TESTING AND MITIGATION AT FOUR SITES ON THE LEVEL(3) LONG HAUL FIBER OPTIC ALIGNMENT, COLUSA COUNTY, CALIFORNIA

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15 May 2003

California State University, Chico
Archaeological Research Program
Reports No. 42

ACKNOWLEDGMENTS

The author is indebted to Kesner Flores and the staff of the Cortina Band of the Wintun Indians for a very productive partnership on this project and the lasting friendships that have developed since. I also wish to recognize Sycamore Environmental, Inc. and Kiewit-Pacific, Inc. for the opportunity to complete this project, and the exceptionally positive work environment which they created for our students and staff throughout the monitoring, mitigation, and analysis and write-up phases of the project.

A number of individuals visited and worked on the project, too many to name. We shared a unique experience that few of us will forget.

Several individuals and institutions contributed stand-alone analyses appearing as appendices to this report, which have been edited, reworked, adapted to developing findings, and incorporated into various parts of the text. For the unaltered text or analytical results, please see the appropriate appendices. Craig Skinner, of Northwest Research Obsidian Studies Laboratory, contributed the obsidian studies results appearing in **Appendix C**. The staff of BetaAnalytic, Inc. and the Lawrence Livermore National Laboratories performed radiocarbon dating analyses appearing in this report in the Chronology chapter or in **Appendix D**. Robin Cordero (then) Staff Archaeologist, Archaeological Research Program, CSU, Chico, completed the human bone identifications appearing in **Appendix E**. John Jangala, Tim Carpenter, and Mark Greenberg all (then) Staff Archaeologists, Archaeological Research Program, CSU, Chico, completed the zooarchaeological identifications appearing in **Appendix F**. Eric Wohlgemuth of Far Western Anthropological Research, Inc., completed the flotation analysis and plant macrofossil identifications appearing in **Appendix G**. Dina Coleman, Project Geoarchaeologist, contributed the analysis of project geoarchaeology appearing as **Appendix I**. The author and Kesner Flores co-wrote and co-developed the recommended burial recovery and analysis methods appearing in **Appendix J**. Dr. Chistopher O'Brien, Director of the Dental Increment Laboratory, CSU, Chico, and Joshua Peabody, B.A., Staff Archaeologist, Archaeological Research Program, CSU, Chico, completed the dental increment analysis appearing in **Appendix K**.

Thanks to Rick Snodgrass for masterful administrative coordination, and to staff and students of the Archaeological Research Program, CSU, Chico, who completed primary research and draft text: Erin Dwyer completed a study of project area environment, Elizabeth Kallenback contributed to the section on Patwin lifeways, Starla Smock completed an analysis of historic artifacts, Lisa Westwood provided historical background. Robin Cordero contributed a particularly solid analysis of project human skeletal remains.

The author is grateful to several individuals who responded to my inquiries about certain artifacts and chronological findings, including Dr. David A. Fredrickson, Dr. Jerald J. Johnson, Dr. Makoto Kowta, and the late Francis A. Riddell.

The author bears full responsibility for the accuracy of the data presented herein.

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INTRODUCTION

PROJECT LOCATION AND MANAGEMENT

Compliance Status

This is the final report of archaeological investigations at four sites encountered on the Level(3) fiber optic cable alignment, situated along Hwy 45 between Princeton and Colusa, Colusa County, California (Figure 1). The proposed investigation was undertaken under the terms of an agreement between the Archaeological Research Program, Research Foundation, California State University, Chico (ARP), and Sycamore Environmental, Inc., of Sacramento. The project was guided by and adhered to the terms of *Level(3) Long Haul Fiber Optics Cultural Resources Procedures* (Parsons Brinkerhoff 1999). Archaeological inventory and monitoring procedures and results undertaken for this project are described in the ARP report *Cultural Resources Monitoring Report for the Level(3) Fiber Optic Project, Yolo, Colusa, Glenn, Tehama, and Shasta Counties, California* (Huberland and Westwood 2001)

The investigations reported here were designed to assist Kiewit Pacific, Inc. in meeting its obligations under the California Environmental Quality Act, as defined by the California Public Utilities Commission (lead agency) in documents filed in advance of the Level(3) Fiber Optic Project. Further, because human remains were identified at three of the sites the project followed provisions of the State of California *Public Resources Code* Section 5097.9 and *Health and Safety Code* Sections 7050.5 and 7052. The mitigation proposal, mitigation program, and this final report were subject to review by Most Likely Descendent (MLD) Mr. Kesner Flores, Cortina Patwin, and California Department of Transportation (Caltrans), District 3 Archaeological Permit Review officer Mr. Daryl Noble.

SUMMARY OF FIELD WORK

Four sites were sampled, Col-158, Col-245/H, Col-246/H, and Col-247. The project excavated 642 m^2 at a volume of 63.9 m^3 of hand excavated soil, and an additional 45 geoarchaeological trenches. Excavations at Col-158 served to determine the nature and extent of cultural deposits in order to assist in avoiding further construction impacts. Excavations at Col-245/H, Col-246/H, and Col-247 served to mitigate inadvertent construction impacts to unanticipated finds.

Colusa County Courthouse, Col-246/H

On 2 February 2000, an ARP monitor and a Cortina Patwin cultural monitor observed cultural materials in a dark, gravelly soil excavated from a bore mounting pit being constructed directly in front of the Colusa County Courthouse. A number of artifacts were observed in this soil, including prehistoric and historic cultural material. Based on the available exposure, pedestrian survey of the surrounding area, and an analysis of historical and ethnographic sources, it was determined that the site could contain significant historical features relating to the early settlement of the Colusa townsite. Field work at the Colusa County Courthouse site was designed to mitigate the inadvertent adverse impacts. Archaeological investigations employed hand excavation of an irregular rectangular area below 37 damaged sidewalk sections. In addition, a 2 ft wide slit trench was dug to a maximum depth of 2 ft below surface. A total of 226 ft^3 was dug. The units were dug stratigraphically to the maximum depth of cultural deposits. A combination of 1/4" and 1/8" water-screens were used. Seven historical strata were identified containing historical features and artifacts dating between 1855-present as well as a redeposited prehistoric assemblage consistent with a late prehistoric to contact period age assignment.

Colusa M-7, Col-245/H

On 18 March 2000, ARP personnel monitoring construction of a vault pit at Market and 7th Streets in the City of Colusa identified cultural materials including possible human bone in the pit exposure. On examination of the exposure ARP representatives determined that the excavation had disturbed a buried prehistoric midden and an associated partial skeleton of an adult Native American. The site was determined potentially eligible for the National Register of Historic Places based on Criterion D. Field work at the site was

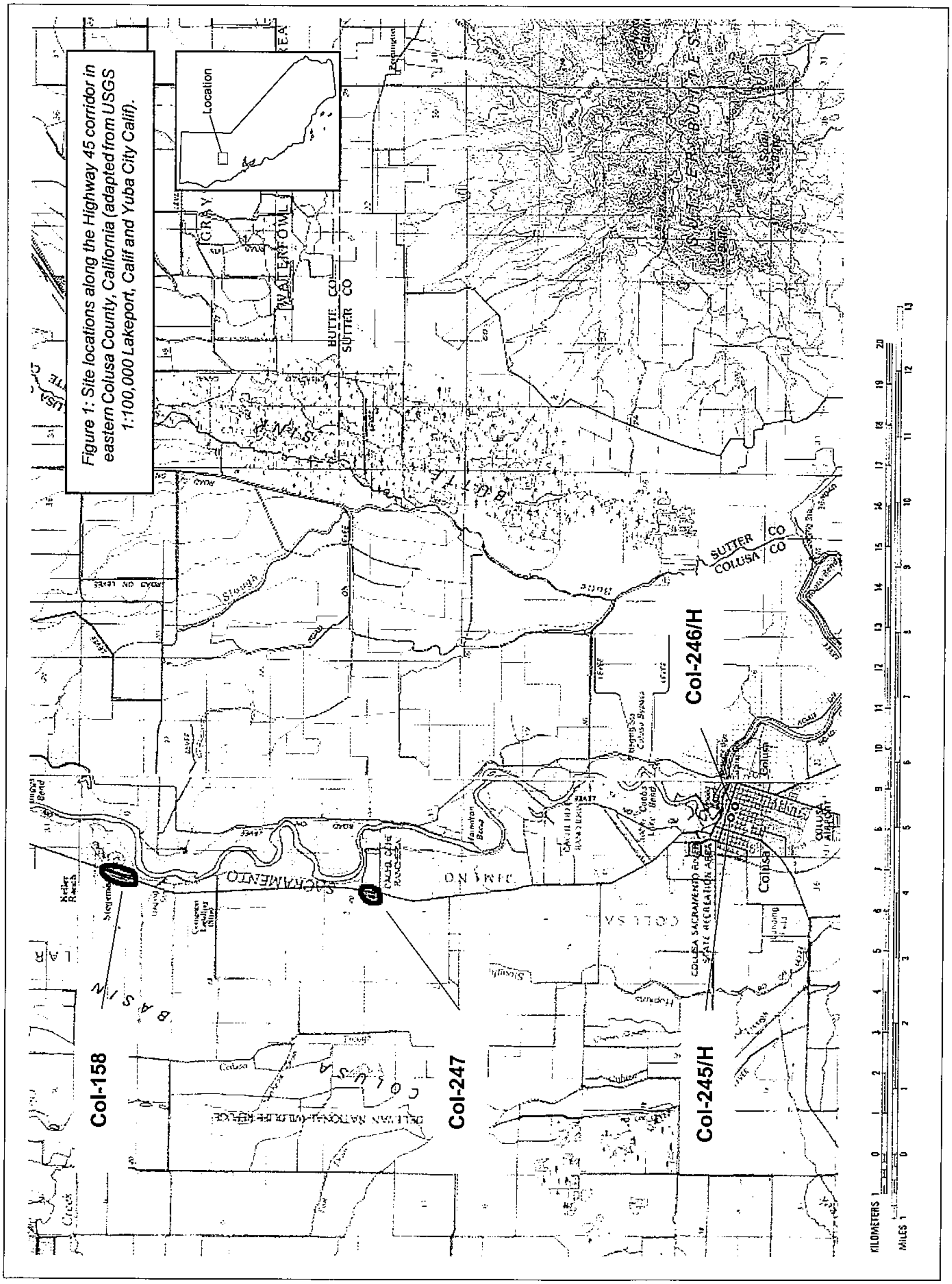


Figure 1: Site locations along the Highway 45 corridor in eastern Colusa County, California (adapted from USGS 1:100,000 Lakeport, Calif and Yuba City Calif).

designed to mitigate the inadvertent adverse impacts. Archaeological investigations included hand excavation and screening of 15.0 m3 of loose vault pit soil which had been dislodged by backhoe operations. An additional 17.8 m3 was hand excavated stratigraphically from the standing walls. All deposits were screened using 1/8" and 1/4" shaker-screens with screen spoils wet screened for final processing. An additional 80x20 ft area at the Colusa County Fairgrounds was investigated using a series of systematic scrapes to recover human bone present in soil which had been transported there as part of the initial vault excavation.

Stegeman Station Site, Col-158

In late January, 2000, ARP personnel visited previously recorded site Ca-Col-158, on the Level(3) alignment alongside Hwy 45 approximately 3.75 miles south of Princeton. Surface reconnaissance of freshly plowed ground determined that cultural deposits on the west side of Hwy 45 extending up to 300 ft north of previously recorded boundaries. We recommended that more extensive test excavations take place at the site in order to determine the nature and extent of cultural deposits in order to assist the construction teams to avoid archaeological impacts.

On Tuesday, 16 February through Thursday, 2 March 2000, the Archaeological Research Program conducted an archaeological testing program at the Stegeman Station site, Col-158, situated Archaeological investigations were restricted to the Level(3) alignment, employing a combination of mechanical test trenches and hand excavated units. Initially, a backhoe was used to dig a series of test trenches at 100 ft (30.5 m) to 300 ft (91.5 m) intervals on the west side of the Hwy 45 right-of-way. These trenches provided a series of "windows" into the deposits, and helped determine the location and relationships between cultural and non-cultural deposits. The trenches found that surface soils had been disturbed to a depth of 40 to 60 cm below surface all along the corridor. Where test trenches determined that no intact cultural deposits existed within the alignment, Kiewit was advised it could proceed with construction work. Where intact archaeological deposits were encountered, trenching ceased and 1x1 m test units were dug. Exact locations of the units were determined in the field in response to trenching discoveries. The units were dug in 10 cm levels and screened using 1/8" dry shaker-screens. The units were dug to the maximum depth of cultural deposits. Four distinct loci were sampled and each produced rich midden deposits.

Reservation Road Site, Col-247

On 13 December 1999, ARP field personnel identified a previously unrecorded archaeological site on the Level(3) alignment 4.2 miles south of Princeton, at Caltrans postmile 26.[10]. The site was exposed in a 40 ft (12.2 m) trench dug for a tie at Kiewit postmile 49+25. As revealed in the trench wall, a combination of fill and culturally sterile soil occurred to a depth of 1.0 m below surface. A cultural deposit consisting of a dark brown midden matrix occurred at a depth of 1.0 m below surface and extended deeper than the base of the trench which was at approximately 1.5 m below surface. The maximum depth and horizontal dimensions of the site could not be established based on the trench. However, the midden was exposed along the full length of the trench and further investigation of the plowed field and Caltans right-of-way revealed a surface scatter of cultural material. A substantial and diverse archaeological assemblage was identified in the trench spoils, including human remains. A mitigation program was recommended. Field work at Col-247 was designed to mitigate the inadvertent adverse impacts of the tie trench. Initially, a backhoe was used to re-expose the tie trench and remove the overburden from an area bordering the west edge of the trench. The total size of the exposure was constrained by the tie trench and existing Hwy 45 shoulder, on the one hand, and the outside edge of the Caltrans right-of-way, on the other. Further, a buffer was necessary around a power pole adjacent to the center of the trench. However, all these constraints considered, two exposures were excavated totaling 19.0 m^2 and 15.3 m^3. A series of 19 1x1 m units was excavated in 10 cm or 20 cm levels and screened using 1/4" or 1/8" dry shaker-screens. Excavations encountered rich cultural deposits of considerable time depth and stratigraphic integrity.

KEY FINDINGS

Artifacts and Special Studies

The artifact collection included 116 projectile points and fragments, 14 flake and spall tools, 34 cores and core tools, 27 milling tools, 50 bone and antler tools, 84 shell beads and ornaments, 13 plummets and pendants, 2 net sinkers, 9 hammerstones, 1 soapstone bowl, 5,581 ceramic and fired clay artifacts, and 2,539 historical artifacts. In addition, 12 burials were excavated and studied and 193 items of isolated human bone were recovered and analyzed. Laboratory studies include compilation of 15 radiocarbon dates and 179 obsidian sourcing/hydration specimens for age determination on all components and most temporally diagnostic artifacts. Special studies included a comprehensive geoarchaeological study of Sacramento River landscape evolution, source identification of basalt chipped stone tools, dental increment analysis of archaeological cervid and carnivore teeth, and an intensive investigation of prehistoric subsistence economy via the analysis and interpretation of plant macrofossil remains yielded by 23 flotation samples and 56,842 animal bones and fragments.

Of particluar note, the Hwy 45 ceramics are the first large Sacramento Valley collection reported north of the Delta region, and the first from the Sacramento Valley region to supply clear evidence of local manufacture and use, and an integral role in day-to-day activities. The Colusa ceramics reveal new information about past technology, plant use, and cultural behavior.

Analysis and Interpretation

Prior to our study, Colusa County archaeology was poorly known. The only previous excavations along the river corridor had been accomplished 30 to 50 years ago, had never been reported, and were largely forgotten. A few more recent excavations had been concentrated in the county's westside foothills, but no synthesis existed and the region lacked a basic chronology. However, regardless of the paucity of work, the Lower Sacramento River corridor has emerged as an important locus for theory building in this part of the state. A number of important theories have been advanced linking prehistoric culture change to demographic change and consequent shifts in technology, organization, and subsistence economy. In view of the key role of the area and absence of hard evidence, our team recognized an obligation and opportunity to fill the void.

The Hwy 45 sites form a long time series, and our investigation contributed to the development of local chronology via the identification, definition, and dating of artifact assemblages. The sites provided the additional advantage of producing horizontal and vertical stratigraphic structure sufficient to yield evidence of single component occupations, enabling us to approach the task of producing a chronology using component-based systematics. The four archaeological sites contained a total of seven chronological components spanning from the contact period to 4,385 years ago. The project produced one of the longest and best dated chronologies yet developed for the north valley, and this sequence will provide grist for the mill of regional descriptive and explanatory models for years to come.

Geoarchaeological investigations provided a master framework for chronological and paleoenvironmental observations. Buried cultural components were identified at the Col-158, Col-245/H, and Col-247. The geoarchaeological study established a basic distinction between late Holocene and early to mid Holocene floodplains, and demonstrated that future archaeological work in the region can be enhanced by further improving our ability to predict the locations of older archaeological phenomena.

In the course of this project, a new and rewarding link was also made between the geomorphological evidence for patterns of floodplain development and the plant macrofossil evidence for human ecological responses. We found a correlation between geomorphic cycles of the floodplain formation and erosion and variation in the harvest of species endemic to young sediments versus those endemic to clayey or alkaline soils.

The project garnered evidence for coincident change in diet, tool kits, mobility, social organization, and regional interaction, and also found evidence of related changes in the late Quaternary environment. Thus, project findings permitted us to look for triggering conditions in the dynamics of local population-resource relationships.

Existing models argue that acorn intensification took place relatively late in time, associated with a shift to the mortar and pestle (e.g., Basgall 1987). The Hwy 45 results contradict this model in a couple of ways, in that acorn use was dominant at 4385 CAL BP and remained dominant throughout, and the acorn must have been processed with handstones and millingslabs prior to 2,200 years ago. However, the rate of small and large seed production increased significantly after 1,180 years ago, indicating the onset of intensified vegetal food production coincident to other cultural and economic changes.

Existing models argue that Sacramento Valley fisheries were also intensified during the late prehistoric period, with Archaic diets characterized by a low proportion of fish to terrestrial game, and late prehistoric diets (post-1100 CAL BP) by a higher ratio of fish to terrestrial game, indicating a decline in foraging efficiency over time in the study area (Broughton 1988, 1994).

The project found evidence for early and late use of fish, but a clear record of a late intensification marked by an increased rate of harvest of all small-bodied fishes of all species, and a new focus on salmonids. We posit that the change is linked to the introduction of harvesting methods such as seine nets, dip nets, and weirs.

Existing models argue that population increase in the late prehistoric period resulted in decreased foraging efficiency (Bayham and Johnson 1990; Broughton 1994). Taken as a whole, project evidence indicates that existing models of economic intensification are generally accurate, but many specifics need to be reconsidered, especially the role of demographics and paleoenvironmental forcing. Economic intensification in Northern California was probably not exclusive to the late prehistoric so much as a series of regionally variable, technologically-mediated transformations that evolved through Paleoindian, Archaic, and Emergent Period thresholds.

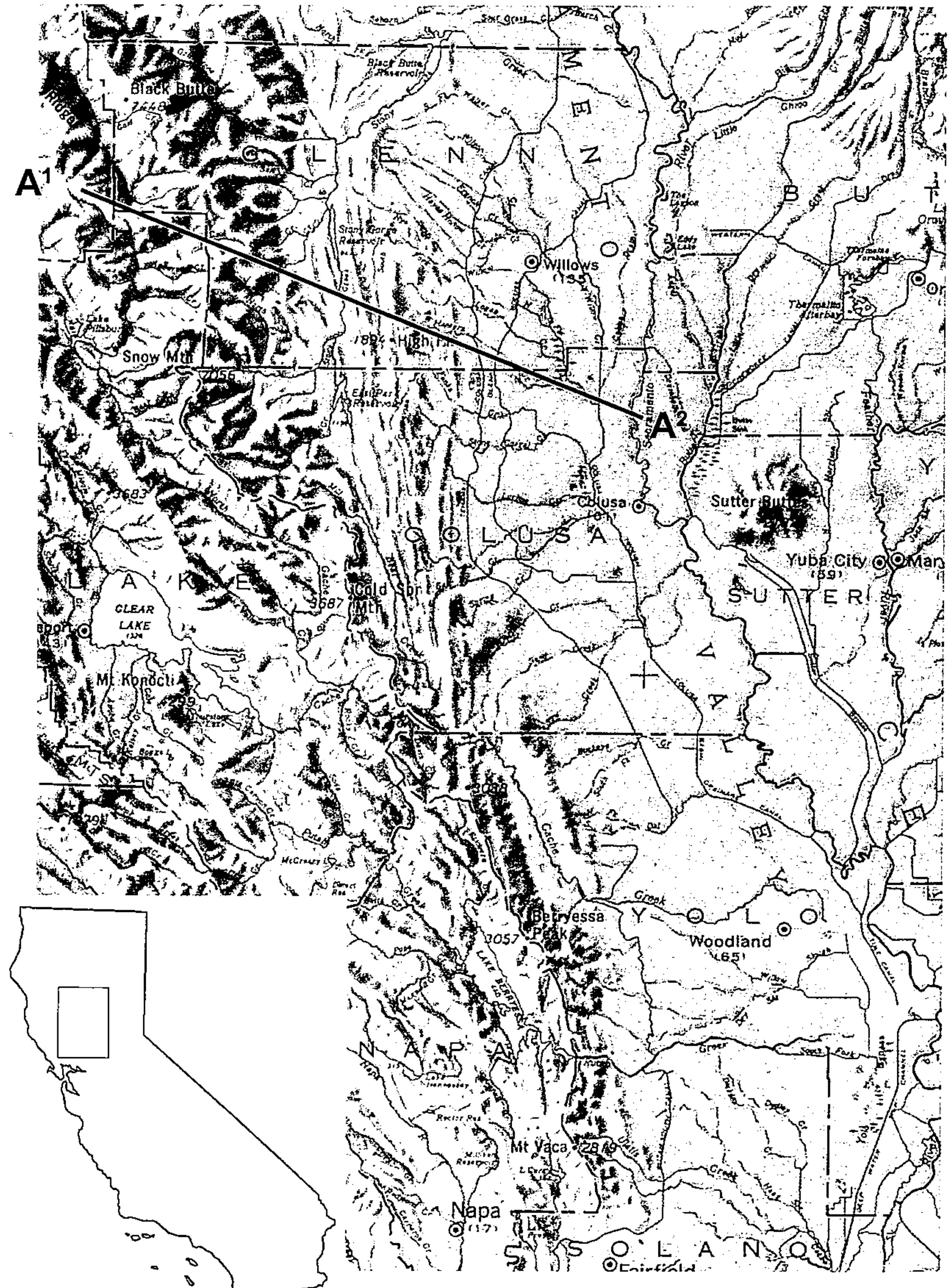


Figure 2: Project location; A¹— A² cross section shown in Figure 3.

ENVIRONMENTAL CONTEXT

GEOMORPHOLOGY

The project area is situated in the west central Sacramento Valley in the eastern part of Colusa County. The county extends from the foothills of the eastern Coast Ranges to the Sacramento River and can be divided into five topographic features that are useful for understanding the geomorphic setting of the project area. The features include (from west to east) (1) the Coast Ranges and foothills, (2) old river terraces and alluvial fans, (3) young alluvial fans, (4) a basin area, and (5) the Sacramento River floodplain (see Figure 2).

Coast Ranges

The eastern Coast Ranges are composed primarily of unaltered sandstone and shale broken, warped, and altered by deep faults. Sedimentary in origin, these rocks were first deposited during the Mississippian and Pennsylvanian periods when seas covered portions of North America. These periods were preceeded by volcanic activity during the Triassic to the Jurassic periods when mountains and igneous intrusions developed and seas advanced and receded (Harwood and Helley 1987). Materials that uplifted during this time consisted primarily of Cretaceous deposits as well as marine sedimentary formations and conglomerates. Following the Cretaceous period, massive uplifting, folding, and erosion took place, ultimately producing the Coast Ranges as they are known today. These geological processes caused extensive erosion in the uplands and deposition in the valleys.

Old Fans and Terraces

East of the Coast Ranges, the landscape descends into foothills and further into early Tertiary river terraces and alluvial fans. The terraces, which form bench-like deposits stepping down toward the valley, represent older sediments that lie parallel to the valley. The Coast Ranges are drained by a series of stream channels that have transported sediments downslope, creating vast alluvial fans at the base of the foothills. The upper three meters or so of the alluvial fans consist of recent sediments below which lie thousands of feet of Tertiary sediments. Fossil remains of Pleistocene-age mammals have been found in portions of these alluvial fans.

Basins

Extending east from the alluvial fans lie the Colusa Basin and the Sacramento River floodplain. The project area is located along a segment of land where the basin and the floodplain converge (see Figures 2 and 3). The Colusa Basin is the lowest physical feature in Colusa County. It is composed of multiple smaller basins that are separated by streams and levees. During wet seasons, the area generally floods, and slow-moving waters deposit thin layers of sediment across the basin. Stratigraphically, the deposits consist of fine layers of sediment composed largely of silt and clay. Due to the relatively small amount of sediment deposited annually, the age of the basin deposits increases rapidly with depth. Laterally, the deposits grade into the younger floodplain to the east and the younger alluvial fans to the west.

Geologic deposits in Colusa Basin are divided into groups based upon parent material, age, and location. Basin soil groups falling specifically within the project area include the Marvin, Willows, and Grimes Soil Series (Figure 5). Most or all of the sediments derived from transported alluvium deposited in lowlying or nearly flat floodplains paralleling the Sacramento River (Harradine 1948). These landforms are poorly drained and characterized by both high ground water and flooding during wet seasons. Despite the high winter water table, the water table plummets and the basins dry during the arid summer months. Annual saturation and drying of the basin deposits causes shrinking and swelling among the clay-based soils. This action affects soil development processes by continually breaking down soil structure and creates difficulties in identifying and evaluating soils in their natural setting. The combination of poor drainage, standing water, and evaporation leads to prevalence of mineral accumulation in the basin soils. As a result, alkali levels tend to be high and cumulic A horizons and Bk horizons are common.

Among the more curious features of the basin soils west of the Sacramento River, these horizons

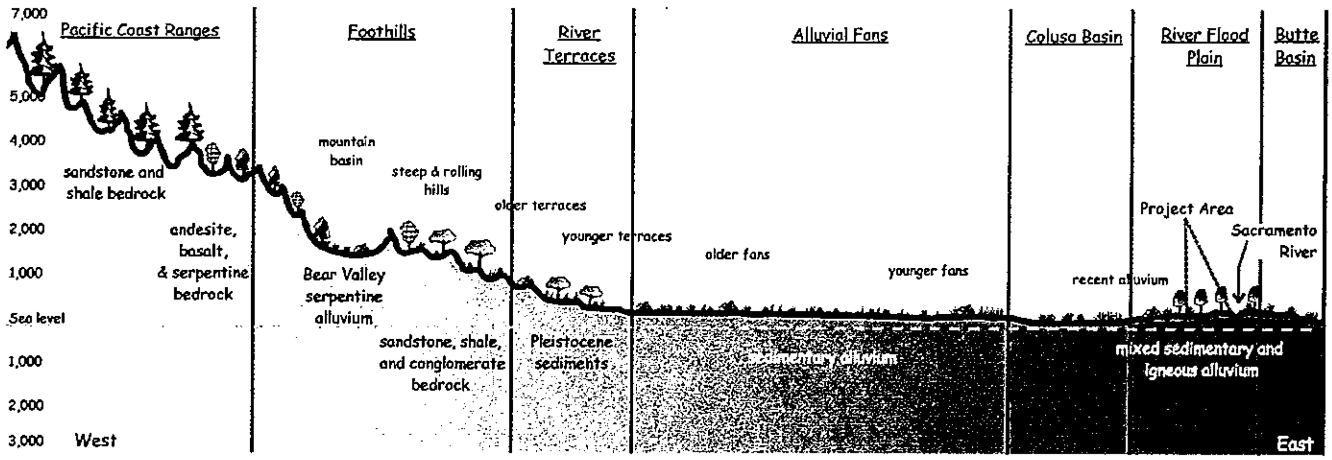


Figure 3: Schematic cross section through the eastern North Coast Range and Sacramento Valley near the project area (see Figure 2 for location of cross section).

are composed of alluvial sediments derived primarily from granitic parent material. Since the Coast Ranges are composed mainly of sedimentary and metamorphic rock, the granitic material in the Colusa Basin likely points to a Sierra Nevada origin. There are several possible explanations for this occurrence, each pointing to the significant antiquity of the basin deposits. While the Sierra sediments may have deposited well out onto the valley floor prior to the development of the river, it is more likely that the river has had major course changes over time. At the very least, sediments transported by the river and distributed over the floodplain contain a mixture of geologic material from both sides of the Sacramento Valley.

Sacramento River Floodplain

The eastern end of the Colusa Basin rises toward a natural levee bordering the Sacramento River. Originating at the base of Mount Shasta, the river flows southward into the Sacramento Valley. The depth of the river deposits and the actual age of the river are unknown, although the oldest discernible meander loops of the river have been estimated to be a minimum of 1,000-2,000 years old. This information is based upon an analysis of abandoned meander loops and intersections with younger loops. (Brice 1977:48) Presumably, however, the river is substantially older.

Annual river overflow has deposited layers of sediment over the riverbanks, thereby creating the Sacramento River floodplain. The floodplain deposits consist predominantly of well-sorted sand, gravel, and silt along the channels, flood zones, and natural levees. The floodplain is made up of numerous soil groups, two of which dominate the project area: the Sycamore and Columbia Soil Series (Figure 5). These are alluvial soils formed from transported materials that are predominantly granitic in character, much like the basin soils, only younger. Surface textures range from fine sandy loam to clay loams, with the loams and clay loams the dominant textures. Soils have recent profiles characterized by indefinite horizons and irregular stratification. Geologic parent materials of the floodplain are generally noncalcareous except for subsoils which acquire alkaline content from percolation of ground water during the wet season (Harradine 1948:6).

Subterranean Canyons

Layers of sediment extend many hundreds of ft below the surface of the Sacramento Valley, and in some areas bedrock has been recorded as much as one mile deep. The valley is filled primarily with nonmarine sediments of the late Tertiary and Quaternary Ages (Olmstead and Davis 1961:3). Subsurface deposits have been primarily studied with the use of well data, although these studies are few in number. One such study was conducted by Almgren (1978) who identified four buried Tertiary submarine canyon deposits in the central Sacramento Valley. One of these, known as the Princeton Canyon, lies directly beneath the project area. The southern end of this deep trough sits just west of the Sutter Buttes near the town of Colusa and extends north under the path of the Sacramento River floodplain to approximately Red Bluff. In a tectonic study of the Sacramento Valley, Harwood and Helley (1987) describe the Princeton Canyon as being 6,000 ft below sea level at its deepest. In and around the Level(3) project area, the canyon bottom sits roughly 3,300 ft below sea level and is filled primarily with Tertiary sediments.

LOCAL FLORA

Historical Observations

The entire landscape of eastern Colusa County has been reworked by agriculture and other forms of development. Nevertheless, records of two 1840s explorations give us insight into precontact vegetation.

The earliest was compiled in September 1841 by Lt. Charles Wilkes of the U.S. Navy who piloted a small boat up the Sacramento River. South of the project area, downstream from the confluence of Butte Creek and the Sacramento River, Wilkes describes the river flowing in a slow, broad meander, with a soft bottom and low banks adjoining marshy tracts:

> The tula or bulrush was still found in great quantities, growing on the banks...At the encamping-place was a grove of poplars of large size, some of which were seventy feet high, and two and a half feet in diameter. The leaf resembled that of the American aspen [Wilkes 1841, reprinted 1958:73].

However, he indicates that a definite change occurred above the mouth of Butte Creek, near present-day Colusa, on the south end of the project area.

> On the 27th, the current in the Sacramento had become much more rapid, and the snags more frequent; its banks were on an average about twenty feet above the water, though there was every appearance on them of their having been overflowed. The prairies are perfectly level; and, according to the testimony of the Indians, the whole country was annually inundated...As they proceeded up the river, the country continued of the same character, the level being only interrupted by the line of trees that borders the river. These consist of oaks and sycamores. [Wilkes 1841, reprinted 1958:73-75].

On September 30th just north of present-day Colusa, Wilkes observed:

> The river was here only two hundred feet wide, and its banks but fifteen feet high. The trees on the shores had now become quite thick, and grew with great luxuriance; so much so, that were the sight confined to the river banks, it might be supposed that the country was one continued forest, instead of an open prairie [Wilkes 1841, reprinted 1958:75].

In 1849-1850 Lt. George H. Derby of the U.S. Army led the first formal mapping expedition in the Central Valley. His map of the Colusa region, depicting conditions in 1849, depicts a mile-wide corridor of woodland bordering the river between Princeton and Colusa (Figure 4). At the northernmost apex of his reconnaissance, on October 23rd and 24th, 1849 Derby visited the mouth of Butte Creek at the Sacramento River, near where the City of Colusa would later stand:

> it makes a wide bend to the west in latitude 39° 9', and empties into the Sacramento. It is in many places of considerable width, but everywhere of great depth, carrying, I should imagine, as much water into the Sacramento as the "Yuba," the principal branch of the Feather river. Near its mouth it widens to about 600 feet, the ground in the vicinity being marshy and covered with tule, and the banks difficult of access on account of the density of the alders and grape-vines with which they are lined. There are many clusters of beautiful trees--oaks, sycamores, and ash upon its banks, but it is not thickly wooded, as is the case with the Sacramento and Feather rivers and their branches. The plain beyond is of rich alluvial soil, covered with fine grass, which was at this time almost dried up, upon which subsisted large herds of wild cattle, horses, elk, and antelope. The "tul'e" swamps do not extend far above "Butte creek;" there are but two or three isolated marshes of this description on the west bank of the Sacramento [Derby 1849, reprinted in Farquhar 1932:115].

Thus, both accounts agree on the location and nature of the change in character of the river and valley. North of the mouth of Butte Creek—in the project area—the river flowed faster and had many rapids. High river banks covered with a dense forest broke into a broad, level, treeless plain. While the plains may have been seasonally flooded, persistent marshy tracts were generally restricted to the area south of the project area.

Classification of Habitat Types

The Wilkes and Derby accounts describe habitats which can also be identified in a growing body of research dealing with the distribution and characteristics of native Sacramento Valley flora: (1) riparian woodland, (2) California prairie, and (3) seasonal wetland (e.g., Barbour and Major 1988; Burcham 1981; Holland and Keil 1990; Ornduff 1974; Thompson 1961, 1980). Generally, these three habitats sorted themselves on the landscape laterally across the valley from the river to the foothills, coassociating with changes in landform

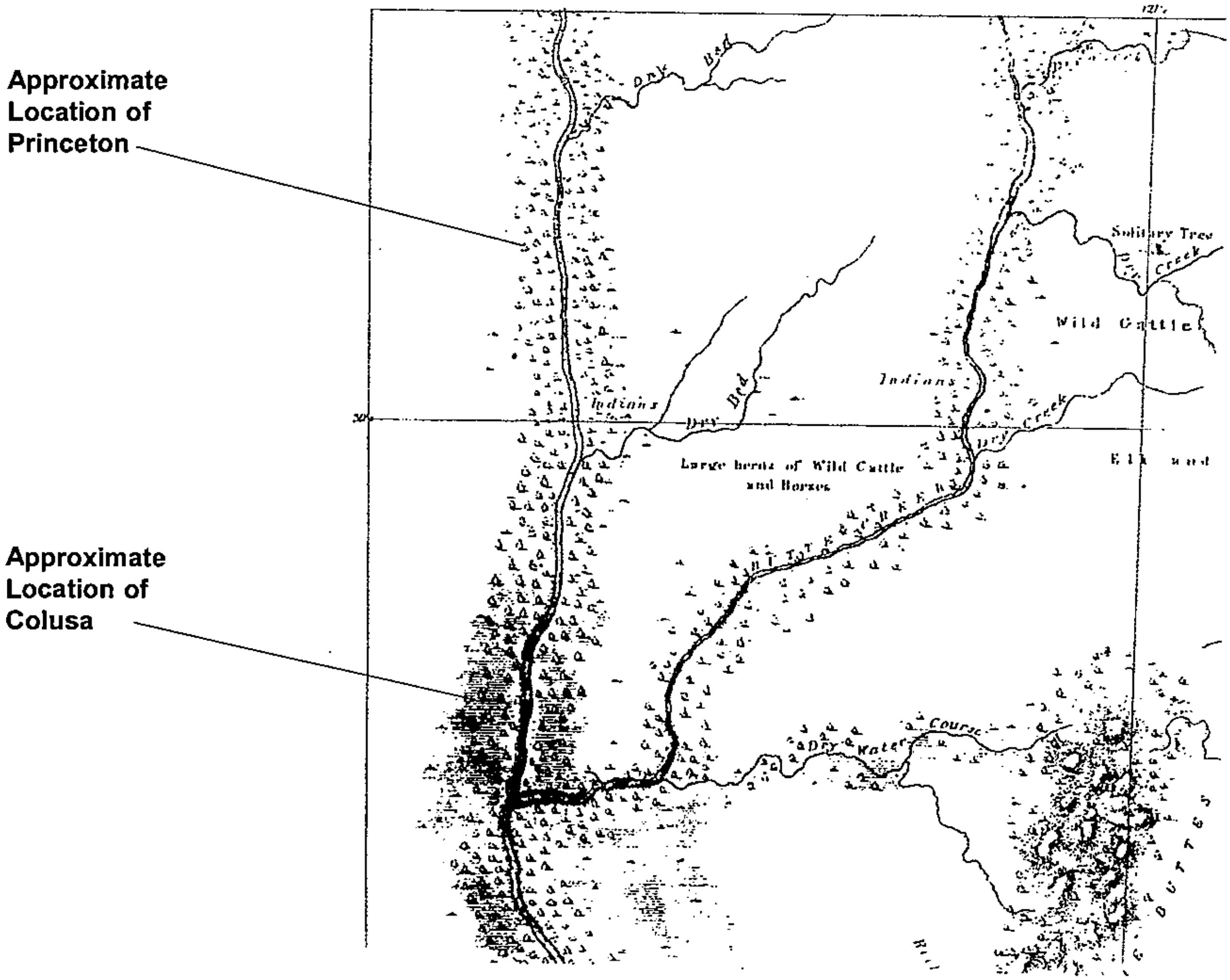


Figure 4: The project area just prior to settlement. Section from Lt. George H. Derby's 1849 map "The Sacramento Valley from the American River to Butte Creek" (Farquhar 1932).

laterally across the valley from the river to the foothills, coassociating with changes in landform and soil type described above.

Riparian Woodland

Wilkes and Derby chronicled clumps and bands of riparian woodland bordering the Sacramento River and following major stream corridors across the valley (see also Belcher 1843; Bryant 1848; Leonard 1934). Based on examination of relict stands still found along the river, Thompson and others have defined the basic species composition and ecology of the riparian woodland. Despite mild winter temperature, trees making up the California riparian forest were primarily deciduous. On the one hand trees of the riparian woodland were flood-tolerant, and on the other, possessed deep tap roots which reached the permanent water table. The woodland had significant floristic diversity and a complex architecture with a woody overstory and a dense underlying growth of vines and herbaceous and shrubby plants sometimes closely similar to a tropical jungle. The overstory canopy was dominated by the California valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), and California sycamore (*Platanus racemosa*). A distinct intermediate overstory zone was composed of Oregon ash (*Eraxinus latifola*), walnut (*Juglans hindsii* and *J. californica*), cottonwood (*Populus* spp.), big leaf maple (*Acer macrophyllum*), California box elder (*Acer negundo* sub. *californicum*), White alder (*Alnus rhombifolia*), California bay (*Umbellularia californica*), and willow (*Salix* spp.).

Typical understory species included elderberry (*Sambucus mexicana*), mugwort (*Artemisia*

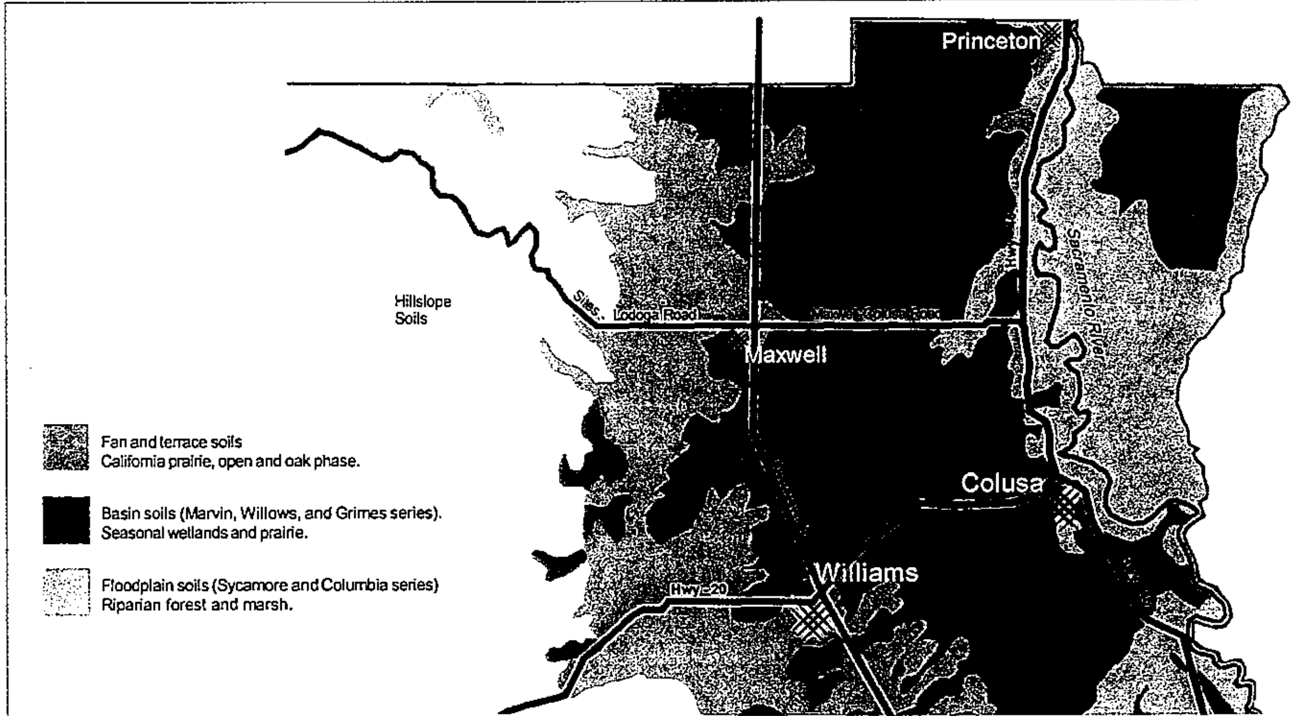


Figure 5: Distribution of floodplain, basin, fan, and terrace soils in northeastern Colusa County, California.

occidentalis), and blackberry (*Rubus* spp.). Common vines and climbers included Dutchman's pipe vine (*Aristolochia californica*), poison oak (*Rhus diversiloba*), wild grape (*Vitis californica*), greenbrier (*Smilax californica*), and wild clematis (*Clematis* spp.). The parasitic big mistletoe (*Phoradendron tomentosum* sub. *macrophyllum*) is found on overstory trees (Katibah 1984; Ornduff 1974; Roberts *et al.* 1980).

Wilkes and Derby clearly described the association of the riparian forest with the highest tier of landforms in the valley basin, the well-drained natural levees alongside the river. Derby's map indicates that a wide riparian forest corridor existed in the project area (Figure 5). Thompson cautions that we should take Derby's map to indicate general rather than specific conditions (Thompson 1980:36). However, the close correlation between Derby's mapped forest and the distribution of floodplain soils (Sycamore and Columbia Soil Series) cannot be missed (compare Figures 4 and 5). In fact, these soils formed under conditions that can be expected to have promoted riparian forest growth, and at least in part the forest probably played a role in forming the soil by slowing flood waters and capturing sediments. Thus, for the purpose of predicting the prehistoric distribution of riparian forest, we will take the distribution of floodplain soils as the more reliable local data set (see below).

