n/a	M plus
62.96	78	-	53	CS	BF	1.8	CH	n	n/a	n/a	M plus
62.96	82	-	54	CS	EMF	0.7	CH	n	n/a	n/a	ND plus
62.96	28	-	55	CS	BF	0.8	CH	y	n/a	n/a	M plus
62.96	39	-	56	CS	HK	4.4	QZ	n	n/a	n/a	P plus
62.96	64	-	57	CS	PP	6	CH	n	MA	Yonkee	P, M plus, "A"
62.96	68	-	58	CS	PP	4.2	QZ	n	MA	Duncan-Hanna	C plus, "A"
62.96	65	-	59	CS	PP	3	CH	n	MA	Duncan-Hanna	C plus, "A"
62.96	67	-	60	CS	BF	2	QZ	n	n/a	n/a	M plus, "A"
62.96	76	-	61	CS	PP	1.7	CH	y	LA	Pelican Lake	M plus
62.96	37	-	62	CS	PP	2.1	CH	n	LA	Pelican Lake	D, M plus, two refitting pieces
62.96	83	-	63	CS	PP	0.8	CH	n	LA	Pelican Lake	P, M plus, "D"
62.96	6	-	64	CS	PP	1.1	CH	n	LA	Pelican Lake	MC (L) plus
62.96	25	-	65	CS	PP	0.8	CH	n	LA	Pelican Lake	MC (P) plus
62.96	47	-	66	CS	PP	0.9	QZ	n	EC	Corner-notched	C plus
62.96	17	-	67	CS	PP	0.8	QZ	n	EC	Corner-notched	C plus
62.96	85	-	68	CS	PP	0.5	CY	n	EC	Corner-notched	MC (T) plus
62.96	42	-	69	CS	PP	0.9	CH	n	EC	Corner-notched	MC (P) plus
62.96	45	-	70	CS	PP	1	CH	n	EC	Corner-notched	MC (L) plus
62.96	11	-	71	CS	PP	0.4	QZ	n	MC	Side-notched	P plus
62.96	5	-	72	CS	PP	1.5	QZ	n	MC	Side-notched	P, M plus
62.96	88	-	73	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	74	GS	MET	-	SA	n	n/a	n/a	L
62.96	13	-	75	GS	MAN	-	GR	n	n/a	n/a	D
62.96	94	-	76	GS	MAN	-	SA	n	n/a	n/a	D

62.96	-	A	77	GS	MAN	-	SA	n	n/a	n/a	L
62.96	-	A	78	GS	MAN	-	SA	n	n/a	n/a	L
62.96	38	-	79	GS	MAN	-	GR	n	n/a	n/a	L
62.96	56	-	80	GS	MAN	-	GR	n	n/a	n/a	C
62.96	18	-	81	GS	MAN	-	GR	n	n/a	n/a	D
62.96	74	-	82	GS	MAN	-	GR	n	n/a	n/a	MC (L)
62.96	87	-	83	GS	MET	-	SA	n	n/a	n/a	L
62.96	19	-	84	GS	MAN	-	GR	n	n/a	n/a	D, L
62.96	4	-	85	GS	MAN	-	GR	n	n/a	n/a	L
62.96	-	A	86	GS	MET	-	SA	n	n/a	n/a	L
62.96	54	-	87	GS	MET	-	SA	n	n/a	n/a	MC (D)
62.96	-	A	88	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	89	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	90	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	91	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	92	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	93	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	94	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	95	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	96	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	97	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	98	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	99	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	100	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	101	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	102	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	103	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	104	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	105	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	106	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	107	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	108	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	109	GS	MISC	-	SA	n	n/a	n/a	L
62.96	-	A	110	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	111	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	112	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	113	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	114	GS	MET	-	SA	n	n/a	n/a	L
62.96	-	A	115	GS	MET	-	SA	n	n/a	n/a	L

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
61.78	158	-	1	CS	HK	14.6	QZ	n	n/a	n/a	MC (P) plus	
61.78	174	-	2	CS	GRV	4.8	CH	y	n/a	n/a	P plus	
61.78	75	-	3	CS	PP	2.9	CH	n	LP	n/a	P plus	
61.78	34	-	4	CS	PP	3.6	QZ	n	EA	Mount Albion	P plus	
61.78	33	-	5	CS	PP	2.6	CH	n	MA	Mallory	P, M plus	
61.78	48	-	6	CS	PP	6.9	QZ	n	MA	Duncan-Hanna	C plus	
61.78	51	-	7	CS	PP	3.7	QZ	n	MA	Duncan-Hanna	MC (T) plus	
61.78	143	-	8	CS	PP	5.1	CH	n	LA	Pelican Lake	P, M plus	
61.78	83	-	9	CS	PP	2.7	QZ	n	LA	Pelican Lake	P, M plus	
61.78	130	D	10	CS	PP	0.9	CH	n	LA	Pelican Lake	MC (L) plus	
61.78	140	D	11	CS	PP	1.2	CH	n	LA	Pelican Lake	P, M plus	
61.78	112	D	12	CS	PP	2.5	CH	y	LA	Besant	MC (T) plus	
61.78	63	-	13	CS	PP	2	CH	n	LA	Besant	C plus	
61.78	54	-	14	CS	PP	3.3	CH	n	LA	Besant	MC (T) plus	
61.78	145	D	15	CS	PP	3.5	QZ	n	LA	Besant	C plus	
61.78	108	-	16	CS	PP	5.7	CH	n	MA	Yonkee	MC (L) plus	
61.78	55	D	17	CS	PP	1	CH	n	LA	Pelican Lake	D, M plus	
61.78	78	-	18	CS	PP	1.3	CH	n	LA	Pelican Lake	C plus	
61.78	132	-	19	CS	PP	2.6	B	n	n/a	n/a	P, M plus	
61.78	19	-	20	CS	PP	2	CH	n	n/a	n/a	M plus	
61.78	103	-	21	CS	PP	0.8	CH	n	n/a	n/a	P plus	
61.78	127	D	22	CS	PP	1.1	CH	n	n/a	n/a	P plus	
61.78	59	-	23	CS	PP	0.5	CH	n	n/a	n/a	P plus	
61.78	86	-	24	CS	PP	0.3	CH	n	MC	Side-notched	P plus	
61.78	113	D	25	CS	PP	0.8	CH	n	LA	Pelican Lake	P, M plus	
61.78	84	-	26	CS	PP	1.3	CH	n	LA	Pelican Lake	P, M plus	
61.78	98	D	27	CS	PP	0.6	CH	n	LA	Pelican Lake	MC (T) plus	
61.78	113	-	28	CS	PP	1.4	PW	n	LA	Pelican Lake	MC (T) plus	
61.78	144	-	29	CS	PP	0.5	PW	n	LA	Pelican Lake	C plus	
61.78	91	D	30	CS	PP	0.5	CH	n	EC	Corner-notched	MC (T) plus	
61.78	100	-	31	CS	PP	0.6	CH	n	EC	Corner-notched	MC (T) plus	
61.78	21	D	32	CS	PP	0.4	CH	n	EC	Corner-notched	P, M plus	
61.78	107	-	33	CS	PP	0.8	CY	n	EC	Corner-notched	D, M plus	
61.78	46	D	34	CS	PP	1	CH	n	EC	Corner-notched	MC (T) plus	
61.78	60	D	35	CS	PP	0.7	CH	n	EC	Corner-notched	MC (L) plus	
61.78	65	D	36	CS	PP	0.7	PW	n	EC	Corner-notched	MC (D) plus	
61.78	69	-	37	CS	PP	0.7	CY	n	EC	Corner-notched	MC (L) plus	

61.78	139	-	38	CS	PP	0.5	CH	n	EC	Corner-notched	MC (T)	plus
61.78	126	-	39	CS	PP	0.4	CH	n	EC	Corner-notched	MC (T)	plus
61.78	114	-	40	CS	PP	0.8	PW	n	EC	Corner-notched	MC (D)	plus
61.78	32	-	41	CS	PP	0.5	CY	n	EC	Corner-notched	C	plus
61.78	123	-	42	CS	PP	0.3	PW	n	EC	Corner-notched	M, P	plus
61.78	129	D	43	CS	PP	0.5	PW	n	EC	Corner-notched	MC (L)	plus
61.78	151	-	44	CS	PP	0.6	CH	n	EC	Corner-notched	D, M	plus
61.78	169	-	45	CS	PP	0.5	CH	n	EC	Corner-notched	P, M	plus
61.78	38	D	46	CS	PP	0.5	CY	n	EC	Corner-notched	MC (L)	plus
61.78	58	-	47	CS	PP	0.8	CH	n	EC	Corner-notched	D, M	
61.78	24	-	48	CS	PP	1.3	PW	n	EC	Corner-notched	MC (P)	plus
61.78	142	-	49	CS	PP	0.6	CY	n	EC	Corner-notched	C	plus
61.78	1	-	50	CS	PP	0.6	CY	n	EC	Corner-notched	C	plus
61.78	4	D	51	CS	ES	4.4	CH	n	n/a	n/a	D	plus
61.78	124	-	52	CS	ES	1.5	CH	n	n/a	n/a	D	plus
61.78	27	-	53	CS	ES	2.2	CH	n	n/a	n/a	C	plus
61.78	104	-	54	CS	ES	1.9	CH	n	n/a	n/a	C	plus
61.78	88	-	55	CS	ES	6.1	CH	n	n/a	n/a	C	plus
61.78	89	D	56	CS	CV	5.9	PW	n	n/a	n/a	C	plus
61.78	163	D	57	CS	ES	10.3	CH	n	n/a	n/a	C	plus
61.78	28	-	58	CS	ES	5.8	CH	n	n/a	n/a	C	plus
61.78	-	-	59	CS	ES	4.7	CH	y	n/a	n/a	C	plus
61.78	96	-	60	CS	ES	3.1	CH	n	n/a	n/a	C	plus
61.78	152	D	61	CS	ES	4.1	CH	n	n/a	n/a	D	plus
61.78	133	-	62	CS	ES	2.8	CH	n	n/a	n/a	D	plus
61.78	-	-	63	CS	MS	3.8	CH	n	n/a	n/a	ND	
61.78	138	-	64	CS	ES	1.8	CH	n	n/a	n/a	D	plus
61.78	-	-	65	CS	ES	1.8	PW	n	n/a	n/a	D	
61.78	97	D	66	CS	ES	3.9	PW	n	n/a	n/a	C	
61.78	2	-	67	CS	ES	3.5	CH	n	n/a	n/a	D	plus
61.78	-	-	68	CS	ES	1.5	CH	n	n/a	n/a	D	
61.78	66	D	69	CS	ES	2.7	CH	y	n/a	n/a	C	plus
61.78	101	-	70	CS	SS	3.1	CH	n	n/a	n/a	M	plus
61.78	93	-	71	CS	ES	3	PW	n	n/a	n/a	C	plus
61.78	148	-	72	CS	ES	3.1	CH	n	n/a	n/a	C	plus
61.78	134	-	73	CS	EMF	0.6	CH	n	n/a	n/a	ND	plus
61.78	36	-	74	CS	EMF	12.6	CH	n	n/a	n/a	ND	plus
61.78	-	-	75	CS	EMF	4.6	CH	n	n/a	n/a	ND	
61.78	30	-	76	CS	EMF	2.9	PW	y	n/a	n/a	ND	plus