California Prairie

In our west valley study area, California prairie occupied the largest section of valley floor, the broad, flat to gently sloping plains between the foothills and floodplains. A deep water table and long dry season meant that the grassland habitat lacked moisture for up to 4 to 8 months every year. Cool season species matured between April to June, while a few warm season annuals reached peak growth during the summer months. Annual weather variation greatly affected the type of plants and density of certain grassland plant species (Crosby 1986:154; Heady 1988:495).

Dominant bunch grasses included needle grass (*Stipa pulchra*) and nodding needlegrass (*Stipa cernva*). Common perennial and annual grasses included California oatgrass (*Danthonia californica*), tufted hairgrass (*Dechampsia caespitosa*), three-awn (*Aristida* spp.), hairgrass (*Deschampsia danthonoides*), western and Idaho fescues (*Festuca occidentaus*, *F. idahoensis*, *F. megalura*, and F. *pacifica*), Pacific reedgrass (*Calamagrostis nuthaensis*), rye (*Elymus glaucus* and *E. triteoides*), Junegrass (*Koeleria cristata*), Melicgrass (*Melica californica* and *M. imperfecta*), and bluegrass (*Poa Scabrella*). Common forbs included brodiaea (*Brodiaea* spp.), buttercup (*Ranunculus occidentalis* and *R. californicus*), blue-eyed grass (*Sisyrinchium bellum*), Lupine (*Lupinus variicolor*), and clover (*Trifolium spp.*), and vetch

(*Ranunculus occidentalis* and *R. californicus*), blue-eyed grass (*Sisyrinchium bellum*), Lupine (*Lupinus variicolor*), and clover (*Trifolium spp.*), and vetch (*Vicia* spp.). Primarily a treeless plain, the prairie also had a valley oak phase (*Quercus lobata*) marked by widespread single trees and an occasional large, closed stand (Burcham 1981:81; Heady 1988:495).

The Wilkes and Derby records describe broad prairies extending out directly from the riparian forest. However, both authors travelled during the early fall season when a real distinction between prairie and seasonal wetland was probably not apparent. Thus, while prairie was certainly the predominant association for the terrace and fan soils shown in Figure 5, the relative proportion of prairie and wetland association in the basin soils cannot be determined.

Seasonal Wetlands

Flooding created winter-spring wetlands including vernal pools in the basins west of the Sacramento River floodplain. Plant succession around the pools and mudflats proceeded with the wet season floods, promoting growth of species adapted to cool weather and fresh water. With spring the wetlands dry, and poor drainage and slow evaporation led to alkali accumulation. As Wilkes reported:

> The vegetation throughout the whole course of the Sacramento showed evident traces of salt, and in some places the prairies seemed to be incrusted with it [Wilkes 1841, reprinted 1958:79].

Accordingly, alkali-tolerant grasses and forbs dominated in the seasonal wetlands, including saltgrass (*Distichlis stricta*) and alkali sacaton (*Sporobolus airoides*), Anempis californica, Nitrophilia occidentalis, Astragalus tener, and clover (*Trifolium fucatum*). Herbs and forbs also followed as the wetlands dried, including Lepidium latipes, Lythrum hyssopifolia, Navarretia leucocephela, Downingia elegans, Mimulus tricolor, and Psilocarpus brevissimus. Prairie grasses described above also intermixed with these elements, dominating in high areas and as the wetlands dried.

Absent clear identification of seasonal wetlands in the Wilkes and Derby records, we will assume that the poorly drained basin soils shown in Figure 5 contained an unknown proportion of wetland associations.

ANIMALS OF THE SACRAMENTO VALLEY

The following provides a summary description of likely faunal associations per habitat type. Only a few of the terrestrial species can be considered exclusive to one or another habitat, but rather more frequent inhabitants of particular associations at particular times of the year. Certain carnivores/omnivores, including coyote (*Canis latrans*), gray fox (*Urocyon cinerargentus*), badger (*Taxidea taxus*), spotted skunk (*Spilogale putorius*), striped skunk (*Mephitis mephitis*), bobcat (*Felis rufus*), puma (*Felis concolor*), black bear (*Ursus americana*), and grizzly bear (*Ursus horribilis*) had widespread distributions and could be expected to prowl all three habitats in a single foray.

Storer and Tevis (1955) provide a number of late Nineteenth century accounts of California grizzly (*Ursus horibilus*) in the Sacramento Valley lowlands. Wilkes also indicates:

> Bears were also in great numbers. It is reported that they will sometimes attack and eat the Indians...They will also ascend the oaks for the acorns, and break off branches so large as almost to ruin the tree. It has been generally supposed that they do not climb; but all the hunters bear testimony that they can do it, although slowly and clumsily...Three or four are usually seen feeding together. The cubs are remarkably small in proportion to the full-grown animal [Wilkes 1841, reprinted 1958:74-75].

As testimony to the high density of carnivores, describing a stop-over near the project area Wilkes reports that:

> [T]he wolves and bears had entered the camp during the night, although there was a watch kept at each end of it. The howling of the wolves was almost constant [Wilkes 1841, reprinted 1958:73].

<u>California Prairie Fauna</u>

Of all three habitats, the California Prairie probably supported the largest number of large mammals; ranked by size these were: tule elk, pronghorn, and deer.

The Derby map plots the location of large herds of elk, pronghorn, and wild cattle, and Wilkes provides testimonial to the high density of elk on the prairie near the project area:

> ...game became more plentiful, and elk were found to be most so. Some of them were of large size, and at this season of the year, the rutting, they are seen generally in pairs; but at other times, the females are in large herds. They are fine looking animals, with very large antlers, and seemed, in the first instance, devoid of fear. The herds are usually thirty to forty in number, and are chiefly composed of females and their young. The father of the flock is always conspicuous (Wilkes 1841, reprinted 1958:73)

Tule elk (*Cervus elophus nannodes*) was probably one of the most significant aboriginal game animals of the grasslands. While early historic extermination leaves many open questions about the this animal, we can infer the general properties of tule elk behavior in the region based on analogy to the behavior of modern herds in similar environments (McCullough 1969; Phillips 1976:62; Smith 1973).

Tule elk in the project area probably usually lived in small, fluid herds whose movements changed "in response to local conditions" (McCullough 1969:47; see also Smith 1973 and Phillips 1976:62). Beginning in November (with the sprouting of new grass) and lasting through to mid-September, the elk probably occupied mixed prairie and oak woodland, living in small, dispersed groups. Beginning in September (in response to desiccation), elk probably accumulated in the vicinity of the riparian woodland, within one mile of perennial water sources, presumably foraging succulents of the riparian zone and browsing oak leaves and green acorns. The rut probably took place near the end of September, characterized by bull-dominated cow groups of up to 30 to 50 individuals. Larger herds coalesced in the lowlands after the rut, feeding primarily on acorn mast until November when they dispersed (McCullough 1969; Smith 1973; Phillips 1976).

Pronghorn (*Antilocapra americana*) were also common in the California prairie, often occurring in large herds. Subsisting primarily on annual grasses and forbs and relying on open ground and speed for defense from predation, the pronghorn was most likely a permanent resident of the prairie. The rut took place in October, characterized by small, buck-dominated doe groups of 5 to 15 individuals. Larger herds might gather in the late fall through spring, dispersing into smaller herds in the summer.

Small game typical of the prairie probably included black-tailed jackrabbit (*Lepus californicus*), Beechy groundsquirrel (*Spermophilis beecheyi*), kangaroo rat (*Dipodomys heermanni*), and pocket gophers (*Thomomys bottae*).

Riparian Woodland Fauna

Terrestrial Fauna

Black-tailed deer was probably the predominant large game animal of the riparian woodland. Unlike the transhumant tule elk and pronghorn described above, black-tailed deer were probably much more fixed and territorial. According to Taber, for black-tailed deer in the chaparral, a comparably dense and woody habitat,

> an area of about 360 acres [1.46 km^2] would represent the maximum home range size occupied by an individual deer... [further,] . . . home ranges are not mutually exclusive, so that the same 360 acres might be occupied, in part at least, by as many as 80 or 90 deer [Taber 1956: 113].

Exceptions to this pattern include yearling dispersal, buck travels during the rutting season, and wandering by aged deer. However, 90 percent of the time, an established animal can be found within a 450 m (500 yd) radius of the center of its home range, except under extreme weather, desiccation, burning, or disturbance from hunting. Black-tailed deer subsisted primarily on fresh, green grass and green chamise sprouts in November through March, and scrub live oak and other browse between April through October (Taber 1956: 164-165).

Small game of the riparian woodland included gray squirrel (*Sciurus griseus*), ground squirrel (*Spermophilus beecheyi*), Audubon cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), California quail (*Lophortyx californicus*), ringtail (*Bassariscus astutus*), as well as many small perching birds, rodents, reptiles, amphibians, and bats.

River and Stream Fauna

Riparian animals common to the rivers and streams included beaver (*Caster canadensis*) Pacific pond turtle (*Clemmys marmorata*), molluscs (*Anodonta californiensis* and *Gonidea angulata*), and predators such as raccoon (*Procyon lotor*), ringtail (*Bassariscus astutus*), weasel (*Mustela frenata*), mink (*M. vison*), and river otter (*Lutra canadensis*). Resident riparian avifauna included waterfowl such as ducks, teal, and shovelers (*Anas* spp.), wood duck (*Aix sponsa*), coot (*Fulica *americana*), double crested cormorant (*Phalacrocorax auritus*), western grebe (*Aechmophorus occidentalis*), and gulls (*Larus* spp.). Wading birds, some of which were migratory, included great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), snowy egret (*Egretta thula*), great egret (*Casmerodius albus*), and American bittern (*Botaurus lentiginosus*). The project area lies directly in the Central Valley path of the Pacific Flyway. Migratory waterfowl, including swans, geese, and ducks (Anseriformes) stopped over between approximately November to February. Ethnographic accounts describe the valley thick with waterfowl during the winter season. In general, they favored open ground or shallow water of the basin areas.

The extraordinary fisheries of the Sacramento River featured a number of resident and anadromous fishes. The largest-bodied resident fish was the white sturgeon (*Acipenser transmontanus*), however, the most common fishes belonged to the cyprinidae family, including hitch (*Lavinia exilicauda*), splittail (*Pogonichthys macrolepidotus*), hardhead (*Mylopharadon conocephalus*), and the western pike-minnow (*Ptychocheilus grandis*). Other common resident fish included the western sucker (*Catostomus occidentalis*), Sacramento perch (*Archoplites interruptus*), and tule perch (*Hysterocarpus traskii*). Each of these species was widely dispersed most of the year, but during the spring season could be found clustered in side streams, sloughs or shallow water habitats for nesting or spawning.

Anadromous fishes primarily spawned in the late fall/winter but also had spring runs. These included the Pacific lamprey (*Lampetra lethophaga*), and several salmonids probably primarily including the king salmon (*Oncorhynchus tshawytscha*), Coho salmon (*Oncorhynchus kisutch*), and steelhead rainbow trout (*Salmo gairdneri gairdneri*).

CULTURAL CONTEXT

THE PATWIN

Sources

A summary of information on the Patwin can be found in Johnson (1978), and in Kroeber's Handbook of the Indians of California (Kroeber 1925). S. Powers Tribes of California (Powers 1877, reprinted 1975) includes a chapter describing his visit with the Patwin. C.H. Merriam conducted ethnographic work among the Patwin between 1902-1905, and these notes have been summarized in Heizer and Hester (1970). W.C. McKern's Functional Families of the Patwin (McKern 1922) covers Patwin sociopolitical customs and kinship, and his Patwin Houses (McKern 1923) goes into details of the construction and use of domiciles and other buildings at a level of detail unheard of for other Native California groups. Village and place name information and post-contact history is available in two synthetic treatments, Kroeber's The Patwin and Their Neighbors (Kroeber 1932), and Heizer's and Hester's Names and Locations of Some Ethnographic Patwin and Maidu Villages (Heizer and Hester 1970).

The most fascinating documents available on the contact period history of the project area are the journals of Arguello and Ordaz. Between October 17-November 17, 1821, Captain Luis Antonio Arguello, Commandant of the *Presidio de San Francisco*, conducted an exploratory military expedition into northern California. Ordered north by the Spanish Governor to pursue rumors of white settlement in the valley, Arguello's troop included 70 men, their mounts, packhorses, and a horse-drawn cannon. The expedition was transported by launch to Suisun area and from there followed a course up the valley, visiting Patwin villages along the west side of the Sacramento River and tracking the rumors north then west to the foothills. Satisfied that the reports actually referred to known Russian settlements on the Pacific coast, the troop turned south again to Mission San Rafael, ultimately returning by launch to the Presidio. Expedition diaries were kept by Arguello and his chaplain, the Reverend Father Fray Blas de Ordaz, and these diaries (Arguello 1821 *in* Fischer 1992; Ordaz *in* Heizer and Hester 1970) contain important details on the Patwin and their village and place names, especially significant because they predate the pandemics—malaria (1830-1833) and smallpox (1837)—which later decimated Patwin society (see Cook 1956). Published translations of both diaries as well as unpublished revised translations compiled by Dr. Randall Milliken (Milliken 2000) were consulted in the preparation of this document.

Three more chronicles were useful in assembling information for this study, the journal of Lt. Charles Wilkes of the U.S. Navy who piloted a small boat up the Sacramento River in September, 1841 (Wilkes 1845, reprinted 1958), the autobiographical notes of John Bidwell (Bidwell *in* Rogers 1881) who mapped and chronicled the Larkin's Children Land Grant in 1844, and the journal and map of Lt. George H. Derby of the U.S. Army, who led a formal military mapping expedition to the Central Valley in 1849-50 (Derby 1849 *in* Farquhar 1932). All three authors identified the locations of villages and other Native American features along the Sacramento River and Wilkes and Derby offer useful details on Patwin culture.

Patwin Geography

Linguistics

At contact, tribes speaking languages belonging to the Wintun language family dominated the west side of the Sacramento Valley from the Redding basin to the Putah Creek plains. The Wintun were subdivided linguistically and culturally into three major language groups: the northern *Wintu*, the central *Nomlaki*, and the southern *Patwin*. These three groups spoke historically related but distinct languages. Each language was further subdivided into local dialects, most differentiated laterally into riverine and foothill zones. The River Patwin spoke three distinct dialects, *Coru* (Colusa area), *Saka* (Grimes area), and *Yo'doi* (Knights Landing area). The Hwy 45 project area was contained entirely within the *Koru* dialect area.

Population

Several sources have provided Patwin population estimates, and these vary wildly based

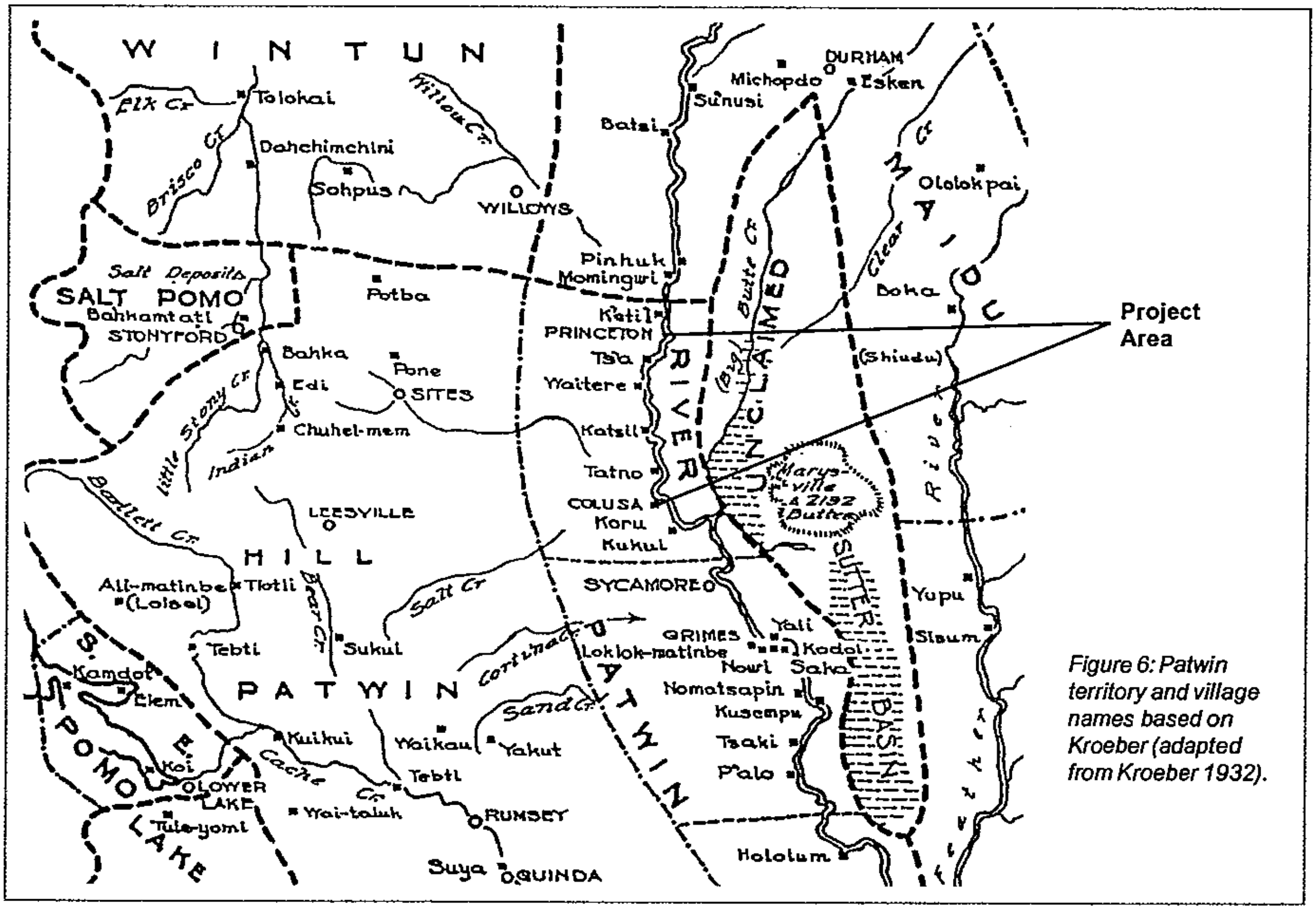


Figure 6: Patwin territory and village names based on Kroeber (adapted from Kroeber 1932).

on the investigator's assumptions, data set consulted, and time period represented. However, it is clear that the precontact Patwin population was very high in both total numbers and density. Kroeber estimated the total precontact Patwin population at approximately 6,000 (Kroeber 1939). Cook estimated the pre-1833 combined River Patwin and Konkow at 15,000 (Cook 1955), agreeing with John Bidwell's personal observations that "the number of Indians within ten miles of this point [Colusa] numbered not less than fifteen or twenty thousand" (Bidwell *in* Rogers 1891:41). Cook's estimate seems plausible in light of Arguello's observations during his 1821 expedition through the project area, during which he visited eight River Patwin villages lying between Ord Bend and Knights Landing with occupants numbering between 500-1,600 people each. Assuming the River Patwin population at one-half of Cook's Konkow/Patwin total, and assuming Kroeber's map of the River Patwin is correct (Figure 6), then approximately 8,000 individuals occupied the 355 mi^2 River Patwin territory at the time of Arguello's expedition, for a density of 22.5 persons per square mile. This is an extraordinary number, and argues for a population density considerably higher than all adjoining groups save perhaps the Konkow to the immediate north, with whom the River Patwin shared a rich environment and were politically and economically intertwined.

Villages and Place Names

A large body of Patwin village and place name information was compiled in the journals of 19th century observers such as Arguello, Ordaz, and Powers. Although Kroeber (1932) is generally regarded as the end-all for Patwin geography the author apparently had little regard for the older journals in favor of his own work with Patwin elders in the 20th century (see below). Thus, Heizer and Hester (1970), which is based on a synthesis of the earlier journals and Kroeber's findings, can be considered the richer and more reliable source.

A close examination of project area ethnogeography points up the differences between these two sources. Figure 6 is based on Kroeber's Patwin village map, and Figure 7 on the Heizer and Hester list. Kroeber identifies "*Koru*" as the region's largest River Patwin village and the tribelet/dialect center. According to Kroeber there were eight satellite villages along the river, seven

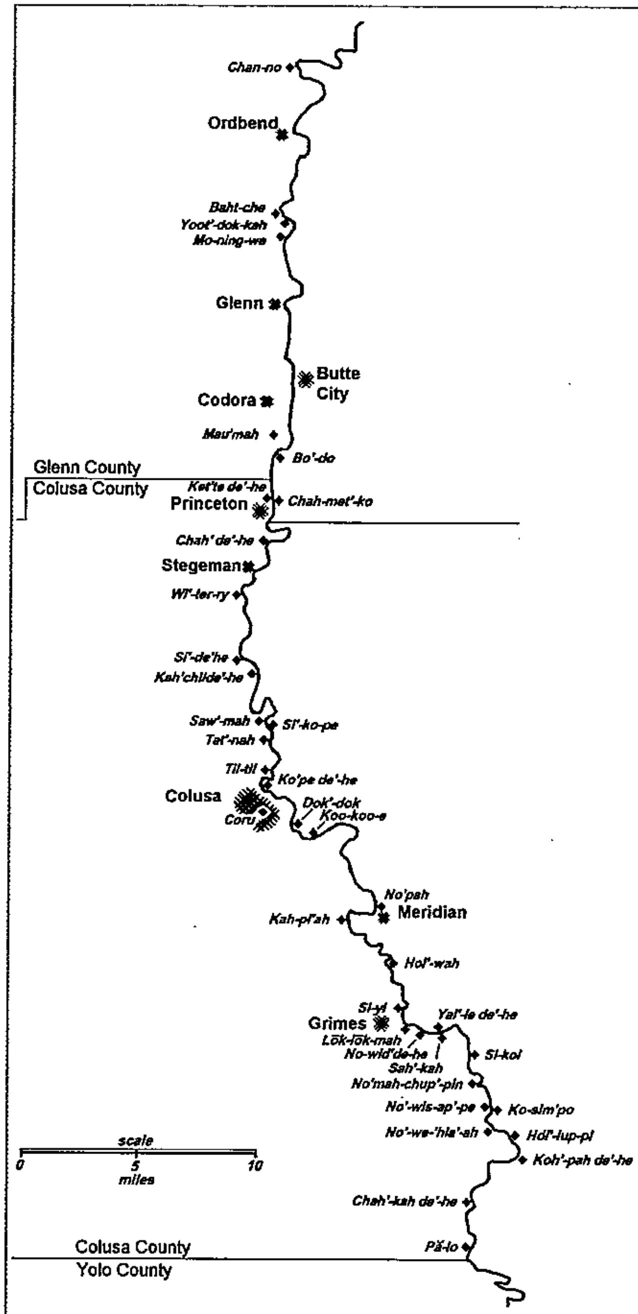


Figure 7: River Patwin territory and village names in the project area based on Heizer and Hester (1970).

north and one to the south of Coru (Kroeber 1932:259-261). The furthest north, *K'eti*, near present day Princeton, in Kroeber's estimation was located on the Patwin border with the Konkow. The other named villages in the Coru sphere included *Ts'a*, three miles south of K'eti, *Katsi'l*, seven miles north of the town of Colusa (near the present-day Colusa Rancheria), *Wa'tere*, two to three miles north of Katsi'l, and *Tatno*, approximately two miles north of Colusa. One village south of Coru, *Kukui*, was also under the Coru sphere (Kroeber 1932). Kroeber's identification of Coru as the region's central village is corroborated by John Bidwell's 1844-1849 observations indicating that:

> the Indian village then on the site of Colusa was one of the largest in the valley, but there were many other villages on both sides of the river, both above and below the Colus village (Bidwell *in* Rogers 1891:41).

In contrast, Heizer and Hester list 17 sites north of Coru, extending Patwin occupation to the area just north of Ordbend, approximately 18 miles farther north than Kroeber's boundary (Heizer and Hester 1970:81-85). This difference may be less a disagreement between sources and more a signal of a cosmopolitan area where villages had a combination of Konkow and Patwin occupants and were known by similar names in both languages. For example, according to the Heizer and Hester list, *Chan-no* was the most northerly named River Patwin village—about 5.0 miles south of the mouth of Big Chio Creek—but may also be the same as Kroeber's Konkow village of *Ts'e'no* (Kroeber 1932:266), a village visited by Arguello and Ordaz on October 30, 1821 (see below), and immortalized in the drawings of Henry B. Brown in 1851-1852 (see Figures 8 and 11). Next south was the River Patwin village of *Baht-che*, located at Jacinto (near Bayliss) another Konkow/Patwin village which Kroeber listed as the Konkow *Batsi'* (Kroeber 1932:267). Table 1 offers a concordance between the Heizer and Hester versus Kroeber names for villages in the immediate project area, and thus presumably lying within the northern River Patwin sphere. The table also indicates if the village was visited by Arguello and Ordaz in 1821.

The variability here no doubt has an historical dimension as well. Notably, the diaries of Arguello and Ordaz chronicle 11 occupied villages between Grimes and Ordbend, and among these they make only brief mention of passing through *Coru*, indicating a minor village with a "sufficient number of inhabitants" (Ordaz 1821 *in* Heizer and Hester 1970:101). This stands in contrast to their longer stays and more extensive description of nearby major villages (their *Guiritoy*, aka *Sah'-kah*, and their *Chac*, aka *Cha' de'-he*, see Table 1) estimated at between 1,000-1,600 occupants each. A decade after the Arguello-Ordaz visit, the River Patwin were devastated by malaria in 1833, reduced to an estimated 1,000 people in 13 total

Heizer and Hester	River Side	Location	Arguello	Kroeber
Chan-no	(W)	-	Checnoc	Tsen-no (Maidu)
Baht-che	(W)	-	Pachit	Batsi (Maidu)
Yoot'-dok-kah	(W)	-	Dacdac	Yoot'-dok-kah (Maidu)
Mo-ning-we	(W)	-	-	Momingwi (Maidu)
Mau'mah	(W)	Packer	-	-
Bo'-do	(E)	-	-	-
Ket'te de'-he	(W)	Princeton	-	K'etil
Chah-met'-ko	(E)	-	-	-
Chah' de'-he	(W)	-	Chac	Ts'a'
Wi'-ter-ry	(W)	-	-	Waitere
Si'-di'-he	(W)	-	-	-
Kah'childe'-he	(W)	Colusa Res.	-	-
Saw'-mah	(W)	Hamilton Bend	-	-
Si'-ko-pe	(E)	-	-	-
Tat'-nah	(W)	-	-	Tatno
Ti-Hil	(W)	-	-	Katsi'l
Ko'pe de'-he	(E)	opposite Colusa	-	-
Ko'-roo	(W)	Colusa	Coru	Koru
Dok'-dok	(E)	-	-	-
Koo-koo-e	(W)	-	-	Kukui
No'pah	(E)	Meridian	-	-
Kah-pi'-ah	(W)	Sycamore Slough	Capa	Kapaya

Table 1: Concordance of Heizer and Hester (1970), Kroeber (1932), and Arguello Patwin village names for the project area.

villages (Cook 1955:316-321). Following *Coru* through the historical record, we find reference to the testimony of Patwin elders who indicate that in response to the epidemics around 1834, *Si-oc*, the headman of *Coru*, led the remaining *Corusi* to abandon the original village in favor of a new site across the river (Green 1880; McComish 1918). Indicating a rebound more than a decade after the 1837 small pox epidemic, by 1849, the new *Coru* itself had an estimated 1,000 inhabitants (Powers 1877:219, reprinted 1975). The historical record indicates that, with the exception of "*Cachil dehe*" (aka Heizer's and Hester's *Kah'childe'-he*), site of the current Colusa Rancheria, other villages in River Patwin territory were much depleted or abandoned.

From this standpoint, we can understand Kroeber's (1932) River Patwin information—his short village list, low population estimates, and identification of Coru as a central village—all appear to refer to post-epidemic phenomena.

Villages

On their progress up the valley Arguello's party marched north along the west side of the Sacramento River, and on October 23, 1821, encountered a village of more than 1,000 inhabitants which the natives identified as *Goroy* (probably Heizer's and Hester's *Yo'-doi*, near current Knights Landing). They observed that the village was on a high mound surrounded by a defensive stockade "that formed a wall" (Ordaz 1821 *in* Heizer and Hester 1970:100). As the troop approached, the Patwin formed a defensive corp along the stockade, but peace was achieved when the village leaders offered gifts to the visitors. This is an intriguing reference, and while we have no other known records of stockaded villages in this or any other part of California, it may indicate a degree of structural complexity previously unrecognized for the region. The reference is at least consistent with the evidence for frequent warfare between villages along the river.

Arguello's and Ordaz's observations also make it clear that River Patwin villages were quite large. A village they encountered on October 26 near the current site of Grimes, which they identified as *Guiritoy* (Heizer's and Hester's Sah'-kah) was at the time of their visit composed of three distinct suburbs totaling of 1,600 occupants (Ordaz 1821 *in* Heizer and Hester 1970:100). Another village encountered on October 28, which the inhabitants called *Cha* (Heizer's and Hester's *Chah' de'-he*), near the current site of Stegeman Station, numbered 1,500 occupants (Ordaz 1821 *in* Heizer and Hester 1970:101).

Structures and Facilities

Mirroring the size of their villages, Patwin architecture was distinctive in the diversity of structures, size of the major buildings, and their complexity of construction. Historical and scholarly sources combined suggest that at least six kinds of structures were in common use: dance houses, sudatories, domiciles, menstrual huts, granaries, and weirs and platforms. Based on his 1917 interviews with Mr. Tom Odock, then head of the *Cachil de-he* rancheria north of Colusa, McKern's *Patwin Houses* provides solid accounts and virtual templates for the construction and use of four types of permanent structures: ceremonial dance house, sudatory (sweat lodge), dwelling house, and menstrual hut (McKern 1923).

Dance House. Dance houses were the largest structures made by the Patwin, larger than those used by other Wintun groups, and some of the largest structures in precontact California. Construction of the community dance houses required a substantial, coordinated effort, and

Figure 8: The village of Chan-no near Ordbend , illustrated by H.B. Brown, 1851-1852 (see Johhnson 1978:340).

every available person was drawn into the task. Design and construction was intimately connected with the ceremonies the buildings housed (see below). Dance houses, built in central villages only, were placed on the northern or southern edge of the village, separate from dwellings. The method of construction is revealed in the dance house plans shown in Figure 11. The amount of material involved and the criteria for selecting material might suggest that beams, poles, reeds, and other materials required several seasons of husbandry to develop the proper growth lines. However, more direct efforts at construction began with excavation of a broad, oval-shaped pit measuring approximately 40 ft wide, 50 ft long, with squared to slightly sloping walls and a flat floor dug to five feet deep. Excavation was done with digging sticks and the dirt carried and piled outside using worn food baskets. Work inside the pit began by mounting the main center post of oak and four main posts, two more aligned with opposing doorways, and two more on both sides perpendicular to the doorway (Figure 11, bottom). Concurrent with the posts, work began on the interior retaining walls, constructed of thatch secured by rods mounted in the earth. The entire pit was ringed by a berm composed of excavated spoils. Ceiling stringers ran from the 11 main posts to mount in this berm. Long, flexible rods were woven into the ceiling stringers. Tule thatch was layered on top of the pole frame, fastened with grape vines. This framework was then completely covered in a foot-thick layer of packed, clayey earth. The construction incorporated a smokehole and sloping entry ramps, including a long, lightly sloped ramp for a common entryway and a steep, open ramp at the rear for a special dancer's entry (Figure 11, middle and bottom). Dance house fixtures were aligned with the main posts and entryways, including a large foot drum and a main hearth. The foot drum was made of a peeled and hollowed sycamore log measuring six to seven feet long, fixed over a pit with planks and stakes. A feast was often held to celebrate completion of the new ceremonial structure (McKern 1923).

Sudatory. The sudatory, or men's sweat lodge (Figure 11, top), was located to the east or west of the dance house with the door facing the dance house. The sudatory was built much like the dance house and at the same scale, but with a single doorway. The menstrual hut was long and narrow, and served as a place of solitude, confinement, or rest, for both menstruating women and women undergoing childbirth (McKern 1923). By design, the menstrual hut was on the northern or southern outskirts of the village, opposite the dance house (McKern 1923:160).

Domiciles. Dwellings were constructed like the larger dance houses but at a smaller scale. Dwellings were oval-shaped to circular in plan view. Paternal relatives were enlisted to assist in the construction. Like the dance house, they were built starting with the excavation of a flat-bottomed, steep-walled pit dug out to four to six feet (1.2-1.8 m) deep measuring between approximately 15-30 feet (5-10 m) in diameter. Thatch retaining walls were secured with stakes and six support posts were mounted in a circular arrangement leaving an open central floor area. Six thick stringers reached between the posts, and a series of long rafters rested on the stringers and the perimeter berm to form the roof. The roof was finished with a thick layer of woven rods and thatching and a packed earth layer around one foott (0.30 m) thick. The single doorway faced either east or west. Several families occupied a single dwelling house. A fireplace and wooden mortar and stone pestle fixed near the open center of the house was shared by the families. However, each family had ownership over a specific section of the house, and had their own cooking area. Family property featured raised beds for each adult made from a rectangular pole framework then lined with tule mats. The end of the bed was fixed to the thatched retaining wall and the beds were arranged like spokes on a wheel. Personal gear such as baskets, tools, and weapons were suspended from the ceiling against the retaining wall and from house posts. Tule sitting mats were arranged around open space. Household goods and bulky gear, including cooking equipment, nets, burden baskets, and seed beaters, were placed on a pole frame rack outside the house (McKern 1923:165-167).

On visiting a small village near the project area, Wilkes observed:

> The roofs of their houses are strong enough to bear the weight of several persons, and the Indians are usually seen sitting on the top of them...Around the huts were scattered vast quantities of the mussels' shells and acorns, which would therefore seem to be the principal articles of food. Near the huts, large branches of trees had been stuck up for shade [Wilkes 1845, reprinted 1958:76].

Wilkes's description of rooftop congress is also depicted in Brown's illustration of Chan-no, adapted here as Figure 8, which also shows a ramada like those described by Wilkes.

Granaries. One of the most distinctive elements of Patwin architecture was the acorn granary. Constructed using a pole and thatch design similar to the retaining walls described above, examples appearing in historical illustrations stand more than 6 ft high and are around 4-5 ft in diameter (e.g., Figure 9), built as a tall cylinder with an external frame of vertical and horizontal retaining rods and a barrel formed by woven thatch. These large storage structures were constructed to cache a supply of unhulled acorns through the winter. Brown's illustration, below, shows two granaries in detail, both capped with a textile cover and one surmounted by a flag (Figure 9).

Weirs. At Salmon Falls adjacent to the current site of Colusa, Wilkes's party encountered a unique salmon fishing fixture spanning the river (Figure 10):

Figure 9: Patwin village with houses and acorn granaries, illustrated by H.B. Brown, 1851-1852 (adapted from Rawls 1984:189).

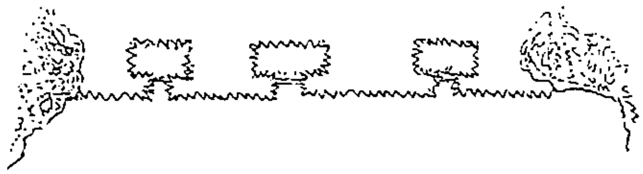


Figure 10: Wilkes's illustration of a River Patwin salmon weir at Salmon Falls, Colusa in 1841 (Wilkes 1845, reprinted 1958:78).

> On the 31st, they again proceeded, and passed several Indian villages. Before noon, they arrived at a substantially-built fish-weir, of which the Indians began to take a part down, but Lieutenant-Commandant Ringgold deeming that this was the termination of his exploration, motioned to them to desist This fish-weir was constructed with a great deal of art: stakes, pointing down the stream had been driven into its bed, having three openings, which led into square pens above; over each of the entrances into the pens was a platform, on which the natives stand to take the fish; on these also there were heaps of ashes, indicating that the natives make use of fire to attract the fish [Wilkes 1845, reprinted 1958:77-78].

John Bidwell provides a description of a similar weir that he encountered farther upriver in 1844:

> For the purpose of fishing they had formed a fish-weir some miles above Colusa, by using willow poles, the ends of which had been rounded and sharpened by burning, and then in some manner being made to penetrate the sandy bottom to a depth sufficient to resist the forces of the current, and by use of cross-sticks, lashed with grape-vines, the structure formed a bridge not less than eight or ten feet wide for them to pass and repass over it. At this point the river was very wide, the bottom very sandy, and the water not more perhaps than four or five feet deep [Bidwell *in* Rogers 1891:41].

Wilkes also describes similarly costructed but smaller individual fishing platforms built along the river shoals (Wilkes 1845, reprinted 1958:80).

Trails

In addition to the structures and facilities described above, the Patwin left other significant traces on the landscape. Davis compiled a robust ethnographic record of trade and trails in the central valley, with the trail up the west side of the Sacramento River being the principal route mentioned by many consultants (Davis 1963). Arguello indicates that, in 1821, the paths between villages were profound and in several places he identified them as "roads" (Ordaz 1821 *in* Heizeer and Hester 1970). In another interesting sidelight, McKern reports that basket loads of off-site dirt were brought into the village "with the intent of keeping the village free from unsightly holes and uneven surfaces" (McKern 1923:164).

Smoke Signals

Scattered ethnographic references indicate that the River Patwin used smoke signals issued from villages to broadcast news and coordinate the local populace. For example, on their approach to *Sah'-kah* near Grimes, Arguello and Ordaz observed:

> Two leagues before arriving we discerned 5 signal smokes which they have to assemble the people [Ordaz *in* Heizer and Hester 1970:100].

Kroeber also indicates that the ceremonial chief among the Konkow "must understand all smoke signals" (Kroeber 1925:374).

Social Structure

The Tribelet

As defined by Kroeber (1925), the "tribelet," or little tribe, was the basic political and proprietary unit of Central California, composed of a central village and related hamlets and activity areas. The tribelet controlled a local territory recognized by adjoining communities and exercised protective measures against uninvited trespassers. Tribelet territories were generally "well-defined, comprising in most cases a natural drainage area" (Kroeber 1925:831). The central village was the nucleus of this system, the population center, site of the main ceremonial lodge, the residence of leaders and specialists, and held caches of ceremonial regalia, food, and trade goods. Political leaders at the tribelet center served to coordinate economic activity such as resource scheduling, trade, ceremonies, and feasts. Among the Patwin, satellite usually paid allegiance to the central village (Kroeber 1965).

The resources and territories controlled by the tribelet were generally considered communal holdings. Seasonal and annual resource variability affected the occupation of hamlets, but less so the main village. Thus "subsidiary settlements were frequently abandoned, reoccupied, or newly founded...[while]...[t]he principal village was

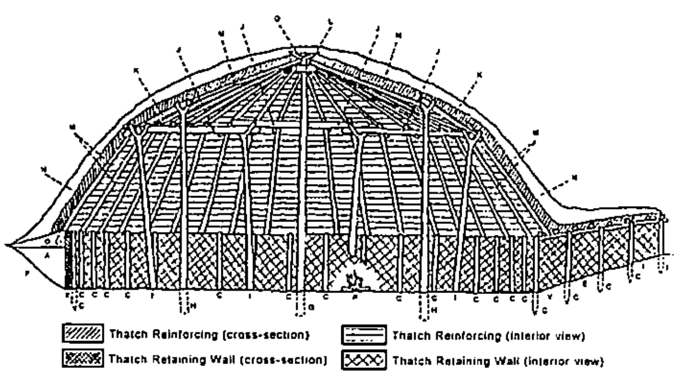
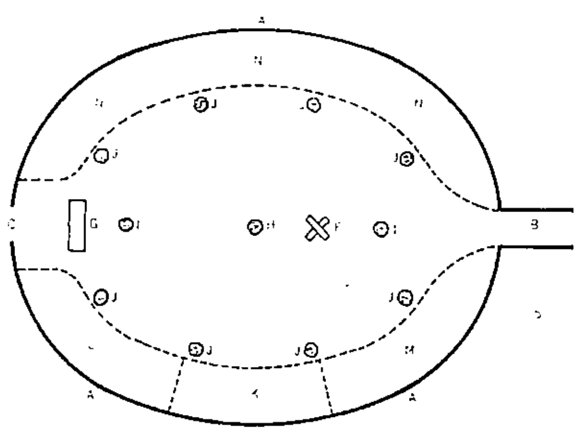


Figure 11:

(Above) men's sweat lodge at Chan-no, near Ordbend, drawing by H.B. Brown, 1851-1852, (adapted from Johnson 1978:Figure 2).

(Left) cross section and (Below) plan view of Patwin ceremonial lodge (adapted from McKern 1923:Figures 1 and 5).



maintained more permanently" (Kroeber 1925:831).

Chieftains

Patwin social order was an elaborate system in which social, political, and economic institutions were intertwined. This is illustrated in the inherited social and economic roles taken by individuals within the tribelet.

The Patwin recognized several kinds of leader. The tribelet chief held the highest recognized authority. Each village also had a leader, in the case of satellite villages subsidiary to the tribelet chief. Leaders exercised authority over many aspects of Patwin culture, ranging from subsistence economy to intergroup trade, and domestic disputes to intergroup warfare. With respect to subsistence concerns, the chief acted as commissioner over plant and animal harvest, and maintained a commanding knowledge of local food supplies. The chief also distributed meat when a significant amount was brought to the village (McKern 1922).

All central villages had a dance house where Kuksu society and political activities took place. The tribelet chief also resided in this village, as most of his duties and activities involved time in the dance house. Villages without dance houses did not have a head chief, and were subordinate to the other village centers. Often a village with a dance house had both a chief and a speaker, the latter playing a coordinating role in Kuksu ceremony. Chieftainship was usually gained though blood lineage, but was sometimes acquired via consensus based on diplomatic merit or other recognized and just qualities. In some instances, a chief might be elected based on his ability to lead social and ceremonial gatherings (Bean and Vane 1978).

Kinship

McKern argues that the Patwin practised a range of "social and economic institutions not prevalent among other native California stocks" (McKern 1922:246). The Patwin system organized each individual into a series of shifting social and political roles related to different duties within the tribelet order. Social order was comprehensive, extending to official and nonofficial, ceremonial and nonceremonial families.

While inheritance "was one of the most important factors in the social structure" (McKern 1922:237), nonaffinal "functional families" were also prevalent, incorporating individuals united by economic and sociopolitical interests. Endeavoring to explore this complexity, McKern defined three Patwin family types: the paternal family, the family social group, and the household:

> The paternal family, then, constituted a group, held together by virtue of traditional ties of blood. The family social group owed its modicum of social unity to group authority vested in the family headman. The household (family) was a social unit due to common residence under the immediate authority of a household head, who might or might not be the family head man [McKern 1922:240].

Family specialization in ceremonial or official functions (e.g., shamanistic roles, construction of ceremonial headdresses and coiled baskets and log foot drums for the Kuksu ceremony) were the exclusive practice of that particular family, and the roles were inherited through the paternal lineage. Specialized crafts and trades such as making salt were also passed through the patrilineage. While all could freely participate in workaday subsistence activities such as gathering, salmon fishing, deer hunting, and tool making, specialized medicines and charms associated with certain trades were maintained only by members of the patrilineage of a specific family.

Males who proved to be particularly good at a specialized function, whether it be in an official, ceremonial, or technical capacity, could be adopted into a family through monetary payment for training and knowledge. Payment to the elder male guaranteed the inherited ownership of the family's secret medicines and charms. Males adopted into a family were then considered bonded through the bloodline (McKern 1922). These specialized roles existed alongside the individual's necessary obligations to work in support of the household.

Ceremony

Patwin ceremonial and religious practices combined elements of performance, kinship, social organization, subsistence economy, and trade. The *Kuksu* society, or "Big Head" dance, practiced in varying forms over much of Central California, was a male secret society focused on initiation through ritualistic raising of the dead. The Patwin practiced the most elaborate form of Kuksu ritual, described in detail in a chapter in A.L. Kroeber's *Handbook of the Indians of California* (Kroeber

1925:364-390; see also Kroeber 1932:312-329). Though rituals varied slightly between Pomo, Konkow, and Patwin, they all included an element of death and rebirth, or revitalization. Novices were "killed" or speared, and then later washed and "brought back to life."

Among the Patwin, male initiates engaged in steps of passage by impersonating spirits, *Moki* being the highest level of achievement. The society functioned as a system for economic and social gain. Initiates received knowledge and training in return for payment (usually in shell beads) to a director or older member, and membership resulted in higher social status. Rituals centered on the (symbolic) raising of the dead (new initiates), and the celebration of a good harvest or bountiful fish catch. Pseudo masks, a foot drum, and the adornment of headdresses made of magpie-feathers and feather capes accompanied the singing and dancing performances (Kroeber 1925:384-388).

Other initiation cults that existed among some Northern California groups include the *Hesi*, which focused on elaborate ceremonial dancing (Kroeber 1925:388-390; 1932:329-340), and the Ghost Dance, or *Wai-Saltu* initiation that focused on symbolic death and resurrection ritual (Bean and Vane 1978; Kroeber 1932:308-311). The *Wai-Saltu* (ghost) society was practiced among the Yuki, Pomo, and Patwin, but was centered among the Patwin and Pomo. The *Hesi* was practiced only among the Patwin and Konkow.

Patwin *Kuksu* was unique in scheduling ceremonies during the winter season. According to Kroeber:

> Much of the systemization of Kuksu dances and their bewildering ramifications so unique in California and so reminiscent of Hopi and Kwakiutl...may be attributed to the fact that the Patwin lived in good sized, permanent, water proof houses. Much of their religious activities were indoors [Kroeber 1922:366].

During Kuksu ceremonies, both dance house doorways came into use. The main, or public door (to the east) was used by the audience and some performers making entrances and exits. The doorway to the west functioned like a back door to a stage. The performers, when not in costume, used this doorway to join the audience or to exit for the next performance (McKern 1923). The ceremonial foot drum was located adjacent to this

Figure 12: River Patwin women near Colusa, illustrated by H.B. Brown, 1851-1852 (adapted from Johnson 1978:Figure 7).

doorway. The audience was seated according to family affiliation along the north one-half of the dance house, while the chief and his associates sat opposite along the southern wall. To the left of the chief sat dancers, drummers, ceremonial directors, guests, and initiates. Newer members were on the left near the foot drum. To the right sat singers or the clown speaker, whose purpose was to entertain the audience (McKern 1923).

The *Wai-Saltu* was considered the most powerful and dangerous ceremony, though Patwin may have viewed the performers as only impersonators of ghosts or devils, while to the Pomo and Yuki the performers were considered actual ghosts. The performers sought an altered state that resulted in the performer leaving the dance house to jump into the river or a marsh, a dangerous feat in this state of mind. Families then rescued performers and brought them back to sanity (resurrection). The Colusa Patwin did not practice this ceremony, substituting the grizzly bear ceremony (Kroeber 1932).

Hesi ritual and ceremony was hierarchically organized. Young boys joined as novices, brought in to first learn by participating "behind the scenes," and helping with costumes. Eventually, novices participated in dancing, and later gained certain esoteric knowledge or ritual medicine purchased from an elder in the society. Eventually members reached a level of social status in which they could receive payment for their knowledge as an older relative within the society (Kroeber 1932). Like the *Wai-Saltu* and *Kuksu* initiates, knowledge and shamanistic power was purchased through the patrilineage or the mother's brother.

Other cults were practiced but were less widespread. The Hill Patwin practiced a ritual that combined elements from all three initiation cults. Unlike their Nomlaki and Wintu neighbors who lacked regular ritual cults like the *Hesi* and *Kuksu*, Patwin did not perform dances for adolescent girls.

Conflict

War was most often a reaction to poaching, and less often for the purpose of avenging deaths caused by witchcraft. Kroeber (1932) identified three types of battle: attacks on individuals, pitched battles, and surprise attacks on enemy villages (usually at dawn). There was a war leader separate from the head chief. The head chief was not expected to fight in battle, but if necessary would do so (Kroeber 1932). From early on, boys were trained for warfare:

> One by one the boys were made to stand out and were then shot four times with a dull or padded arrow at close range. They were told to watch the bowman's movements, the flight of the arrow, and to bend their body or raise their legs. They might be hit once or twice in four shots. If they dodged four times in succession, they were commended. There was similar practice in avoiding hurled spears [Kroeber 1932:29].

Ethnographic accounts indicate that the majority of fighting took place between Patwin villages, although some war stories include accounts of Patwin fighting with Konkow or Wintu (Kroeber 1932:300-303).

CONTACT

Spanish and Mexican Dominion

The history of culture contact in the Sacramento Valley began with the Moraga expedition of 1808 and ended suddenly with a devastating smallpox epidemic in 1833. In this 25 year span, the river tribes and their neighbors met non-Indians for the first time. No formal non-Indian outposts were established or long term footholds were secured on Indian lands, and there is no evidence of pandemics or significant social or economic upheaval. Aboriginal lifeways were on full display to the visitors, and the visitor's journals and recollections are an interesting source of information about tribal lifeways. However, these sources can also be read for information about the nature of initial contact between these asymmetric societies, a growing aggregate of events that culminated in a sudden termination of aboriginal lifeways in the Sacramento Valley.

The project area formed the northern frontier of Spanish territory until the War of Mexican Independence concluded in 1846. Accordingly, the region's earliest known non-Indian visitors consisted of Spanish military expeditions on patrol.

Moraga, 1808

The expedition of Ensign Gabriel Moraga, September 25 through October 23, 1808, began at the Mission de San Jose with the objective of identifying resources and locations that might support an expansion of the mission system. Eleven privates and a corporal accompanied Moraga and at least one Indian guide/translator. They explored the San Joaquin, Cosumnes, Mokelume and American rivers as they progressed north. On October 9th, Moraga camped on the lower Feather River, which he named the *Sacramento*, and later crossed the river somewhere near Nicolas (Chapman 1921:423-425). According to Cutter's translation of Moraga's *Journal Diario de la Tercera Expedicion*, Moraga passed "a mountain range in the middle of the valley" (the Sutter Buttes) then proceeded north on the east side of the Sacramento River, which he named the *Jesus Maria* (Cutter 1957). Moraga then traveled north along the river to a point which researchers have plotted somewhere in the vicinity of the Drumheller Unit, between the latitudes of Princeton and Butte City. Moraga turned east at this juncture and returned south to Mission San Jose.

Arguello and Ordaz

Among the most fascinating documents available on the early history of the project area are the journals of Arguello and Ordaz. Between October 17 to November 17, 1821, Captain Luis Antonio Arguello, Commandant of the *Presidio de San Francisco*, conducted a military expedition into northern California. Ordered north by the Spanish Governor to pursue rumors of white settlement in the valley, Arguello's troop included 70 men, their mounts, packhorses, and a horse-drawn cannon. The expedition was transported by launch to Suisun area and from there followed a course up the valley, visiting Patwin villages along the west side of the Sacramento River and tracking the rumors north then west to the foothills. Satisfied that the reports actually referred to known Russian settlements on the Pacific coast, the troop turned south again to Mission San Rafael, ultimately returning by launch to the Presidio. Expedition diaries were kept by Arguello and his chaplain, the Reverend Father Fray Blas de Ordaz, and these diaries (Arguello 1821 *in* Fischer 1992; Ordaz 1821 *in* Heizer and Hester 1970) contain important details on the Patwin and their village and place names, especially significant because they predate the pandemics—malaria (1830-33) and smallpox (1837)—which later decimated the river tribes (see Cook 1956). As Arguello passed into River Patwin territory in late October, 1821, his troop encountered villages with no prior direct experience with non-Indians. Arguello was a military man under orders to secure territory and he approached each village with this intent, which was made evident to the Patwin by his actions and interpreters. Of interest was the tendency for village leaders to seek peace, and also how this was often achieved with gifts of food. For example, as noted above on October 25, 1821, as Arguello's troop approached the village of *Yo'doi*, the villagers formed along a perimeter stockade. Arguello's troop also formed up, and marched to a high bank alongside, where according to Ordaz:

> there immediately visited us a chief with his gang who brought the present (a custom no doubt among them); the present consisted of guego of coras, several different secles, and some mecates [Ordaz *in* Heizer and Hester 1970:100].

Joined by two *Yo'doi* guides, after a full day's march the next day Arguello's troop approached another large Patwin settlement, *Sah'-kah* near Grimes. Arriving at the village, they heard

> formidable voices and mingled cries of several threats and other indications of war breaking out...[and]...the Commander saw the necessity of having the troops fall back, drew his troops into line of battle, ordered the cannon brought up to frighten them and at the same time charged them [Ordaz *in* Heizer and Hester 1970:100].

Arguello met the resistance by firing a cannon shot aimed low:

> The objective was to intimidate them and make them moderate their pride. For this reason I fired at them, [which was] required by such a group that surrounded us and by their discharging arrows into the troop [Arguello *in* Fischer 1992:24].

At least five *Sah'-kah* were killed in the skirmish and the remainder fled to the woods and across the river. Arguello's troop camped nearby that night, and hostilities continued with loud shouts and arrows fired into the camp. However, the next morning a number of the *Sah'kah*, responding to "the novelty that a people unknown to them caused" visited the camp, and on October 27, Arguello spent the morning conferring with two men of *Sah'kah* (Ordaz *in* Heizer and Hester 1970:101).

By October 28, Arguello's party had traveled an additional nineteen miles, ending the day at another large village he identifies as *Chac* near latter day Stegeman Station (aka Heizer's and Hester's 1970 *Chah'de'-he*). Indicating differences between villages in the way they approached the visitors, Arguello notes that the inhabitants "showed themselves of sufficient peace and quiet and received the troops with much pleasure and celebration" (Arguello 1821 *in* Fischer 1992:27). Ordaz offers interesting details:

> we were received with great contentment by the inhabitants, who set out with several banners to meet us. All of the children up to the age of 14 years were arranged in the vicinity of the houses, forming an oval in each one of them [Ordaz *in* Heizer and Hester 1970:101].

It is very likely that this welcoming pose indicates that *Chah'de'-he* was a tribelet center housing important political leaders whose training and inclination was to convert potential conflict into political or economic gain by means of diplomacy.

On October 29th, Arguello traveled approximately 18 miles, passing through five large villages he identified as *Tocolic*, *Utulsabec* (probably near Codora), *Dacdac* (probably near Glenn), *Pachit* (probably near Jacinto), and *Sunuc*, the latter probably the village later identified by Kroeber (1932) as *Su'nusi* at Ordbend.

On October 30th, Arguello halted his march up the river and turned west, then south. Though considerable doubt exists about Arguello's northernmost termination, some researchers argue that he may have reached as far north as Red Bluff. However, our reading of the Arguello and Ordaz diaries does not support this. Assuming that the party traveled at a steady rate and again made approximately 18 miles of progress on the day of the 30th, then the October 30th camp was probably four to seven miles north of Hamilton City in the vicinity of Snaden Island. In fact, in his diary for October 30th, Arguello "considered it convenient to make a halt on the banks of the river Jesus Maria after having passed the villages named *Chenoc* and *Yllalic*," camping "two leagues" beyond *Yllalic*. Arguello's *Chenoc* is a close match with Heizer's and Hester's (1970) *Chan-no*, near the Phelan Island Unit just south of Hamilton City (see **Native Cultures**). However, we are unable to match *Yllalic* to any known ethnographic village, and must assume that this village was somewhere in the vicinity of Hamilton City. It should also be noted that another line of evidence is consistent with this location in that both Arguello and Ordaz also specify that on October 30th the party passed into an area where their Patwin interpreter could no longer communicate with villagers, indicating that the party had indeed passed into full Konkow territory, a boundary that would have been found somewhere between Ordbend and Hamilton City (see **Native Cultures**).

Satisfied that the reports of white settlement actually referred to Indian stories about visits to known Russian settlements on the Pacific coast, Arguello's troop struck out to the west and probably followed Stony Creek to the foothills and south through the coast range on their return trip to the Presidio.

Trappers and Epidemic

Beginning in the late 1820s a number of overland fur trapping and trading expeditions passed through the Central Valley. In 1827, trapper Jedediah Smith of the Rocky Mountain Fur Company twice led parties of trappers through California, on both occasions detained by Mexican authorities. On the second trip, following detention at Mission San Jose Smith's party was compelled to leave, and ordered (by Governor L.A. Arguello) to follow a route northward through the Sacramento Valley. In early 1828, the party traveled along the Sacramento River to the Feather and then up the Feather to the forks and back overland to the Sacramento, apparently skirting the project area (Sullivan 1934; Weber 1990). In summer 1828, an American trapping party led by Ewing Young conducted a poorly recorded, covert expedition into the Sacramento Valley, perhaps the earliest trapping venture on the Sacramento River in the project area. Beginning in 1829, the Hudson's Bay Company sent a number of trapping expeditions into the northstate. In 1829, Alexander McLeod trapped the Sacramento River south to Stockton, returning north in 1830 (Nunis 1968). In 1830, Peter Skene Ogden trapped down the north coast to San Francisco Bay, then trapped the Sacramento River north to the Pit River. In 1832 through 1833, John Work led an expedition that trapped along the Sacramento southward, then wintered over on the Sutter Buttes (Maloney 1945). For a time, Work's party trapped alongside parties led by Ewing Young, who was again in California, and Michel Laframboise, who had come down from Oregon. All three parties encountered depleted game. The nexus of these three parties also had more disastrous consequences. In his fascinating epidemiology of *The Epidemic of 1830-1833 in California and Oregon* S.F. Cook tracks the spread of malaria from the trapping centers of the northwest to central California with the Hudsons Bay companies, resulting in the death in one year of at least 20,000 Indians in the Central Valley (Cook 1955). While the fur trapper's journals comment on the great number of Indians encountered in the Sacramento Valley through the winter of 1832, in the spring and summer of 1833 Native American lifeways came to a sudden and somber end when malaria introduced by the trappers swept through and decimated Nomlaki, Mechoopda, and Patwin tribes.

Already frustrated with low take resulting from overharvest, the fur trapping parties also suffered the epidemic—for example, Work reported that as many as 72 of his 100 member brigade contracted the fever (Maloney 1945)—and eventually abandoned their efforts in the valley, giving way to a slow trickle of immigrants.

The first wave of American settlers arrived in the 1840s to find a land still reeling from the devastating epidemics. The settlers reported a few occupied villages but none approaching the population sizes observed by Arguello. For example, visiting a location at or near the former village site of *Yo'doi* (Knights Landing) on August 25, 1841, Wilkes's party encountered a disturbing tableau:

> the ground was strewed with the skulls and bones of an Indian tribe, all of whom are said to have

> died, within a few years, of the tertian fever, and to have nearly become extinct in consequence [Wilkes 1841, reprinted 1958:73].

Throughout the 1840s, the surviving river tribes suffered further deprivations at the hands of some American colonists who raided the increasingly scarce and temporary camps, murdering and taking slaves. An account recorded by John Bidwell is typical of the period, describing deprivations and murders of Indians committed by the members of a party of immigrants passing south along the Sacramento River in what would later be Colusa County (Bidwell *in* Rogers 1891:39-40). Wilkes provided another account of a typical raid on a camp near Colusa, in the south end of the project area:

> Near this had been an Indian village, which was destroyed by Captain Suter [sic] and his trappers, because its inhabitants had stolen cattle, &c. The affair resulted in one of the Indians being killed, twenty-seven made captive, and the removal of the remainder beyond the limits of his territory [Wilkes 1841, reprinted 1958:73].

It is clear from this an other examples that the River Patwin were much reduced by epidemic and other injuries, and now found themselves on the fringes of an economy to which they had little or no access. Within a few years, ranching and homesteading and development of the emerging county seat at Colusa (built atop the original Coru mound) led to confinement of the River Patwin to the *Cachil-dehe* (Colusa) Rancheria, Rumsey Rancheria, Cortina Rancheria, and in non-reservation communities in Sites, Colusa, and Stonyford. By 1924, Kroeber tabulated just 200 Patwin people (Kroeber 1932).

AMERICAN SETTLEMENT

Early Land Grants

Born in Chatauqua County, New York, in 1819, after schooling and the beginnings of an academic career, John Bidwell joined a group of immigrants bound from Kansas to California. Crossing at Walker River and arriving in the Central Valley in 1841, Bidwell was soon employed by John Sutter to oversee commercial activity in several of his business concerns. Bidwell first visited the Sacramento Valley in 1843, when he joined Peter Lassen on the pursuit of horse thieves into the area later to become *Colusi County* (Figure 13). Bidwell was later employed by Thomas O. Larkin, American consul to the Mexican government in Monterey, to scout potential land grants in the northstate. In 1844, Bidwell scouted and mapped the "Larkins Children Land Grant" which spanned the northern end of the current project area. Impressed with the economic potential of the region Bidwell applied for and was awarded two land grants by the Mexican government, one in Solano and the other in Colusa. It was later discovered that there were conflicts with other land grants: the Manuel Jimeño land grant, and the Larkin and J. S. Misroon grants. Fortunately, the issue was worked out and no land battles ensued (Colusa Sun 1876). However, focusing his attention on a Feather River gold discovery and faced with conflicting claims, Bidwell did little to develop the "Colus Grant."

On the other hand, in 1847 Larkin built an adobe on his land grant in the vicinity of the abandoned Patwin village of *Chah' de'-he*, near Princeton (Figure 7) (Bidwell 1877 *in* Green 1880).

Semple and Green

In 1846 the Kentuckian Dr. Robert B. Semple traveled up the Sacramento Valley to visit the Red Bluff area. R.B. Semple also found the Colusa environs promising, not only for its ranching and farming potential, but also for potential Sacramento River commerce, agreeing with Wilkes that Colusa was the upstream terminus for river travel (McComish 1918). He inquired about the ownership of land of the Colus Indians, and learned that it was part of Bidwell's Colus grant.

R.B. Semple encouraged his brother, Charles D. Semple, to purchase the land from Bidwell in order to establish a new city at the location where R.B. Semple had originally observed a Colus Indian settlement. C.D. Semple visited what he thought was the preferred town site and established some markers. C.D. Semple completed the purchase in 1850 and soon after both Semple brothers, accompanied by their nephew (an 18 year-old named Will S. Green) and a carpenter named Hicks, piloted a steamer upriver to the proposed town site. However, once arrived, R.B. Semple realized that the presumed site was actually a temporary Indian camp seven miles north of the preferred location. Shortly thereafter, the company steamed back downriver and moved to the preferred location at Salmon Bend. Later C.D. Semple, W.S. Green, and Hicks laid out several

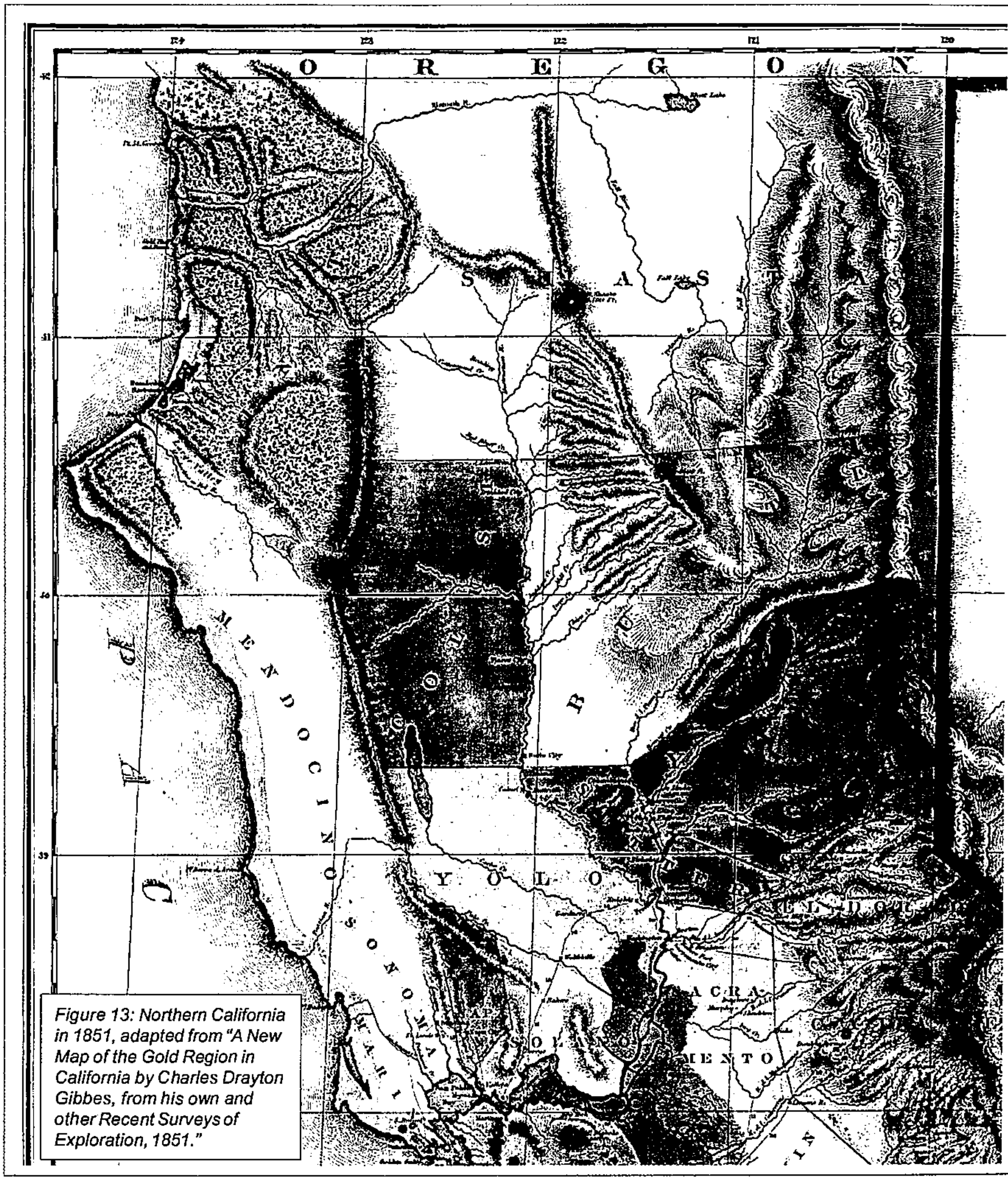


Figure 13: Northern California in 1851, adapted from "A New Map of the Gold Region in California by Charles Drayton Gibbes, from his own and other Recent Surveys of Exploration, 1851."

streets and helped build the first house on Lot 2, in Block 6, on Levee Street between 5th and 6th Streets. It measured 20 x 30 ft, was 1.5 stories high, and was operated as a store and bar by the firm of Semple & Green. The papers for the 8,876.02 acre "Colus" land patent were filed with the new State of California on July 23, 1869.

Early on, lands in the Colusa area were considered fit only for raising and grazing stock. In 1852 there was an unsuccessful attempt to grow wheat about 0.5 mile west of Colusa, near Klew's Slaughter House. Farming was primarily restricted to lands along the river, although a few inland farmers were successful as well (e.g., Gibson, Williams, Elrey, Weyand, Miller, Stoval, and Johns farms). However, by the mid-1800s, wheat production exploded in the valley. The best soil, called black "dobe" was preferred for wheat crops, whereas the sandy soil mixed with gravel was better for barley.

Colusa soon became a waystation along the routes of wagon and mule trains that serviced Shasta and the northern mines, and many entrepreneurs recognized and acted on the potential of the Sacramento River for transportation of goods, people, and livestock from Sacramento northward. The first steamboat commissioned in 1850 to navigate the waters of the Sacramento River, the *Colusa*, was purchased for a total of $60,000, and broke down on its maiden voyage. Next, Semple tried unsuccessfully to market the Martha Jane, but eventually sold the it to alleviate increasing debts. In 1851, Shasta merchant Lewis Johnson agreed to hire a ship regularly if a reliable one could be found, and the steamer *Benicia* was commissioned soon thereafter. Captain George V. Hight navigated the vessel on its route north from Sacramento with flour, but encountered snags at Knight's Landing and sunk. The *Orient* was next in line, and was more successful. Eventually, in 1854, the snags between Monroeville and Colusa were removed by town founder U.P. Monroe.

During the 1850s, the town of Colusa began to grow rapidly. In a period of only two months, Levee Street was built up from 4th to 7th Streets. Early mercantile houses established in town included Chenery & Hazzletine, Carpenter & Spalding, Alderman Brothers, Hoop & L'Ameroux, P.B. Woods, Van Wie & Co., Proctor N. Smith, and Patch Brothers. William Vincint and O.C. Berkey built the Colusa House, J.H. Leining built a restaurant in 1851, and W. Riley built a blacksmith shop.

Colusa County

According to Green (1880), Rogers (1891), and McComish (1918) Colusi County was created by the first Legislature in 1850, but was attached to Butte County for judicial purposes. As originally defined, the county encompassed an area now incorporating Colusa, Glenn and Tehama counties. Originally, the town was called "Colusa" and the county "Colusi," however, these spellings became a source of disagreement between lawmakers and local residents. Legislator General M.G. Vallejo argued that "i" was the correct termination in recognition of its the derivation from the Colus (i.e, *Coru*) Indians. However, others argued that "a" was more appropriate, and because the Colusa town residents thought that the town and county should be spelled alike, the "a" termination was officially adopted in 1854.

The people of Monroeville petitioned Butte County Judge Moses Bean to secede from Butte and organize a new county. An election was held at Monroe's Ranch on Friday, January 10, 1851 to elect officers for the positions of county judge, clerk, sheriff, assessor, recorder, treasurer, surveyor, coroner, and county attorney. Failure of some elected officials to qualify prompted a second election held on February 25, 1851. A third election was held on May 3, 1851, to fill the position of County Judge after Judge Holland died. John T. Hughes was elected County Judge, held one court, and then left the county. A fourth election was called on September 3 to elect William B. Ide as judge. Ide, known as the first and only president of the California Republic, died of small pox on December 20, 1852, and was replaced by governor-appointed John F. Wills. After Wills died, his assistant and all of the county's money disappeared. A posse pursued and captured him, and imprisoned him in the jail that Ide had built in Monroeville. The elated posse retired to the local saloon, but neglected to search their prisoner and confiscate the keys to the jail and safe. He escaped with the loot, and was never seen again. Shortly thereafter, the county seat was moved to Colusa.

Although Colusa was designated as county seat in 1851, courts and judicial proceedings were still held in the rival town of Monroeville. Monroe's Ranch, the site of the original election, continued to serve as unofficial county seat until the election of 1853. At that time, Colusa was voted into the position of official county seat, with a total count of 310 votes. Other contenders for county seat included Monroeville (52), Moon's Ranch (7), Twenty-one Mile House (1), and Swift's Corral (3). The first county officers included County Judge W.B. Ide (elected in 1851), County Clerk E.D. Wheatley (1851), District Attorney A.J. Weaver (1852), Sheriff J.F. Wills (1851), Assessor W. G. Chard (1851), Treasurer G.W. L'Amoroux (1853), County Surveyor J.C. Huls (1851), School Superintendant R. Paine (1855), and Coroner and Public Administrator U.P. Monroe (1851).

The settlement grew rapidly between 1850-1853, adding mercantile houses, a hotel, restaurants, and a blacksmith shop. On June 6, 1854, the firm of Stewart & Morrison was contracted to built the county courthouse and jail for $3,000.00.

On September 5, 1855, the new town of Colusa was consumed by a fire originating in a stable at the northwest corner of 6th and Main Streets, then sent racing by a strong north wind. The only structures left after the fire were a few in the business district, the Colusa House, the National Hotel, and several one-story houses between the Colusa House and the river. Subsequently, the town was rebuilt around the original city center. At the heart of the rebuilt town, the current courthouse was erected in 1861, designed by Marysville architect Vincent Brown and built by by Sacramento builder James Plummer, at a total cost of $21,000. The original building, measuring 3,136 square ft, was constructed of stuccoed brick. The bell and tower was added in 1886. The Colusa County Courthouse has been in continuous service since March 1, 1861.

The town of Colusa was incorporated in 1868 after the upper class citizens of Colusa were distressed over the wallowing of pigs and miners in the streets.

The Webster School House, on Webster Street between 4th and 5th Streets, was erected in 1871 by R. Fariss. A rear wing was added in 1874, and the building supported 500 students and teachers.

The Colusa Water Works plant on 3rd and Levee Streets was erected in 1870 to pump water from the Sacramento River to houses for domestic use. Over 10,000 ft of primary pipe was laid within the town. City Hall was built in 1870, then known as the Station House at 6th and Main Streets. A new city hall was built on Market at 4th and 5th Streets in 1890.

In 1876, the town boasted, among other things, 13 attorneys, two banks, three barbers, two bakeries, five blacksmiths, 11 cobblers, one brewery, six carpenters, nine clothing merchants, one carriage painter, two civil engineers, five confectioners, one dentist, two pharmacists, three hotels, five music teachers, two newspapers, two oyster saloons, one restaurant, 13 saloons, four tobacco and cigar shops, two telegraph stores, three wagon makers, three wheat dealers, and two wool dealers. In 1876, the town's population reached an estimated 2,000-2,500 residents, including 430 school children and six teachers. Colusa also was the home of the county courthouse and a county hospital.

Politics in Colusa were largely dominated by the Whig party, and later the Democratic party. Many Colusa residents were sympathetic to the Confederacy during the Civil War. Although Colusa County as a whole was opposed to the war, many local men volunteered for the Union. Eighteen from Red Bluff, then a part of Colusi County, and one from Princeton gladly volunteered. War troops often passed through Colusa en route to the nearest military headquarters at Camp Bidwell. Many Colusans were opposed to Lincoln's policies, and some saluted his assassination with wild festivities. Dudley Shepardson, one such celebrant, was arrested and banished to Alcatraz for two months.

The invention of the automobile in 1892 brought motorized vehicles out west. In 1907, 27 cars were present in Colusa County. Currently, Colusa County is the leading rice-producing county in the United States, with a population of almost 5,000.

ARCHAEOLOGICAL CONTEXT

ARCHAEOLOGICAL BACKGROUND

While considerable archaeological investigation has been devoted to portions of Northern California and several solid synthetic works are available, most of this effort has missed Colusa County. The following reviews the broad framework of prehistoric chronology in surrounding regions, followed by a summary of previous Colusa County investigation.

Regional Context

Systematics

The first comprehensive Central California culture history appeared in An Introduction to the Archaeology of Central California by J.B. Lillard, R.F. Heizer, and F. Fenenga (Lillard, *et al.* 1939). Known as "*Bulletin 2*," this document summarized excavation at fifteen prehistoric archaeological sites located in Colusa, Contra Costa, Sacramento, and San Joaquin counties. Three prehistoric periods were defined: the *Early Period*, the *Transitional Period*, and the *Late Period*. Subsequently, the Periods were redesignated cultural *Horizons*, with the Transitional Period being renamed the *Middle Horizon* (Heizer 1941; Heizer and Fenenga 1939). R.K. Beardsley refined this taxonomy in his Temporal and Areal Relationships in California Archaeology (Beardsley 1954). Beardsley's basic chronological building block was the *Component*, defined as the cultural material from a single site representing a brief, culturally uniform period of time. A series of culturally related components were termed *Facies*, with related facies making up a *Province*. Tying his scheme into Bulletin 2, Beardsley defined Horizons as unifying cultural/temporal phenomena that crosscut Provinces (Beardsley 1954:Table 1).

Subsequent researchers found fault with this system as investigations expanded and new prehistoric cultures and cultural sequences were documented for the North Coast Ranges, Sierra Nevada, Southern Cascades, and northern Sacramento Valley. Each of these regions were shown to have a distinct cultural sequence that could not be adequately incorporated into the old cultural units. Further, most regions bore evidence of occupation much older than the "Early Horizon," creating a need for terminology that avoided chronological preconditions. Consequently, researchers began using stopgap "*Complexes*," consisting of simple cultural-historical units of observation (e.g., Baumhoff 1955; Heizer and Elsasser 1953; Meighan 1955). This was also unwieldy because some "Complexes" were broad and integrative while others were highly specific and these relationships were not specified in the new units. However, in practice it was assumed that Central California was a climax region surrounded by marginal areas with "cultures derived from traits which spread from one or more climax regions" (Fredrickson 1994a:27). Regional culture was seen as dictated by changes in the climax region or explained by degree of association with climax regions. Thus, the horizon scheme militated a perspective which overrode evidence of distinct regional cultures with independent historical roots.

Dissatisfied with the substantive and conceptual inadequacies of the old systematics, Bennyhoff and Fredrickson proposed a new taxonomic system in 1969, which they had occasion to revise, expand, and update over the course of more than 20 years (Fredrickson 1973, 1974, 1984; Bennyhoff and Fredrickson 1994). Recognizing that the existing taxonomic system had been worked out to its fullest form by Beardsley (1954), Fredrickson and Bennyhoff offered detailed critiques of Beardsley's formula and proposed an alternative framework of spatial and cultural integrative units whose interrelationships were designed to reflect the considerable diversity found in the California archaeology. Hughes points out that these revisions:

> allowed researchers to keep separate the dimensions of time and culture which had been inextricably wed in the Bulletin 2 system. But perhaps of equal importance, the criticisms they made of the Bulletin 2 system prompted in their classification an explicit awareness of why time, adaptive mode, burial mode, and exchange media must be treated as independent variables in any comprehensive taxonomy. In this respect, the taxonomic system they proposed is clearly better than its predecessors to the aims of contemporary archaeology [1994:5].

Bennyhoff and Fredrickson defined three cultural-historical units: *Pattern*, *Aspect*, and *Phase*.

Pattern. As originally defined, the *Pattern* is the largest cultural-historical unit employed in the taxonomy, composed of:

> a configuration of basic traits [representing] a basic adaptation generally shared by a number of separate cultures over an appreciable period of time within an appreciable geographic space [Bennyhoff and Fredrickson 1994:21].

Understood as "an adaptive sphere strongly marked by the common occurrence of artifacts used primarily in coping directly with the environment" (Fredrickson 1994b:78), from the standpoint of artifact traits, the Pattern is in fact a polythetic configuration. The assemblage associated with a Pattern can be viewed as a loosely affiliated grouping of artifact types which co-occur in various combinations, and whose combined space/time distributions may describe patterns of interaction. In subsequent revisions, Fredrickson emphasized this dimension, indicating that cultures sharing a pattern "can be assumed to interact more with one another, both directly and indirectly, than with other cultures exhibiting different patterns" (Fredrickson 1994a:40).

Aspect. Definition of the *Aspect* is heavily dependent on artifact time/space distribution studies, and "like phases the aspect is analyzed out of a larger, more generalized unit, the pattern" (Fredrickson 1994a:35). As originally defined, the *aspect* was a more localized variant made up of a historically related sequence of phases (Bennyhoff and Fredrickson 1994:21). An aspect may extend across one or more regions depending on the economic integration reflected in similarity of trade items and stylistic assemblages. On the other hand, an individual district may contain evidence of more than one aspect at any one time.

Phase. As originally defined the *Phase* was the "smallest cultural unit recognizable in space and time" (Fredrickson 1994a:34), made up of one or more site components representing a set of traits characteristic of a brief interval of time within a single district.

Patterns Found in Adjoining Regions

To date no syntheses have been produced for Colusa County, and only a few overviews are available for surrounding regions. Six cultural patterns have been identified in surrounding regions: the *Post Pattern*, *Borax Lake Pattern*, *Mendocino Pattern*, *Windmiller Pattern*, *Berkeley Pattern*, and the *Augustine Pattern* (Fredrickson 1973, 1974, 1984; Hughes *ed.* 1994; White and Fredrickson 1992; White *et al.* 2002). The Mendocino, Windmiller, and Berkeley Patterns are long lasting, relatively stable cultural patterns spanning the Middle to Upper Archaic Periods, dating between 1200-6500 before present (BP). Additional patterns spanning this period are indicated for Northern California, but have not yet been clearly identified and synthesized.

Post Pattern

The *Post Pattern* is the Northern California manifestation of the Western Clovis Tradition (Willig and Aikens 1988), and in our area may date between approximately 10000-13500 BP. This is the earliest known occupation of the region, marked by the use of the distinctive Clovis-like fluted point which was apparently hafted and used as a dart propelled by an atlatl (Figure 14, top). Post Pattern subsistence and settlement adaptation remains a matter of speculation (Fredrickson 1984:497, Fredrickson and White 1988). No artifacts or assemblages of this age have been identified in Colusa County.

Borax Lake Pattern

The Borax Lake Pattern is the northern California manifestation of the Western Stemmed Tradition (Willig and Aikens 1988), and in our area occurred during the Lower to Middle Archaic Periods (7000-10000 BP). The Borax Lake Pattern assemblage was characterized by wide-stemmed projectile points and the millingslab and handstone as the exclusive milling equipment. Deep, flutelike basal thinning, large bladelet flakes and well-worked unifacial tools also appear to be carried over from Paleoindian technology (Figure 14, bottom).

Three aspects have been defined. The *Borax Lake Aspect*, the earliest of the three, is found in the southern North Coast Ranges due west of the project area. Several examples have been found in Clear Lake basin (Harrington 1948; White and Fredrickson 1992; White *et al.* 2002). An excavation at the Fout Springs Work Station in western Colusa County produced Borax Lake Aspect artifacts including the distinctive large, square-stemmed Borax Lake wide-stemmed point (Slaymaker

1983). However, the Fouts Springs sites (Col-76 and Col-98) were stratigraphically mixed so taxonomic assignment of assemblage elements was problematic. Two aspects of this Pattern—potentially dating 7000-9000 BP—have been recognized to the north of Clear Lake: the *Buck Rock Aspect* of the northern North Coast Ranges, and the *Squaw Creek Aspect* identified in northcentral California (White *et al.* 2002). To date, no artifacts of this age have been identified in the Sacramento Valley.

Mendocino Pattern

The Mendocino Pattern spans the Middle to Upper Archaic Periods (1200-6500 BP) throughout the North Coast Ranges region to the Sacramento valley foothills. The Mendocino Pattern (Figure 15) has two recognized aspects, a northern *Mendocino Aspect* and a southern *Hultman Aspect*, which converge around the latitude of Clear Lake basin (Fredrickson 1984:499; White *et al.* 2002). Both aspects are characterized by the presence of notched, concave-based and thick leaf-shaped projectile points. Mendocino Aspect assemblages are dominated by notched points, while Hultman Aspect assemblages are distinguished by a preponderance of thick leaf-shaped points (White and Fredrickson 1992:67). Both aspects have produced milling assemblages including shaped and cobble pestles and cobble mortars, with the majority of the ground stone assemblage made up of handstones and millingslabs. Other shared traits include basalt core tools, thin, finely flaked obsidian knives, shaped unifaces and heavily worked bifaces. Mendocino Aspect assemblages are distinguished by an abundance of chert used for projectile points, while Hultman Aspect assemblages are characterized by use of local and nonlocal obsidian. The Hultman Aspect is further distinguished by the presence of ovate scrapers, simple flake tools, and incised and drilled soapstone plummets. Hultman Aspect deposits generally contain rock features which appear to be cooking hearths, as well as cached artifacts, including millingslabs and handstones (White and Fredrickson 1992).

Burials seldom occur in Mendocino Pattern contexts in the North Coast Ranges. However,

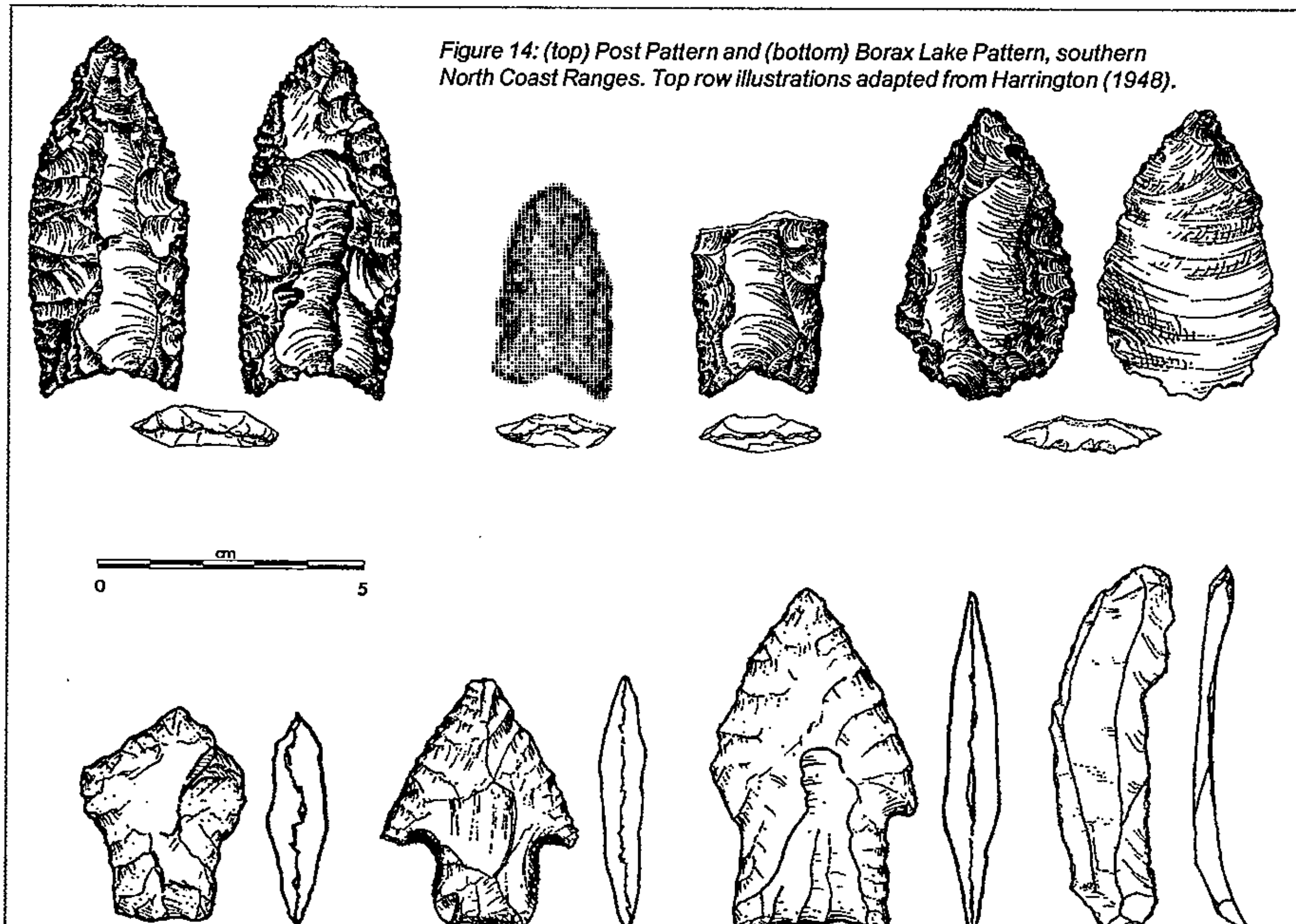


Figure 14: (top) Post Pattern and (bottom) Borax Lake Pattern, southern North Coast Ranges. Top row illustrations adapted from Harrington (1948).

recent excavations in the Clear Lake Basin and Green Valley Region of Solano County have produced over fifty interments associated with the Hultman Aspect. A total of 51 flexed burials was recorded at Sol-315, Green Valley, Solano County. Twenty-eight of these graves included associations primarily composed of unmodified cobbles, "killed" mortars and pestles arranged as a cairn over the skeleton. Other associations included unmodified bird and mammal bone, and rare perforated plummets and quartz crystals. Ochre was often included with the interment (Wiberg 1992). A grave uncovered at Lak-509/881, near Lower Lake, produced a similar mode of burial. The grave consisted of a flexed individual, capped with one "killed" and three other mortars, and one millingslab, one of which was stained with red ochre (White and Fredrickson 1992).