61.78	-	-	77	CS	EMF	3.5	CH	n	n/a	n/a	ND
61.78	5	-	78	CS	EMF	1.4	PW	n	n/a	n/a	ND plus
61.78	152	-	79	CS	EMF	2.2	CH	n	n/a	n/a	ND plus
61.78	-	-	80	CS	EMF	1.6	CY	n	n/a	n/a	ND
61.78	53	D	81	CS	EMF	1.5	CH	n	n/a	n/a	ND plus
61.78	131	-	82	CS	EMF	0.6	CH	n	n/a	n/a	ND plus
61.78	17	-	83	CS	BF	0.8	CH	n	n/a	n/a	D plus
61.78	141	-	84	CS	BF	3	CH	n	n/a	n/a	P plus
61.78	137	-	85	CS	BF	2.3	QU	n	n/a	n/a	P plus
61.78	110	-	86	CS	BF	4.1	CH	n	n/a	n/a	D plus
61.78	95	-	87	CS	BF	1.5	CH	n	n/a	n/a	M plus
61.78	162	-	88	CS	BF	7	QZ	n	n/a	n/a	P plus
61.78	150	D	89	CS	BF	11.1	QZ	n	n/a	n/a	C plus
61.78	-	-	90	CS	BF	6.8	CZ	n	n/a	n/a	M plus
61.78	165	-	91	CS	BF	11.5	PW	n	n/a	n/a	C plus
61.78	41	-	92	CS	BF	8.5	CH	n	n/a	n/a	MC (L) plus
61.78	67	-	93	CS	BF	6.6	CH	n	n/a	n/a	M plus
61.78	10	-	94	CS	BF	1.6	PW	n	n/a	n/a	D plus
61.78	56	-	95	CS	BF	1.7	QZ	n	n/a	n/a	M plus
61.78	-	-	96	CS	BF	8.9	QZ	n	n/a	n/a	P
61.78	166	-	97	CS	BF	1.8	CH	n	n/a	n/a	P, M plus
61.78	90	-	98	CS	BF	1.2	CH	n	n/a	n/a	D plus
61.78	42	-	99	CS	BF	2.1	CH	n	n/a	n/a	P plus
61.78	64	-	100	CS	BF	13.2	QZ	y	n/a	n/a	M plus
61.78	155	-	101	CS	BF	1.6	QZ	n	n/a	n/a	P plus
61.78	119	-	102	CS	BF	3.6	CH	n	n/a	n/a	P plus
61.78	61	-	103	CS	BF	2.6	CH	n	n/a	n/a	P plus
61.78	-	-	104	CS	BF	5.2	PW	n	n/a	n/a	P
61.78	117	D	105	CS	BF	0.5	CH	n	n/a	n/a	D plus
61.78	8	-	106	CS	BF	3.6	QU	n	n/a	n/a	P plus
61.78	12	-	107	CS	BF	0.6	CH	n	n/a	n/a	M plus
61.78	47	-	108	CS	BF	3.8	CY	n	n/a	n/a	ND plus
61.78	160	-	109	CS	PRE	1.3	PW	n	n/a	n/a	P, M plus
61.78	52	-	110	CS	BF	0.9	PW	n	n/a	n/a	D plus
61.78	74	D	111	CS	BF	0.8	CH	n	n/a	n/a	D plus
61.78	125	-	112	CS	BF	0.6	CH	n	n/a	n/a	D plus
61.78	-	D	113	CS	BF	1.4	PW	n	n/a	n/a	P
61.78	109	-	114	CS	BF	0.8	CH	n	n/a	n/a	D plus
61.78	31	D	115	CS	PRE	0.8	CH	n	n/a	n/a	P, M plus

61.78	82	-	116	CS	BF	0.8	QZ	n	n/a	n/a	M plus
61.78	-	-	117	CS	PRE	1	CH	n	n/a	n/a	P
61.78	80	-	118	CS	BF	0.6	CH	n	n/a	n/a	D plus
61.78	72	-	119	CS	BF	0.4	CH	n	n/a	n/a	D plus
61.78	9	-	120	CS	BF	0.2	CH	n	n/a	n/a	D plus
61.78	111	D	121	CS	PRE	0.7	PW	n	n/a	n/a	P plus
61.78	25	-	122	CS	BF	1.2	CH	n	n/a	n/a	P plus
61.78	`116	-	123	CS	BF	0.5	CH	n	n/a	n/a	ND plus
61.78	128	-	124	CS	BF	0.8	QZ	n	n/a	n/a	M plus
61.78	26	D	125	CS	PRE	0.9	PW	n	n/a	n/a	P plus
61.78	120	-	126	CS	BF	0.4	CH	n	n/a	n/a	D plus
61.78	3	-	127	CS	BF	0.4	CY	n	n/a	n/a	D plus
61.78	20	-	128	CR	NAP	3.3	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	129	CR	NAP	4.8	n/a	n	EC	Cord-marked	BO
61.78	-	-	130	CR	NAP	3.6	n/a	n	EC	Cord-marked	BO
61.78	-	-	131	CR	NAP	4.8	n/a	n	EC	Cord-marked	BO
61.78	-	-	132	CR	NAP	6	n/a	n	EC	Cord-marked	BO
61.78	40	-	133	CR	NAP	12.5	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	134	CR	NAP	5.4	n/a	n	EC	Cord-marked	BO
61.78	-	-	135	CR	NAP	5.3	n/a	n	EC	Cord-marked	BO
61.78	-	-	136	CR	NAP	3.9	n/a	n	EC	Cord-marked	BO
61.78	35	-	137	CR	NAP	4.1	n/a	n	EC	Cord-marked	BO plus
61.78	147	-	138	CR	NAP	5.4	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	139	CR	NAP	3.3	n/a	n	EC	Cord-marked	BO
61.78	-	-	140	CR	NAP	6.3	n/a	n	EC	Cord-marked	BO
61.78	-	-	141	CR	NAP	2.6	n/a	n	EC	Cord-marked	BO
61.78	-	-	142	CR	NAP	2.5	n/a	n	EC	Cord-marked	BO
61.78	159	-	143	CR	NAP	2.8	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	144	CR	NAP	3.7	n/a	n	EC	Cord-marked	BO
61.78	-	-	145	CR	NAP	3.8	n/a	n	EC	Cord-marked	BO
61.78	-	-	146	CR	NAP	2.6	n/a	n	EC	Cord-marked	BO
61.78	16	-	147	CR	NAP	3.6	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	148	CR	NAP	2	n/a	n	EC	Cord-marked	BO
61.78	-	-	149	CR	NAP	1.8	n/a	n	EC	Cord-marked	BO
61.78	168	-	150	CR	NAP	4.3	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	151	CR	NAP	4.1	n/a	n	EC	Cord-marked	BO
61.78	-	-	152	CR	NAP	3.8	n/a	n	EC	Cord-marked	BO
61.78	-	-	153	CR	NAP	3.2	n/a	n	EC	Cord-marked	BO
61.78	-	-	154	CR	NAP	3.9	n/a	n	EC	Cord-marked	BO