Mendocino Pattern components are invariably non-midden deposits, ranging from attenuated materials typical of a brief stay to more substantial and diverse assemblages indicating residential base camps. However, no Mendocino Pattern domiciles have been identified, and overall feature variability tends to be quite low. In certain districts, most notably Clear Lake, the Mendocino Pattern sites are probably attributable to short term visits by nonlocal people (White 1984, 1986; White *et al.* 2002), and appear to have been used periodically, but contemporaneous with Berkeley Pattern settlements nearby. To the south in Napa, Solano, and Sonoma Counties, a similar situation appears to have ensued where Hultman Aspect cultures were at least in part coeval with, but economically and culturally distinct from, Berkeley Pattern populations of the North Bay (Stewart 1993: Wickstrom 1986:40-42). In the coast ranges north of Clear Lake, the Mendocino Pattern was the predominant local adaptive pose.

Windmiller Pattern

The Middle to Upper Archaic Windmiller Pattern (5000-2500 BP), originally termed the "Early Horizon," represents the oldest identified and longest lived cultural pattern of the Central Valley. The original type sites were dug in the 1930s through 1960s along the Cosumnes and Mokelumne Rivers in the San Joaquin-Sacramento Delta region, summarized by Heizer (1949) and Ragir (1972). Windmiller Pattern sites occur on

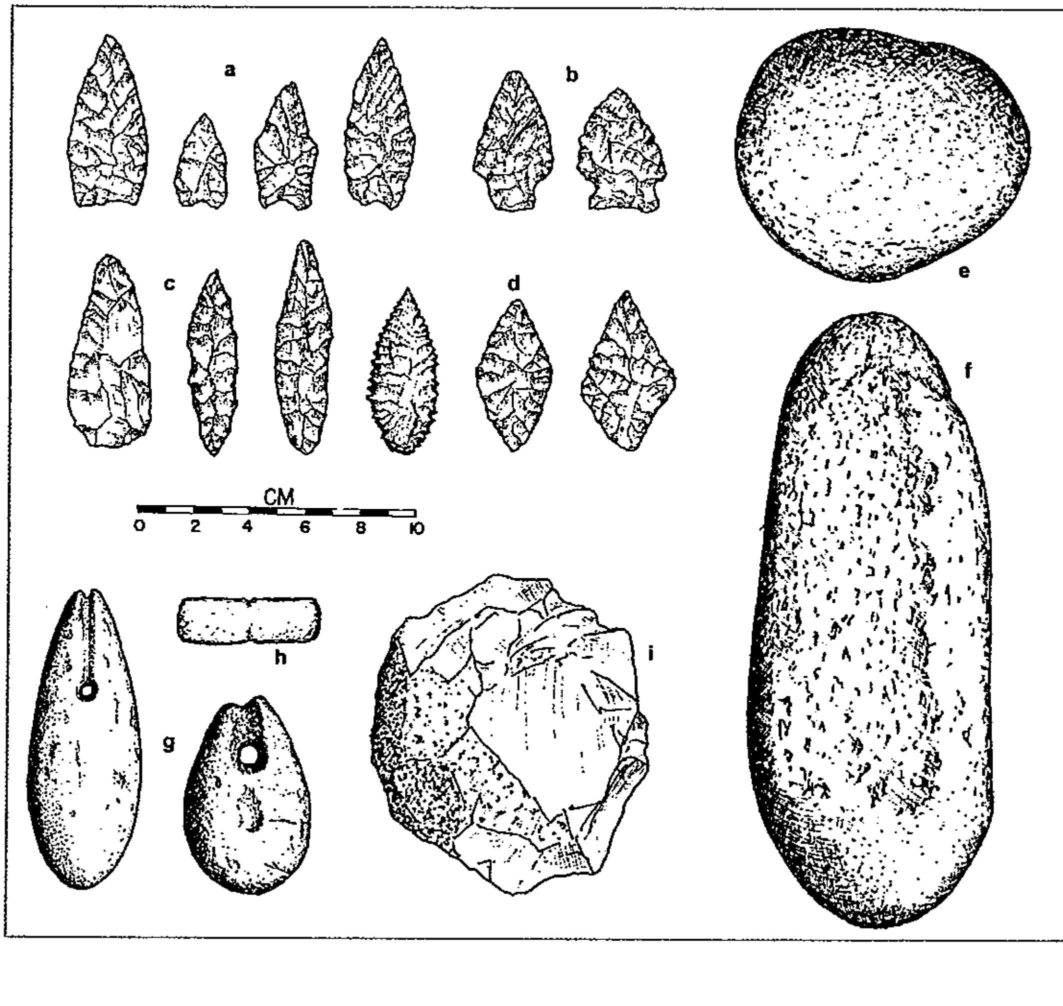


Figure 15: Mendocino Pattern, Hultman Aspect, southern North Coast Ranges.

a - Mendocino concave-based points; b - Myacamas and Mendocino corner-notched points; c - leaf-shaped points; d - lozenge-shaped points; e - cobble handstone; f - shaped pestle; g - drilled plummets; h - notched slate pendant; i - basalt core tool.

natural knolls within the valley and are currently characterized by indurated site soils (Heizer 1949:12; Beardsley 1954:65). Graves occur both in dedicated cemeteries within village deposits and on isolated knolls with no signs of habitation (Heizer 1949:12; Moratto 1984:203). The Windmiller Pattern is of unknown spatial extent, but the temporal extent is relatively finite. The original type sites all appeared to fall between 2,400-5,000 years old, replaced by the "Middle Horizon" (Berkeley Pattern) culture.

Early Windmiller Pattern sites were distinguished by a unique burial practice featuring ventrally extended interments primarily oriented in a westerly direction. In a few instances, grave associations included human bone implements (Heizer 1949:17-24; Beardsley 1954:65-67; Moratto 1984:203). Schulz's (1970) analysis of Windmiller burial orientation indicated that the majority (91%) were oriented between N223°E and N282°E (magnetic), corresponding to the positions of the sunset ranging between the winter and summer solstices. The majority (80%) of burials from the four sites sampled were oriented between the winter solstice and the equinox (N223°E and N252°E), with the highest frequency from all sites directed toward 240°. From these findings, Schulz argued that Windmiller Pattern burials were oriented toward the setting sun and that deaths primarily occurred during the winter, peaking between either October-November or in Mid-February (N240°E) (Schulz 1970).

Material culture (Figure 16) was primarily made of stone acquired from a variety of widespread nonlocal sources, and made into plummets, quartz crystals, large projectile points of chert, slate, and obsidian, worked asbestos splinters, biotite ornaments, and worked clay. Worked shell included ornaments and square beads or applique of red and black abalone, small *Olivella* spire-ground beads, and *Olivella* 'L' series thick rectangular beads.

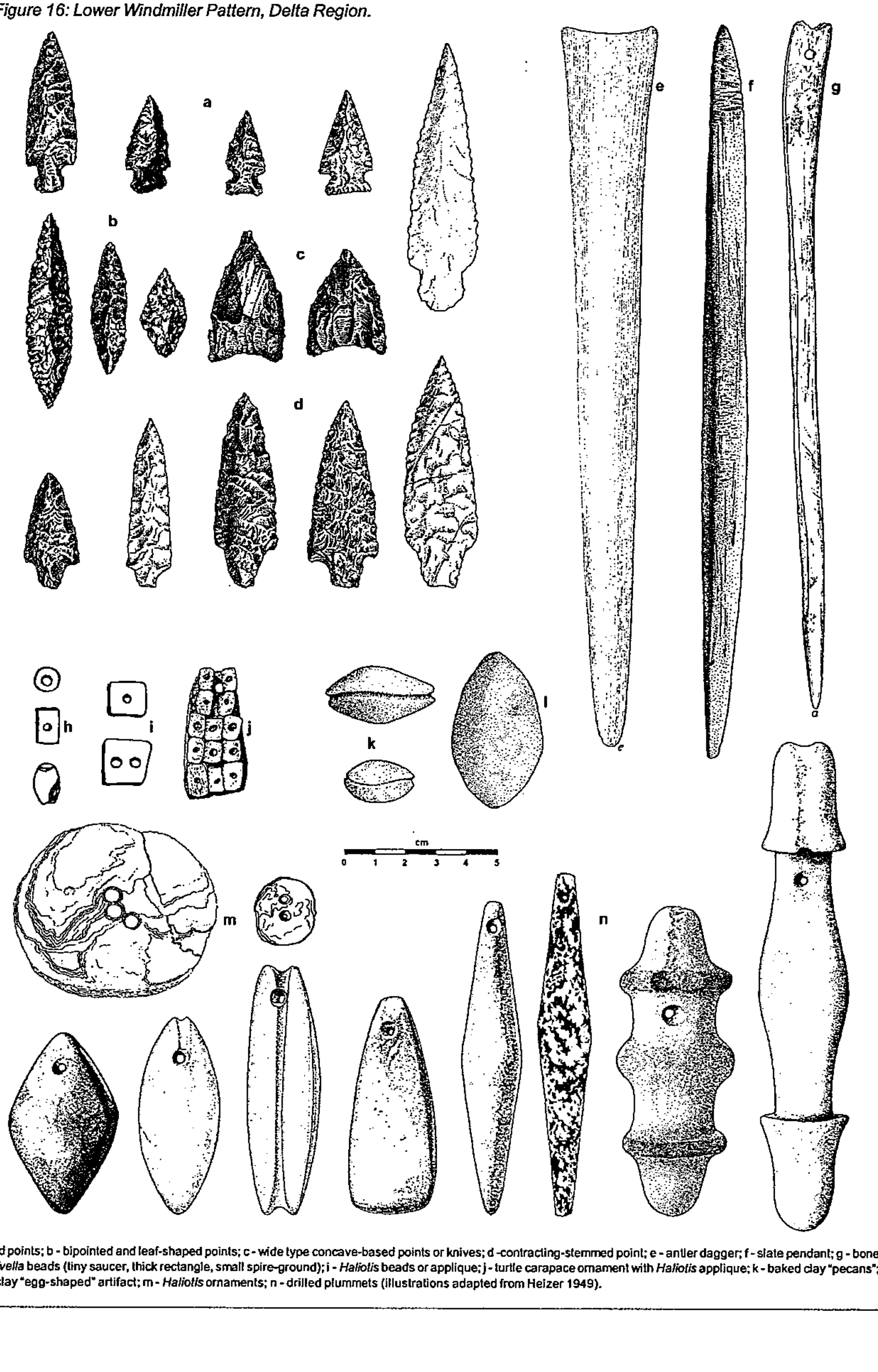
Based on an abundance of chipped stone projectile points and faunal remains including elk, pronghorn, deer, rabbit, coyote, beaver, lynx, bear, and waterfowl, it is assumed that hunting was the focus of Windmiller Pattern subsistence. Evidence for fishing comes from the bones of sturgeon, salmon and other fish, as well as from fishing equipment including bone fish hooks, gorge hooks, and a trident fish spear. Several mortars, pestles, handstones and millingslabs from these deposits suggest that seed and nut grinding also occurred (Heizer 1949:20,27; Moratto 1984:201). Twined basketry is known from impressions left in baked clay. Other baked clay objects include baked clay balls, possibly used for cooking, as well as perforated baked clay disks, and "pecan-shaped" grooved artifacts interpreted as fishline sinkers (Heizer 1949:25; Beardsley 1954:69; Moratto 1984:201). Bone artifacts are also represented in Windmiller Pattern sites and include bird and mammal bone tubes, mammal bone awls, strigils, pins, and other artifacts manufactured from split and ground mammal bone (Heizer 1949:26,27).

Recent research in the foothills of eastern Contra Costa and Alameda counties has documented an Upper Archaic Windmiller Pattern variant (Wiberg 1984; Meyer and Rosenthal 1997). Identified as the Meganos Aspect, continuity with Windmiller is made clear by persistence of distinctive traditions such as extended burial and heavy use of stone and shell artifacts. Bennyhoff reviews evidence showing the gradual constriction of Windmiller territory and shift of the remnant Meganos population westward, probably in advance of Berkeley Pattern advance in Central California (Bennyhoff 1994). Hylkema makes a case for the extension of Meganos culture into the Santa Clara Valley at the terminal Upper Archaic (Hylkema 1999).

Berkeley Pattern

The Middle to Upper Archaic Berkeley Pattern (1200-7000 BP) was the basic and most widespread Archaic adaptation of the rich alluvial basins of Central California. The progenitors of the Berkeley Pattern are as yet unknown, however, an early (5000-9000 BP) cultural pattern representing a common root for both Berkeley and Windmiller is likely (White and King 1993; White *et al.* 2002). The mid-Archaic portion of the Berkeley Pattern (Figure 18) is also poorly known, but the evidence is clear that lower Berkeley Pattern in the Bay was contemporaneous with lower Windmiller Pattern in the Central Valley (Fredrickson 1974:125a; Gerow and Force 1968:125,126; Moratto 1984:207). Upper Berkeley sites are widespread, with components identified at a number of archaeological sites in the Central Valley, Bay Area, and southern to central North Coast Ranges. Notably, Middle to Upper Archaic Berkeley Pattern sites in the southern North Coast Ranges occur contemporaneous with nearby Mendocino Pattern components, and Berkeley Pattern components in the south and east Bay areas occur contemporaneous with nearby Meganos Aspect

Figure 16: Lower Windmiller Pattern, Delta Region.



a - notched points; b - bipointed and leaf-shaped points; c - wide type concave-based points or knives; d -contracting-stemmed point; e - antler dagger; f - slate pendant; g - bone pin; h - *Olivella* beads (tiny saucer, thick rectangle, small spire-ground); i - *Haliotis* beads or applique; j - turtle carapace ornament with *Haliotis* applique; k - baked clay "pecans"; l - baked clay "egg-shaped" artifact; m - *Haliotis* ornaments; n - drilled plummets (illustrations adapted from Heizer 1949).

components. Berkeley Pattern sites are documented in nearly all the lowland basins in the vicinity of the project area, including Monticello, Wooden, Napa, Sonoma, and Russian River valleys (Heizer *ed.* 1953; Bennyhoff 1994; Rosenthal 1996; Wickstrom 1986).

There was also considerable cultural diversity within the Berkeley Pattern, with three Aspects identified in the southern North Coast Ranges alone, including: Houx Aspect (Clear Lake basin and surroundings), Goddard Aspect (Napa Valley and surroundings), and Solano Aspect (Solano, southern Yolo, and southern Napa counties) (Bennyhoff 1994; Rosenthal 1996). Certain traits are common to all Berkeley Pattern sites. Foremost among these, all sites with suitable preservation show evidence of a highly developed bone tool industry. Flat and round bone hairpins were frequent grave associations. Common midden finds include deer cannon bone awls, bird and mammal bone whistles, serrated scapula "saws," mammal and bird bone tubes, and other split, ground, and polished bone artifacts (Bennyhoff *in* Elsasser 1978; Beardsley 1954:74). Bone fish spears and harpoons and bone fish hooks and gorge hooks also occur (Bennyhoff *in* Elsasser 1978; Beardsley 1954). The use of the atlatl is known from various types of bone and antler engaging hooks, as well as several types of dart sized projectile points; non-stemmed obsidian points predominated (Fredrickson 1974:125a,126; Lillard *et al.* 1939:77; Beardsley 1954:74). Grooved stone net sinkers have been found in many Berkeley Pattern sites. Most Berkeley Pattern sites, especially those postdating 2500 BP, are characterized by abundant cylindrical pestles and bowl mortars. Other Berkeley Pattern characteristics include several types of baked clay artifacts including spool and loaf-shaped items and objects with tule and basketry impressions (Lillard *et al.* 1939:44; Beardsley 1954:75; White *et al.* 2002).

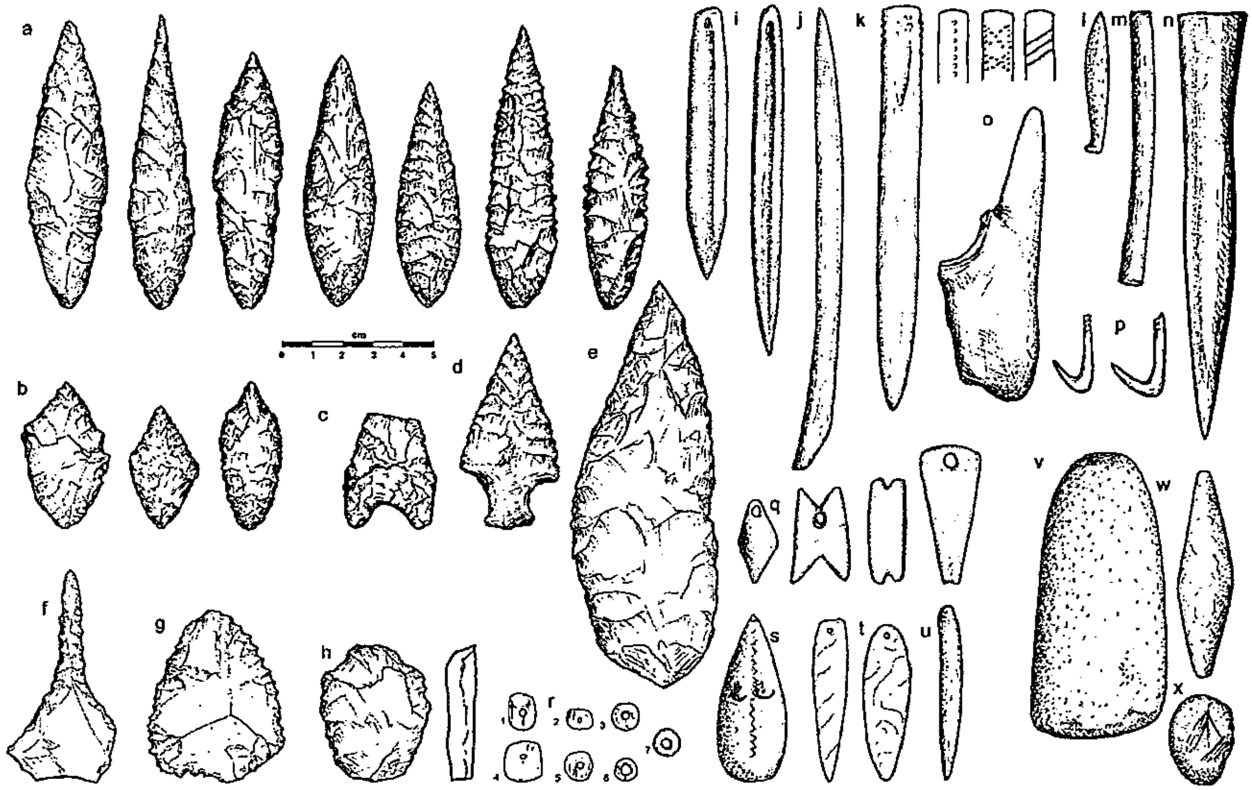
All Berkeley Pattern sites exhibit evidence for extra-regional interaction. Evidence comes in the form of Berkeley "style horizon" indicators such as non-stemmed points, the use of lobed serration on points, and "tick mark" and punctate decorations on pendants and bone pins. Diagonally flaked projectile points are unique to Berkeley Pattern components and are regularly found with burials (Moratto 1984:210; Lillard *et al.* 1939:77). Direct evidence of extra-regional interaction is also found in marine shell bead and ornament trade. *Macoma*, *Haliotis*, and *Mytilus* disks beads are widespread, with *Olivella* 'F' series saddles, 'G' series saucers, and 'C' series split-bevelled beads the predominant forms. The Berkeley Pattern was also characterized by widespread and extensive obsidian trade, including spatially distinct Napa obsidian and Borax Lake obsidian trade spheres. In nearby Clear Lake basin, a biface roughout industry marked by masses of Borax Lake obsidian flaking debris and biface fragments in the village context appeared after 3200 BP, concurrent with interregional trade indicated by marine shell beads. The production of biface roughouts for trade increased throughout the Archaic, culminating after 1900 BP in an industry responsible for village sites dominated by remarkable masses of chipping debris and blanks and obsidian-filled refuse pits.

Berkeley Pattern sites exhibit evidence of fixed, multi-season settlement. Common Berkeley Pattern features include patchy fire-affected rock heaps, shallow hearths and baking pits, deep, rock-lined ovens, refuse-filled pits, house floors, cairns, and graves. Complete house floors are rare in the archaeological record, and fully exposed housefloors are uncommon in the professional record, but current evidence suggests that large pole framed houses between 4-6 m in diameter occurred after 2800 BP. Baked clay daub with tule or bulrush impressions indicates that the thatched and sod-packed houses described ethnographically (see Patwin) were in use during the Berkeley Pattern.

With respect to the Berkeley Pattern economy, there is considerable variation throughout the range in terms of the exact species and habitats exploited. However, in general, the Berkeley Pattern economy focused on seasonally structured resources that could be harvested and processed in bulk, such as acorns, salmon, shellfish, and deer. The high frequency of mortars and pestles relative to chipped stone may imply a heavy reliance on acorn processing (Fredrickson 1974:125a; Moratto 1984:209), however, cervids were probably often taken using drives and clubs, and without stone-tipped spears. Marine shoreline and interior riverine shellfish gathering was also an important part of Berkeley Pattern subsistence as indicated by large shell accumulations. Oyster, clam and marine mussel characterize coastal and bayside deposits, while freshwater mussel occurs in Central Valley and North Coast Ranges sites.

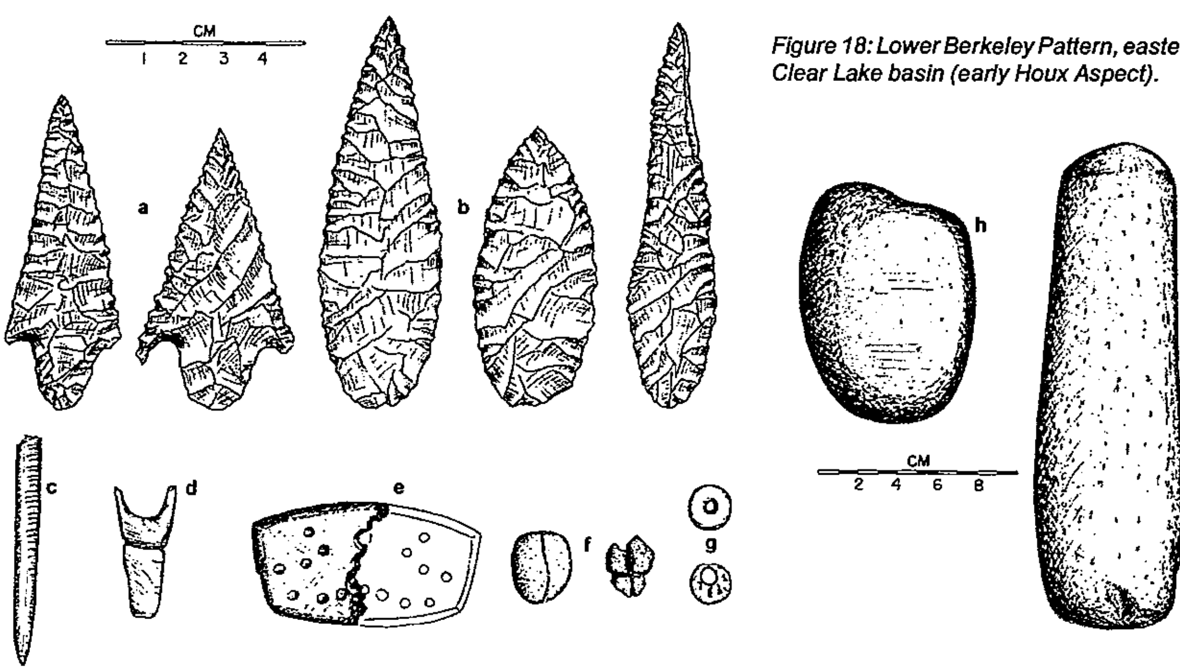
Burials were almost strictly flexed, ranging from loose to tight flex generally with no apparent patterning in orientation. Relatively few Berkeley Pattern burials had artifact associations, and those with associations tended to emphasize trade and

Figure 17: Upper Berkeley Pattern, eastern Clear Lake basin (late Houx Aspect).



a - bipointed Excelsior points; b - shouldered Excelsior points; c - wide type concave-based point or knife; d - chert Houx stemmed point; e - large bifacial knife; f - obsidian drill; g - flake serrate; h - bevelled scraper (reworked biface blank); i - metapodial sulcus awls; j - metapodial splinter awl; k - bone hairpins and handle decoration variants; l antler fish harpoon; m - birdbone tube whistle; n - metapodial dagger; o - ulna awl or punch; p - "J"-shaped bone fishhooks; q - notched and drilled slate and soapstone pendants; r - 1 *Olivella* split-drilled bevelled, 2 *Olivella* F2, 3 *Macoma* clam disk, 4 *Olivella* F/M, 5 *Olivella* G2, 6 *Olivella* G3, 7 slate and soapstone disk; s - ceramic female figurine; t - *Haliotis* pendants; u - slate and soapstone rod-shaped pendant; v - shaped pestle; w - spindle-shaped plummet; abrading stone.

Figure 18: Lower Berkeley Pattern, eastern Clear Lake basin (early Houx Aspect).



a - Houx stemmed points; b - large Excelsiors; c - decorated bone pin with incised "tick marks"; d - bone fishhook blank; e - slate pendant or gorget; f - dacite and sandstone net weights; g - beads (soapstone disk and *Mytilus* disk); h - quartzite cobble handstone and sandstone cylindrical pestle.

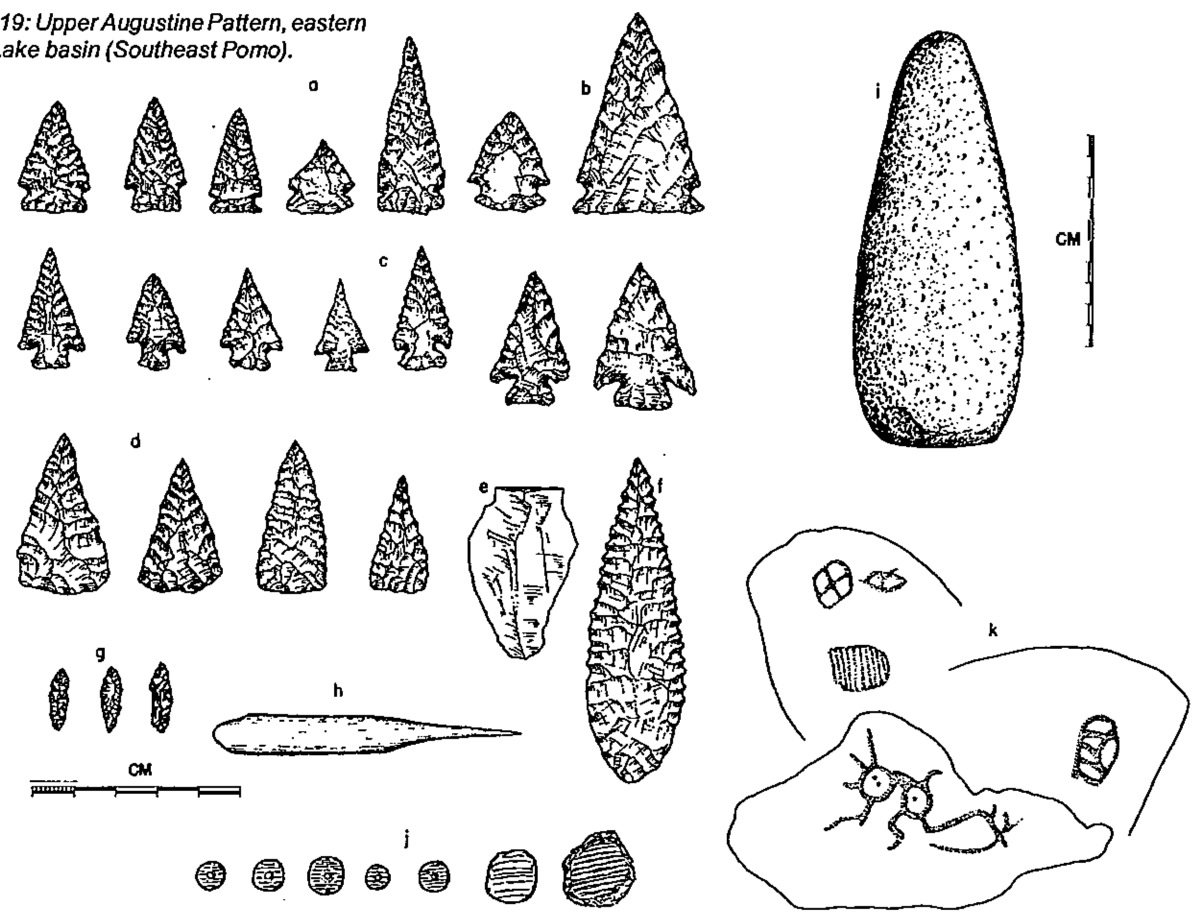
ceremonial wealth rather than utilitarian goods (Moratto 1984:210). *Olivella* saucer and saddle beads and *Haliotis* ornaments are common grave associations, but also occur as midden finds.

In the Clear Lake Basin just west of the project area, the Berkeley Pattern is represented by the Houx Aspect (Figures 17 and 18). The Houx Aspect is marked by long-standing stylistic and technological traditions tying together a cultural continuum in Clear Lake Basin lasting from the terminal Borax Lake Pattern at around 7000 BP all the way up to the Augustine Pattern transition at around 1400 BP. These distinctive traditions included: (1) a diverse ceramic assemblage featuring pinched and rolled artifacts, (2) an unusual bone fishhook industry, (3) a basketry industry (revealed in baked clay impressions) which intensified after 1900 BP, (4) prevalent lobed serration on obsidian tools including serrated flake tools interpreted as tule saws, and (5) a bone tool industry emphasizing deer cannon bone "sulcus awls."

Augustine Pattern

The Augustine Pattern (200-1250 BP) is a widespread tradition marked by the arrival of the bow and arrow and the coalescence of integrative trade spheres. The Augustine Pattern has been divided into several regional aspects composed of local phases. The marker trait is the small, chipped stone arrow point, and the bow and arrow appears to have replaced the atlatl as the favored hunting implement after a 500-700 year transition. Other new traits which distinguished the Augustine Pattern include pre-interment grave pit burning, tightly flexed burials, and cremation, a form of burial apparently reserved for high status individuals during Phase 1 but widespread during Phase 2 (Fredrickson 1974:127; Moratto 1984:211). Grave offerings, such as shell beads and ornaments regularly occur with utilitarian items including mortars and pestles often "killed" before burial. *Olivella* and clamshell disk beads, magnesite cylinders, and "banjo" type *Haliotis* ornaments first appear with the Augustine Pattern, as well as

Figure 19: Upper Augustine Pattern, eastern Clear Lake basin (Southeast Pomo).



a - Rattlesnake side-notched points; b - Rattlesnake corner-notched points; c - distinctive large variant probably used as a spear tip; d - Rattlesnake triangular; e - bladelet flake; f - Excelsior point; g - chert bead drills; h - bone basketry awl; i - sandstone conical pestle; j - clam disc beads and bead blanks; k - petroglyph panels (from Peterson and Peterson 1987: Figures 15c, 16c, and 16f).

elaborately incised bird bone whistles and tubes, and "flanged" soapstone pipes (Moratto 1984:213; Bennyhoff *in* Elsasser 1978:44; Beardsley 1954:77-79).

The Augustine Pattern economy was regionally variable, though fishing and acorn gathering appear to have increased in importance over time. Shaped mortars and pestles predominated with charred acorns frequently found in middens. Fishing equipment was more common than in earlier deposits and included several types of harpoons, bone fish hooks, and gorge hooks (Beardsley 1954:78, Moratto 1984:211, Bennyhoff *in* Elsasser 1978:44). Basketry has been identified from charred remains found in graves and a form of pottery is known from sites in the central valley (Moratto 1984:213; Beardsley 1954:77). Baked clay balls, probably used for cooking, are a common constituent in central valley sites where stone is absent (Moratto 1984:213: Beardsley 1954:77).

The Augustine Pattern in the Clear Lake basin is represented by the Clear Lake Aspect, identifiable with the Southeast Pomo (Figure 19). The Clear Lake Aspect assemblage is marked by small corner-notched and triangular "Rattlesnake" type points, clam disc beads and bead drills, magnesite cylinders, bedrock mortars, house pits, and sites attributable to ethnographic villages (Fredrickson 1984; White and Fredrickson 1992). The Clear Lake Aspect is dated between approximately 150-1500 BP (White and Fredrickson 1992).

ARCHAEOLOGICAL INVESTIGATION IN COLUSA COUNTY

Colusa County has received very little professional archaeological attention, with just 10 sites excavated before our work began. Further, only four of the excavation projects (involving seven of the sites) had been formally reported, with the largest excavations—conducted in the 1930s—unreported or under reported. Nevertheless, thanks to the generosity of J.J. Johnson, R. Milliken, and E. Wohlgemuth, the senior author was able to access the research notes compiled by F. Fenenga, R.F. Heizer, and most importantly J.A. Bennyhoff in order to assemble the following summaries of Col-1, Col-2, and Col-3. In addition, the senior author's recent excavations at three sites in western Colusa County are summarized below, bringing the total "previous" investigations to 13 sites.

The following offers basic chronological building blocks, essentially a summary of previously identified prehistoric components in Colusa County.

Excavations at Col-1, Col-2, and Col-3

In the 1930s, three Colusa County midden mound sites south of Grimes were excavated by crews from Sacramento Junior College and UC Berkeley. In 1935 W.R. Wedel dug at Col-2, the Howell's Point site, probably the tribelet center of *Palo*. In 1936 and 1937, R.F. Heizer and A. Krieger excavated Col-1, the Miller site, probably the ethnographic Patwin village of *Chah'-kah de'-he* (Kroeber's 1932 *Tsaki*). In 1938, F. Fenenga and R.F. Heizer conducted excavations at Col-3, the Sandhill site, a mound lacking specific ethnographic reference (Bennyhoff n.d.; Fenenga 1938; Heizer n.d., 1941; Lillard *et al.* 1939). In 1946, A.E. Treganza returned to Col-1 and excavated three test pits at Col-1 (Treganza n.d.).

Although no final report on the Col-1, Col-2, and Col-3 excavations has ever been completed, some special studies have appeared in print. Gifford reports on his bone tool and shell ornament typological and stratigraphic studies of Col-1 and Col-2 (Gifford 1950:56-57, Table 7). Bennyhoff includes three bone fish spears, two from Col-1 and one from Col-2, in his study of California fish spears and harpoons (Bennyhoff 1950:Figure 1 w and z, Figure 2 s). Jackson conducted obsidian sourcing studies for 22 artifacts from Col-1, with 15 (68.2%) of Borax Lake obsidian, five (22.7%) of Napa Valley obsidian, one (4.5%) of Mt. Konocti obsidian, and one (4.5%) of "Medicine Lake" source material (Jackson 1974:127-128, Table 24). All 22 of Jackson's specimens were Gunther-barbed points, and the findings appear again in Jackson's and Schulz's synthetic evaluation of Gunther-barbed points from Central California (Jackson and Schulz 1975). In another forum, Schulz reported his analysis of fish remains from Col-1 (1979). The following relies heavily on extensive analysis notes on Col-1, Col-2, and Col-3 compiled by J.A. Bennyhoff.

Miller Site, Col-1

The Miller mound measured 350x350 ft, containing an estimated 105,000 ft^2 of deposit. According to Heizer, a large percentage of the mound mass was attributable to the importation of clean sand, probably for house floors (Heizer n.d.). Excavations at this site were extensive, consisting of two deep stratigraphic trenches 6 ft wide and a broad area exposure measuring approximately 2x24 ft. The area exposure revealed a large, historic Patwin house floor. A total of 66 burials was excavated, and field finds or documentation was sufficient to assess 60 of these (Bennyhoff n.d.). Of the 53 individuals complete enough to make a determination, 47 were tight to loose flexed, four were semiextended, and two were dorsally extended. A total of 38 individuals had artifact associations.

According to Bennyhoff, the deposits were well stratified, and while the upper 3 ft was mixed by pit digging and slough associated with the floor, analysis of burial associations permitted the identification of individual components in the upper portion of the deposit. Judging from Bennyhoff's notes, the site was composed of four distinct chronological components: *Component A* - Historic *Chah'-kah de'-he* represented by the upper 12" of deposit, three burials, and the house floor. *Component B* - Phase 2b, the terminal prehistoric period, represented by 46 burials and 48" of deposit; *Component C* - Phase 1a, the initial Augustine Pattern, was represented by eight burials and up to 36" of deposit; *Components D through F* - Berkeley Pattern, represented by three burials.

Component A. Col-1A was assigned to the historic period. According to Heizer (n.d.), the senior Mr. Miller took possession of this property in 1875, three years after the site had been abandoned by Patwin occupants. Heizer felt that the UC Berkeley excavation had mostly missed the Col-1 historic component which is assumed to have been centered in an area off the southeast edge of the site where the Miller family reported finding a number of glass trade beads after plowing around the mound. The house floor found at the site was consistent with McKern's (1923) description of Patwin houses (see Patwin). The excavators found a hard packed clay floor with a fire pit slightly off center. An east entryway, four center posts and 31 peripheral posts were identified. The floor was roughly circular in plan view and measured 21' 4" in diameter. Historic items found on the floor included clamshell disk beads, a pair of steel scissors, an iron pan, a tin plate, an axe handle, a Wagon axle, a steel file shaped into a knife, and glass bottles. One bottle—"*Henley's Wild Grape Root Bitters*"—dated to 1868, confirming the approximate date of occupation. However, only three of the excavated burials could be confidently assigned to the historic period, one with a glass trade bead, one with iron nails or screws, and one with a *Haliotis* ornament decorated with a Christian cross (Bennyhoff n.d.).

Component B. Col-1B was assigned to Phase 2b of the Augustine Pattern, the final prehistoric phase before contact. A total of 46 burials (76.6%) represented this phase, all fully flexed. A total of 24 of the burials had clamshell disk beads. In aggregate, the burials had associated 6,963 clamshell disk beads, 716 *Olivella* spire-ground beads (A1a, A1b, A1c), 1,196 *Olivella* bushing beads (K2), two magnesite disk beads, and two magnesite cylider beads. A total of 59 *Haliotis* ornaments, one incised birdbone tube, one birdbone bead, one pestle fragment, one bone hairpin, one bone toggle harpoon tip, one bone gaming die, one antler tine flaker, seven cannon bone awls, six obsidian projectile points, two obsidian knife fragments, and two obsidian scrapers was also recovered with the burials. Of the 24 burials with clamshell disk beads, 11 also had square to rhomboidal *Haliotis* ornaments, five had magnesite tube beads, and five had obsidian points, including Rattlesnake corner-notched and Excelsior forms. Burial associated bead frequencies ranged from a low of two beads to a high of 2,874 beads.

Component C. Col-1C was assigned to Phase 1a of the Augustine Pattern, the initial phase after termination of Berkeley Pattern lifeways and the introduction of the bow and arrow. A total of eight burials (13.3%) represented this phase. Burial posture was distinct, with two fully dorsally extended, three semiextended, and two flexed. Five burials had artifact associations. All five had associated *Olivella* sequin (M) beads, two of these were found in the form of shingled waist bands and one as a shingled skull cap. In aggregate the burials had associated 120 *Olivella* spire-ground beads (A1a), 30 side and end ground *Olivella* barrel beads (B1a and B2a), 376 *Olivella* normal sequin beads (M1a), and four *Olivella* narrow sequins (M2a). A total of two *Haliotis* ornaments, three birdbone beads, one mammal bone bead, one bipointed bone hairpin, one pestle fragment, one elk rib strigil, one bone gorge hook, one stone discoidal, and several cannon bone awls, two obsidian projectile points, and seven obsidian knife fragments was also recovered with the burials. Three of the burials had associated projectile points including Gunther-barbed and Excelsior forms, and two had square *Haliotis* ornaments.

Components D-F. Col-1D through F was assigned to the Berkeley Pattern. The Berkeley Pattern

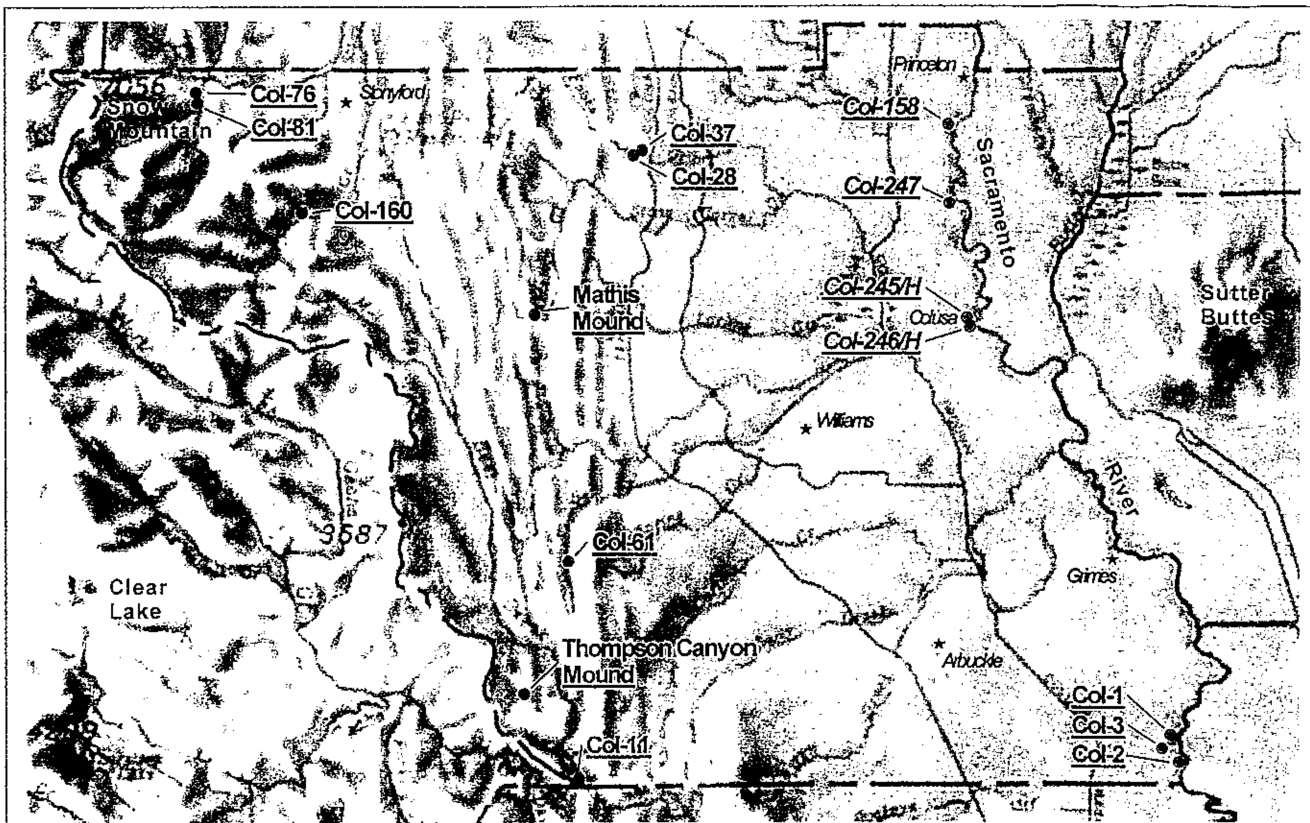


Figure 20: Colusa County excavated sites. Project sites (Col-158, Col-245/H, Col-246/H, and Col-247) italicized.

deposits occurred below 78" depth in the mound. A total of two burials (3.3%) represented these components, one fully flexed the other a loose flex. Burial 35, an infant, had associated 160 *Olivella* saddle beads (F2a, F2b, F3a, F3b), 40 *Olivella* spire-ground beads (A1b, A1c), and 10 *Haliotis* ornaments. Other evidence of Berkeley Pattern occupation was based on midden finds, including 10 large, thin, and finely worked Excelsior points, including shouldered and bipointed variants, many serrated above the shoulders. A significant bone and antler industry was also represented, including four fish spears (e.g., Bennyhoff 1950:Figure 1 w and z), 22 cannon bone awls, six flat and round hairpins, four rib strigils, one bone gaming die, one elk scapula strigil or net sizer, one antler flaker, and eight antler wedges. Ground stone artifacts were uncommon, but included a soapstone ear plug, two grooved net sinkers, and one stone pestle.