61.78	-	-	155	CR	NAP	3.7	n/a	n	EC	Cord-marked	BO
61.78	-	-	156	CR	NAP	3.7	n/a	n	EC	Cord-marked	BO
61.78	-	-	157	CR	NAP	2.2	n/a	n	EC	Cord-marked	BO
61.78	13	-	158	CR	NAP	2	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	159	CR	NAP	4	n/a	n	EC	Cord-marked	BO
61.78	-	-	160	CR	NAP	1.6	n/a	n	EC	Cord-marked	BO
61.78	-	-	161	CR	NAP	2.9	n/a	n	EC	Cord-marked	BO
61.78	-	-	162	CR	NAP	1.6	n/a	n	EC	Cord-marked	BO
61.78	-	-	163	CR	NAP	2.7	n/a	n	EC	Cord-marked	BO
61.78	-	-	164	CR	NAP	3	n/a	n	EC	Cord-marked	BO
61.78	-	-	165	CR	NAP	3.6	n/a	n	EC	Cord-marked	BO
61.78	15	-	166	CR	NAP	2.3	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	167	CR	NAP	2	n/a	n	EC	Cord-marked	BO
61.78	20	-	168	CR	NAP	2.6	n/a	n	EC	Cord-marked	BO plus
61.78	-	-	169	CR	NAP	0.9	n/a	n	EC	Cord-marked	BO
61.78	-	-	170	CR	NAP	1.3	n/a	n	EC	Cord-marked	BO
61.78	-	-	171	CR	NAP	0.6	n/a	n	EC	Cord-marked	BO
61.78	-	-	172	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	173	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	174	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	175	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	176	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	177	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	178	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	179	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	180	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	181	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	-	-	182	CR	NAP	-	n/a	n	EC	Cord-marked	BO
61.78	45	-	183	GS	MET	-	SA	n	n/a	n/a	L
61.78	99	-	184	GS	GRD	-	SA	n	n/a	n/a	L
61.78	102	-	185	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	186	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	187	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	188	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	189	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	190	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	191	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	192	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	193	GS	MAN	-	QZ	n	n/a	n/a	L

61.78	-	-	194	GS	MAN	-	SA	n	n/a	n/a	D
61.78	-	-	195	CS	HAM	-	QZ	n	n/a	n/a	C
61.78	15	-	196	CS	HAM	-	QZ	n	n/a	n/a	C
61.78	62	-	197	CS	HAM	-	QZ	n	n/a	n/a	C
61.78	22	-	198	CS	HAM	-	QZ	n	n/a	n/a	C
61.78	-	-	199	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	200	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	201	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	202	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	203	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	204	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	205	GS	GRD	-	SA	n	n/a	n/a	L
61.78	-	-	206	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	207	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	208	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	209	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	210	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	211	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	212	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	213	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	214	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	215	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	216	GS	MET	-	SA	n	n/a	n/a	L
61.78	-	-	217	GS	MET	-	SA	n	n/a	n/a	L
61.78	79	-	218	GS	MET	-	SA	n	n/a	n/a	L
61.78	77	-	219	GS	MET	-	SA	n	n/a	n/a	L
61.78	99	-	220	GS	MET	-	SA	n	n/a	n/a	L
61.78	43	-	221	GS	MET	-	SA	n	n/a	n/a	L
61.78	81	-	222	GS	MET	-	SA	n	n/a	n/a	L
61.78	11	-	223	GS	MET	-	SA	n	n/a	n/a	L
61.78	121	-	224	GS	MET	-	SA	n	n/a	n/a	L
61.78	68	-	225	GS	MET	-	SA	n	n/a	n/a	L
61.78	170	-	226	GS	MAN	-	SA	n	n/a	n/a	C
61.78	135	-	227	GS	MAN	-	GR	n	n/a	n/a	L
61.78	57	-	228	GS	MAN	-	SA	n	n/a	n/a	D
61.78	167	-	229	GS	MAN	-	MQ	n	n/a	n/a	D, L
61.78	105	-	230	GS	MAN	-	SA	n	n/a	n/a	L
61.78	63	-	231	GS	MAN	-	MQ	n	n/a	n/a	D
61.78	37	-	232	GS	MAN	-	MQ	n	n/a	n/a	D, L

61.78	7	-	233	GS	MAN	-	GR	n	n/a	n/a	MC (D)

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
61.63	34	-	1	CS	MS	8.6	CH	n	n/a	n/a	MC (T)	plus
61.64	11	-	2	CS	CV	5.7	CH	y	n/a	n/a	C	plus
61.71	3	-	3	CS	MS	13.9	CH	n	n/a	n/a	C	plus
61.66	-	-	4	CS	ES	1.5	CH	n	n/a	n/a	C	plus
61.66	6	-	5	CS	ES	6.3	CH	n	n/a	n/a	C	plus
61.64	10	-	6	CS	ES	7.3	CH	y	n/a	n/a	C	plus
61.67	5	-	7	CS	ES	6.7	CH	n	n/a	n/a	D	plus
61.68	5	-	8	CS	ES	5.8	CH	n	n/a	n/a	D	plus
61.68	3	-	9	CS	ES	6.3	CH	n	n/a	n/a	D	plus
61.64	18	-	10	CS	CV	22.9	CH	n	n/a	n/a	MC (P)	plus
61.67	10	-	11	CS	EMF	1.5	CH	n	n/a	n/a	D	plus
61.64	17	-	12	CS	EMF	2.4	CH	n	n/a	n/a	ND	plus
61.70	2	-	13	CS	EMF	2.1	CH	n	n/a	n/a	ND	plus, "D"
61.63	25	-	14	CS	EMF	2.3	CH	n	n/a	n/a	C	plus
61.64	7	-	15	CS	MS	3.6	CH	n	n/a	n/a	D	plus
61.63	18	-	16	CS	MS	15	CH	n	n/a	n/a	C	plus
61.63	32	-	17	CS	MS	10	CH	n	n/a	n/a	ND	plus, "D"
61.635	57	-	18	CS	MS	2.1	QZ	n	n/a	n/a	D	plus
61.70	2	-	19	CS	MS	2.2	CH	n	n/a	n/a	ND	plus, "D"
61.635	51	-	20	CS	ES	7.1	CH	n	n/a	n/a	C	plus
61.635	60	-	21	CS	ES	9	CH	y	n/a	n/a	C	plus, "D"
61.63	45	-	22	CS	ES	3	CH	y	n/a	n/a	D	plus
61.67	6	-	23	CS	ES	4.2	CH	y	n/a	n/a	C	plus
61.68	2	-	24	CS	ES	9.5	CH	n	n/a	n/a	C	plus
61.635	59	-	25	CS	ES	4	CH	y	n/a	n/a	C	plus
61.64	2	-	26	CS	ES	2.2	CH	n	n/a	n/a	D	plus
61.64	23	-	27	CS	ES	3.5	CH	n	n/a	n/a	C	plus
61.63	8	-	28	CS	ES	3.8	CH	n	n/a	n/a	D	plus
61.63	26	-	29	CS	ES	4.9	CH	y	n/a	n/a	C	plus
61.67	8	-	30	CS	ES	2.3	CH	n	n/a	n/a	D	plus
61.64	12	-	31	CS	ES	3.7	CH	n	n/a	n/a	D	plus, "D"
61.64	25	N	32	CS	BF	9.1	CH	n	n/a	n/a	P	plus
61.63	20	-	33	CS	BF	9.1	CH	n	n/a	n/a	P	plus
61.67	3	-	34	CS	BF	0.8	CH	n	n/a	n/a	D	plus
61.635	54	-	35	CS	BF	1.1	CH	n	n/a	n/a	D	plus
61.66	5	-	36	CS	BF	27.8	PW	n	n/a	n/a	D	plus, refits with CMPA #41
61.64	6	-	37	CS	BF	7.2	CH	n	n/a	n/a	C	plus