Howell's Point Site, Col-2

The Howell's Point site mound measured an estimated 270 ft in diameter and stood approximately 10 ft high. Of particular interest was the site's status as a tribelet center and thus its potential for evidence of Kuksu practices. Excavations at this site were also extensive, consisting of an 80' long stratigraphic trench with staggered depths reaching a maximum depth of 16' (4.9 m). A total of 63 burials was excavated, and field finds or documentation was sufficient to assess 57 of these (Bennyhoff n.d.). A total of 38 individuals had artifact associations.

According to Bennyhoff, the deposit was well stratified, or at least burials could be sorted if not by depth then by associations. Bennyhoff's notes span decades in which his thinking about the site had obviously evolved. From the standpoint of chronostratigraphic assignment, his Col-2 notes lack the consistency found in the Col-1 notes, indicating that he had accomplished a final reworking of the Col-1 notes but not Col-2. Moreover, with respect to the Col-2 analysis, it is clear that over time more finite data sets were assigned greater significance. For present purposes, we will rely on his notes to the mid-1980s, which identify four distinct chronological components. We will reserve judgement on his latter-day identification of Phase 1a and Berkeley Pattern components (his post-1985 components E through H), based on information in part hindered by problematic original field notes (Krieger and Gibbs). The four distinct components are: *Component A* - Historic *Palo* represented by three intrusive burials. *Component B* - Phase 2b, the terminal prehistoric period, represented by six intrusive burials. *Component C* - Phase 2a, represented by 26 burials and the upper 17" of deposit. *Component D* - Phase 1a, the initial Augustine Pattern, represented by 22 burials and 17"-40" in depth.

Component A. Col-2A was assigned to the historic period, representing the ethnographic village of *Palo*. A total of three burials was assigned to this phase (4.7%), two fully flexed and one a partial cremation. Burial associations included 910 glass trade beads, 446 clamshell disk beads, 11 *Olivella* spire-lopped beads (A1b and A1c), 17 Haliotis ornaments, one glass button, a fragment of coiled basketry, and a shaped stone discoidal.

Component B. Col-2B was assigned to Phase 2b of the Augustine Pattern, the final prehistoric phase before contact. A total of six burials (9.5%) represented this phase, all fully flexed. A total of five of the burials had associations, including 2,654 clamshell disk beads, 42 *Olivella* tiny bushings (K2), one magnesite cylinder, 11 *Haliotis* ornaments, one incised birdbone tube, and one deer rib awl. Projectile points assigned to this phase included three small side-notched points and one small triangular point of Napa Valley and Borax Lake obsidian, and one large, side-notched ceremonial blade of white chert.

Component C. Col-2C was assigned to Phase 2a. A total of 26 burials (41.2%) represented this phase, with 20 fully flexed (76.9%; two of these partially cremated), two semiextended (7.7%), and two fully dorsally extended (7.7%). A total of 24 of the burials had associations, including 1,529 *Olivella* spire-lopped beads (A1a, A1b, A1c), 14 *Olivella* barrel beads (B2b), 375 *Olivella* lipped beads (E1), 1,030 *Olivella* tiny bushings (K1, K2), and 47 narrow *Olivella* sequins (M2a, and M2b). The burials also had associated 98 clamshell disk beads, 294 magnesite disks, 10 soapstone disks, and 54 *Haliotis* ornaments. Other associations included five birdbone tubes (four incised), four pestles, six baked clay objects, a bone fish spear (see Bennyhoff 1950:Figure 2s), a soapstone pipe, and a shaped plummet. Projectile points were dominated by Rattlesnake side-notched forms of Napa Valley and Borax Lake obsidian. An additional eight large, serrated, side-notched spear points of obsidian of undetermined source were also found.

Component D. Col-2D was assigned to Phase 1c. A total of 22 burials (34.9%) represented this phase, with 16 fully flexed (72.7%), and one partially cremated (4.5%), two semi-flexed (9.1%), and two fully dorsally extended (7.7%). A total of 17 of the burials had associations, including 1,325 *Olivella* spire-lopped beads (A1a, A1b, A1c), 77 *Olivella* barrel beads (B1b), 12 *Olivella* wall disk beads (J), 686 narrow *Olivella* sequins (M2a, and M2b), and 163 regular *Olivella* sequins (M1a, M1c). The burials also had associated 33 *Haliotis* ornaments, four baked clay objects, and one cannon bone awl. Projectile points were dominated by Rattlesnake corner-notched forms grading into Stockton serrate variants, made from obsidian of unknown source.

Sandhill Site, Col-3

The Sandhill mound measured an estimated 150 ft in diameter and stood approximately 3.5 ft high. Excavations at this site were comparatively limited, and Bennyhoff's analysis was the least developed of all three sites, in part due to problematic field records. A manuscript filed by Fenenga suggests the UC Berkeley and Sacramento JC work combined excavated a rectangular area an estimated 18x24 ft in extent, with a central unexcavated balk. According to Bennyhoff, a minimum of 20 burials was excavated, but little information was available on three of the burials and complete information was available for only eight burials (Bennyhoff n.d.). A total of 12 individuals had artifact associations.

Bennyhoff identified two distinct components: *Component A* - Phase 1b, represented by eight burials in the upper 27" of deposit, and *Component B* - Phase 1a, the initial Augustine Pattern, represented by 12 burials in the lower 28'-42' of deposit. Notably, probing to depths of 4' produced artifacts indicative of Berkeley Pattern occupation, but field notes (Gibbs) were insufficient to make a clear determination (Bennyhoff n.d.).

Component A. Col-3A was assigned to Phase 1b. A total of eight burials (22.2%) represented this phase. Of five burials with sufficient documentation to make a determination, four were fully flexed and one was loose flexed. One of the burials had associated three *Haliotis* ornaments, another had associated 77 *Olivella* spire-ground beads (A1a) and 420 *Olivella* normal sequins (M1). Midden finds in the upper deposit included a slate spear point, a soapstone pipe fragment, and a worked elk antler tine.

Component B. Col-3B was assigned to Phase 1a of the Augustine Pattern. A total of 12 burials (60.0%) represented this phase. Of four burials with sufficient documentation it is clear that burial posture was distinct, with three fully dorsally extended and one flexed. Ten of the burials had artifact associations, including 915 *Olivella* spire-ground beads (A1a and A1b), 33 *Olivella* barrel beads (B2a and B2b), and 1,201 *Olivella* sequins (M1a and M1b). One burial had a waist band made of shingled *Olivella* spire-lopped beads. The burials also had associated 48 *Haliotis* ornaments, two cylindrical deer cannon bone hairpins, four cannon bone awls, and a soapstone collared pipe. A total of 10 projectile points was recovered in association with the burials, including two small, serrated notched points of obsidian (source unknown), five large, serrated spear or dart points of obsidian (source unknown), one basalt contracting-stemmed point, and three Excelsior points (two of obsidian, one of quartzite).

Funks Creek, Col-28, Col-37, and Col-53

In winter 1974-1975, a crew from UC Davis conducted investigations in advance of construction of Funks Reservoir in western Colusa County, two miles north of the town of Sites (Figure 20). Three sites were studied, Col-28, Col-37, and Col-53, all three non-midden artifact scatters. Intensive surface collection was conducted at all three sites. Limited excavation and trenching at Col-37 and Col-53 revealed that both sites were on shallow, weathered, old surface soils, and both sites were almost entirely surface scatters on small, low lying knolls with shallow bedrock exposures.

Col-28. Col-28 yielded a total of 17 prehistoric artifacts in a small patch measuring 20 m in diameter. The artifacts included six handstones, three core tools, three cores, two hammerstones, one projectile point midsection, and two unmodified flakes. Small obsidian flakes were observed but not collected (West *et al.* 1975:17).

Col-37. Col-37 yielded a total of 102 prehistoric artifacts in a concentration measuring approximately 70x40 m. The artifacts included two millingslab fragments, 33 handstones, one polished stone, 14 core tools, six cores, 12 hammerstones, 10 used/retouched flakes, and 13 unmodified flakes. Small obsidian flakes were observed but not collected (West *et al.* 1975:17).

Col-53. Col-53 yielded a total of 92 prehistoric artifacts in a concentration measuring approximately 180x75 m. The artifacts included three millingslab fragments, 43 handstones, 12 core tools, nine cores, 11 hammerstones, two used/retouched flakes, and nine unmodified flakes. Small obsidian flakes were observed but not collected (West *et al.* 1975:17).

At the conclusion of surface collection, backhoe trenches were dug at all three sites. Depths ranged between 30-70 cm, terminating in sandstone bedrock. Trench A-4 at Col-37 produced a highly mineralized midshaft of a human femur. Soil profiles were drawn and 20x20 cm column samples were excavated in each trench in 10 cm levels and wet screened. Tiny obsidian flakes were observed in the upper levels, but no other cultural material was recovered. A small 1.5x1.5 m test excavation unit was dug at Col-53, yielding one obsidian flake.

Dating evidence is limited and problematic. Because all three sites were heavily weathered surface deposits, it was not possible to generate a stratigraphic sequence. In turn, horizontal stratigraphy in the form of a site-to-site comparison shows only that all three sites are closely similar in artifact content. A sample of the human femur fragment recovered from Col-37 was submitted for radiocarbon assay, producing a date of 720±80 BP. As yet, no obsidian samples have been submitted for hydration analysis. On the basis of the limited dating evidence, small scale assemblages, and overwhelming evidence for food processing specialization, the authors proposed that:

> the Funks Creek sites represent recent prehistoric short-term seasonal gathering camps or stations occupied by a few individuals and possibly related to a larger permanent or semipermanent village" [West *et al.* 1976:10].

Fouts Springs, Col-76 and Col-81

In the winter of 1982, a crew from California Archaeological Consultants conducted test excavations at the Fouts Springs Recreation Area in the Stonyford District of the Mendocino National Forest (Slaymaker 1983). Two sites were studied, Col-76, Col-81, both near the confluence of Mill Creek and the South Fork Stony Creek, about seven miles west of Stonyford (Figure 20).

Col-76. Col-76 measured 220x140 m, occupying a low finger ridge dividing Mill Creek from South Fork Stony Creek just upstream from their confluence. Sampling at Col-76 included transit-assisted surface collection, 35 subsurface probes with a hand-auger, 35 1x1 m surface collection squares, and eight 1x1 m excavation units dug to sterile. The auger probes and surface collection units were dispersed across the length of the site, while the excavation units were situated in patchy concentrations of cultural material. Excavation units ranged between 40-90 cm in maximum depth. A total of 4.2 m^3 was dug (Slaymaker 1983).

The deposit was contained in a weathered, gravelly clay. Chipped stone artifacts recovered included nine chert projectile points, 21 biface fragments (15 chert and 6 obsidian), two chert scrapers, six core tools (3 greenstone, 3 graywacke), six cores (5 greenstone and 1 chert), 19 edge-modified flakes, and 2,788 unmodified flakes (60.0% obsidian, 40.0% chert). Ground stone artifacts from Col-76 included three handstones and seven millingslab fragments. Notably, the Col-76 projectile points included one complete and six fragmentary wide-stemmed points (one contracting-stemmed and six square-stemmed forms). A chert, plano-convex "McKee uniface" was also recovered which may represent a scraper or point. Thus, as a whole, the Col-76 assemblage, composed of stemmed projectile points, cores and core tools, and the handstone and millingslab, appeared to be predominantly Borax Lake Pattern in attribution. Obsidian sourcing studies for 50 Col-76 specimens found a preponderance of Borax Lake obsidian with some Napa Valley, Mt. Konocti, and Medicine Lake source group obsidian (Bouey 1983 *in* Slaymaker 1983. Obsidian hydration rim values on 50 specimens ranged between 3.4- 13.5 microns, with a mean average of 6.4 microns and a mode at 7.0 microns (Jackson 1983 *in* Slaymaker 1983). The Borax Lake obsidian hydration model for Clear Lake basin (see **Chronology**) would indicate an age of between 4500-8000 BP for the assemblage, consistent with the Borax Lake Pattern assignment.

Col-81. Col-81 measured 200x100 m, occupying a flat overlooking Mill Creek above its confluence with South Fork Stony Creek. Sampling at Col-81 consisted of transit-assisted surface collection, 36 auger probes and 1x1 m surface collection squares on a 30x30 m grid across the site, and eight 1x1 m excavation units dug to sterile deposits. Excavation units ranged between 30-130 cm in maximum depth. A total of 6.9 m^3 was dug (Slaymaker 1983).

Six of the excavation units were placed in a patch of dark, clayey midden measuring 20x20 m in plan view found on the south end of the site. The remaining two excavation units were spread out across the rest of the site, consisting of a non-midden clayey gravel. Relatively few artifacts were recovered from non-midden excavations. Chipped stone artifacts included 26 projectile points (19 chert, 6 obsidian, 1 basalt), 33 biface fragments (26 chert, 6 obsidian, 1 graywacke), 13 scrapers (12 chert, 1 obsidian), three core tools (2 greenstone, 1 greywacke), 14 cores (2 greenstone, 12 chert), 75 edge-modified flakes, and 5,372 unmodified flakes (74.3% obsidian, 25.7% chert). Ground stone artifacts from Col-81 included ten handstones, 32 millingslabs and fragments, one pestle, and one bowl mortar fragment. In addition, two drilled soapstone ornaments were found.

The Col-81 projectile points were considerably different from the Col-76 assemblage. Just one complete Borax Lake wide-stemmed point was found, and one large basalt contracting-stemmed point reminiscent of early Houx forms from Clear Lake basin. The remaining points included six Mendocino concave-based points (Deep, Hipped, and Shallow-based variants), two lozenge-shaped point, and 16 Mendocino corner-notched and Willits side-notched points. Thus, as a whole, the Col-81 assemblage, composed of concave-based and notched projectile points, cores and core tools, and a mixed assemblage of handstone and millingslab and mortar and pestle, appeared to be predominantly Mendocino Pattern in attribution. Obsidian sourcing determinations for 62 Col-81 specimens found a mix of Borax Lake, Napa Valley, and Mt. Konocti obsidian (Bouey 1983 *in* Slaymaker 1983). Obsidian hydration rim values on 50 specimens ranged between 3.3-9.3 microns, with a mean average of 5.2 microns and a tight cluster between 4.2-5.5 microns (Jackson 1983 *in* Slaymaker 1983). The Borax Lake obsidian hydration model for Clear Lake basin (see **Chronology**) would indicate an age of between 2000-3500 BP, consistent with a late Mendocino Pattern assignment. This age estimate is supported by a radiocarbon date of 3,360±140 BP obtained for an aggregate of charcoal from Unit 8, levels 80-120 cm, located in the midden.

Little Stony, Col-160

In winter 1990, Origer and Waechter, Consulting Archaeologists, conducted test excavations at the Col-160, on Little Stony Creek, in the Stonyford District of the Mendocino National Forest (Origer and Waechter 1990; Waechter and Origer 1993) (Figure 20). Col-160 consisted of a light midden and artifact scatter measuring 90x90 m, occupying a gently sloping flat or terrace on the north side of the creek. Sampling at Col-160 consisted of transit-assisted surface collection, the excavation of 18 1x.5 m surface transect units and 5 1x1 m excavation units. The surface transect units were dug to 10 cm or 20 cm below surface, while the excavation units were dug to sterile deposits, between 30-160 cm deep. A total of 5.2 m^3 was dug (Origer and Waechter 1990).

Midden was restricted to a small patch on the north end of the site, sampled by one transect unit and one excavation unit. The excavation unit reached a depth of 160 cm, with the upper 80 cm consisting of midden soil and the lower 80 cm a light tan clayey gravel. The remainder of the site was a relatively shallow gravelly clay, with excavation units reaching a maximum depth of 30-110 cm (Origer and Waechter 1990:Table 1). Chipped stone artifacts recovered included 5 projectile points, 15 biface fragments (12 obsidian, 3 chert), ten flake tools (8 obsidian, 2 chert), six core tools (5 sandstone, 1 blueschist), five cores (1 obsidian, 45 chert), and 756 unmodified flakes (85.4% obsidian, 14.3% chert, 0.2% basalt). Ground stone artifacts from Col-160 included seven hammerstones, two pestles, eight handstones, and six millingslab fragments. The Col-160 projectile points included two small Rattlesnake corner-notched arrowpoints made from Borax Lake obsidian, one chert Mendocino concave-based, and two chert Borax Lake wide-stemmed points.

The site clearly had both horizontal and vertical stratigraphy. A check of their catalogs and obsidian studies gives substantial detail. The deep excavation unit dug in the midden area recovered faunal remains, both of the Rattlesnake corner-notched points, one flake tool and both of the pestles above 45 cm depth. However, the same unit below 60 cm depth produced a Borax Lake wide-stemmed point, six flake tools, a blueschist core tool, two hammerstones, four handstones, and two milling slab fragments. Obsidian hydration records provide independent evidence of two temporal components. Ignoring the thinnest rim of double rim results (presumed here to represent the results of mid-Holocene weathering), 10 hydration rim values on Borax Lake obsidian flakes from the 0-30 cm levels had a mean average rim value of 4.28 microns (STD=0.98) compared with 24 hydration rim values on Borax lake obsidian flakes and bifaces from the 60-160 cm levels which had a mean average rim value of 7.21 microns (STD=1.41). The Borax Lake obsidian hydration model for Clear Lake basin (see **Chronology**) would indicate an age of between 1000-1500 BP for the upper deposits and an age of around 4500-8000 BP for the deeper deposits, the latter consistent with a Borax Lake Pattern assignment.

Thompson Canyon Site
(trinomial pending)

The Thompson Canyon site is located in a small valley in the Bear Creek drainage, on the Bureau of Land Management (BLM) Paine Ranch acquisition, southwestern Colusa County (Figure 20). The site had been severely impacted by erosion, and in response to requests from BLM and Patwin descendants the CSU, Chico Archaeological Research Program conducted a minor salvage excavation at the site on weekends between 6 through 28 October, 2001. The site consisted of a large midden mound—probably originally around 50x70 m in plan view and 1.5 m high—surrounded by smaller midden and non-midden loci on perimeter benches. The midden was located on a bench within a "horseshoe bend" in the creek, and the creek was cutting directly into the bench.

Fully one-half of the midden had been destroyed, exposing the entire length of the mound in the long, vertical stream cut (Figure 21). The cut revealed a mature soil profile. The midden was relatively clayey and appeared leached, contributing to the evidence for age. Further, the midden resided on a buried, clayey soil marked by formation of a distinct calcium carbonate horizon which was thicker and more distinct beneath the thickest portion of the midden. The bank exposure revealed numerous cultural features, including shallow, basin shaped rock-lined hearths probably representing acorn bread ovens, possible broad, shallow house pits, and other living surfaces. Human remains were identified in one part of the profile.

Sampling consisted of nine controlled excavation units spread along the longest section of the sloughing bank (Figure 21), alternating 1/8" and 1/4" screened blocks. One of these units was dug to the full depth of the archaeological deposit, 150 cm deep. Two soil strata were found, a midden to 100 cm deep and a submidden silty clay. Chipped stone artifacts recovered included 15 projectile points, two formed flake tools (both obsidian), and five core tools (4 limestone, 1 chert). Shell beads recovered included two clamshell disk beads, three *Olivella* M series sequin beads, one *Olivella* G series saucer bead, two *Olivella* F series saddle beads, and one *Macoma* clam disk bead.

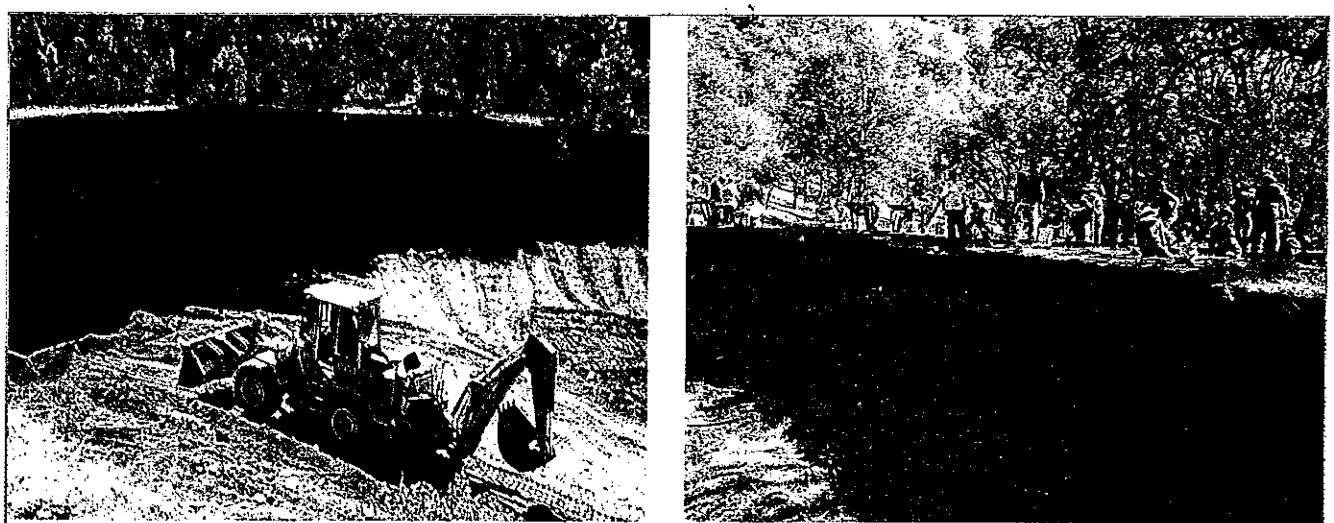


Figure 21: Thompson Canyon site - (Left) BLM bank stablization, (Right) CSU, Chico excavation.

Ground stone artifacts included seven pestles and fragments. The Thompson Canyon projectile points included three Gunther-barbed and five Rattlesnake corner-notched arrowpoints (all made from Borax Lake obsidian), one Houx stemmed point (made from basalt), and six Excelsior series points (made from Borax Lake obsidian).

Analysis is ongoing. Tentatively, the midden contained three cultural components. The upper 40 cm of midden contained trace evidence of Phase 2 occupation, marked by the clamshell disk bead. Large Rattlesnake corner-notched and Gunther-barbed points and M series *Olivella* sequin beads are indicative of a Phase 1 late prehistoric occupation. However, the bulk of the midden was attributable to late Houx Aspect (Redbud Phase) occupation, marked by the Excelsior series and Houx stemmed points, *Olivella* F and G series beads and a *Macoma* disk bead, and shaped, cylindrical pestles and fragments.

Old Tebti, Col-11

Old Tebti, Col-11, is situated at the confluence of Bear and Cache Creeks, on the BLM Paine Ranch acquisition, southwestern Colusa County (Figure 20). The site was subject to two unreported excavations, a 1934-1935 visit by Sacramento Junior College students under J.B. Lillard, and a late 1960s excavation by UC Davis under the direction of P.J. (Palumbo) Johnson. Limited manuscripts are available for both of these investigations, which consisted of the exposure of a portion of dance house floor in 1935 (Neitz *et al.* 1935) and large-scale midden and house pit excavations in 1969 (Johnson n.d.). The site retains significant surface features including the dance house and at least 12 house pit depressions. However, the extent to which previous excavations have exposed or even created these features is not known at this time. The site had ongoing vandalism on a secondary bench below the dance house and house pits, and BLM and Patwin tribes requested a salvage excavation in the damaged area.

Salvage field work took place on weekends between 2 through 30 September, 2001. Sampling consisted of thorough surface maps including detailed plots of 10x10 m squares and a larger transit-based contour map. On completion of the maps, attention was directed to the looted area situated on an adjoining lower terrace at the eastern margin of the site. A 6x8 m grid was established, incorporating the looting pit and spoils. Eight one-meter-wide, six-meter-long strips were demarcated, designated 'A' through 'H' from north to south. Loose looting spoils contained in each strip were scraped into buckets and screened through 1/8"-dry rocker screens. An estimated total of 2.0 m^3 was screened. The deposit was quite loose, ashy, and rich in oak and grey pine bark and limb wood charcoal. The exercise produced a very unusual and distinct cultural assemblage. Typical midden constituents were rare, including a few obsidian flakes, unburned bones, and fire-affected rocks which bore stains indicating they were derived from midden slough accumulating at the base of the bank to the upper terrace. However, the screens were filled with an estimated 5,500 burned and calcined bone fragments. Preliminary osteological analysis has determined that all or nearly all of the burned bones are either definitely human or cannot be ruled out as human. Less than

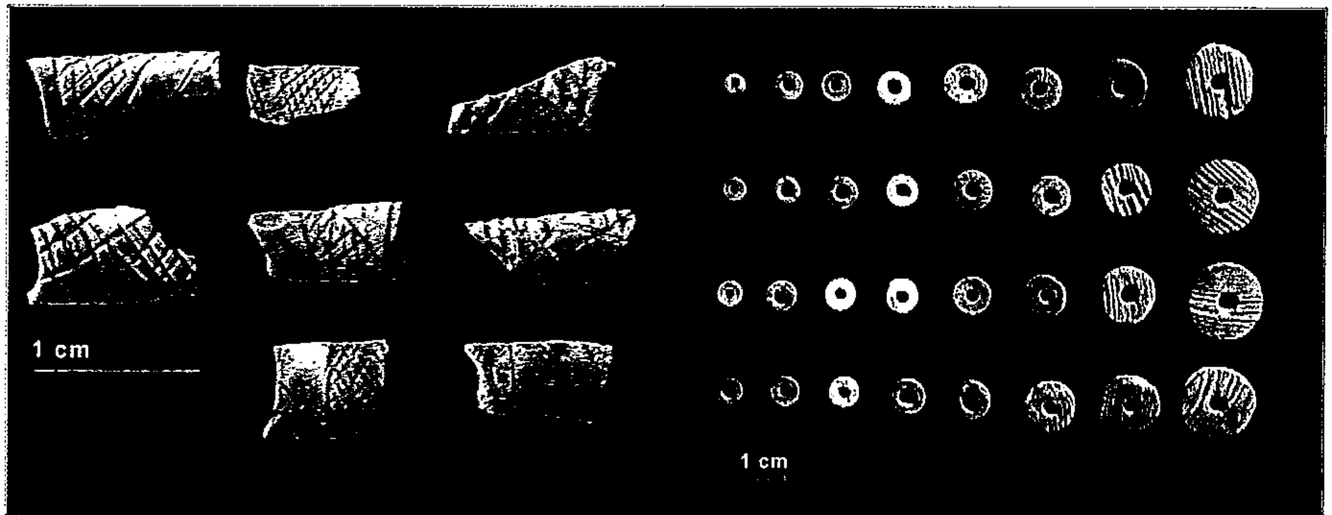


Figure 22: Artifacts from Col-11 - (Left) carved bone ear tube or whistle fragments, (Right) clamshell disk beads.

100 items of non-burned bone were recovered, all of which appear to be intrusive modern ground-dwelling species or derived from midden slough. Screening also produced more than 4,000 burned clamshell disk beads and fragments and other burned and fragmentary artifacts including numerous grey pine (*Pinus sabiniana*) nut shells likely to be pine nut bead fragments, four *Haliotis* ornaments, two soapstone pipe fragments, 4 magnesite bead fragments, one *Olivella* E3 bead, and 20 fragments of decorated bone ear tubes or whistles (Figure 22).

Laboratory work continues. However, bead and ornament types are identical to types Johnson (n.d.) and Neitz *et al.* (1935) reported for the midden, indicating that the two loci are related. The feature is interpreted as a Phase 2b cremation area.

Upper Antelope Valley,
the Mathis Mound

On 27 through 28 October, 2001, the Archaeological Research Program conducted test excavations at the Mathis Ranch Mound, field site number SR12-A (trinomial pending). The site was located on the Antelope Creek drainage on the western flank of upper Antelope Valley, in the foothills west of Maxwell (Figure 20). The site measured 150x120 m in plan view, with a widespread light to moderate density scatter and three discrete midden loci. Sampling consisted of excavation of a single 2x2 m unit on the central midden, a small but prominent mound measuring 50x70 m and rising 2 m above its surroundings. The unit was subdivided into a 1x2 m at 50 cm deep (Figure 23), and excavation proceeded to a maximum depth of 160 cm below surface, halting before the maximum depth of cultural deposits was reached.

The unit was still encountering midden soils when excavations were halted, however, a change was detected at around 80 cm deep. Above 80 cm, the deposit was friable and rich in fire-affected rock. Below 80 cm the deposit was more compacted, clayey, and contained about half the density of fire-affected rock. Shell beads recovered included one *Olivella* spire-ground bead (A1b), two *Olivella* saddle beads (F2), two *Olivella* modified sequin beads (F/M), one *Macoma* clam disk bead, one small *Haliotis* square ornament or applique, and one fragment of a teardrop-shaped *Gonidea* ornament. Chipped stone artifacts recovered included six projectile points and numerous biface fragments and flake tools. Ground stone artifacts included five pestles, two handstones, and one hammerstone. The Col-160 projectile points included three Gunther-barbed arrowpoints made from Borax Lake obsidian, and two Excelsior series points made from Borax Lake obsidian.

Analysis is ongoing. Tentatively, the midden contained two cultural components. The upper 80 cm of midden contained Phase 1a markers, including the Gunther-barbed points, small Haliotis ornament, and F/M bead. However, Upper Berkeley Pattern indicators, including an Excelsior and *Olivella* F series saddle bead were also found in the upper midden. Below 80 cm, only Upper Berkeley indicators were found, including Excelsiors, an *Olivella* F series saddle bead, the *Macoma* bead, and several shaped pestle fragments.

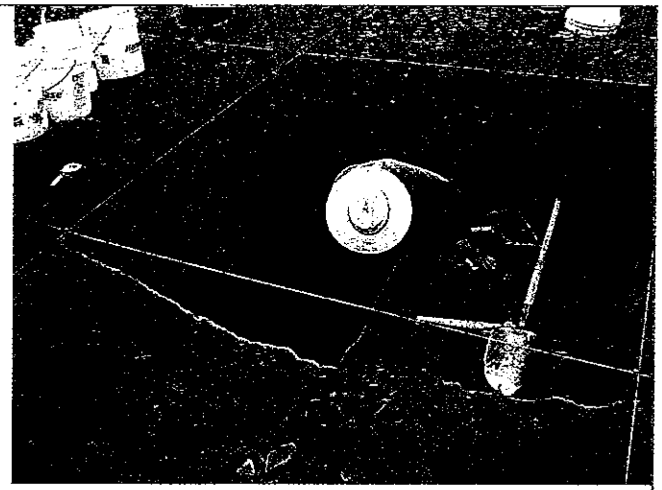



Figure 23: Mathis mound excavations - (Left) obsidian Gunther-barbed point, (Right) excavation in progress.

Lower Antelope Valley, Col-61

In summer 1992, Pacific Legacy, Inc., conducted data recovery excavations at Col-61, on Salt Creek in the southern terminus of Antelope Valley, west of Williams (Jackson and Shapiro 2001) (Figure 20). Col-61 consisted of a dark midden mound occupying a high bench overlooking the creek. The site had been bisected by past highway construction, and the portion of the site remaining on the east side was scheduled to be demolished by further expansion of Hwy 20. Excavation was designed to completely remove the archaeological deposit, an estimated 24x16 m area. Sampling consisted of the excavation of a series of contiguous 1x1 m excavation units in 2x2 m blocks, alternating 1/4" screen for midden and 1/8" screen for burials. A total of 183 m^3 was dug (Jackson and Shapiro 2001).

The midden reached depths of 30 cm to 160 cm, and resided directly on decomposing sandstone bedrock. The midden exhibited little or no internal stratigraphy beyond localized features. A total of 19 burials was excavated in 14 separate inhumations (3 multiple burials), with four burials and all three of the multiple inhumations (a total of 11 individuals) having associated artifacts. A single feature was identified, a midden filled pit dug into the substrate (Jackson and Shapiro 2001). It is difficult to ascertain information about projectile points from the report, because the authors assign the term "projectile point" only to notched or stemmed specimens, calling all non-stemmed specimens the generic "bifaces." Thus, while the site may have produced a substantial number of Excelsior series or thick-leaf points, it is not possible to segregate these from other, non-projectile point bifaces.

The site had evidence for horizontal and vertical stratigraphy, and two distinct components can be identified. The predominant occupation appears to have been associated with the Augustine Pattern, Phase 1a. Marker artifacts include large, Gunther-barbed and Rattlesnake corner-notched points and *Olivella* M series sequin beads. Three burials are attributable to this phase, all three having associated Olivella M series sequin beads. An Upper Berkeley component is marked by Excelsior series and Houx stemmed series points, *Olivella* F series saddle beads, slate tabular pendants, a soapstone bead, and a soapstone ear spool. One burial is attributable to this phase, having associated two *Olivella* G series saucer and ring beads (Bennyhoff 1993 *in* Jackson and Shapiro 2001).

RESEARCH DESIGN

PREFIELD OBSERVATIONS

Prior to the data recovery, ARP staff visited each site and made observations on the nature and extent of cultural deposits. In general, initial trench exposures were not large so it was not possible to get a sense of the overall chronostratigraphic structure of each site. However, we were able to determine that all four sites were residential bases and in fact, could have been large village sites. All four sites were marked by well developed midden soil and were likely to produce varied assemblages of features, artifacts, and subsistence remains. Further, our preliminary observations suggested the sites in aggregate represented a long time span, and discrete chronological components might be defined at each site.

Col-246/H, the Colusa County Courthouse midden, produced stylistic types and glass trade beads typical of the early contact period. Col-158, the Stegeman Station site, consisted of four loci each separated by one-tenth of a mile or less. Cultural constituents and soil characteristics were similar in each locus, each containing a thin horizon of dark, silty midden soil marked by a preponderance of broken freshwater mussel shell. The good state of preservation of the shell and lack of calcium carbonate buildup on the cultural materials suggested that the Col-158 loci were all fairly recent, all probably representing late prehistoric occupation dating less than 1,100 years old. However, we suspected that further investigation would show that each locus had a different history of occupation, perhaps the product of shifting village locations in response to late prehistoric floods. Col-245/H, the M-7 midden, yielded artifacts which appeared to be a phase older than the Col-158 finds, potentially adding another chronological building block.

In contrast, Col-247 was characterized by deep, rich midden in a "mature" soil profile marked by a more clayey, oxidized deposit. Cultural constituents appeared to be quite old, with poor shell preservation, clay skins on solid objects, and a heavy buildup of calcium carbonate on bone and stone cultural constituents. Therefore, Col-247 appeared to be significantly older than the other sites. Based on comparison to old sites elsewhere in Central California, we expected an age in excess of 2,000 years.

These finds in hand we formed the opinion that the project was likely to develop a long and fairly complete chronological sequence, and thus, had the potential to address a broad array of research questions related to culture change.

RESEARCH PROBLEMS

The Hwy 45 project is one of several investigations currently being developed by the Archaeological Research Program in the central Sacramento Valley and western foothill reach. The projects are a deliberate extension of the author's research in the central North Coast Ranges, where a long term research program was advanced using a similar patchwork of projects guided by a single body of theory (White *et al.* 2002). The current report is one of several planned reports of ongoing investigations in the middle Sacramento Valley region. Future reports will continue to synthesize and integrate data and findings presented herein. Some of the research themes identified below can be answered on the current project, in particular, basic issues of chronology, culture history, and subsistence-settlement patterns. However, the research themes appearing below which relate to more profound theoretical issues involving population-resource relationships can only be addressed using a record with greater time depth and more robust economic data. Thus, these questions are developed here and comments are directed to these topics in the concluding chapter, but the comments will generally identify specific needs for future field and laboratory studies.

Local Chronology

Building Chronology with Component Building Blocks

Before our project began, the Colusa region lacked a well-documented and reliable culture chronology, and at the outset this was our most important archaeological research objective. Even in the pursuit of higher level theory there is a fundamental and over-arching need for reliable local chronology as a framework for sampling and observation. Because the Hwy 45 sites formed a time series, our investigations could contribute to the development of local chronology via the identification, definition, and dating of discrete archaeological components. The archaeological "component" is a fundamental chronological building block composed of a temporally related aggregate of artifacts, features, and other residues representing the material remains produced during a specific period of residence or other use at a specific location, and found associated with a definable horizontal/vertical fraction of a site (Willey and Phillips 1958:21-22). With this research need in mind, field strategies focused on the implementation of methods for the identification and sampling of chronological components. These included the use of geoarchaeological studies to produce a stratigraphic master chronology, hand excavation of large area exposures and profiles on balk walls to assist in the assignment of unit/levels to specific stratigraphic units, collection of chronometric dating samples, and regular monitoring of artifact types and frequencies to track cultural stratigraphy.

Lab and analysis strategies also focused on the identification and definition of components, including stratigraphic analysis of each class of artifact or constituent, the selection of chronometric dating samples to maximize temporal resolution, and the development of independent lines of evidence, including bead or ornament seriation, regional comparison ("cross-dating"), obsidian hydration, and ^{14}C dating.

Obsidian Hydration Calendric Rate

Obsidian was observed at each of the sites, most appearing to be from the Borax Lake obsidian source located near Clear Lake in Lake County about 70 air miles west of the project area (Heizer and Treganza 1972). Because the Hwy 45 sites formed a time series and possessed datable charcoal and obsidian, subsurface investigation might produce ^{14}C/hydration pairs sufficient to develop an empirical hydration rate curve similar to that established for nearby Clear Lake basin (White et al. 2002:426-427). Given the potential for source material variability, the ^{14}C/hydration pairs would ideally include other obsidian source materials, including Modoc, Cascade, or Great Basin source materials brought in via long distance travel or trade. In order to address this issue, the project needed to compile extensive samples of culturally modified obsidian, including flakes and tools, to be used in obsidian hydration studies. With regard to radiocarbon dating, in order to solve local chronology problems we determined that the project would need to acquire and run a variety of radiocarbon dating samples selected from stratigraphic horizons and cultural features, including some chosen because they might represent useful ^{14}C/hydration pairs.

Culture History

The Hwy 45 sites have the potential to contribute to local culture history research concerns, including the identification and definition of Patwin culture history, its distinctive developments, and comparison to other cultures nearby. While never fully reported, excavations at Col-1, Col-2, and Col-3 in the 1920s and 1930s by teams from Sacramento Junior College, were summarized in at least two seminal monographs (Lillard *et al.* 1939; Heizer 1941). One of these provided a significant discussion of Colusa County archaeology, describing a four-phase culture history: *Transitional Phase* (late Middle Horizon), *Late Culture Phase 1*, *Late Culture Phase 2*, and *Late Culture Phase 3* (Heizer 1941). Heizer argued that this sequence was associated with the development of ethnographic Patwin culture. He argued that, while the local sequence paralleled the Plains Miwok cultural sequence from the Sacramento/San Joaquin Delta (described by Lillard *et al.* 1939), Patwin culture history was differentiated by a higher frequency of obsidian, magnesite, and other materials indicative of northern and Coast Range trade spheres and these materials appeared in Patwin territory at an earlier date.

In a review of the historic record, Heizer also argued for significant tribal relocation to the Sacramento River basin in Colusa County between 1820-1840, suggesting displacement of foothill Patwin into the basin, and even potential encampments of Walla Walla Indians on horse trading expeditions from the Columbia Plateau (Heizer 1941:110).

In their study of But-1, Chartkoff and Chartkoff argue for a distinct late prehistoric cultural complex in the Chico area probably coterminous with the territory of the Mechoopda Maidu (Chartkoff and Chartkoff 1983).

Because the Hwy 45 sites represented residential bases, a wide range of structure types, subsistence activities, social-cultural phenomena, and ceremonial modes are likely to have occurred within their bounds. Consequently, excavation at these sites should produce a diverse material culture. Analysis of stylistic, technological, or source material characteristics of the artifacts compiled by the Hwy 45 project should contribute to the development and evaluation of existing and new culture history research themes.

Paleodemography and Archaeological Visibility

To date, archaeologists working in the region have generally assumed that the temporal distribution of archaeological sites along the river is a direct reflection of colonization patterns and population density in the Sacramento Valley region. For example, based on the absence of Sacramento Valley archaeological sites older than 4500 BP, the rarity of sites dating 4500-1100 BP, and the abundance of sites postdating 1100 BP, Dreyer (1984) and Deal (1987) argue that the valley floor was initially colonized only after 4500 BP and settlement intensified only after 1100 BP. Kowta also relied on this apparent demographic pattern when he proposed a sequence of entry for the Konkow, Patwin, and Nomlaki culminating in a conflation of these tribes in the valley region after 1100 BP (Kowta 1988). Even optimization models—which cast the dynamic relationship between a human population increase and change in diet breadth—borrow off the empirical pattern and assume that population forcing culminated after 1100 BP (e.g., Broughton 1988, 1994).

The intuitive appeal of these models is their ability to account for the empirical pattern itself, most sites along the river do in fact postdate 1100 BP. However, the models must also assume that valley resources were not desired for the first 9,000 years of human occupation, sponsoring intensive use only in the last 1,100 years. This is improbable given an environmental record which indicates a high density and diversity of high-ranked foods along the river corridor and a regional archaeological record which demonstrates that early populations were interested in exactly these foods (White et al. 2002). Further, the archaeological record of adjoining regions clearly shows increased population density and an increase in adaptive diversity throughout the early to mid-Holocene, and the river corridor should have been part of this pattern, if not among the earliest habitats colonized in the region. In light of these concerns, is it still reasonable to assume that the spatial and temporal distribution of archaeological sites along the river is prima facie evidence for prehistoric population? I think not. There must be something else affecting the spatial and temporal distribution of archaeological sites along the Sacramento River, something that has diminished and/or deleted the evidence for older occupation.

Holocene geomorphic processes, specifically cycles of floodplain formation and erosion, are likely responsible for configuring the available record of human occupation in the Sacramento Valley. This problem establishes a new goal for our geoarchaeological study: can we learn enough about Quaternary landscape formation along the Sacramento River to begin to predict the location and depositional context of subsurface archaeological deposits, particularly the early to mid-Holocene sites that, until now, have been missing from the record? If we become more skilled at identifying and investigating the limited geomorphic contexts where these older sites might be found, will our results offer a new understanding of the rate and sequence of habitat colonization in the Sacramento Valley?

Optimality Theory and Foraging Efficiency

The Hwy 45 sites are residential bases located in an area marked by high resource density and diversity. The sites yielded a broad range of direct and indirect indicators of prehistoric subsistence activity in the form of animal bones, plant remains, and the technology used to procure and process foods. The sites produced a set of well-defined chronological building blocks forming a long time series, and investigations were likely to produce reliable and meaningful evidence for change over time in prehistoric subsistence economy.

The most robust body of scholarship dedicated to this topic can be found in optimality theory derived from evolutionary ecology. Optimality theory assumes that human diet and technology was conditioned by the fundamental goal of energetic efficiency. Because resources are always limited across space and over time, human consumers seeking these resources form competitive relationships. In the context of this competition, greater success (economic and reproductive) is conveyed to individuals whose behavior optimizes their access to resources relative to all others seeking access. Optimality is measured by calculating the energetic efficiency of resources and whole diets. The efficiency of a resource is determined based on its net acquisition rate (NAR), the sum of energy expended in search, pursuit, and processing versus the energy gained in consumption. The theory assumes that foragers seek the most efficient diet possible, one that incurs the lowest expenditures for the highest gains. In order to consider the factors conditioning human diet, researchers have developed diet breadth models for different regions and periods, consisting of known economically significant resources ranked by NAR. Optimality theory makes a number of predictions about the scope and composition of diet: (1) that the most efficient resources were preferred by human foragers; (2) that diets were formed based on the relative availability of the most efficient foods; (3) that resources were added to the diet to the extent that they did not depress overall efficiency, and (4) that the addition of a given resource was controlled by the availability of higher ranked resources (J.M. Smith 1978; E.A. Smith 1979; Foley 1985).