61.63	11	-	38	CS	BF	1.7	CH	n	n/a	n/a	C	plus
61.63	9	-	39	CS	BF	3.4	PW	n	n/a	n/a	MC (D)	plus
61.63	27	-	40	CS	BF	5	CH	n	n/a	n/a	C	plus, "D"
61.66	4	-	41	CS	BF	29.7	PW	n	n/a	n/a	P	plus, refits with CMPA #36
61.66	8	-	42	CS	BF	30	CH	n	n/a	n/a	P	plus
61.66	1	-	43	CS	BF	2.8	CH	n	n/a	n/a	P	plus
61.68	6	-	44	CS	BF	13.6	CH	n	n/a	n/a	MC (P)	plus
61.635	56	-	45	CS	BF	16.9	CH	n	n/a	n/a	D	plus, "D"
61.68	1	-	46	CS	BF	11.3	CH	n	n/a	n/a	P	plus
61.63	17	-	47	CS	BF	7	CH	n	n/a	n/a	P	plus
61.66	19	-	48	CS	BF	2	CH	n	n/a	n/a	M	plus
61.64	13	-	49	CS	BF	1.2	QZ	n	n/a	n/a	D	plus
61.63	14	-	50	CS	BF	2.5	QZ	n	n/a	n/a	P	plus
61.63	12	-	51	CS	BF	3.6	QZ	n	n/a	n/a	D	plus
61.64	14	-	52	CS	BF	4.1	QZ	n	n/a	n/a	M	plus
61.66	2	-	53	CS	BF	2.9	CH	n	n/a	n/a	P	plus
61.635	53	-	54	CS	BF	0.8	QZ	n	n/a	n/a	D	plus
61.64	24	-	55	CS	BF	1.1	CH	n	n/a	n/a	P	plus
61.63	10	-	56	CS	BF	0.5	CH	n	n/a	n/a	ND	plus
61.63	49	-	57	CS	BF	1.2	CH	n	n/a	n/a	P	plus
61.64	16	-	58	CS	BF	4.8	QZ	n	n/a	n/a	P	plus, "D"
61.69	1	-	59	CS	BF	1.2	CH	n	n/a	n/a	P	plus, "D"
61.71	1	-	60	CS	BF	0.9	CH	n	n/a	n/a	D	plus
61.67	16	-	61	CS	PP	0.4	CH	n	n/a	n/a	P	plus
61.63	46	-	62	CS	PP	2	CH	n	n/a	n/a	D, M	plus
61.63	5	-	63	CS	PP	2.7	QZ	n	n/a	n/a	M	plus
61.63	1	-	64	CS	PP	0.9	QZ	n	n/a	n/a	P	plus
61.70	4	-	65	CS	PP	0.5	CH	n	n/a	n/a	D, M	plus, "D"
61.67	7	-	66	CS	PP	8.7	CH	n	n/a	n/a	P, M	plus, possible paleo
61.66	3	-	67	CS	PP	2.2	CH	n	MA	Yonkee	P	plus
61.63	37	-	68	CS	PP	3.8	CH	n	MA	McKean	C	plus
61.68	4	-	69	CS	PP	3.1	CH	n	MA	Duncan-Hanna	MC (T)	plus
61.63	13	-	70	CS	PP	1.8	CH	n	LA	Pelican Lake	M	plus
61.66	13	-	71	CS	PP	0.9	CH	n	LA	Pelican Lake	D, M	plus
61.63	50	-	72	CS	PP	1.2	CH	n	MA	Yonkee	P	plus
66.67	4	-	73	CS	PP	2.1	CH	n	LA	Pelican Lake	MC	plus
61.63	47	-	74	CS	PP	0.8	CH	n	LA	Pelican Lake	P	plus
61.69	3	-	75	CS	PP	1.2	CH	n	LA	Pelican Lake	P	plus, "D"
61.63	2	-	76	CS	PP	2.8	CH	n	LA	Pelican Lake	D, M	plus

61.63	3	-	77	CS	PP	5.2	PW	n	LA	Pelican Lake	C	plus
61.635	52	-	78	CS	PP	4.2	CH	n	LA	Pelican Lake	P, M	plus
61.63	61	-	79	CS	PP	2.7	B	n	LA	Pelican Lake	C	plus
61.63	7	-	80	CS	PP	3.1	CH	n	LA	Pelican Lake	M	plus
61.64	5	-	81	CS	PP	2	CH	n	LA	Pelican Lake	MC (T)	plus
61.70	3	-	82	CS	PP	1	CH	n	LA	Pelican Lake	P	plus
61.64	22	-	83	CS	PP	2	CH	n	LA	n/a	P, M	plus
61.65	3	-	84	CS	PP	3.2	CH	n	LA	n/a	MC (T)	plus
61.63	33	-	85	CS	PP	2.7	PW	n	LA	Pelican Lake	MC (L)	plus
61.66	7	-	86	CS	PP	5.3	CH	n	LA	Besant	MC (T)	plus
61.63	35	-	87	CS	PP	1.7	CY	n	LA	Pelican Lake	MC (L)	plus
61.63	4	-	88	CS	PP	1.6	CH	n	LA	Pelican Lake	P, M	plus
61.67	11	-	89	CS	PP	2.9	CH	n	LA	Besant	C	plus
61.63	38	-	90	CS	PP	1.2	CH	n	MC	Unnotched	C	plus
61.64	19	-	91	CS	DR	4.6	CH	n	n/a	n/a	MC (T)	plus
61.64	20	-	92	CR	NAP	2.6	n/a	n	EC	Plainware	BO	plus
61.64	-	-	93	GS	MET	5	SA	n/a	n/a	n/a	L	
61.66	-	-	94	GS	MET	4	SA	n/a	n/a	n/a	L	
61.66	-	-	95	GS	GRD	8	SA	n/a	n/a	n/a	L	
61.66	-	-	96	GS	GRD	8	SA	n/a	n/a	n/a	L	
61.63	40	-	97	GS	MET	340	SA	n/a	n/a	n/a	L	
61.63	24	-	98	GS	MET	80	SA	n/a	n/a	n/a	L	
61.63	21	-	99	GS	MET	8	SA	n/a	n/a	n/a	L	
61.63	1	B	100	GS	MET	80	SA	n/a	n/a	n/a	L	
61.63	39	-	101	GS	MET	20	SA	n/a	n/a	n/a	L	
61.63	28	-	102	GS	MET	20	SA	n/a	n/a	n/a	L	
61.63	23	-	103	GS	MET	40	SA	n/a	n/a	n/a	L	
6`.63	48	-	104	GS	MAN	200	SA	n/a	n/a	n/a	L	

Site	Specimen #	Collection Zone	CMPA #	Class	Element	Mass (g)	Raw Material	Cortex	Temporal Age	Type	Portion	Comments
15.13	-	-	1	CS	ES	2.4	CH	n	n/a	n/a	D	
15.13	112	-	2	CS	ES	2.2	CH	n	n/a	n/a	C plus	
15.13	59	-	3	CS	ES	2.1	CY	n	n/a	n/a	C plus	
15.13	-	-	4	CS	ES	3.4	CH	y	n/a	n/a	C	
15.13	151	-	5	CS	ES	2.3	CH	n	n/a	n/a	D plus	
15.13	88	-	6	CS	ES	10	CH	n	n/a	n/a	D plus	
15.13	-	-	7	CS	ES	12.6	CH	n	n/a	n/a	C	
15.13	49	-	8	CS	ES	5.8	PW	n	n/a	n/a	C plus	
15.13	134	-	9	CS	ES	7.1	CH	n	n/a	n/a	C plus	
15.13	-	-	10	CS	ES	6.3	CH	y	n/a	n/a	C	
15.13	135	-	11	CS	BF	2.9	CH	n	n/a	n/a	D plus	
15.13	107	-	12	CS	BF	3.3	PW	n	n/a	n/a	C plus	
15.13	24	-	13	CS	BF	2	CH	n	n/a	n/a	D plus	
15.13	117	-	14	CS	BF	1.9	CH	n	n/a	n/a	D plus	
15.13	131	-	15	CS	BF	3.6	CH	n	n/a	n/a	M plus	
15.13	13	-	16	CS	BF	6.4	CH	n	n/a	n/a	C plus	
15.13	-	-	17	CS	BF	4.5	CH	n	n/a	n/a	P	
15.13	7	-	18	CS	PRE	2.2	CH	n	n/a	n/a	C plus	
15.13	-	-	19	CS	BF	6.8	CH	n	n/a	n/a	C	
15.13	-	-	20	CS	BF	21.1	PW	n	n/a	n/a	C	
15.13	133	-	21	CS	ES	2.4	CH	n	n/a	n/a	D plus	
15.13	-	-	22	CS	ES	2.2	CY	n	n/a	n/a	D	
15.13	47	-	23	CS	ES	2.3	CH	n	n/a	n/a	D plus	
15.13	132	-	24	CS	EMF	2.1	CH	n	n/a	n/a	C plus	
15.13	-	-	25	CS	ES	2.9	CH	n	n/a	n/a	D	
15.13	60	-	26	CS	ES	2.9	QZ	y	n/a	n/a	C plus	
15.13	-	-	27	CS	MS	10.4	CH	n	n/a	n/a	ND	
15.13	19	-	28	CS	MS	1.1	CH	n	n/a	n/a	ND plus	
15.13	57	-	29	CS	MS	1.4	CH	n	n/a	n/a	D, M plus	
15.13	103	-	30	CS	MS	4	CH	n	n/a	n/a	D, M plus	
15.13	86	-	31	CS	EMF	2.9	CH	n	n/a	n/a	P plus	
15.13	65	-	32	CS	MS	2	CH	n	n/a	n/a	ND plus	
15.13	8	-	33	CS	MS	2.5	CH	n	n/a	n/a	ND plus	
15.13	95	-	34	CS	MS	4.8	CY	y	n/a	n/a	ND plus	
15.13	29	-	35	CS	MS	2	CH	n	n/a	n/a	ND plus	
15.13	3	-	36	CS	SS	5.6	CH	n	n/a	n/a	C plus	
15.13	-	-	37	CS	MS	3.4	CH	n	n/a	n/a	ND	