With respect to local applications, anthropologists traditionally held that California Indians had an "affluent foraging" adaptation afforded by an environment supplied with a high density and diversity of vegetal foods. A significant change in thinking about this issue can be traced to M.A. Baumhoff's Ecological Determinants of Aboriginal California Populations (1963). Baumhoff classified the spatial distribution of Native American economic types in Northern California, identifying regions and subregions characterized by diets with distinct combinations of acorn-deer-fish staples. On the face of it, Baumhoff's taxonomy could be taken as supporting detail for the "affluent foraging" perspective. However, he also examined the relationship between population density and the seasonal and spatial structure of staple resources. After determining that climates and resource schedules acted to produce a food surplus in the fall (September-October) and deficit in the winter (November-February), he concluded that the winter deficit had fixed a "Malthusian" cap on Native American populations. Regional demography was mediated by the density of anadromous fish and acorns, representing the primary fall season staples appearing in quantities sufficient to store and—in part—mitigate the winter low (Baumhoff 1963:161).

Recent research has confirmed Baumhoff's link to demographic causation, and most investigators will now argue the more defensible ecological perspective, that a reliance on vegetal foods was forced by high population density (e.g., Cohen 1981; Basgall 1987). In other words, from the standpoint of optimality theory, California's ethnographic diets, dominated by high cost resources requiring significant handling time (organizational and technological investment), were a product of reduced foraging efficiency forced by an increase in human population density or other population:resource shifts.

Several examples of resource depression/decreased foraging efficiency have been identified in the Northern California prehistoric record. In the following review it should become clear that each example raises fundamental theoretical and empirical questions that can only be answered via the careful sampling of well-preserved deposits.

Intensification and Overharvest

Optimality models have given rise to a number of significant predictions for human organizational and evolutionary behavior, predictions that are still being explored by anthropologists, biologists, and archaeologists worldwide. However, of particular interest here are the implications of human population forcing. For example, given the inverse relationship that pertains between prey species rank and reproductive rate (larger animals take longer to reach reproductive maturity, gestate longer, have fewer offspring), then human population forcing is likely to result in depletion of high-ranked game species, with ensuing resource depression leading to diet and technological change (Charnov 1976; Charnov *et al.* 1976; Winterhalder *et al.* 1988).

One of the most important implications of the new models is a change in perception of the ecology of hunter-gatherers and their prey:

> Although the idea of hunter-gatherers living in harmony with nature was popular among anthropologists in the 1960s and 1970s, this is no longer the prevailing view, and it is now clear that traditional societies often overharvest their prey [FitzGibbon 1998:449].

Several examples of overharvest and impacts to prey species have been identified in the record of prehistoric coastal Northern California, including diminution of intertidal shellfish (White 1988), local extermination of marine mammal rookeries (Hildebrandt and Jones 1992), and diminution of estuarine sturgeon populations (Broughton 1997).

None of these examples pertain to the Sacramento Valley region. However, the Hwy 45 project is likely to produce significant new zooarchaeological and plant macrofossil records.

Will these records yield evidence of prehistoric human impacts to prey populations of the Sacramento Valley region?

Intensification and the Acorn Economy

Based on the analysis of stone grinding tools it is commonly held that California's distinctive acorn economy developed relatively late in time, just 2,500 years ago in Central California, and arriving substantially later in peripheral territories (e.g., Gould 1964; Cohen 1981; Basgall 1987). However, recent work in Clear Lake basin using a combination of geoarchaeology (to find well-preserved Archaic archaeological deposits) and extensive flotation analysis (for the recovery of plant macrofossils) found that the acorn economy was actually already in place by the end of the Lower Archaic. Acorns dominated vegetal food diets beginning as early as 7700 BP, and were used intensively thereafter (White et al. 2002).

A number of implications can be checked using the Hwy 45 finds. First, was early acorn intensification exclusive to Clear Lake basin or was it more widespread? By applying a similar combination of geoarchaeology and flotation techniques on the Hwy 45 project, will we also identify well-preserved Archaic components containing evidence of early acorn intensification?

Second, White notes that early use of acorns in Clear Lake basin indicates that either (a) demographic thresholds were reached at an earlier time depth in the basin than elsewhere in Central California and population models need to be revised, or (b) the food was higher ranked than currently credited and diet breadth models need to be recast. White favors both explanations, but focuses on the assumption that acorn use required multistage processing to produce and leach a fine flour. He suggests that alternative products and processing characterized the Archaic Period, involving methods that minimized handling costs. White proposes that acorns may have been simply treated with "red clay earth" and mulled (White et al. 2002:536), a strategy that can reduce tannic acid content by more than 75 percent without the need for high cost production of fine flour or leaching (see Johns and Duquette 1991). Will the Hwy 45 project find evidence of variable Archaic acorn preparation methods?

Third, contrary to existing assumptions about the use of Archaic ground stone tools, the Clear Lake basin findings also show that the hand stone and milling slab must have been the primary technology for processing acorns between 7700-2300 BP. Mortars and pestles were predominant only after 2300 BP, and were actually associated with a proportional *decrease* in use of acorns relative to other vegetal foods. White argues that the change after 2300 BP—increased mortar use and diminished acorn use—was the result of a change in product, a shift from bread to gruel and introduction of multistage processing and leaching to achieve a finer flour (White et al. 2002:536). Will the Hwy 45 Archaic deposits produce evidence that hand stones and milling slabs were used to process acorns, and will the shift from handstone and milling slab to mortar and pestle correlate with a shift in intensity of acorn use?

Intensification and Slow Water Fish

Broughton's CSU, Chico MA thesis *Archaeological Patterns of Prehistoric Fish Exploitation in the Sacramento Valley* evaluated the economics of prehistoric Sacramento River fisheries (Broughton 1988). Based on an argument that prey species NAR correlates closely to individual body size, Broughton created a tentative diet breadth model for the Sacramento Valley which ranked fish against other potential food sources, indicating that the fisheries in general probably had a lower caloric payoff than terrestrial animals such as artiodactyls (tule elk, deer, pronghorn) and even rabbits/hares. He examined a number of Sacramento River archaeological assemblages, assigning age to stratigraphic components then examining the archaeological faunal remains recovered from each component. He totalled the number of specimens identifiable to various taxonomic levels, and calculated "fish indices" consisting of the proportion of bones of fish versus bones of higher ranked game from each component. Because these data measured the relative importance of low-ranked game to high-ranked game in prehistoric diets, these data could then be used to speak to the relative efficiency of diets over time and across space in the study area. Broughton argued that the Archaic diets were characterized by a low proportion of fish to terrestrial game, while late prehistoric diets (post-1100 CAL BP) had a higher ratio of fish to terrestrial game, indicating a decline in foraging efficiency over time in the study area.

With respect to the validity and generality of Broughton's methods and findings, based on his research in Clear Lake basin, White has offered a variety of critiques and new analyses (White et al.

2002). White notes that there were significant differences in body size, seasonal encounter rate, and pursuit variables among the "slow-water" fishes, and that these differences are likely to have produced temporal and spatial variation in species-specific fish harvest that are more meaningful than a distinction between "fast-water" and "slow-water." White's second criticism goes to Broughton's assumption of the equivalency of prey body size and prey profitability. Broughton denies the economic significance of mass capture and models fish NAR based on individual capture using low-yield methods (Broughton 1994:502). Instead, White argues that harvest of the most important cyprinid species (hitch, splittail, and blackfish) was likely via low-cost mass capture methods, thus encumbering higher encounter rates, lower pursuit rates, and lower handling rates than those assumed by Broughton (White et al. 2002:506-512). Therefore, White argues, cyprinids had significantly higher profitability than assumed by Broughton. In fact, because the Clear Lake cyprinids were captured during stream spawning runs which took place during seasons when encounter rates for many higher ranked species were at seasonal ebbs, the cyprinid fisheries may have been:

> among the highest ranked resources available during their respective spawning seasons, spanning the spring to midsummer periods [White et al. 2002:512].

Notably, White found a pattern similar to that documented by Bayham and Johnson (1990) (see below), with intensive Archaic fisheries declining over time in favor of greater use of higher ranked artiodactyls (White *et al.* 2002:Figure 228).

Will the Hwy 45 results indicate a general difference between slow-water and fast-water fishes, or will they indicate significant inter-species variability in patterns of harvest and intensification? Will the Hwy 45 results show late fish exploitation or evidence for early and persistent use of fish?

Late Prehistoric Intensification

Broughton also conducted a more general study of "*Late Holocene Resource Intensification in the Sacramento Valley, California: The Vertebrate Evidence*" (Broughton 1994). Faunal assemblages were examined from nine sites spanning from Red Bluff on the north to Stockton on the south, and ranging in age from the Middle Archaic to the terminal prehistoric period. Adhering to themes developed in his thesis, Broughton focused on the issue of foraging efficiency, holding to an assumption of the equivalency of prey body size and prey profitability, and again denying the economic significance of mass capture.

Broughton recast his argument regarding fish, describing the taxa as "resident" and "anadromous." Measured in terms of average body size, he argued, all species of resident fish (mostly Cyprinidae and Percidae) are smaller than any terrestrial game species. On the other hand, anadromous fishes (Salmonids and white sturgeon), because they are large anyway and enter the river as spawning adults, are on average significantly larger than the resident fish and comparable in size to small to mid-sized terrestrial game. He also made a distinction between artiodactyls and lagomorphs, representing the most common taxa of large and small game, respectively.

Armed with these observations, Broughton compiled information on the sum of identifiable bones, or number of individual specimens (NISP), representing each taxon. He then calculated a series of "indices" consisting of proportional measures of: (a) bones of mammals relative to resident fish [NISP mammals/mammal+resident fish], (b) bones of artiodactyls relative to lagomorphs [NISP artiodactyls/artiodactyls+lagomorphs], and (c) bones of anadromous fish relative to resident fish [NISP anadromous fish/anadromous fish+resident fish]. These indices were plotted against the average age of each site, producing a statistically valid correlation for the mammal/resident fish index only, an index value that decreased with time, indicating that, over time, resident fish made up a progressively larger part of the diet relative mammals. Broughton also found that "the relative abundance of large anadromous fish in archaeological sites increases with latitude" (Broughton 1994:509). In other words, the farther upstream the archaeological site, the higher the percentage of salmon of all fish remains. Broughton offered no explanation of this variation, suggesting only that it was likely a product of variation in river discharge and due further study. Overall, Broughton concluded:

> [I]nsofar as prey size is a valid proxy measure of prey rank, long-term patterns in vertebrate utilization in the Sacramento Valley provide evidence of resource intensification [Broughton 1994:510].

Based on Broughton's findings, our Hwy 45 investigation should find an increase over time in the relative proportion of fish to game, and a low proportion of anadromous fish relative to resident fish.

Regional Variation in Late Prehistoric Intensification

Bayham and Johnson (1990) commented on the faunal assemblages from five Chico-area archaeological sites, including three sites along the Sacramento River (Gle-101, Gle-105, But-12, and But-288), one site in the Sierra foothills east of Chico (But-7), and one site located on the plains between the river and foothills (But-288). Though dominated by late prehistoric components, the sites in aggregate spanned from the Upper Archaic to the Emergent, 2500-200 BP. Bayham and Johnson found significant differences in the subsistence economy of each environmental zone (river, plains, and foothills), indicating that environment was the primary factor determining spatial variation. There was some indication of economic change in all three environmental zones, but samples were insufficient to determine if there was a common pattern of economic change over time in all three zones. Bayham and Johnson then refocused attention to the site with the most robust faunal record, But-288 on the plains north of Chico. Deal's thorough MA thesis on the site had documented two distinct occupations, an Archaic component (1100-2500 CAL BP) at a depth of 8-16 ft below surface and an Emergent component (1100 CAL BP to contact) at a depth of 0-8 ft below surface (Deal 1987).

Bayham and Johnson acknowledged the prevailing theory of declining foraging efficiency in Central California, and found one of the theory's predictions supported by the But-288 record. There was an increase in the diversity of species used over time, with many small bodied animals added to the diet after 1100 CAL BP. Generally, optimality models would predict that diets containing a higher proportion of low ranked taxa would also be marked by lower dietary efficiency, supporting the inference that dietary efficiency decreased after 1100 CAL BP at this site (Bayham and Johnson 1990). However, species diversity is at best an indirect measure of diet efficiency, and the question is better addressed by studying the relative proportion of animals of different ranks in the diet. Performing this test, Bayham and Johnson (1990) found that, even though there was a greater diversity of small bodied animals exploited over time (especially fish and birds), in fact the But-288 data showed an overall decline in the intensity of use of small game species relative to higher ranked artiodactyls, especially deer. Foraging efficiency actually increased over time, reaching its zenith after 1100 CAL BP when most researchers would expect foraging efficiency to have been at its lowest ebb.

In the context of their 1990 study, Bayham and Johnson do not offer an explanation of this interesting and counter-intuitive result, mentioning only that it raises a number of questions due additional study (1990:150-152). Further, and setting aside the relative strengths and weaknesses of Broughton's arguments (see below), the implied disagreement between Broughton's (1988, 1994) findings versus Bayham's and Johnson's (1990) findings has not been resolved. Will the Hwy 45 results confirm the existence of a distinctive pattern of increased foraging efficiency after 1100 CAL BP (per Bayham and Johnson 1990), or will our results indicate reduced foraging efficiency (per Basgall 1987 and Broughton 1988, 1994)? If our study finds a pattern consistent with the But-288 findings, can we show that it is widespread across the region? Will our study or some independent model explain this unexpected result?

CORU, THE COLUSA COUNTY COURTHOUSE SITE, CA-COL-246/H

Col-246/H Discovery and Consultation

The Colusa County Courthouse historic/prehistoric site, Ca-Col-245/H, has long been locally recognized for its heritage significance. The courthouse, which was probably built atop the remains of the Patwin village of *Coru*, resides at the center of the Semple brother's original Colusa city blocks laid out in 1869. A rich ethnographic and historical literature describes *Coru* and the early townsite (see **Cultural Context**). Nevertheless, the location has had little or no professional attention. The report of prefield studies indicated no cultural resource concerns or special provisions for the location (Foster Wheeler 1999), and prior to our effort no site record had been filed or trinomial assigned. However, aware of the potential for historical or prehistoric cultural deposits, our team recommended that cultural monitors be present during any ground disturbing activity anywhere within the City of Colusa.

On Tuesday, 2 February 2000, Kiewit Pacific, Inc. teams began construction of a mounting pit for a boring machine on the south side of Market Street between 7th and 8th Streets, directly in front of the Colusa County Courthouse (Figure 24). Construction began with the removal of approximately 24 sidewalk sections and initial excavation of the pit. The pit first encountered a 6-8 inch thick layer of gravel, and below this a gravelly but dark soil was found. The monitoring team, consisting of an Archaeological Research Program archaeologist and a Cortina Patwin cultural monitor, identified cultural materials in the dark, gravelly soil. A combination of Native American and historical artifacts was found. Construction was halted, and on 4 February, the senior author and Kesner Flores visited the discovery. Based on the available exposure, it was determined that the dark, gravelly soil indeed contained cultural material but was a redeposited fill. However, ongoing research revealed new areas of significance for the redeposit and the potential for significant undisturbed deposits at a greater depth.

The precise dimensions of the site could not be established based on pedestrian survey. Only sparse cultural materials were observed in the few visible patches of soil, limited to a few garden plots in the Courthouse grounds. However, it was suspected that the surface area of the site was quite large. We dispatched teams to consult historical and ethnographic sources at the Colusa County Records office (housed in the Courthouse), the Colusa County Library, and the Northeastern California Special Collections of the Merriam Library, California State University, Chico. This research produced documents relating to early town history and several photos showing the evolution of the Courthouse building and grounds from the 1880s through the early 20th century, providing context for the historical artifacts found in the pit. Ethnographic research confirmed that the prehistoric materials were probably traces of the Patwin village of *Coru*, the residence of the *Corusi* Indians, and the place name of origin for

Figure 24: View looking south across Market Street toward the sidewalk excavation. Arrows bracket exposure.

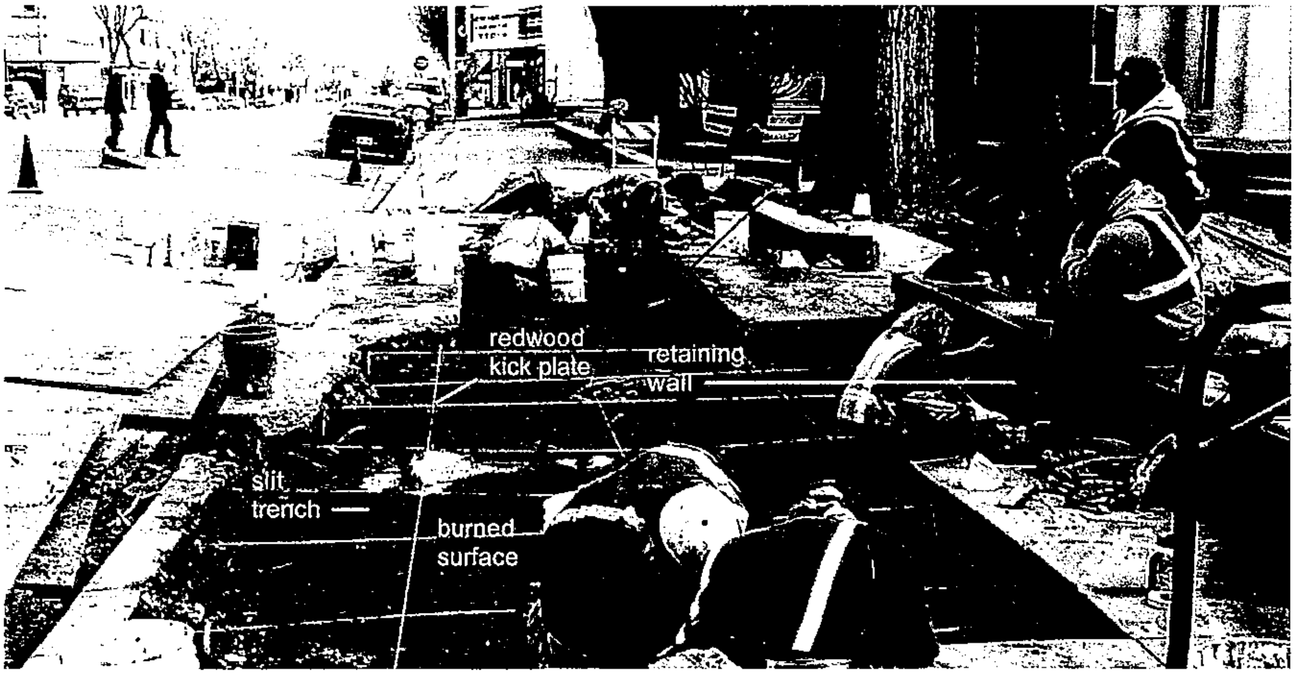


Figure 25: View looking east down the Market Street sidewalk showing the full excavation exposure, 1 March 2000.

"Colusa" (see Cultural Context). Records indicated that the village of *Coru* was inhabited through the mid 19th century, then decimated by the epidemic of 1833 and probably abandoned in 1834. However, the site may have retained some continued Indian occupation through 1844, when the land was obtained in the "Colus grant" by John Bidwell, who indicated that "the Indian village then on the site of Colusa was one of the largest in the valley" (Bidwell *in* Rogers 1891:41).

In 1850, the Semple brothers fixed the town site of "Colusa" atop the *Coru* mound. In 1861, the Courthouse was built at the center of this town site. Thus, our research revealed continuous occupation of *Coru*/Colusa, and an essentially seamless transition from Native American through Euroamerican use. The coring pit produced artifacts that could be tied to each of these phases, as well as items indicating Native American use of the site dating back up to approximately 1,100 years, including an obsidian Gunther-barbed arrowpoint and a center-drilled *Olivella* sequin bead.

With regard to Native American significance, on conferring with Kesner Flores it was determined that while the deposit lacked integrity of context it did retain integrity of origin because it was derived from a single occupation deposit and could be linked to the village of *Coru*. Further, due to the presence of a number of obvious signatures of occupation, we judged it likely that human skeletal remains would be present within the redeposit. In fact, local reports indicated that an "Indian mound" had been levelled in advance of Courthouse construction, and therefore the location could yield the base of the truncated mound, raising the possibility of the presence of intact graves and other features typical of mound subsoils. With respect to historical significance, the pit produced artifacts spanning from the mid 19th century to the mid 20th century, ranging in age from the origin of the City of Colusa up to the WWII era. We concluded that the soils beneath the sidewalk could contain historical features significant to the early settlement and development of the Colusa townsite.

While our investigation was originally planned for the drill pit impact only, Kiewit Pacific, Inc. reached an agreement with the City of Colusa to replace all damaged sidewalk sections, requiring excavation and placement of new fill materials in a larger area. Therefore, archaeological mitigation was extended to include the hand excavation and screening of cultural deposits contained below the entire proposed sidewalk replacement, a total of 37 3x3 ft sidewalk sections (Figures 25 and 26).

Col-246/H Field Work

The Colusa County Courthouse sidewalk dig took place between Thursday, 24 February

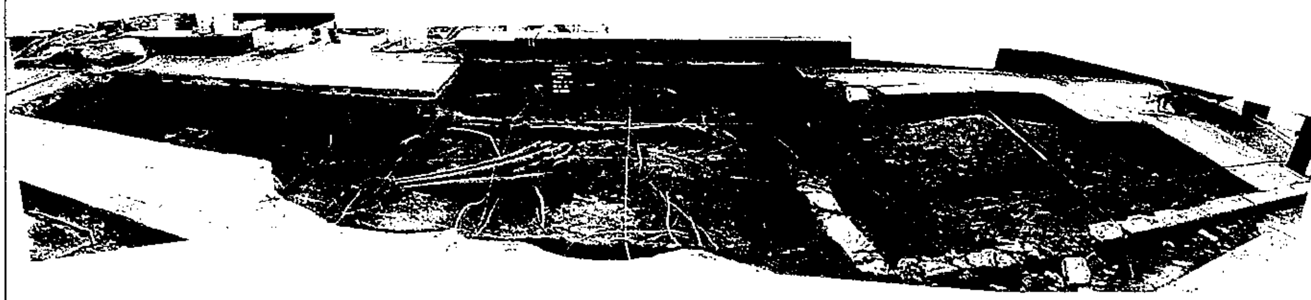


Figure 26: Composite view of the Market Street sidewalk exposure at the conclusion of excavation.

through Thursday, 2 March 2000. The area designated for excavation was bracketed by the Market Street curb on the north side and a retaining wall around the courthouse grounds on the south side. A total of 37 3x3 ft sidewalk sections were removed, opening an irregular area measuring a maximum of 39 ft long and 12 ft wide, and totaling 333 ft^2 (Figure 26). A level datum was established at the corner of a sidewalk section. Owing to the predominance of historical deposits, all measurements were in English rule except for certain plan and profile drawings.

The entire exposure was excavated stratigraphically to the depth of culturally sterile soil, between 7.0-10.0 inches below datum. In addition, a 2 ft wide slit trench was dug to bisect the deposits to a maximum depth of 2.0 ft below surface. An estimated 210 ft^3 was dug from the exposure and an additional 16.0 ft^3 was dug from the slit trench, for a total of 226 ft^3 (6.4 m^3).

All deposits were screened. Disturbed spoils from the initial boring pit excavation, representing about one-third of the total excavated volume, were passed through 1/4" shaker screens. Hand excavated fill soils, representing about two-thirds of the excavated volume, were transported in buckets to a field water-screening outfit established in the Kiewit Pacific, Inc. storage yard located in the Colusa County Fairgrounds in Colusa. Bucketed soils were water-screened through 1/8" screens and the contents were dried, bucketed, and transported back to the Archaeology Laboratory, CSU Chico, for further sorting, cataloging, and analysis.

Col-246/H Stratigraphy

Stratigraphy

The cultural deposit was composed of a combination of historical fill and historical surfaces. No intact prehistoric soils were encountered. Evidently, the location had a long history as a sidewalk, beginning as a 19th century boardwalk and continuing as a concrete sidewalk to the present day.

Seven separate stratigraphic units were observed, numbered Stratum 1 - Stratum 7. These units were conceived of in three dimensions and numbered in order of relative age, from oldest to youngest, established based on vertical stratigraphic relationships observed in various parts of the exposure. Figure 28 offers a profile of the slit trench west wall, showing the stratigraphic relationship between the fill and certain features. The units and their estimated age were as follows:

Stratum 7 (S7). Not all of the sidewalk sections were of the same age, with some replaced for 20th century underground utility emplacements. Stratum S7 was composed of a series of mid to late 20th century intrusive trenches, sidewalk patches, and utility emplacements cutting through Stratum 1 through Stratum 6. The two most recent features were found on the west end of the exposure (Figure 27): (1) a narrow, 6" wide, 6" deep slit trench crosscutting the west end of the exposure containing an abandoned 2" conduit pipe holding a pair of high capacity (probably 220-volt) electrical wires, probably for a former street light. The slit trench was filled with a dirt and gravel fill containing the same mixed Native American and historical material common to the surrounding deposits, but also yielding a few mid to late 20th century artifacts, and; (2) a rectangular pit filled with sterile, sandy commercial gravel dominating the northwest quadrant of the exposure—near the street corner—which was presumably for an underground utility. The latter feature was not further explored.

Stratum 6 (S6). The active sidewalk was assigned to Stratum 6, including the concrete slab itself (S6b) and the culturally sterile gravel fill (S6a) immediately below. The sidewalk was cracked and erratic due root growth and clay swell, and had been patched and replaced in some sections. Throughout the exposure, the sidewalk rested on a 2-4 inch thick bed of clean, culturally sterile gravel. No artifacts were found in the gravel fill (S6a) to firmly fix the age of the sidewalk. However, based on an analysis of historical photos of the courthouse grounds, we concluded that the sidewalk was built after 1915. As noted above, it appears that some of the sidewalk patches were less than 40 years old (S7).

Stratum 5 (S5). Stratum 5 was composed of a lens-shaped 8 inch thick bed of culturally sterile sand found directly beneath S6a, limited to the two sidewalk strips nearest the retaining wall, S4b. This stratum was probably a fill placed sometime after the retaining wall was built but prior to the construction of the current sidewalk alignment, and may indicate a former, more narrow concrete sidewalk alignment. Excavation for this fill clearly cut through S4a, fixing S5 as postdating the retaining wall.

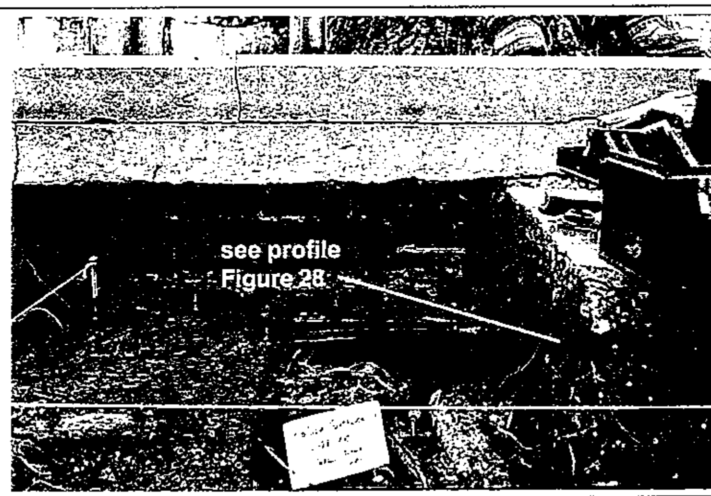
Stratum 4 (S4). The decorative Courthouse retaining wall was assigned to Stratum S4, including the construction trench dug for the wall (S4a) and the wall itself (S4b). The construction trench appears to have been compacted but not otherwise prepared and the lowermost concourse of bricks resides directly on clay soil with no fill material in evidence. The wall was composed of a footing made of single tier or concourse of horizontally-laid bricks. The wall was composed of a seven tier core of mortared bricks with the upper three tiers above ground and encased in a concrete skirt and surmounted by a bevelled granite capstone (Figure 27). The construction trench fill was composed of mixed gravel and culturally sterile soil. Based on an analysis of historical photos of the Courthouse, the retaining wall was built between 1880 and 1915. Notably, a portion of the retaining wall brick footing exposed in our slit trench sidewall revealed ongoing damage from tree roots undermining the wall (Figure 30).

Stratum 3 (S3). A mixed gravel and Native American midden fill was found directly below S5a and S6a. This midden fill had been cut through by excavation of both the retaining wall trench (S4a) and the localized sand lens (S5), indicating it was laid before 1880. S3 was composed of a midden material probably originating from the *Coru* mound site described above, mixed with fill gravel. S3 contained a significant Native American cultural assemblage as well as a number of historical artifacts. Based on field observations, it appeared that the fill was placed in advance of sidewalk construction, perhaps sidewalk S5 or another earlier fixture removed before construction of S6. The historical artifacts dated from the mid to late 19th century, indicating the fill included material from the earliest phases of the Colusa town site, dating this layer to between 1856-1880.

Stratum 2 (S2). Stratum 2 was associated with the surface of the parent soil layer beneath the first fill, S3. S2 was composed of the soil layer itself (S2a) a burned area on the west-central end of the exposure (S2b), and a narrow slit trench and redwood plank paralleling the burn (S2c). Stratum S2 produced an extensive historical artifact inventory, an inventory which indicates an interesting and unusual origin. Stratum S2 was bracketed on the north side by the remains of an alignment of 2x6 inch redwood planks laid on edge and oriented precisely parallel with the current sidewalk, S6b. A single 4x4 inch post set in a pit on

Figure 27: Feature S4, the courthouse retaining wall visible in the south wall of our exposure, with the lower concourse of bricks exposed in the slit trench. The toolbox rests on the modern sidewalk.

Tree roots from an adjoining landscape box in the northwest corner of the courthouse grounds mass below the bricks and appear to be responsible for damage to the lower brick concourse.



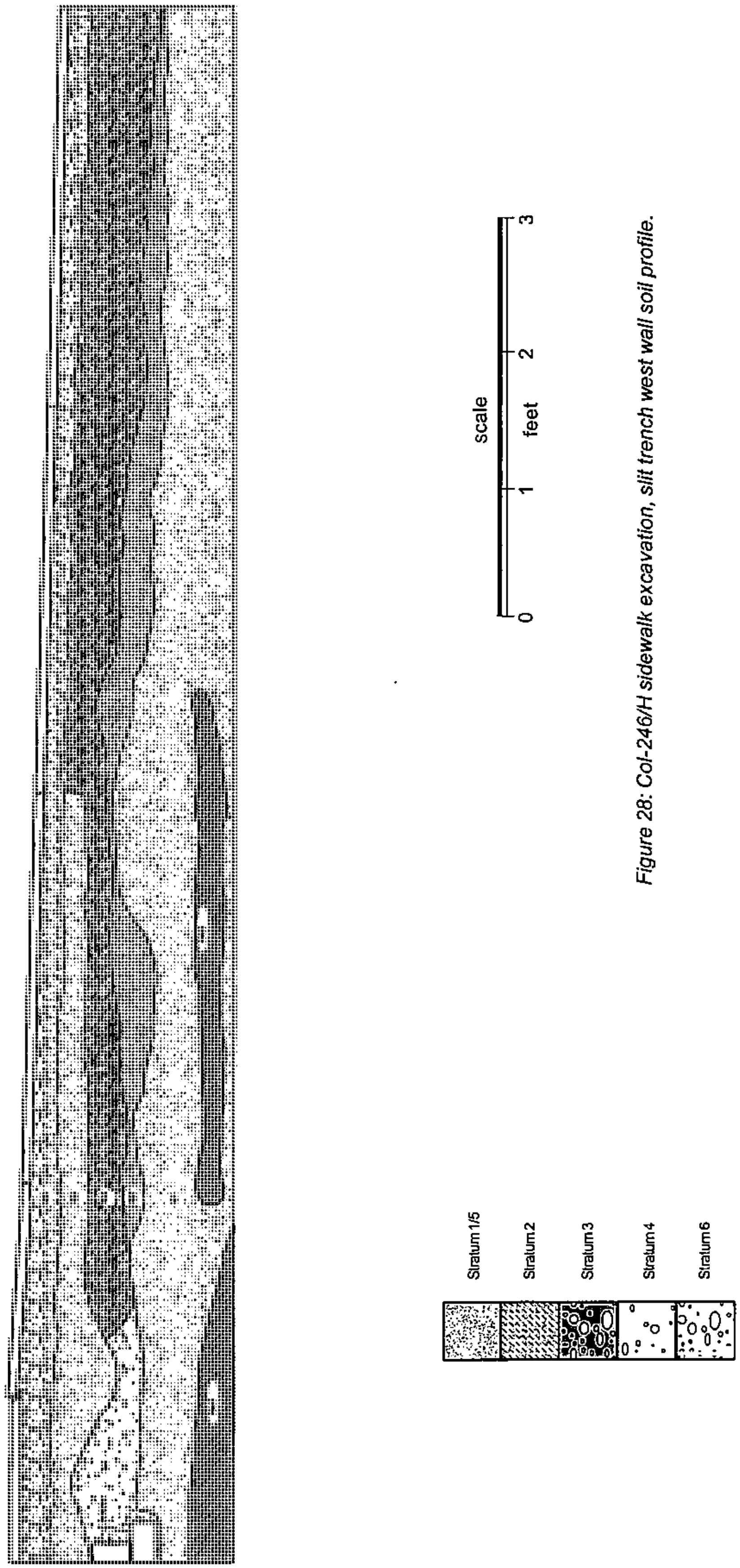


Figure 28: Col-246/H sidewalk excavation, slit trench west wall soil profile.

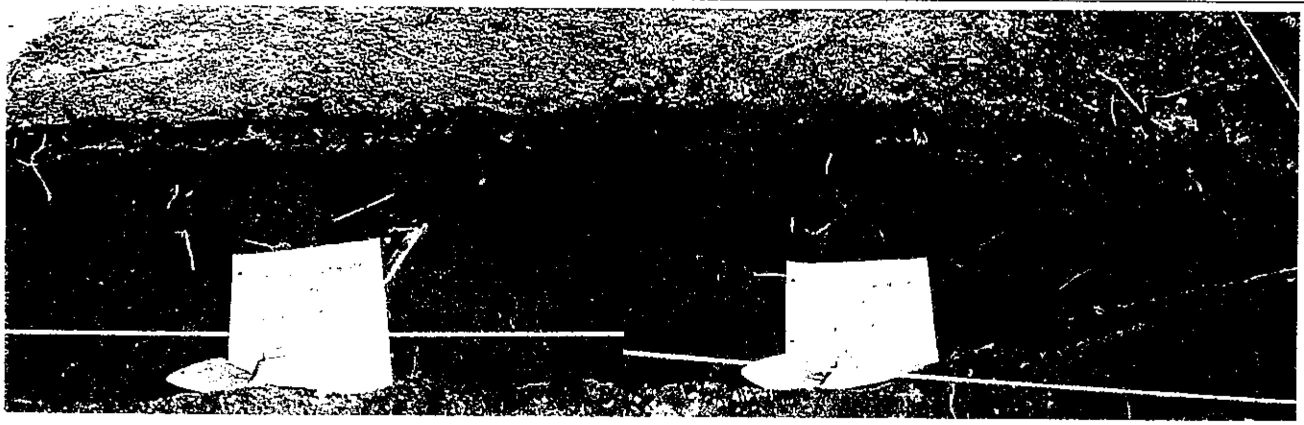


Figure 29: Stratum S2a exposed in the east slit trench wall profile. Note the evidence of an intense burn and the tapered slope to the left (toward Market Street) and right (toward the Courthouse). The redwood kick plate is 1 ft to the left of the photo frame.

the street (north) side of the plank was probably used to tie plank sections, or may have been the base of a hitching post. The planks were set in a shallow, 4 inch deep, 6 inch wide slit trench containing S2b fill. The planks were judged to represent the kick plate for a plank sidewalk which predated the concrete walks, and probably dated sometime between the mid-1850s through 1880. The contact between S2 and S3 was quite sharp, and S3 broke away easily, laying open the original, historical S2 surface. The S2A burned zone on the west-central end of the exposure appeared to have been a soil "baked" in place, and was judged to represent a fire which had engulfed the plank walkway and ended its use-life. The dates and nature of the feature were consistent with the September, 1855 fire which destroyed downtown Colusa (see Culture History).

Thus, we understood that Stratum S2A could represent something of a "time capsule" of early Colusa history. We carefully stripped out the S2 features and passed the soils through 1/8" wet screens. A variety of coins and a number of toy marbles and small metal, glass, and ceramic fragments dating to the 1850s and 1860s were recovered, mostly from fine upper sediments, and these were taken to represent materials which fell through cracks in the plank walkway. The unburned portions of Stratum S2A also produced cultural material reflecting post-contact Native American occupation and a wide range of mid 19th century glass, ceramic, metal, and bone historical artifacts, which preliminary analysis indicates were refuse from both commercial (restaurant or hotel) and domestic sources. Nearly all of the historical items can be interpreted as having an American-Euroamerican ethnic origin, with the exception of a few items of Chinese ceramics and contact-period Native American glass trade beads.

Stratum 1 (S1). Stratum 1 was composed of a culturally sterile light tan silty clay substrate. An excavation probe to 5 ft below surface found no soil change and no cultural material.

Figure 30: Feature S2c, the fragile, deteriorated remains of the edge of a redwood plank found in a narrow slit trench bordering the burn area (S2a). Notably, the plank, fixed on edge, was precisely aligned with the existing sidewalk, but one sidewalk tile section in from the current gutter. The plank was stratigraphically associated with the burned surface (Figure 29), and is interpreted as a kick plate for a boardwalk burned in the Colusa fire of 5 September, 1855.

A	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
BACKDIRT	153	555.8	160	234.1	n/a	592.4	1178	761.6	0	2	37
3B	25	20.9	0	0.0	n/a	2.8	24	11.6	0	0	0
3A	824	6318.7	100	770.0	n/a	579.1	2573	653.1	14	0	31
2B	45	120.3	0	0.0	n/a	72.6	175	373.3	0	0	0
2A	340	330.9	2762	193.6	n/a	149.5	311	143.2	0	0	0

B	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
BACKDIRT	50.9	185.0	53.3	78.0	n/a	197.3	392.3	253.6	0	0.67	12.32
3B	8.3	7.0	0.0	0.0	n/a	0.9	8.0	3.9	0	0	0
3A	123.6	947.8	15.0	115.5	n/a	86.9	386.0	98.0	2.10	0	4.65
2B	3.3	8.7	0.0	0.0	n/a	5.3	12.7	27.1	0	0	0
2A	45.9	44.7	372.9	26.1	n/a	20.2	42.0	19.3	0	0	0

Table 2: Distribution of Col-246/H cultural constituents per stratum, 1/4" screen sample, weight in grams. A - actual count, B - per 0.1 m³.

Col-246/H Cultural Constituents

Two Col-246/H strata, S2 and S3, produced cultural material associated with four feature/substrata, S2A, S2B, S3A, and S3B. Table 2 shows the distribution of cultural constituents per substratum including total recovery and converted to per 0.1 m^3, the latter representing the basic unit of observation used for all four excavated sites.

Stratum 2, the boardwalk burn layer dating to September, 1855, yielded a moderate density of cultural material, primarily fired clay resulting from the burn. Small, fragmentary pieces of historical ceramics, glass, metal, and bone were recovered, almost exclusively associated with the ash layer itself (S2A). No exclusively prehistoric cultural materials were found associated with Stratum 2.

Stratum 3, the post-1855 fill probably deposited between 1859-1861 during rebuilding of the Colusa downtown and construction of the current Colusa County Courthouse, yielded negligible cultural material from the east end of the exposure (3B), but a very high density from the west end (3A). The assemblage consisted of a mixture of mid to late 19th century ceramics, glass, metal, and bone and prehistoric cultural material derived from the Coru mound material used as fill. The Stratum 3 historic artifacts were dominated by refuse from commercial eateries.

Col-246/H Dating Evidence

With respect to the prehistoric assemblage, no radiocarbon determinations were run for Col-246/H. However, a total of 45 obsidian specimens from Stratum 3 fill and the aggregate drill pit backdirt was submitted for obsidian source determination and obsidian hydration studies. A total of 29 Napa Valley obsidian rim values averaged 1.7 microns (SD=0.40), and 15 Borax Lake obsidian rim values averaged 2.9 microns (SD=1.44), consistent with a late prehistoric age assignment.

Dates on the historical features can be determined by a combination of background research, contextual evidence, and age assignments for associated artifacts, the latter appearing in subsequent chapters.

Summary of Col-246/H
Cultural Components

The Col-246/H investigation produced evidence of two stratigraphically mixed cultural components:

Stratum 2. Stratum 2 was associated with a section of plank sidewalk dating between the mid-1850s to the 1880s. The deposit included plank and post remnants and a distinct burned layer of ultra-fine soil probably representing dirt that sifted between the planks and then burned in place by an 1855 fire which destoryed the young townsite. The burn layer and associated deposits produced coins, marbles, and small metal, glass, and ceramic fragments derived from both commercial (restaurant or hotel) and domestic sources.

Stratum 3. Stratum 3 was a mixed fill containing redeposited midden probably derived from the *Coru* mound. A number of Native American artifacts attributable to Augustine Pattern Phase 2b, including small arrowpoints and clamshell disk beads, were recovered from this deposit.

Colusa M-7 Site, CA-Col-245/H

Col-245/H Discovery and Consultation

On 1 February 2000 an Archaeological Research Program Monitor was present at a bore receiving pit construction site located in the City of Colusa, on the south side of Market Street, on the sidewalk approximately 150 ft west of the junction of Market and 7th. At that time, a bore receiving pit was dug to a depth no greater than 4 ft below the sidewalk surface. No cultural materials were identified, and Kiewit Pacific, Inc. crews were given clearance to continue operations. Subsequently, work at this location was delayed due to discovery of cultural materials and ensuing archaeological mitigation at the Colusa Courthouse bore pit two blocks to the east (see above).

On Saturday, 18 March 2000, an archaeological monitor and Native American monitor were again present at the Market and 7th location as work resumed. At that time, Kiewit Pacific, Inc. determined to construct a pit vault at the Market and 7th location. A backhoe was used to remove soil. An additional 6 ft of soil was removed to a maximum depth of approximately 10 ft below surface (Figure 31). In the course of this new excavation, a cultural deposit including possible human bones was exposed, and thus the monitors called a halt to construction activity. In the meantime, spoils from the pit had been loaded into a dump truck for transport to yard space which Kiewit Pacific, Inc. had rented at the Colusa County Fairgrounds in the City of Colusa. At least one truckload of dirt was taken to this yard and dumped in a single, discrete pile.

Also on 18 March, cultural monitors visited the Colusa County fairground to confirm the disposition of the spoils. The Principal Investigator also visited the new discovery at Market and 7th and determined that the vault had disturbed a buried prehistoric midden deposit and bones which were determined to be a partial skeleton of an adult Native American. The skeleton had been impacted by the construction excavation, and it appeared that one-half or less of the skeleton remained intact in the wall of the pit. Archaeological Research Program staff immediately contacted Kesner Flores and the Colusa County Sheriff-Coroner. Flores visited the site and consulted on mitigation procedures.