15.13	-	-	38	CS	MS	1.9	CH	n	n/a	n/a	ND
15.13	138	-	39	CS	MS	0.5	PW	n	n/a	n/a	ND plus
15.13	142	-	40	CS	EMF	13.3	CH	n	n/a	n/a	ND plus
15.13	-	-	41	CS	EMF	1	CH	n	n/a	n/a	C
15.13	-	-	42	CS	EMF	2.2	CH	n	n/a	n/a	ND
15.13	-	-	43	CS	EMF	3	CH	n	n/a	n/a	ND
15.13	53	-	44	CS	EMF	4.9	QZ	n	n/a	n/a	C plus
15.13	-	-	45	CS	EMF	2.5	CH	n	n/a	n/a	M
15.13	124	-	46	CS	EMF	0.8	CH	n	n/a	n/a	ND plus
15.13	71	-	47	CS	BF	3.1	CH	n	n/a	n/a	P plus
15.13	125	-	48	CS	BF	1.9	QZ	n	n/a	n/a	D plus
15.13	-	-	49	CS	BF	1.6	CH	n	n/a	n/a	P
15.13	32	-	50	CS	BF	5.7	CH	n	n/a	n/a	P plus
15.13	-	-	51	CS	MS	10.5	QZ	n	n/a	n/a	P, M
15.13	-	-	52	CS	BF	11.9	QZ	n	n/a	n/a	P
15.13	145	-	53	CS	BF	5.7	CH	n	n/a	n/a	P plus
15.13	20	-	54	CS	BF	3.4	CH	n	n/a	n/a	P plus
15.13	-	-	55	CS	BF	0.8	CH	n	n/a	n/a	D
15.13	123	-	56	CS	BF	4.9	CH	y	n/a	n/a	MC (T) plus
15.13	119	-	57	CS	BF	0.5	CH	n	n/a	n/a	D plus
15.13	-	-	58	CS	BF	4.1	CH	n	n/a	n/a	D
15.13	45	-	59	CS	BF	2.6	CH	n	n/a	n/a	D plus
15.13	152	-	60	CS	BF	2.6	CY	n	n/a	n/a	C plus
15.13	-	-	61	CS	BF	3.1	CH	n	n/a	n/a	D
15.13	99	-	62	CS	BF	0.9	CH	n	n/a	n/a	D plus, "D"
15.13	20	-	63	CS	BF	5.6	PW	y	n/a	n/a	P plus
15.13	67	-	64	CS	BF	0.1	CH	n	n/a	n/a	D plus
15.13	84	-	65	CS	BF	4.1	CH	n	n/a	n/a	P plus
15.13	108	-	66	CS	BF	0.4	CH	n	n/a	n/a	D plus
15.13	16	-	67	CS	BF	0.4	CH	y	n/a	n/a	M plus
15.13	129	-	68	CS	BF	4.3	QZ	n	n/a	n/a	M plus
15.13	111	-	69	CS	BF	1.3	CH	n	n/a	n/a	D plus
15.13	82	-	70	CS	BF	3.3	CH	n	n/a	n/a	M plus, "C"
15.13	153	-	71	CS	EMF	2	CH	n	n/a	n/a	C plus
15.13	-	-	72	CS	EMF	0.3	CH	n	n/a	n/a	ND
15.13	27	-	73	CS	BF	3.4	CY	n	n/a	n/a	M plus
15.13	35	-	74	CS	BF	1.8	PW	n	n/a	n/a	P plus
15.13	51	-	75	CS	BF	1.8	CH	y	n/a	n/a	D plus
15.13	113	-	76	CS	BF	2.7	CH	n	n/a	n/a	MC(T) plus

15.13	159	-	77	CS	BF	0.7	CH	n	n/a	n/a	P plus
15.13	40	-	78	CS	BF	3.6	CH	n	n/a	n/a	P plus
15.13	73	-	79	CS	BF	0.7	CH	n	n/a	n/a	D plus
15.13	148	-	80	CS	BF	2	CH	n	n/a	n/a	M plus
15.13	-	-	81	CS	BF	1.3	CY	n	n/a	n/a	D
15.13	22	-	82	CS	BF	1.1	CH	n	n/a	n/a	P plus
15.13	149	-	83	CS	BF	0.3	CH	n	n/a	n/a	D plus
15.13	110	-	84	CS	BF	0.9	CH	n	n/a	n/a	P plus
15.13	-	-	85	CS	BF	0.5	CH	n	n/a	n/a	P
15.13	26	-	86	CS	BF	1.5	CH	n	n/a	n/a	M plus
15.13	62	-	87	CS	BF	1.7	CH	n	n/a	n/a	P plus
15.13	17	-	88	CS	BF	3.1	CH	n	n/a	n/a	P plus
15.13	-	-	89	CS	BF	1.1	CH	y	n/a	n/a	M
15.13	80	-	90	CS	BF	0.7	CH	n	n/a	n/a	D plus
15.13	58	-	91	CS	BF	0.6	CH	n	n/a	n/a	M plus
15.13	23	-	92	CS	BF	2.7	QZ	n	n/a	n/a	P plus
15.13	79	-	93	CS	BF	0.8	CH	y	n/a	n/a	D plus
15.13	121	-	94	CS	BF	1.1	CH	n	n/a	n/a	M plus
15.13	31	-	95	CS	BF	0.2	CH	n	n/a	n/a	D plus
15.13	41	-	96	CS	BF	4.1	CY	n	n/a	n/a	D plus
15.13	109	-	97	CS	BF	0.3	B	n	n/a	n/a	D plus
15.13	108	-	98	CS	BF	0.2	CH	n	n/a	n/a	D plus
15.13	33	-	99	CS	DR	1.2	CH	n	n/a	n/a	P, M plus
15.13	2	-	100	CS	DR	1.1	QZ	n	n/a	n/a	D plus
15.13	120	-	101	CS	DR	2	CH	n	n/a	n/a	M plus
15.13	100	-	102	CS	PP	1.6	CH	n	n/a	n/a	P, M plus
15.13	87	-	103	CS	PP	1.3	CH	n	LA	n/a	P plus
15.13	-	-	104	CS	PP	0.9	CH	n	LA	n/a	P
15.13	5	-	105	CS	BF	0.5	CH	n	n/a	n/a	P plus
15.13	-	AZN	106	CS	PP	0.8	CH	n	LA	n/a	P
15.13	72	-	107	CS	PP	2.5	PW	n	LP	n/a	P plus
15.13	11	-	108	CS	BF	3.7	CH	n	n/a	n/a	M plus
15.13	66	-	109	CS	BF	3.7	CH	n	n/a	n/a	P, M plus
15.13	69	-	110	CS	PP	3.1	CH	n	n/a	n/a	P plus
15.13	123	-	111	CS	PP	2.5	CH	n	MA	Duncan-Hanna	C plus
15.13	143	-	112	CS	PP	2.1	CH	n	MA	Duncan Hanna	C plus
15.13	85	-	113	CS	PP	1.7	CH	n	MA	Duncan-Hanna	C plus
15.13	30	-	114	CS	PP	0.6	CH	n	MA	Duncan-Hanna	P plus
15.13	-	-	115	CS	PP	2.9	CH	n	MA	McKean	C plus

15.13	28	-	116	CS	PP	3.1	CH	n	MA	McKean	P, M	plus
15.13	18	-	117	CS	PP	1.9	CH	n	MA	McKean	C	plus
15.13	9	-	118	CS	PP	1.3	CH	n	MA	McKean	P, M	plus
15.13	-	-	119	CS	PP	8.8	CH	n	MA	Yonkee	MC (T)	plus
15.13	-	-	120	CS	PP	1.6	CH	y	MA	Duncan-Hanna	P, M	
15.13	150	-	121	CS	PP	0.8	CH	n	MA	Duncan-Hanna	P	plus
15.13	-	-	122	CS	BF	3.1	CH	n	n/a	n/a	MC (T)	
15.13	-	-	123	CS	BF	2.5	CH	n	n/a	n/a	C	
15.13	136	-	124	CS	PP	3.1	CH	n	LA	Pelican Lake	MC (T)	plus
15.13	64	-	125	CS	PP	2	CH	n	LA	Pelican Lake	C	plus
15.13	91	-	126	CS	PP	2.3	CH	n	LA	Pelican Lake	MC (L)	plus
15.13	-	-	127	CS	PP	1.5	CH	n	LA	Pelican Lake	P, M	plus
15.13	94	-	128	CS	PP	2	CH	n	LA	n/a	MC (T)	plus
15.13	-	-	129	CS	PP	5.1	CY	n	LA	Pelican Lake	C	plus
15.13	63	-	130	CS	PP	4.8	CH	n	LA	n/a	P, M	plus
15.13	127	-	131	CS	PP	3.2	CH	n	LA	Pelican Lake	MC (L)	plus
15.13	130	-	132	CS	PP	2.9	QZ	n	LA	Pelican Lake	P	plus
15.13	-	-	133	CS	PP	3.5	CH	n	LA	Pelican Lake	P	plus
15.13	70	-	134	CS	PP	3.7	CH	n	LA	n/a	P, M	plus
15.13	-	-	135	CS	PP	1.9	CH	n	LA	n/a	C	
15.13	42	-	136	CS	PP	2.6	CH	n	LA	n/a	MC (T)	plus
15.13	-	-	137	CS	PP	2.7	CH	n	LA	Pelican Lake	M	
15.13	126	-	138	CS	PP	2	CH	n	LA	Pelican Lake	M	plus
15.13	118	-	139	CS	PP	2.2	CH	n	LA	Pelican Lake	D, M	plus
15.13	78	-	140	CS	PP	2.7	CH	n	LA	Pelican Lake	M	plus
15.13	-	-	141	CS	PP	3.9	CH	n	LA	n/a	P, M	
15.13	-	-	142	CS	PP	1.7	CH	n	LA	Pelican Lake	C	
15.13	52	-	143	CS	PP	2.3	CH	n	LA	Pelican Lake	C	plus
15.13	-	-	144	CS	PP	0.6	QZ	n	EC	Corner-notched	MC (L)	
15.13	106	-	145	CS	PP	0.4	CH	n	EC	Corner-notched	P	plus
15.13	43	-	146	CS	PP	0.5	CY	n	EC	Corner-notched	MC (T)	plus
15.13	56	-	147	CS	PP	0.6	QZ	n	EC	Corner-notched	C	plus
15.13	-	-	148	CS	PP	0.8	CH	n	EC	Corner-notched	C	
15.13	93	-	149	CS	PP	0.3	CH	n	EC	Corner-notched	C	plus
15.13	36	-	150	CS	PP	2.1	CH	n	MC	Tri-notched	C	plus
15.13	128	-	151	CS	PP	1.3	CH	n	MC	Side-notched	C	plus
15.13	15	-	152	CS	PP	1.4	CH	n	MC	Avonlea	C	plus
15.13	101	-	153	CS	PP	1.1	CY	n	MC	Avonlea	P	plus
15.13	12	-	154	CS	PP	2.8	CH	n	MC	Avonlea	C	plus

15.13	48	-	155	CS	PP	0.1	CH	n	MC	Side-notched	P	
15.13	6	-	156	CS	PP	0.8	CH	n	MC	Side-notched	P	plus
15.13	146	-	157	CS	PP	0.6	CH	n	MC	Avonlea	P	plus
15.13	-	-	158	CS	PP	0.5	CH	n	MC	Side-notched	P	
15.13	89	-	159	CS	PP	1.5	CH	n	LA	Pelican Lake	P, M	plus
15.13	46	-	160	GS	MAN	-	GR	n	n/a	n/a	L	
15.13	19	-	161	CS	HAM	-	QZ	n	n/a	n/a	C	
15.13	38	-	162	GS	MAN	-	MQ	n	n/a	n/a	L	
15.13	405	-	163	GS	MAN	-	SA	n	n/a	n/a	D	
15.13	-	-	164	CS	HAM	-	QZ	n	n/a	n/a	C	
15.13	-	-	165	GS	MAN	-	SA	n	n/a	n/a	L	
15.13	-	-	166	GS	MET	-	SA	n	n/a	n/a	L	
15.13	96	-	167	GS	MAN	-	GR	n	n/a	n/a	L	
15.13	-	-	168	GS	MAN	-	SA	n	n/a	n/a	L	
15.13	105	-	169	GS	MAN	-	MQ	n	n/a	n/a	L	
15.13	33	-	170	GS	MAN	-	SA	n	n/a	n/a	C	
15.13	74	-	171	GS	MET	-	ND	n	n/a	n/a	L	
15.13	10	-	172	GS	MAN	-	GR	n	n/a	n/a	C	
15.13	-	-	173	GS	MAN	-	SA	n	n/a	n/a	D	
15.13	-	-	174	GS	MAN	-	SA	n	n/a	n/a	D	
15.13	34	-	175	GS	MAN	-	MQ	n	n/a	n/a	D, L	
15.13	154	-	176	GS	MAN	-	SA	n	n/a	n/a	L	
15.13	-	-	177	GS	MAN	-	SA	n	n/a	n/a	D	
15.13	-	-	178	GS	MAN	-	SA	n	n/a	n/a	D, L	