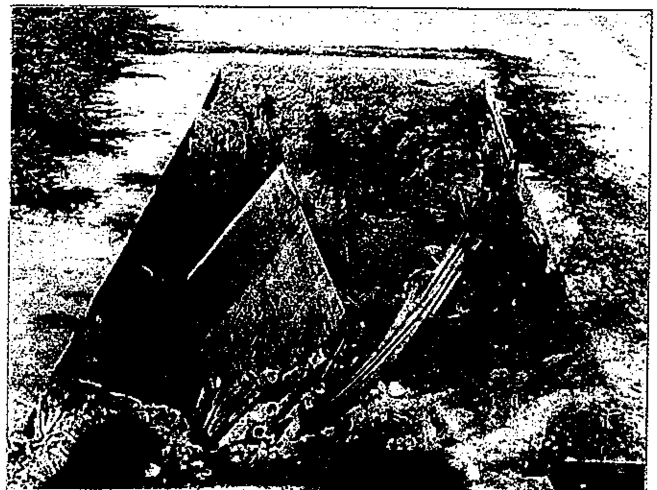


Figure 31: The vault pit at Col-246/H shortly after discovery. Burial #1 is at the base of the pit behind the plywood

Figure 32: The vault pit at the conclusion of the excavation, the author stands in a test pit dug to 12.5 feet (381 cm) below the sidewalk surface. Both photos look west toward the west wall.

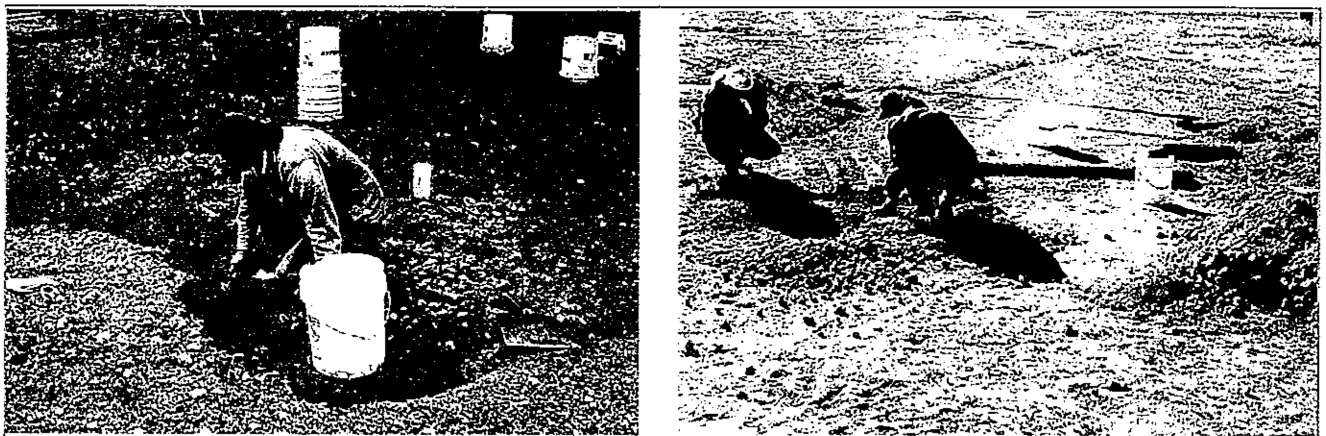


Figure 33: Careful, systematic troweling in the Colusa County Fairgrounds parking lot redeposit, April, 2000.

We recommended that work be stopped in the vicinity of the finds until such time that a treatment plan could be approved and implemented. The proposed treatment would include careful sampling of all midden deposits found within the existing vault pit and excavation into the vault walls to remove exposed skeletal remains or other samples as needed. Further, we recommended that the Fairgrounds spoils pile be checked and thoroughly screened should human bone be implied or found.

M-7 Field Work

Field work at Col-246/H took place between Wednesday, 5 April through Wednesday, 12 April 2000. The vault pit was framed by a rectangular hole cut through the sidewalk measuring 180x560 cm in plan view (10.8 m^2) (Figure 31). The backhoe work had scooped out soil in a smaller oval-shaped pit measuring approximately 120x450 cm. The initial backhoe excavation went to the maximum depth of 200 cm below the sidewalk surface (bsw) near the center of the west end of the vault, but just 150 cm bsw on the east end. The backhoe had dislodged a large amount of material still contained in the vault pit. An estimated 15.0 m^3 of loose soil still contained in the pit was removed by hand and screened through 1/4 inch shaker screens for cultural material.

In addition, soil was removed stratigraphically from each wall, bringing the walls square to the sidewalk cut (Figure 32). An estimated 17.8 m^3 of soil was removed from the standing walls and screened for cultural material. All deposits were screened through 1/4 inch shaker screens. Screening spoils were transported in buckets to a field water-screening outfit established at CSU, Chico. Bucketed spoils were then wet screened through 1/4 inch hardware cloth. A number of soil samples were also collected from each of the identified strata in preparation for ^{14}C dating, soil analysis, and flotation studies. The site was visited by the project geoarchaeologist who studied the exposure and recorded her observations (see below).

Fairgrounds Field Work and the Disposition and Recovery of Burial 1

On conclusion of the field work described above, we proposed no further archaeological mitigation measures for the Market and 7th bore vault, and construction activity at the vault pit was authorized to proceed. However, additional mitigation measures were necessary for proper and respectful treatment of the Fairgrounds spoils.

Burial 1 had been heavily damaged by the backhoe work, and only the calvarium, sacrum and pubi, tibiae and fibulae, and tarsals and foot phalanges still occurred intact in the ground. The Patwin MLD and cultural monitors asked our team to locate all the bones in hopes of reassembling the disturbed burial. In an effort to initiate the second phase of this work, on 6 April 2000, the author visited the Kiewit Pacific, Inc. Colusa County Fairgrounds yard space and found that the M-7 spoils pile had been removed or disturbed. We sought and received information about the disposition of the pile, and learned that a frontloader or skiploader had been used to spread the pile in an existing dirt parking area and then gravel was spread back over the spoils. On 7 April, 2000, team members visited the parking area and dug a series of small scrape probes. We found the M-7 spoils covered an area measuring a minimum of 80x20 ft, and the layer was between 2-6 inches thick across this area. In consultation with MLD Kesner Flores, a course of action was determined, including careful and systematic scrapes through all affected portions of the parking lot and recovery of all associated cultural materials. This study was approved, and the Fairgrounds recovery effort (Figure 33) took place between 6 April to 2 May, 2000.

Analysis of Burial 1 showed that the individual had perimortem trauma to one of the recovered feet and some compensatory pathologies on other bones of both feet, making it possible that, before death, the individual had trauma to the legs sufficient to make it difficult to bend the legs (see **Burials and Human Remains**). Consistent with this finding, the in situ bones at the vault pit indicated that the burial was originally interred in an unusual fashion, with the skull within 10 cm and fully facing the anterior aspect of the tibiae and fibulae. Based on the pattern of in situ bone and the pattern of recovery of bone from the backhoe spoils still contained in the pit, it appeared that the individual was folded and bent tightly at the waist with the legs straight.

Analysis of backhoe scars on the vault wall and floor suggests that the vault pit was first dug to depth (approximately 150 cm below surface) on the east end, then dirt from the west end was pulled back and compacted into the vacant east end. Backhoe scars and the pattern of fresh breaks on in situ and dislodged bone showed that at least two backhoe scoops passed through the midsection of Burial 1, the first through the lower trunk—removing the illiae and proximal femorae—and the second through the upper trunk—removing the vertebrae, ribs, scapulae, clavicles, one humerus, and mandible. Excavation at the vault pit found displaced bones incorporated into the material packed back into the east end. However, even after clearing the entire vault pit the skeleton was still substantially incomplete, and the pattern of bone recovery suggested that bones were still contained in the backhoe spoils removed to the Colusa County Fairgrounds.

Fiargrounds field work resulted in the recovery of 109 pieces of bone, all quite fragmentary and weighing an average of 1.2 gm each. Approximately one-third of these bone fragments could be attributed to Burial 1, and many of these could be reconstructed to form larger fragments, many of which could be matched to fragments from the vault pit. Burial 1 bones as yet unaccounted for included both illiae, both proximal femorae, some thoracic and lumbar vertebrae, all cervical vertebrae, some ribs, the lower skull including the mandible, the clavicles and scapulae, and one humerus (see **Burials and Human Remains**).

Col-245/H Stratigraphy

Figure 34 provides an illustration and photograph of the vault pit west wall. A total of eight separate, well defined strata was observed, numbered youngest to oldest, Stratum 1 through Stratum 8.

Stratum 1 (S1). Stratum 1, 0-10 cm bsw, was the modern concrete sidewalk.

Stratum 2 (S2). Stratum 2, 10-30 cm bsw, was the gravel fill below the active sidewalk. This fill appeared to be approximately the same age as the fill found beneath the courthouse sidewalk, and here produced a variety of historical artifacts including mid 20th century glassware and ceramics and a 1936 buffalo-head nickel with considerable pocket wear.

Stratum 3 (S3). Stratum 3, 30-80 cm bsw, was composed of a medium brown silty loam with weak to moderate angular, blocky soil structure. The soil breaks to crumbs, and is composed of coarse to very coarse size peds with a friable consistency. The soil contained less than 10 percent gravels, had many fine roots and charcoal flecks. This did not appear to be a midden, but may have included graded or redeposited midden used as fill. S3 produced a low density of mixed historical and prehistoric material. Historical items included mid to late 19th century metal and glass fragments as well as sheep, cow and other butchered bone consistent with residential debris. Prehistoric cultural material included freshwater bivalve (probably *Gonidea angulata*) shell, animal bone, and obsidian flakes and tools. The base of S3 had a gradual, wavy boundary with S4, indicating that S3 was a soil which developed on top of a stable S4 surface.

Stratum 4 (S4). Stratum 4, 60-110 cm bsw, was an ABkb, light brown loam with weak to moderate angular blocky structure and friable peds. Constituents included less than 10 percent gravels. S4 contained calcium carbonate veins and partial oxidation. There was evidence of extensive bioturbation. S4 was most likely deposited by slow-moving Sacramento River overflow, and the deposits had a series of characteristics consistent

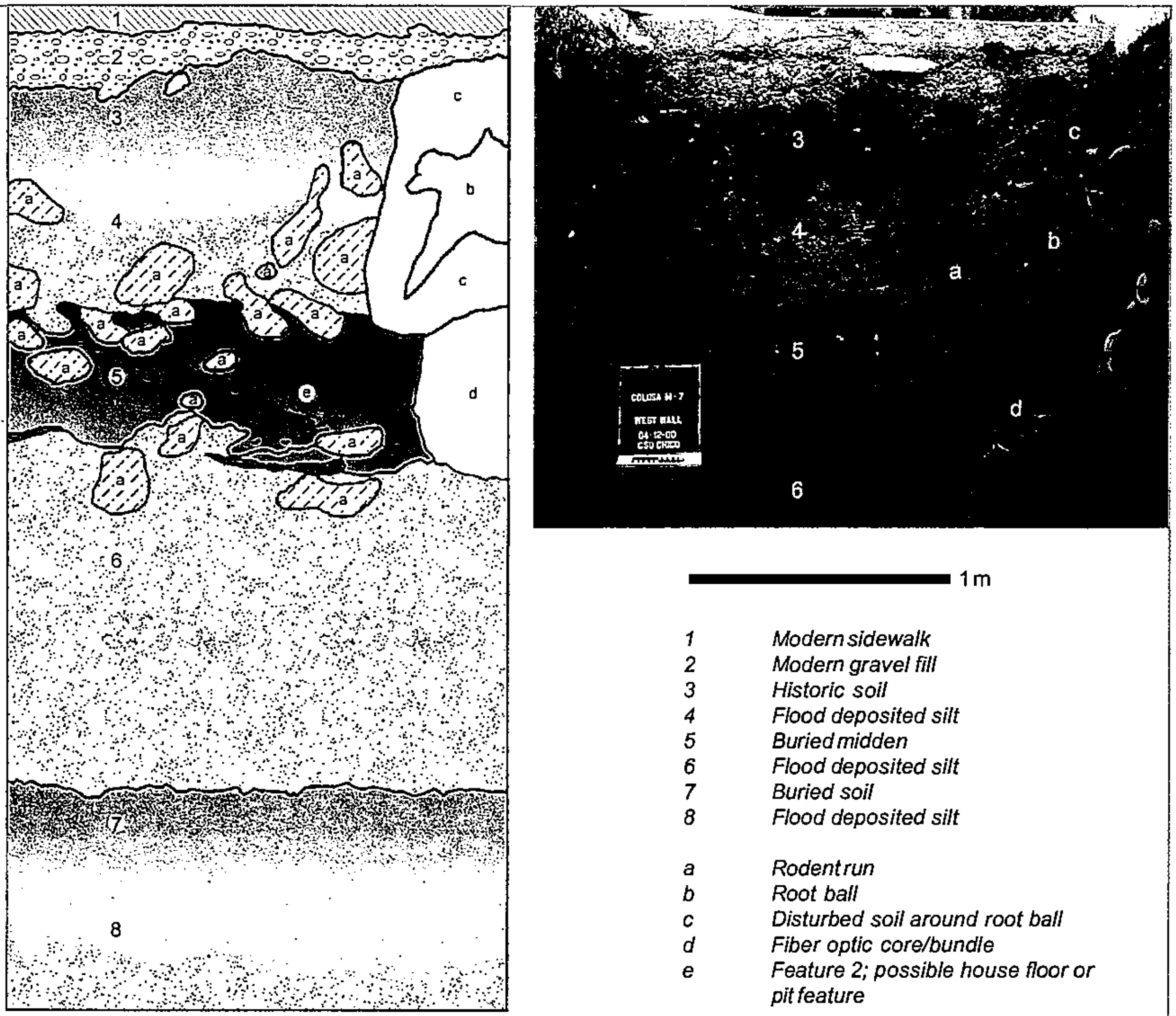


Figure 34: Col-246/H vault pit west wall profile.

with single event deposition. There was a definite fining-upward of sediments. Finely bedded, discrete sand layers occurred near the base of S4. This and the nonconformable contact with the underlying S4 indicated rapid deposition initiating with a relatively high-energy event.

Stratum 5 (S5). Stratum S5, 110-160 cm bsw, was a buried midden, an 2Ab brown to dark brown silty loam with weak, angular, blocky structure, medium size peds, and very friable consistency. No gravels were observed. The midden contained no historical material and moderate quantities of prehistoric cultural material including shell, bone, baked clay, and obsidian flakes and tools. Throughout the exposure, the midden was capped by a 3 cm thick layer of charcoal and ash suggesting that the habitation burned just prior to its burial by the S4 flood event. The midden also contained two features: (1) Feature 1 was a small pocket of white ash and charcoal representing a possible baking pit, and (2) Feature 2 was a broad, lens-shaped pit containing a high density of charcoal representing a possible hearth or living floor. Burial 1 was also determined to be associated with Stratum 5, interred in a definite midden-filled pit visible in the south wall of the exposure.

Stratum 6 (S6). Stratum 6, 160-290 cm bsw, was a thick bed of culturally sterile silty to sandy clay beneath the S4 midden. Similar to S3, this deposit exhibited a pattern of fining upward and discrete lenses of sand and clay indicative of alluvial deposition. Single-event deposition cannot be ruled out but cannot be demonstrated based on the limited exposure available for this study.

A

	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
Stratum 3	59	193.4	1304	979.9	n/a	428.2	651	380.9	6	3	8
Stratum 4	8	6.3	1083	1039.2	n/a	131.6	225	69.7	0	0	4
Stratum 5	11	10.6	9563	8529.7	n/a	868.3	822	739.4	6	1	42

B

	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
Stratum 3	1.1	3.7	24.8	18.6	n/a	8.1	12.4	7.2	0.11	0.05	0.15
Stratum 4	0.1	0.1	19.7	18.9	n/a	2.4	4.1	1.2	0	0	0.73
Stratum 5	0.3	0.3	281.2	250.9	n/a	25.5	24.2	21.7	0.17	0.03	1.23

Table 3: Distribution of Col-245/H cultural constituents per stratum, 1/4" screen sample, wgt in grams. A - actual count, B - per 0.1

Stratum 7 (S7). Stratum 7, 290-330 cm bsws, was a buried soil discovered in an excavation probe dug from the base of the vault pit (Figure 34, bottom). The deposit consisted of a culturally sterile, light brown silty clay soil. The soil had considerable pedological development, with distinct blockiness, numerous worm and root tracks and a mottled appearance. While some evidence of fire was identified, no cultural materials were observed in this soil.

Stratum 8 (S8). Stratum 8, +330 cm bsw, was a third culturally sterile silty to sandy clay beneath the S7 soil. Similar to S4 and S6, this deposit appeared to possess a pattern of fining upward and discrete lenses of sand and clay. As with S6, single-event deposition cannot be ruled out but also cannot be demonstrated based on examination of the limited exposure available to our team.

Col-245/H Cultural Constituents

Three Col-245/H strata, S3, S4, and S5 produced cultural materials. Table 3 shows the distribution of cultural constituents per stratum, including the total recovered material (Table 3, A), and the data converted to count and/or weight per 0.1 m³ (Table 3, B), the latter the basic unit of observation used for all four excavated sites.

Stratum 3, identified as the historical, pre-sidewalk soil of the City of Colusa, produced manufactured materials (glass, ceramic, metal, plastic). Cultural constituents that might represent either historical or prehistoric activity (fired clay and non-human bone) occurred in relatively low density. Further, cultural material most likely associated with Native American activity (freshwater mussel and chipped stone flakes) occurred in low to minimal densities, and are assumed to represent redeposit, perhaps the same use of mound material as fill found at Col-246/H, just one block to the east.

Stratum 4, identified as a possible single-event flood deposit and the parent sediment for Stratum 3, produced minimal cultural material. As indicated in the profile and photograph (Figure 34), S4 contained a number of rodent runs marked by dark soil indicating the presence of intrusive S3 and/or S5 deposits, accounting for all S4 cultural material.

Table 4: Radiocarbon determinations from Col-245/H.

Sample Code	Lab Code	Stratum	Association	Flot #	Depth bsw (cm)	MRA 14C BP	One Sigma CAL BP Range
HWY 45 #04	Beta-150819	S5	Burned Surface	2	110-120	860+/-70	660 to 920
HWY 45 #05	Beta-150820	S5	Feature 2 Pit Floor	28	120-150	980+/-60	720 to 960

Stratum 5, identified as a buried midden, produced a high density of prehistoric cultural material dominated by fired clay, mussel shell, and nonhuman bone.

Col-245/H Dating Evidence

Two radiocarbon determinations bracketing the S5 buried midden were obtained on charcoal recovered by flotation (Table 4). One sample was from the charcoal rich midden cap (HWY 45 #04/ Beta-150819). This sample produced a radiocarbon date of 860±70 BP, which converts to a one-sigma calibrated date of 660-920 CAL BP (AD 1160). The second sample was from the charcoal rich Feature 2 matrix associated with the base of the midden (Figure 34) (HWY 45 #05/Beta-150820). This sample produced a radiocarbon date of 980±60 BP, which converts to a one-sigma calibrated date of 720-960 CAL BP (AD 1110). These two dates are statistically identical and can be taken to corroborate the age of the S5 midden rather than bracketing the span of occupation.

Summary of Col-245/H
Cultural Components

The Col-245/H investigation produced evidence of two stratigraphically distinct cultural components:

Stratum 3. Stratum 3 produced an historical assemblage consisting of a mixture of sparse late 19th and 20th century ceramics, glass, metal, and plastic indicative of general domestic activity. Sparse prehistoric material contained in Stratum 3 is probably redeposited, possibly from the same midden source used as fill at Col-246/H, one block to the east.

Stratum 5. Stratum 5 produced a single-component prehistoric deposit dating between 660-960 CAL BP, buried beneath a thick layer of flood-deposited silt. Artifact associations are consistent with assignment to Phase 1c of the Augustine Pattern.

Stegeman Station Site
Ca-Col-158

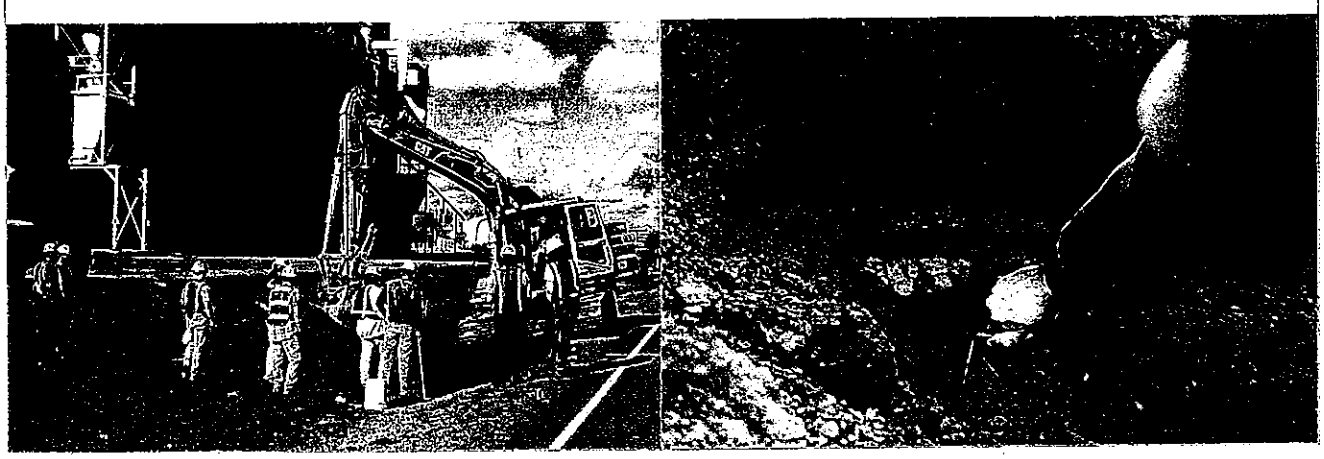
Col-158 Discovery and Consultation

The Stegeman Station site, Col-158, situated along Hwy 45 approximately 3.75 miles south of Princeton (Figure 1), was the only previously recorded prehistoric archaeological site located along the Level(3) Fiber Optic alignment in Colusa County. The original record was filed in 1988 (Orlins 1988). The site was revisited in 1999 during an archaeological reconnaissance for the Level(3) project. According to a report dated 17 September 1999, Foster Wheeler archaeologists completed excavation of two shovel test units at Col-158, one unit on each side of Hwy 45. The unit west of Hwy 45, along the Level(3) alignment, encountered subsurface cultural material but excavation was halted at a very shallow depth and no other units were dug. Based on these findings, Foster Wheeler concurred with the 1988 record indicating that Col-158 was restricted to the east side of Hwy 45, away from the Level(3) alignment (Foster Wheeler 1999). A revised site record was not filed.

In late January, 2000, ARP personnel revisited Col-158, also focusing on the Level(3) alignment on the west side of Hwy 45. Surface reconnaissance of freshly plowed ground determined that cultural deposits existed on the west side of Hwy 45 extending up to 300 ft north of the 1988 recorded boundaries. Cultural materials observed included patchy, light to moderate density surface scatters (1-10 items per m^2) of freshwater mussel shell, with occasional items of fire-affected rock and quartzite and metavolcanic flakes. The soil was also patchy, ranging from a brown sandy loam to a dark brown clayey midden darker. Several items of archaeological bone were observed, consisting of medium mammal bone fragments, most likely deer bone. We concluded that the site occupied a much larger area than previously documented, with a surface scatter of prehistoric cultural material spanning a 1/2-mile section of the Level(3) corridor. Based on these survey results and our growing knowledge of local floodplain geomorphology, we were also concerned that Foster Wheeler's test excavation had failed to establish the vertical and horizontal extent or content of the deposit, and significant intact cultural deposits were likely to be present in the Level(3) alignment. We concluded that Ca-Col-158 was potentially eligible for the National Register of Historic Places based on Criterion D, and based on discoveries at similar sites nearby it was also considered likely that human skeletal remains were present within site boundaries. We recommended that more extensive test excavations take place at the site in order to determine the nature and extent of cultural deposits.

An on-site meeting was called, attended by Kiewit Pacific, Inc. engineers and project managers, Caltrans archaeologist Daryl Noble, TRC Cultural Resource Specialists, Patwin MLD Kesner Flores, and the author. A number of avoidance and testing alternatives were discussed at this meeting. Because the revised site

Figure 35: Left - Excavating Trench 38 alongside Stegeman Station; Right - House floor found in Trench 33, 3.0' below surface.



boundaries militated against avoidance by deep boring, a comprehensive testing program was proposed consisting of backhoe testing for boundary determination followed by excavation testing of all cultural loci identified by the backhoe work.

Testing and trenching described below identified four loci of intact cultural deposits likely to contain human remains and residential features. Thus, we concluded that further construction impacts should be avoided by boring under the known cultural deposits. Our testing program provided clearance for a zone measuring between 8-16 ft below surface beneath each of the four Stegeman loci. Further, the limited areal extent of the deposits allowed the boring to be done in three segments, the longest measuring approximately 750 ft. Prior to boring, archaeological and Native American personnel consulted with construction engineers to determine specific depths and buffer areas.

Col-158 Field Work

On Tuesday, 16 February through Thursday, 2 March 2000, the Archaeological Research Program conducted an archaeological testing program at the Stegeman Station archaeological locality.

Backhoe Testing

To define the nature, extent, and distribution of cultural deposits a total of 45 backhoe trenches was dug in the span of 4,622 ft bracketing the Stegeman cultural locality. The trenches are inventoried in Table 5, listing the Caltrans postmiles, density of cultural material, and cultural features encountered in each trench. Figure 36 plots the trenches with reference to Caltrans postmiles, and indicates our revised locus and site boundaries within the Caltrans Hwy 45 right-of-way. An excavator backhoe with 18" and 30" buckets was used. For both bucket sizes a sheet metal plate had been tack-welded over the teeth to create a square cutting edge, reducing damage to cultural material and creating the broadest possible stratigraphic exposure. The trenches were dug in 6-10" layers, and trench walls and spoils piles were observed by archaeologists and Patwin cultural monitors. On discovery of intact cultural deposits, all work ceased and a record was made of the nature and density of the finds. Trench intervals were geared to discovery. For example, the intervals were 100-300 ft until discovery of cultural materials and then the dropped to 20-40

Table 5: Col-158, Summary of trench location and recovery.

Trench #	Hwy 45 Postmile			Density	Features
1	16+68	to	16+80	None	None
2	20+00	to	20+18	None	None
3	21+20	to	21+40	None	None
4	22+28	to	22+45	None	None
5	23+15	to	23+34	Low	None
6	23+72	to	24+07	Mod	Shell Lens, 4.0-4.5' bs
7	24+30	to	24+55	Mod	House Floor, 3.0-4.0' bs
8	24+88	to	25+08	High	Shell-Filled Pit, 4.5' bs
9	25+74	to	25+88	None	None
10	26+15	to	26+33	None	None
11	26+68	to	26+90	None	None
12	27+31	to	27+50	None	None
13	28+84	to	29+01	None	None
14	30+08	to	30+23	None	None
15	33+31	to	33+51	High	None
16	38+35	to	36+60	Mod	None
17	37+37	to	37+62	Low	None
18	38+00	to	38+22	Mod	None
19	38+82	to	38+99	None	None
20	40+39	to	40+59	Low	None
21	41+75	to	41+95	High	None
22	42+41	to	42+59	High	None
23	43+22	to	43+42	High	None
24	44+00	to	44+22	Mod	None
25	44+78	to	45+00	Mod	None
26	45+41	to	45+57	High	None
27	46+05	to	46+26	Mod	None
28	46+81	to	46+98	Mod	None
29	47+44	to	47+63	Mod	None
30	48+21	to	48+37	None	None
31	49+16	to	49+29	None	None
32	50+18	to	50+32	Low	None
33	51+50	to	51+66	Mod	House Floor, 3.0' bs
34	00+26	to	00+43	Low	Pit Feature, 3.2' bs
35	02+28	to	02+46	Low	None
36	03+50	to	03+66	Low	None
37	04+54	to	04+74	Low	None
38	06+53	to	08+69	Low	House Floor, 3.0' bs
39	07+57	to	07+74	None	None
40	09+93	to	10+10	None	None
41	47+85	to	48+01	None	None
42	48+58	to	48+74	Low	None
43	31+18	to	31+34	None	None
44	31+74	to	31+90	Low	None
45	22+64	to	22+80	None	None

Figure 36:
Stegeman Station Site, Ca-Col-158
Trenching and Test Excavation Plan

Key:

Hwy 45

Trench

Excavation Unit

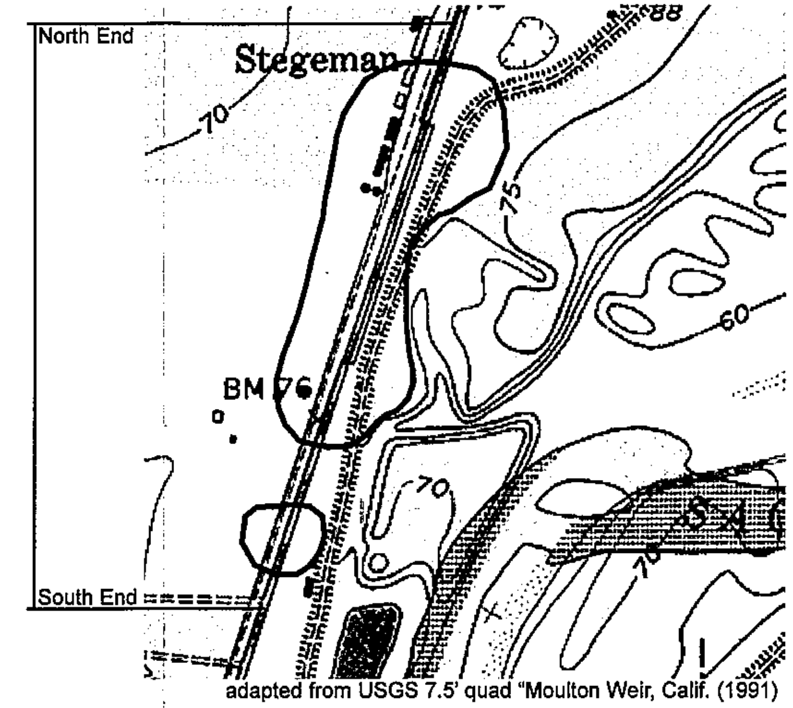
Caltrans Postmile

Culvert

Density of Cultural Material:

Low/Moderate Density

High Density



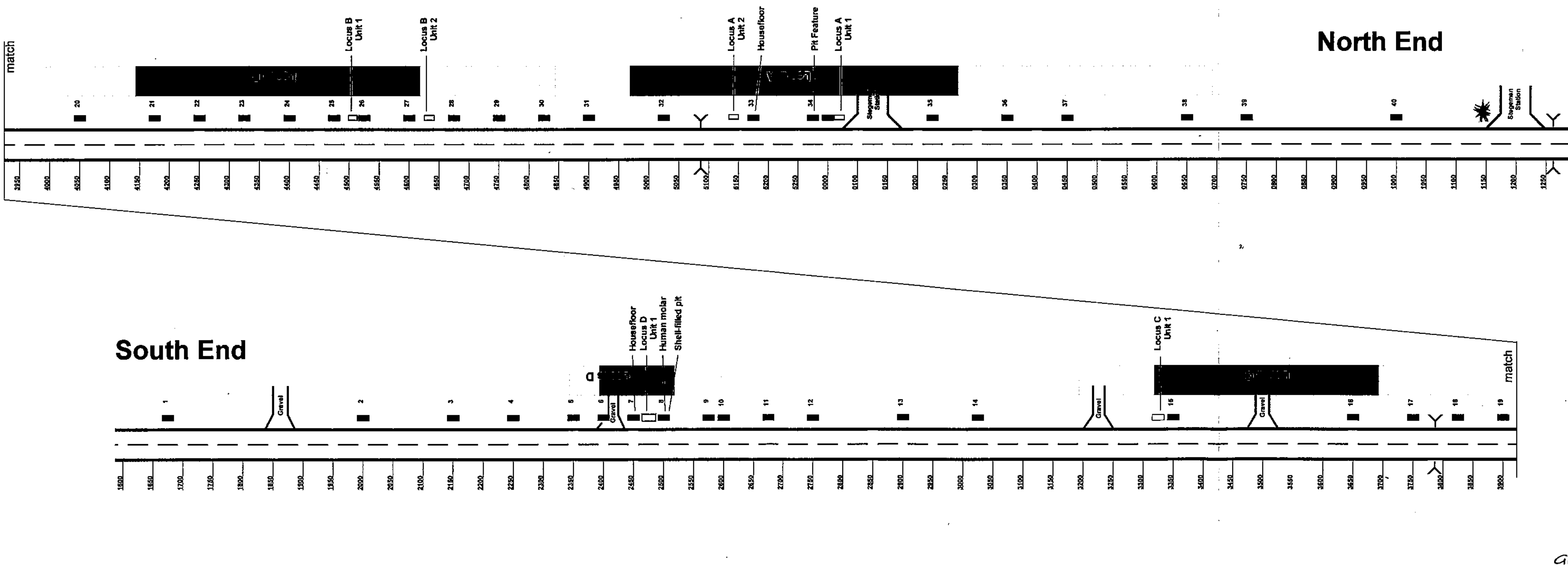


Figure 37: Left - Screening station in Princeton; Right - Locus B, Unit 1.

ft. A total of 40 initial trenches was dug to define the cultural loci, then an additional five trenches were dug under the direction of the Project Geoarchaeologist in order to define the contacts between cultural loci (see below).

Four separate, high density midden loci were identified, each containing cultural deposits with stratigraphic integrity. The loci were numbered 'A' through 'D' from north to south (Figure 36). The original boundaries of Col-158 in the project area appeared to be contained entirely within Locus C (Figure 36). In general, surface distributions did not correspond closely to subsurface distributions. However, we are confident that our observations should supercede the previous record which we conclude was based on surface distributions heavily altered by grading and plowing. As a result of our work we did file a revised site record redefining Ca-Col-158 to include a broad surface scatter of redeposited material and the four newly defined subsurface loci (i.e., Ca-Col-158A, 158B, 158C, and 158D).

The backhoe trenching team recorded four levels of density of cultural materials: (1) none (no cultural materials), (2) low density (2 to 20 items per m^3), (3) moderate density (21 to 100 large items per m^3), and (4) high density (+101 large items per m^3). Cultural deposits were immediately recognizable based on the common occurrence of shell belonging to the mud dwelling freshwater bivalve *Gonidea angulata*. All cultural deposits also produced large and small mammal bone, baked clay, waterfowl and fish bone, fire-affected rock, and obsidian flakes.

With respect to soil variability, low density deposits were generally marked by light brown silty clay, slightly darker than the surrounding soil. In contrast, moderate to high density deposits were associated with obvious dark brown and clayey midden, distinct from the light tan silt. The diversity of cultural material and presence of baked clay (a signature of structural remains) indicated that each of the loci resulted from residential activity. Supporting this was the occurrence of three house floor features, one each found in low, moderate, and high density deposits (see Figure 35, right). Geoarchaeological findings suggest that the higher density middens occurred in well developed soils; in other words, more stable

Table 6: Col-158 midden and excavation unit maximum depth, per locality.

Unit #	Caltrans Postmile	Max Depth Unit	Midden Depth (cm)	Midden Depth (ft)
Locus A, Unit 1	00+50	070 cm	20-60	1.5-2.0
Locus A, Unit 2	51+28	070 cm	20-60	1.5-2.0
Locus B, Unit 1	45+15	140 cm	40-140	1.3-4.6
Locus B, Unit 2	46+35	120 cm	20-120	1.3-4.6
Locus C, Unit 1	33+25	050 cm	20-40	0.6-1.3
Locus D, Unit 1	24+75	190 cm	163-183	4.9-6.5

occupations developed on more stable land surfaces, with some local variability resulting from late Holocene flood episodes. Geoarchaeological findings also indicated that the gap between Locus C and Locus D, marked by an abrupt change from midden to silt on both edges of the gap, may represent an extinct, infilled channel or slough possibly active during the period of cultural occupation.

Test Excavations

Test excavation units were dug in each locus. A total of 9.4 m^3 was excavated. Originally planned to be 1x1 m units, owing to extreme weather conditions, soil loading, and potential need for shoring deep units, a decision was made to dig 1x2 m units, allowing greater space for the potential shoring apparatus and excavator. A total of six 1x2 m test units was dug, two in Locus A, two in Locus B, one in Locus C, and one in Locus D. The completed test units are plotted in Figure 36. Except for Locus D, Unit 1, the test units were dug in 10 cm levels to the maximum depth of cultural deposits. Level records and unit plans were completed for each excavation unit. A soil profile was completed for each unit, and the units were backfilled immediately on completion.

Weather conditions and clayey soil militated against traditional shaker-screens (Figure 37, right). Kiewit Pacific, Inc. staff helped us solve the problem by setting up and running an elaborate water-screening operation in Princeton, 3 miles north of Stegeman Station (Figure 37, left). All soil removed from the units was placed in 4-gallon buckets with color-coded flags marked with unit/ level provenience information. The buckets were collected in a flatbed truck and transported to the water-screening operation where they were processed through 1/8" screen and prepared for drying and sorting. The empty buckets were then transported back to the excavation loci to complete the circuit.

At Locus D unusual conditions required creative sampling methods. During exploratory trenching a rich, well-preserved, but patchy midden was found buried at a depth of between 150-200 cm below surface. The overlying deposit was a culturally sterile, light tan silty clay which appeared to be an event-specific flood deposit.

Test excavation of the Locus D deposit was complicated by safety concerns related to OSHA slope requirements for subsurface work, and the presence of heavily water-loaded soil and standing water near the location designated for testing. Therefore, it was determined that sampling would require excavation of a broad, stepped-down exposure. However, once completed even this exposure proved unstable, and further compromised by an adjacent PG&E underground utility trench on the west and the Hwy 45 fill prism/pavement on the east, the two of which essentially bracketed the maximum surface extent of our exposure. In view of these limitations, it was determined that worker access would be limited to the minimum time necessary to remove a hand-excavated sample of the midden. The stepped-down exposure measured approximately 1x3 m at a depth of 150 cm. A square-point shovel and a trowel were used to strip the remaining silty clay down to the surface of the midden. A 1x2 m square was then excavated in a single level, 165-185 cm below surface, taking out the entire midden layer. On completion of the unit, a backhoe was used to dig an exploratory hole to a maximum depth of 13 ft. No additional cultural deposits deeper than 185 cm were observed.

Col-158 Stratigraphy

Horizontal and Vertical Distribution of Cultural Deposits

The excavation of 40 trenches at the Stegeman locality resulted in the identification of four separate archaeological loci (A, B, C, and D) (see Figure 36). Trenching and test excavation combined showed that the Locus A-C cultural deposits were all near the surface. In Locus A undisturbed midden was found between 45-60 cm below surface, and below 60 cm it graded into a culturally sterile, light tan silty clay. In Locus B undisturbed midden was found between 40-120 cm below surface, where it also graded into a culturally sterile, light tan silty clay. In Locus C undisturbed midden was found between 20-40 cm below surface, and at 40 cm it graded into a culturally sterile, light tan silty clay. Locus D consisted of an undisturbed midden found buried between 163-183 cm below surface, where it rested nonconformably on a culturally sterile, light tan silty clay. The maximum depth of cultural deposits at each locus is listed in Table 6.

Col-158 Constituents

Constituents recovered from excavation units dug in each of the four Col-158 loci are tabulated in Tables 7-11. The tables show the distribution of

A	Historical Materials n	Historical Materials WGT	Fired Clay n	Fired Clay WGT	Mussel Shell n	Mussel Shell WGT	Nonhuman Bone n	Nonhuman Bone WGT	Metasedimentary Flakes n	Chert Flakes n	Obsidian Flakes n
000-010	322	83.9	135	83.2	n/a	191.6	194	89.3	8	3	1
010-020	2	78.6	51	141.3	n/a	2.8	134	38.8	1	0	1
020-030	132	55.3	98	61.5	n/a	73.6	145	42.0	4	1	2
030-040	28	14.2	326	167.3	n/a	157.4	179	52.2	7	4	2
040-050	20	10.0	166	127.4	n/a	301.9	279	77.7	14	0	6
050-060	55	49.3	191	119.2	n/a	372.2	341	96.8	19	1	2
060-070	3	0.2	42	34	n/a	128.1	77	33.6	10	2	1

B	Historical Materials n	Historical Materials WGT	Fired Clay n	Fired Clay WGT	Mussel Shell n	Mussel Shell WGT	Nonhuman Bone n	Nonhuman Bone WGT	Metasedimentary Flakes n	Chert Flakes n	Obsidian Flakes n
000-010	80.5	20.9	33.7	208.0	n/a	47.9	48.5	22.3	2.00	0.75	0.25
010-020	0.5	19.6	12.7	35.3	n/a	0.7	33.5	9.7	0.25	0.00	0.25
020-030	33.0	13.8	24.5	15.4	n/a	18.4	36.2	10.5	1.00	0.25	0.50
030-040	7.0	3.5	81.5	41.8	n/a	39.3	44.7	13.0	1.75	1.00	0.50
040-050	5.0	2.5	41.5	31.8	n/a	75.5	69.7	19.4	3.50	0.00	1.50
050-060	13.7	12.3	47.7	29.8	n/a	93.0	85.2	24.2	4.75	0.25	0.50
060-070	1.0	0.1	14.0	11.3	n/a	42.7	25.7	11.2	3.33	0.67	0.33

Table 7: Distribution of Col-158A cultural constituents (Units A-1 and A-2 combined) per 10 cm level, 1/4" screen sample, weight in grams. A - actual count, B - per 0.1 m³.

cultural constituents per 10 cm level, each table listing the total recovered material and the data converted to count and/or weight per 0.1 m³, the latter the basic unit of observation used for all four excavated sites.

Col-158A. The two Col-158A excavation units were each dug to a maximum depth of 70 cm below surface. Historical materials, most or all of which were attributable to modern roadside debris (glass, ceramic, metal, plastic) were primarily found at shallow depths, with 79.7 percent of all historical materials found above 30 cm. However, trace amounts of historical material were found in each level to the base of excavations at 70 cm, indicating an active mixing agent. The outline of a utility trench marked by mottled, clayey soil was identified in the western 1/3 of both excavation units, 0-70 cm. Thus, at least one-third of the volume of each unit can be considered recently mixed redeposit.

Compared to the other excavated sites, Col-158A cultural deposits had a low to moderate density of prehistoric cultural constituents. Like the other prehistoric components, fired clay, mussel shell, and dietary bone were the predominant constituents. The peak density for fired clay was encountered at 30-50 cm, while for bone and shell peak density was slightly offset at 40-60 cm deep. Among chipped stone constituents, flakes derived from reduction of local metasedimentary cobbles predominated, and their density also peaked at 40-60 cm deep. The density of prehistoric cultural constituents was still fairly high at 70 cm, consistent with backhoe trenching nearby indicating that the deposit tapered off but extended to a maximum depth of around 100-120 cm below surface.

Col-158B. The two Col-158B excavation units were dug to a maximum depth of 120 cm (Unit B-1) and 140 cm (Unit B-2) below surface. The 0-10 cm

Table 8: Distribution of Col-158B cultural constituents (Units B-1 and B-2 combined) per 10 cm level, 1/4" screen sample, weight in grams. A - actual count, B - per 0.1 m³.

A

	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	0	0.0	104	69.2	n/a	51.0	86	20.1	17	1	4
010-020	175	118.4	113	40.5	n/a	107.0	92	32.1	1	0	8
020-030	145	317.9	116	48.5	n/a	106.9	113	31.4	11	0	5
030-040	36	52.0	225	124.6	n/a	161.2	182	53.1	0	2	2
040-050	10	2.8	300	223.2	n/a	224.7	130	44.9	6	0	4
050-060	3	3.9	674	1086.8	n/a	820.4	277	133.1	16	0	10
060-070	2	2.4	523	602.7	n/a	1551.1	343	176.5	10	0	6
070-080	0	0.0	422	967.0	n/a	634.9	198	64.1	9	0	9
080-090	3	3.6	448	602.6	n/a	855.0	137	48.1	2	0	1
090-100	0	0.0	427	408.2	n/a	569.3	150	45.3	6	0	2
100-110	0	0.0	143.5	249.4	n/a	493.2	104	35.2	5	0.5	2.5
110-120	0	0.0	87.5	140.6	n/a	185.5	29	14.7	4	0.5	1.5
120-130	0	0.0	166	87.1	n/a	379.2	33	10.7	2	0	0
130-140	0	0.0	129	57.1	n/a	188.2	20	3.8	1	0	0

B

	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	0.0	0.0	26.0	17.3	n/a	12.7	21.5	5.0	4.25	0.25	1.00
010-020	43.7	29.6	28.2	10.1	n/a	26.7	23.0	8.0	0.25	0.00	2.00
020-030	36.2	79.5	29.0	12.1	n/a	26.7	28.2	7.8	2.75	0.00	1.25
030-040	9.0	13.0	56.2	31.1	n/a	40.3	45.5	13.3	0.00	0.50	0.50
040-050	2.5	0.7	75.0	55.8	n/a	56.2	32.5	11.2	1.50	0.00	1.00
050-060	0.7	0.9	168.5	271.7	n/a	205.1	69.2	33.3	4.00	0.00	2.50
060-070	0.5	0.6	130.7	150.7	n/a	387.8	85.7	44.1	2.50	0.00	1.50
070-080	0.0	0.0	140.7	241.7	n/a	211.6	66.0	21.3	3.00	0.00	3.00
080-090	1.5	1.8	224.0	301.3	n/a	427.5	68.5	24.0	1.00	0.00	0.50
090-100	0	0.0	213.5	204.1	n/a	284.6	75.0	22.6	3.00	0.00	1.00
100-120	0	0.0	71.7	124.7	n/a	246.6	52.0	17.6	2.50	0.25	1.25
100-120	0	0.0	43.7	70.3	n/a	91.2	14.5	7.3	2.00	0.25	0.75
120-130	0	0.0	166	87.1	n/a	379.2	33	10.7	2.00	0.00	0.00
130-140	0	0.0	129	57.1	n/a	188.2	20	3.8	1.00	0.00	0.00

levels of each were problematic, overwhelmed by modern fill and muddy and undulating from recent heavy equipment activity. We tracked the nature, extent, and variability of historical materials below 10 cm in depth. These materials, most or all of which were attributable to modern roadside debris (glass, ceramic, metal, plastic) were primarily found at shallow levels, with 85.5 percent found above 30 cm in depth. Trace amounts were found below this depth, but no historical material was found below 90 cm in depth indicating that mixing was restricted to the top of the profile. The Locus B units were placed along the same alignment as the Locus A units, thus, the Locus B units also encountered the outline of a utility trench on the western 1/3 of both excavation units, affecting the 0-70 cm levels. Excavation was halted in the western one-half of Unit B-1 at 70 cm, and in Unit B-2 at 85 cm. Both were halved to 0.5x2.0 m in plan view. Thus, at least one-third of the volume of each unit above 70 or 80 cm can be considered recently mixed redeposit, but below these depths the deposits were relatively unaffected by modern intrusion.

Compared to the other excavated sites, Col-158B cultural deposits produced a low to moderate density of prehistoric cultural constituents. Like the other prehistoric components, fired clay, mussel shell, and dietary bone were the predominant constituents. The peak density for all three constituents was encountered at 50-100 cm. Among chipped stone constituents, flakes derived from reduction of local metasedimentary cobbles predominated, and their density also peaked at 50-100 cm deep.

Col-158C. The Col-158C excavation unit was dug to a maximum depth of 50 cm below surface. Historical materials, most or all of which were attributable to modern roadside debris (glass, ceramic, metal, plastic) were restricted to the upper 30 cm. No evidence for subsurface excavation or redeposit was found in the unit plan.

Compared to the other excavated sites, Col-158C cultural deposits had a low density of prehistoric cultural constituents. Mussel shell and dietary bone were the predominant constituents, with fired clay and chipped stone flakes representing minor constituents. The density of cultural constituents peaked at a depth of 30-40 cm and diminished abruptly in the subsequent level. Backhoe testing nearby confirmed the absence of cultural deposits at greater depths.

Col-158D. The Col-158D sample consisted of a 1.0 m wide, 2.0 m long, and 20 cm deep section taken from a thin but rich and well-preserved buried cultural deposit. Two small fragments of clear bottle glass were recovered from the sample, indicating some downward movement in the profile of modern roadside debris. However, the deposit can otherwise be considered remarkably intact.

Compared to the other excavated sites, Col-158D had a high density of prehistoric cultural constituents. Fired clay and mussel shell were the predominant constituents, and dietary bone was relatively uncommon. Among chipped stone constituents, flakes derived from reduction of local metasedimentary cobbles predominated.

Col-158 Dating Evidence

Four radiocarbon determinations were obtained for Col-158, two from bulk feature charcoal and ash and two from charcoal derived from flotation light fraction (Table 9). Sample Hwy 45 #06 is a bulk low carbon radiocarbon determination made on charcoal and ash from a possible house floor encountered in Unit A-1 at a depth of 30-40 cm below surface. This sample produced a radiocarbon date of 880±40 BP, which converts to a one-sigma calibrated date of 690-910 CAL BP (AD 1150). Sample Hwy 45 #07 is a bulk low carbon radiocarbon determination made on charcoal and ash from a possible house floor

Table 9: Radiocarbon determinations from Col-158.

Sample Code	Lab Code	Stratum	Association	Flot #	Locus	Depth bsw (cm)	MRA 14C BP	One Sigma CAL BP Range
HWY 45 #02	Beta-150817	n/a	Buried Midden Matrix	53	D	163-183	1290+/60	1060 to 1290
HWY 45 #03	Beta-150818	n/a	Buried Midden Matrix	54	D	163-183	1100+/80	890 to 1170
HWY 45 #06	Beta-150821	n/a	Housefloor Matrix	n/a	A	30-40	880+/-40	690 to 910
HWY 45 #07	Beta-150822	n/a	Ash Feature Matrix	n/a	B	70-85	1180+/40	960 to 1170

encountered in Unit B-2 at a depth of 70-85 cm below surface. This sample produced a radiocarbon date of 1180±40 BP, which converts to a one-sigma calibrated date of 960-1170 CAL BP (AD 885).

Charcoal light fraction derived from two separate flotation samples collected from the Col-158D buried midden were submitted for radiocarbon determination. The first sample produced a radiocarbon date of 1290±60 BP, which converts to a one-sigma calibrated age of 1060-1290 CAL BP (AD 780). The second sample produced a radiocarbon date of 1100±80 BP, which converts to a one-sigma calibrated age of 890-1170 CAL BP (AD 920).

Summary of Col-158 Cultural Components

The Col-158 investigation produced evidence of a spatially large and horizontally and vertically complex prehistoric cultural deposit. The current sample is not adequate to characterize the nature, extent, and variability of this deposit. However, the current investigation did gain an understanding of its general chronological structure, identifying two distinct analytical units.

Locus A. Col-158A produced cultural deposits to a maximum depth of around 120 cm. However, the Col-158A excavation sample and radiocarbon date focus exclusively on the upper one-half of the deposit, found to date around 800 CAL BP. Artifacts recovered from this deposit are consistent with Phase 1c of the Augustine Pattern.

Locus B/C/D. The Col-158B excavation sample and radiocarbon date focuses primarily on the lower one-half of the deposit, found to date around 1065 CAL BP. Notably, the Col-158D buried midden produced two almost identical radiocarbon dates of 1030 CAL BP and 1175 CAL BP. Therefore, for the purposes of analyses appearing below, loci 158B and 158D are lumped together as representative of one cultural component. Artifacts recovered from this deposit are consistent with Phase 1b of the Augustine Pattern.

Col-158C produced low density and very shallow cultural deposits. In fact, we found nothing to militate against the original conclusion that this portion of the site represented redeposit (Foster-Wheeler 2000). We consider it likely that some portion of the original mound in the area of Locus 158B was leveled and the material used to fill a shallow depression—probably representing a late Holocene channel or oxbow remnant—still evident east of the flood levee. Thus, the Col-158C cultural assemblage can be considered problematic but appears below lumped with Col-158B and Col-158D only to show the general character and composition of cultural deposits at the south end of the site.

Table 10: Distribution of Col-158C cultural constituents (Unit C-1 only) per 10 cm level, 1/4" screen sample, weight in grams. A - actual count, B - per 0.1 m^3.

A	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	6	5.2	3	3.0	n/a	22.4	25	9.6	6	0	0
010-020	0	0.0	10	6.9	n/a	23.1	12	3.2	0	0	0
020-030	7	2.4	27	23.4	n/a	41.1	44	12.5	3	0	0
030-040	0	0.0	1	3.8	n/a	22.9	84	3.7	0	0	0
040-050	0	0.0	1	0.7	n/a	18.9	10	3.6	0	0	0

B	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	3.0	2.6	1.5	1.5	n/a	11.2	12.5	4.8	3.00	0.00	0.00
010-020	0.0	0.0	5.0	3.5	n/a	11.6	6.0	1.6	0.00	0.00	0.00
020-030	3.5	1.2	13.5	11.7	n/a	20.5	22.0	6.2	1.50	0.00	0.00
030-040	0.0	0.0	0.5	1.9	n/a	11.5	42.0	1.9	0.00	0.00	0.00
040-050	0.0	0.0	0.5	0.3	n/a	9.4	5.0	1.8	0.00	0.00	0.00

Table 11: Distribution of Col-158D cultural constituents (Unit D-1 only) per 10 cm level, 1/4" screen sample, weight in grams. A - actual count, B - per 0.1 m^3.

A	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
163-183	2	0.1	1030	2065.0	n/a	1869.7	193	52.0	49	2	3

B	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
163-183	0.5	0.0	260	516.2	n/a	467.4	48.2	13.0	12.25	0.50	0.75

RESERVATION ROAD SITE
CA-COL-247

Discovery and Recommendations

On 13 December 1999, Kiewit Pacific, Inc. construction crews began excavation of a 40 foot trench at Caltrans postmile 26^{10}, the junction of Highway 45 and Reservation Road 4.2 miles south of Princeton (Figure 39). An initial reconnaissance of the proposed trench location by an ARP crew found no surface archaeological evidence. However, because soils in the vicinity appeared to be old floodplain remnants, we determined that the location was sensitive for buried cultural resources. Therefore, tribal and archaeological monitors were assigned to monitor the trench excavation. The monitors soon observed a buried midden in the bottom of the trench. The top of the midden was approximately 1.0 m below surface, and it extended deeper than the base of the trench which had reached a maximum depth of approximately 1.5 m below surface. Based on the trench findings alone, the maximum depth and precise horizontal dimensions of the site also could not be established determined. However, the midden was exposed along the full length of the trench, and further investigation of nearby plowed fields revealed a low density surface scatter of cultural materials, mostly freshwater mussel shell, extending to the south and west. The estimated horizontal extent of the site is plotted in Figure 39. The site was recorded and assigned trinomial Ca-Col-247.

Cultural materials observed in the trench included freshwater mussel shell, fire-affected rock, large and small clumps of baked clay, and quartzite, chert, metavolcanic, and obsidian flakes contained in a dark brown midden matrix. Numerous items of archaeological bone were observed, including a proximal elk metapodial fragment, two deer metapodial fragments, one deer distal calcaneus, and three bird bones. Two items of human bone were also identified in the trench spoils, including an anterior midshaft fragment of an adult femur and a proximal fragment of an immature metatarsal.

Field Work

Because the site was significant and culturally sensitive, we recommended that work be stopped in the vicinity of the finds until such time that a treatment plan could be determined. The senior author met with MLD Kesner Flores, and a mitigation plan was devised. Between Monday, 3 March through Sunday, 26 March 2000, ARP conducted an archaeological mitigation program at Col-247. Mitigation consisted of the controlled hand excavation of 15.3 m^3 of cultural deposit.

Grid Layout

An overview of the excavation and its relationship to constructed features nearby appears in Figure 40. The area designated for excavation was adjacent to the trench, bracketed on the east by the west wall of the trench and on the west by the edge of the Caltrans Hwy 45 right-of-way. The excavation consisted of two exposures divided by a balk left in place to support an existing power pole and avoid an 8" underground natural gas pipeline passing through on an east-west alignment.

Initially, the two exposures were opened using a backhoe under the oversight of Native American and archaeological monitors. Each exposure measured approximately 6.5x2.5 m, and was dug to

Figure 38: Composite view looking east. Col-247 Exposure 1 is under the white dome on the left. Highway 45 is in the middle distance, Rerservation Road is in the center background.

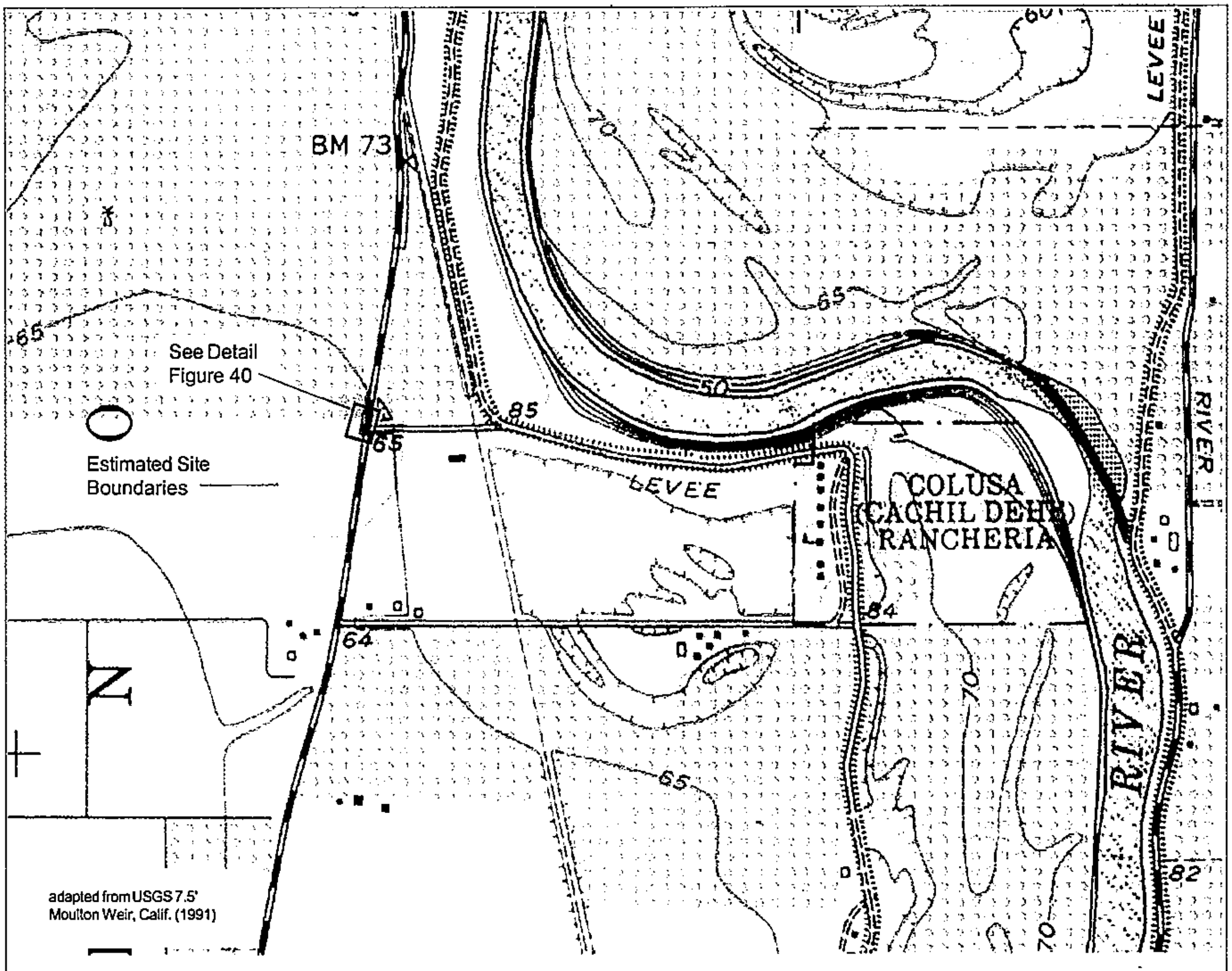


Figure 39: Col-247 estimated site boundaries.

70 cm below surface, just above the top of the midden which began at an average of 80-90 cm below surface. For ease of access sloping ramps were dug into each exposure. The interior walls and the exposures were trimmed square and the floors were dug to a common horizontal plane ("grid zero") using shovels and trowels, and guided by a transit established on a datum outside the exposures.

The transit was also used to set identical grid zero reference points 90 cm below datum in both Exposure 1 and Exposure 2. Thus, grid "0" was actually 90 cm below surface. Datums for vertical control were anchored by long nails driven into the wall at 2 m intervals along the west wall of each exposure at precisely 50 cm above grid zero. As excavation reached depths greater than 50 cm below grid zero in Exposure 1, the wall nails were relocated to the grid corners at "zero" elevation. Each nail had attached a 4 m long nylon string with a carpenter's level, and depth was read off the level string.

Excavation grids were established inside each exposure using a traditional Alpha-Numeric system (Figure 40). Excavation unit designation was based on the unit's horizontal (Alpha) and vertical (Numeric) location in the grid.

Excavation units were 1x1 m. A total of 12.0 m^2 was excavated in Exposure 1, including units A1 through A6 and B1 through B6. Exposure 2, on the other hand, was foreshortened by the discovery of old trenches containing mixed fill and historic material intersecting the north end and east side of the exposure. A total of 7 m^2 was excavated in Exposure 2, including units A14 through A17, and grid squares A18/B18, which were combined to form a 1x2 m unit. Table 13 lists the maximum excavated depth and m^3 recovery for each unit square. An total of 15.6 m^3 of deposit was manually

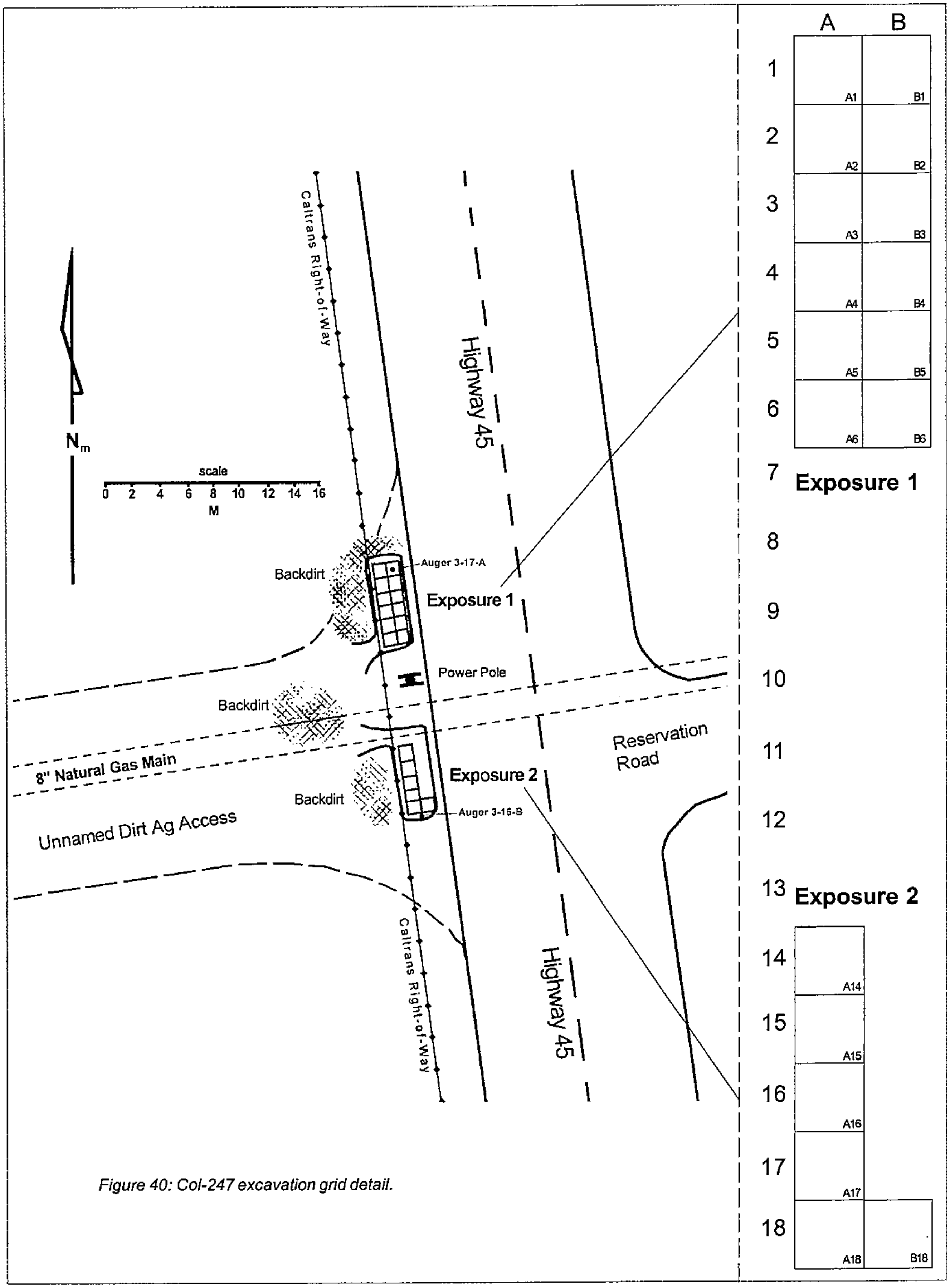


Figure 40: Col-247 excavation grid detail.

Unit #	M3 Excavated	Max Depth Unit	Comments
A1	1.0	160 cm	half to 40 cm; half in 1/8" screened column to 160 cm
A2	1.7	170 cm	to 160 cm & submidden flotation sample
A3	2.0	200 cm	to 160 cm & Burial 11 exposure, flotation sample
A4	1.0	100 cm	to 100 cm
A5	1.0	100 cm	to 100 cm
A6	0.3	30 cm	to 30 cm
B1	1.1	110 cm	to 110 cm
B2	1.1	110 cm	to 110 cm
B3	1.1	110 cm	to 110 cm
B4	1.0	100 cm	to 100 cm
B5	1.0	100 cm	to 100 cm
B6	1.0	100 cm	to 100 cm
A14	0.3	30 cm	to 30 cm
A15	0.4	40 cm	to 40 cm
A16	0.4	40 cm	to 40 cm
A17	0.4	40 cm	to 40 cm
A18/B18	0.8	80 cm	1 x 2 m unit to 40 cm
18 Units	15.6 m3	200 cm	

Table 12: Col-247 excavation unit detail.

removed and screened during the excavation. All excavation units were dug in 10 cm arbitrary levels except on discovery of burials or features (see below).

Excavation followed a stratigraphic principle in the sense that digging to a level depth was completed in all units before excavation to the next level began. Thus, the excavators got a developing sense of stratigraphic composition and integrity of the deposit, and level record notes could speak to the relationship between the unit and the larger pattern of stratigraphic change in the exposure. Further, the relationship between feature elements found in different units could be assessed, and features could be analyzed in the context of their associated living surface. Generally, when features or burials were first encountered only minor elements were visible, and if these were in the level floor they were left in place for further exposure in the next level. Features were not pedestaled beyond the depth necessary to facilitate horizontal or vertical exposure.

Features or burials encountered in exposure walls presented some challenges. Native American monitors instructed us to follow out traces of Burial 1 and Burial 4, both found lagging into the east wall of Exposure 1 (see **Burials and Human Remains**). This required excavation of burial "windows," and because the burials were adjoining these windows overlapped. Burial 1, found at a depth of 25-45 cm below grid zero, required the removal of a semicircular window out of the east wall of Exposure 1 measuring approximately 120 cm N-S, 60 cm E-W, and 55 cm deep, an estimated 0.5 m^3 of deposit. Burial 4, found at a depth of 60-100 cm below grid zero, was contained almost entirely within the east wall, and required the removal of a long, oval shaped window measuring approximately 240 cm N-S, 80 cm E-W, and 110 cm deep, an estimated 1.8 m^3 of deposit. Because the exposures abutted the original construction trench, the bulk of the windows consisted of trench backfill, which was screened.

A single column sample was dug, measuring 0.5x1 m in plan view, dug in 10 cm arbitrary levels to a maximum depth of 160 cm below grid zero. The column was excavated at the end of field work, after the full vertical extent of excavations had been completed in Exposure 1. The location of the column sample was selected based on wall profiles showing the least disturbance by cultural pit digging and rodent runs in the northwest corner of the exposure. The 0-40 cm section of the column was dug from the north sidewall of Unit B1, and the 40-160 cm section of the column was dug from the south 1/2 of Unit A1.

Flotation samples, column samples, and all burial and feature contexts were screened using 1/8" (3 mm) hardware cloth or finer screens. Excavation unit spoils were screened using 1/4" (6 mm) hardware cloth. Screening was a multistage field and lab procedure, described below.

Burial and Feature Excavation Methods

On discovery of human remains in excavated contexts, a series of steps were taken as spelled out in Appendix A: Recommended Procedures for Burial Recovery and Analysis. Initially, excavation probes would be done to confirm that the bones were human and to determine the position, posture, and orientation of the remains. At this point, all excavation in the vicinity of the remains was conducted using only fine hand tools brushes to free dirt from the exposure. In order to determine the nature and extent of the grave and its contents, controlled excavation extended to a full buffer zone around the perimeter of the remains. Excavation unit boundaries were ignored in favor of a burial-focused provenience scheme, as follows.

A perimeter balk (essentially, a shallow trench) was excavated around the burial, using a buffer of a minimum of 10 cm around the maximum extent of the skeletal remains. The dirt from the perimeter balk was bucketed and screened for cultural materials. Excavation then proceeded inward from the walls of the balk as well as downward from its surface. Loose dirt was scooped out or brushed off into a dustpan or other collection device. Considerable care was taken in the direct exposure of the bones, using fine-pointed bamboo or wood skewers, preferred because they are less likely than metal tools to damage the bone. Buckets, collection bags, notes, and tags were fully labeled per provenience, and a distinction was made between samples from three contexts: (1) *Perimeter Balk* (described above), (2) *Exposure* (dirt removed in exposing the exterior/burial plan, and (3) *Matrix* (dirt from the interstices between bones or associations). Thus, each burial was represented by three collection bags (e.g., "Burial 1 Perimeter Balk," "Burial 1 Exposure," and "Burial 1 Matrix").

Burial records included a detailed scale drawing for each burial, including identification as to side and element of each bone, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, or intrusive disturbance. Formal burial records and an in situ photographic records were also completed for each burial. Feature excavation methods followed a similar scheme.

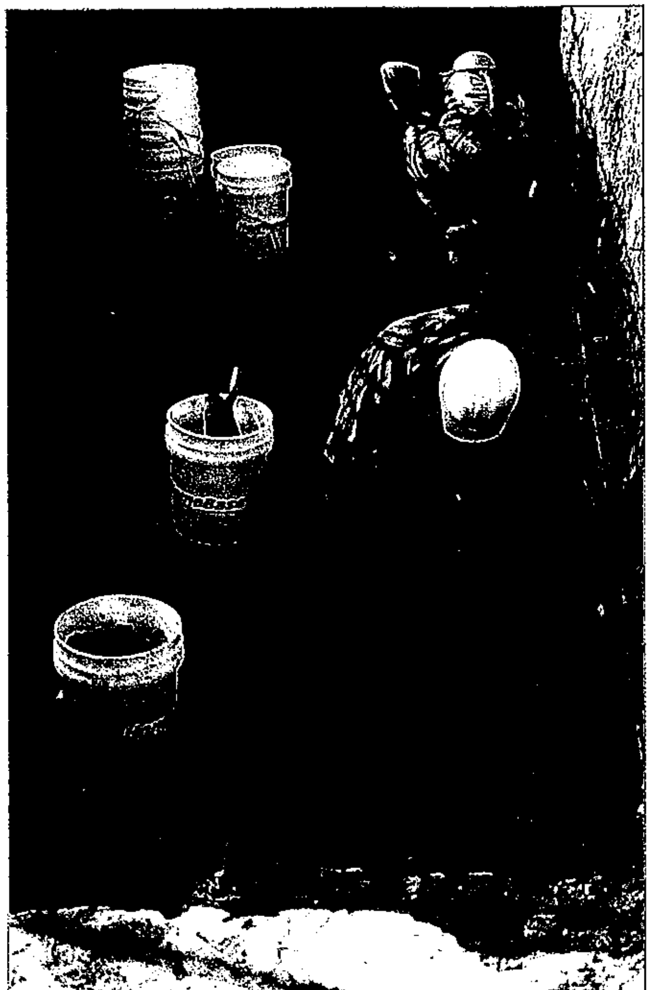


Figure 41: Col-247, Exposure 2, 0-10 cm.

Controlled Water-Screening and HCL Processing

All cultural deposits were screened using an elaborate process necessitated by the prevalence of carbonate precipitates on all objects recovered from the deposit. All hand excavated soils were transported in buckets to an on site dry screening area and screened to the extent possible, usually not much given the high soil moisture and clay content. All screen residues were then bucketed for transport back to the CSU Chico lab for further water processing. Bucketed screen residues were then water-screened through 1/4" or 1/8" screens, as appropriate, and the screen residues were sorted for shell, bone, and sensitive cultural items (e.g., beads). Once this preliminary sort was complete, then the remaining heavy fraction was passed through a 3.0 percent solution HCL bath for a minimum of 15 minutes in order to remove the thick coating of calcium carbonate precipitate (CaCo3). The residues were then rewashed, left to dry, and resorted. The acid bath was very successful, revealing a diverse baked clay assemblage, as well as chipped and ground stone objects that otherwise would have been overlooked.

Col-247 Cultural Stratigraphy

Constituents

Geomorphic studies at Col-247 found evidence of three distinct soil horizons, all of which contained cultural traces, and the middle of which corresponds to the buried midden sampled by the current investigation. This midden at bore characteristics of a soil developed over a long period on a stable landform. Although the deposits lacked fine stratigraphic structure, we did find evidence of significant archaeological stratigraphy. Table 15A shows the distribution of cultural constituents averaged per 10 cm level, units B1-B6 combined. Table 15B shows the distribution of cultural constituents per 10 cm level in the 1/8" column sample.

Overall, the sampled archaeological deposits produced a high to very high density of cultural material from top to bottom in the profile. The high density of cultural material recovered at the base of excavations, 250 cm below surface and 150 cm below grid zero, indicates that the cultural deposit continued for some depth and makes it quite likely that another major cultural horizon exists below the sampled zone.

Given the roadside context of the excavation, the near absence of historical materials confirms the relative isolation of the buried deposits from recent weathering or sources of modern intrusion.

The graphs indicate that different classes of constituents had distinct stratigraphic patterns, with nonhuman bone distributed evenly throughout the profile while peak densities of fired clay and mussel shell occurred at 50-100 cm. Chipped stone flakes showed significant variability, with chert flakes in their highest density and proportion in the 100-150 cm level, metasedimentary flakes in highest proportion in the 50-100 cm level, and obsidian flakes in highest proportion in the 0-50 cm level.

Dating Evidence

A total of nine radiocarbon determinations were obtained for Col-247, including one from a second buried soil sampled in an auger test hole and described in a subsequent chapter (see Chronology). The dates appear in Table 14, arranged in order by depth below grid zero. The dates increase in age with depth, ranging from an average age of 2355 BP in the 0-20 cm level to an average age of 4385 BP at the base of excavations.

Summary of Cultural Components

The sampled portion of Col-247 was composed a discrete, buried soil unit representing a stable mid-Holocene floodplain occupied beginning around 4,300 years and ending approximately 1,700 years ago. Archaeological deposits are contained in

Table 13: Radiocarbon determinations from Col-247.

Sample Code	Lab Code	Stratum	Association	Flot #	Locus	Depth bd (cm)	MRA 14C BP	One Sigma CAL BP Range
HWY 45 #12	Beta-150827	Unit IIS1	Hearth Feature	47	Exp 1	10-20	1670+/-40	1500 to 1690
HWY 45 #15	CAMS-80290	Unit IIS1	Olivella G2 bead	n/a	Exp 2	10-30	2745+/-30	2129 to 2189
HWY 45 #13	Beta-150828	Unit IIS1	Matrix	17	Exp 1	40-50	2650+/-40	27030 to 2780
HWY 45 #16	CAMS-82181	Unit IIS2	Olivella L2 bead	n/a	Exp 1	60-70	3585+/-35	3187 to 3257
HWY 45 #11	Beta-150826	Unit II/S2	Matrix	20	Exp 1	90-100	3030+/-40	3070 to 3340
HWY 45 #09	Beta-150824	Unit II/S3	Matrix	38	Exp 1	130-140	3390+/-40	3470 to 3680
HWY 45 #08	Beta-150823	Unit II/S3	Matrix	4	Exp 1	160-180	3250+/-40	3370 to 3550
HWY 45 #01	Beta-142092	Unit II/S3	Burial 11 Pit Lining	n/a	Exp 1	160-180	3950+/-60	4235 to 4535
HWY 45 #14	Beta-151594	Unit I	Auger 3-16-B	n/a	Exp 1	225	5230+/-60	5900 to 6180

Table 14: Distribution of cultural constituents per 10 cm level, Col-247. A - 1/4" screen sample per 0.1 m³, B - 1/8" screen sample per 0.05 m³.

A	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	0.2	0.01	n/a	607.6	n/a	84.4	45	40.2	13	1	8
010-020	0.2	0.05	n/a	821.7	n/a	123.0	64	49.2	47	1	7
020-030	0.0	0.00	n/a	939.3	n/a	228.1	67	40.9	18	1	10
030-040	0.0	0.00	n/a	772.0	n/a	173.9	76	37.6	27	1	6
040-050	0.0	0.00	n/a	1031.4	n/a	300.2	76	48.6	27	1	6
050-060	0.0	0.00	n/a	1084.9	n/a	307.6	116	47.0	28	2	8
060-070	0.0	0.00	n/a	989.5	n/a	359.8	94	47.2	30	2	5
070-080	0.0	0.00	n/a	792.5	n/a	440.1	83	33.5	19	2	6
080-090	0.0	0.00	n/a	1105.6	n/a	512.4	132	48.4	55	2	6
090-100	0.0	0.00	n/a	1017.9	n/a	336.3	105	54.4	40	3	5
100-110	0.0	0.00	n/a	622.0	n/a	329.4	98	52.5	23	2	4
110-120	0.0	0.00	n/a	531.1	n/a	179.8	59	37.0	9	0	2
120-130	0.0	0.00	n/a	347.4	n/a	190.2	73	37.8	7	2	4
130-140	0.0	0.00	n/a	353.4	n/a	243.5	40	45.6	4	3	1
140-150	0.0	0.00	n/a	193.3	n/a	137.4	113	24.5	4	2	2

B	Historical Materials		Fired Clay		Mussel Shell		Nonhuman Bone		Metasedimentary Flakes	Chert Flakes	Obsidian Flakes
	n	WGT	n	WGT	n	WGT	n	WGT	n	n	n
000-010	0.0	0.00	n/a	134.4	n/a	34.5	180	13.4	33	0	10
010-020	0.0	0.00	n/a	141.7	n/a	80.1	277	226.2	21	2	17
020-030	0.0	0.00	n/a	196.2	n/a	77.8	128	25.2	1	1	5
030-040	0.0	0.00	n/a	361.0	n/a	134.1	310	19.2	2	0	22
040-050	0.0	0.00	n/a	490.7	n/a	155.8	253	95.1	32	0	21
050-060	0.0	0.00	n/a	532.4	n/a	183.3	360	28.2	60	3	12
060-070	0.0	0.00	n/a	367.1	n/a	274.7	510	38.2	6	3	15
070-080	0.0	0.00	n/a	384.2	n/a	105.6	503	28.2	97	0	14
080-090	0.0	0.00	n/a	100.6	n/a	189.2	264	27.7	38	0	8
090-100	0.0	0.00	n/a	334.5	n/a	128.9	469	38.6	72	1	13
100-120	0.0	0.00	n/a	118.3	n/a	114.4	434	24.5	12	3	11
100-120	0.0	0.00	n/a	123.9	n/a	94.2	292	19.6	19	2	7
120-130	0.0	0.00	n/a	119.8	n/a	57.0	173	12.4	51	2	6
130-140	0.0	0.00	n/a	28.1	n/a	66.8	119	8.5	0	1	6
140-150	0.0	0.00	n/a	33.8	n/a	70.3	74	9.8	6	3	1
150-160	0.0	0.00	n/a	29.2	n/a	35.7	114	9.0	13	0	4

a well developed soil consistent with a long period of development in place. Close examination of the soil profile showed no evidence of distinct stratigraphic breaks but gradational changes. However, the depth distribution of cultural constituents and an array of archaeological radiocarbon dates demonstrates internal stratigraphy.

For the purposes of archaeological analysis, Col-247 deposits are broken into three cultural strata, *Stratum 1*, 0-50 cm in depth and dating 1675-2755 BP, *Stratum 2*, 50-100 cm in depth and dating 2755-3205 BP, and *Stratum 3*, 100-150 cm in depth, dating between 3575-4385 BP. Analysis below will show the utility of these distinctions and evidence for a distinctive pattern of culture change.

CHIPPED STONE

INTRODUCTION

A total of 163 flaked stone tools, including 116 projectile points and fragments, 6 flake tools, 33 cores and core tools, and 8 spall tools was recovered during the Hwy 45 project. Tables containing metrical and non-metrical observations appear in **Appendix B.**

PROJECTILE POINTS

Classification

A total of 46 stylistically diagnostic projectile points was recovered during the Hwy 45 project. The classification used here is simple and generalized, focused on extraregional comparison. Elaborate projectile point classifications have been generated for the nearby northern Sierra and central North Coast Ranges, and we should expect stylistic properties to be shared with these regions. However, the relationships run deeper than this. Because the valley contained few or no chipped stone resources suitable for projectile points, the Hwy 45 specimens were made of materials originating from other regions, including basalt from the Northern Sierra, obsidian from the Southern Cascades and Southeast Sierra, and obsidian, basalt, and chert from the central North Coast Ranges (see **Appendix C**). A couple of factors indicate that many of the points were actually acquired ready-made via trade from these regions. The relative rarity of chipped stone flaking debris in the Hwy 45 sites would argue against local manufacture. Further, there is also a tendency for Coast Range stylistic types to be made of Coast Range source materials and Sierran stylistic types to be made of Sierran source materials, indicating that the point might have been made in their general region of origin. Thus, in addition to its morphological agenda, the Hwy 45 projectile point classification can also be understood as an exercise in identifying and defining prehistoric interaction spheres.

As a first step in classification, a distinction was made between arrowpoints versus dart and spear points. This was an easy distinction to make because the sample was clearly divergent, in distribution (Table 15) and morphology (Figure 42). All arrowpoints weighed between 0.5-2.0 gm

Table 15: Chronostratigraphic distribution of projectile points from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-245/H	Col-158A	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**815 BP**	**800 BP**	**< 400 BP**	**Total**
Dart point fragments	3	14	20	1	-	-	-	38
Mendocino concave-based	1	-	-	-	-	-	-	1
Leaf-shaped	1	2	2	-	-	-	-	5
Willits corner-notched	1	2	2	-	-	-	-	5
Martis side-notched	-	1	-	-	-	-	-	1
Contracting-stemmed, small blade	1	3	1	-	-	-	-	5
Contracting-stemmed, large blade	2	-	4	1	-	-	-	7
Arrowpoint fragments	-	-	-	6	4	3	3	16
Arrowpoint preforms	-	-	-	4	8	6	2	20
Gunther barbed wide neck	-	-	-	2	1	-	-	3
Gunther barbed narrow neck	-	-	-	2	3	-	1	6
Rattlesnake corner-notched	-	-	-	2	1	1	-	4
Rattlesnake side-notched	-	-	-	-	-	-	5	5
Total	9	22	29	18	17	10	11	116

and were found associated strictly with components dating between 790-1175 CAL BP. In contrast, dart and spear points weighed between 2.6-12.0 gm and were found almost exclusively at Col-247, dating between 1675-4385 CAL BP. The exceptions were two dart point fragments from Col-158B indicating the presence of an Upper Archaic trace component at that locus.

Rattlesnake Series Arrowpoints

A total of nine Rattlesnake series points was recovered (Figure 43, a-g). Complete specimens ranged between 14.2-25.0 mm long (AVG: 21.6 mm), 10.2-16.2 mm wide (AVG: 13.6 mm), 2.0-4.5 mm thick (AVG: 3.5 mm), and 0.6-0.9 gm in weight (AVG: 0.6 gm). A limited range of source materials was represented, with three specimens of Napa Valley obsidian and six of Borax Lake obsidian. There were two distinctive morphological types with significant differences in source materials and dating results.

Rattlesnake Side-Notched. Five Rattlesnake side-notched points were recovered (Figure 43, a-c, f-g). The type was defined by wide neck width relative to blade width (NW/WMX≥0.52, per White 1984:Figure 37A). All five specimens were submitted for obsidian analysis. Three of the five side-notches were made of Napa Valley obsidian, and two were of Borax Lake obsidian. Obsidian hydration testing yielded four rim values ranging between 1.4-1.5 microns and one Borax Lake obsidian specimen with a rim value of 3.2 microns.

Rattlesnake Corner-Notched. Four Rattlesnake corner-notched points were recovered (Figure 43, d-e). The type was defined by narrow neck width relative to blade width (NW/WMX<0.52, per White 1984:Figure 37A). All four specimens were basal fragments. Two were stems with portions of the blade (Figure 43, d-e), and two were stems absent the blade. The two large fragments were submitted for obsidian studies. Both points were made of Borax Lake obsidian, and yielding obsidian hydration rims of 2.4 and 2.8 microns.

Distribution

Rattlesnake series points were recovered from the same three components that produced all of the Gunther barbed points, Col-246/H (n=5), Col-245/H (n=1), and Col-158 (n=3).

All five of the Rattlesnake side-notched points were recovered from Col-246/H (<400 BP). Four of these were submitted for obsidian hydration analysis and had rim values between 1.4-1.5 microns. Three Rattlesnake corner-notched points were recovered from Col-158, one from Locus A (800 CAL BP) and two from Locus B (1030-1175 CAL BP). One of these yielded a rim value of 2.4 microns. One specimen (326-050-05), was recovered from Col-245/H, found associated with the buried midden (815 CAL BP). This specimen yielded an obsidian hydration rim of 2.8 microns, consistent with the Gunther barbed results from this stratum.

Gunther Barbed Series Arrowpoints

Description

A total of nine Gunther barbed series points was recovered (Figure 43, j-r). Complete specimens ranged between 16.5-36.7 mm long (AVG: 22.2 mm), 11.9-22.6 mm wide (AVG: 16.4 mm), 3.3-5.0 mm thick (AVG: 4.4 mm), and 0.5-2.0 gm in weight (AVG: 0.9 gm). A wide range of source materials are represented, with four specimens of Napa Valley obsidian, three specimens of Borax Lake obsidian, one of basalt (no source determination), and one of white chert or opalite. All seven obsidian specimens were submitted for obsidian hydration analysis, the four Napa Valley specimens yielding rims between 1.5 to 3.0 microns (AVG: 2.2 microns) and the three Borax Lake specimens also yielding rims between 1.5-3.0 microns (AVG: 2.0 microns). Two morphological subtypes can be distinguished, wide-necked and narrow-necked variants. In the nearby Central North Coast Ranges, these two variants have temporal and spatial meaning (Jaffke 1997).

Gunther Wide-Necked. Three wide-necked Gunther barbed points were recovered (Figure 43, n-p). Like the North Coast Ranges examples, the Hwy 45 wide-necked Gunthers are larger overall than other Gunther barbed points. They have large blades, pronounced barbs (PSA 134-157), maximum neck width ≥9.0 mm and a long stem squared off at the apex. The three specimens were all made from different materials, one of white chert, one of basalt, and one of obsidian. The two latter specimens were submitted for source characterization including one of Napa Valley obsidian and one of Gold Lake basalt. The obsidian specimen had a hydration rim value of 1.5 microns.

Gunther Narrow-Necked. Six narrow-necked Gunther barbed points were recovered (Figure 43, h-m).

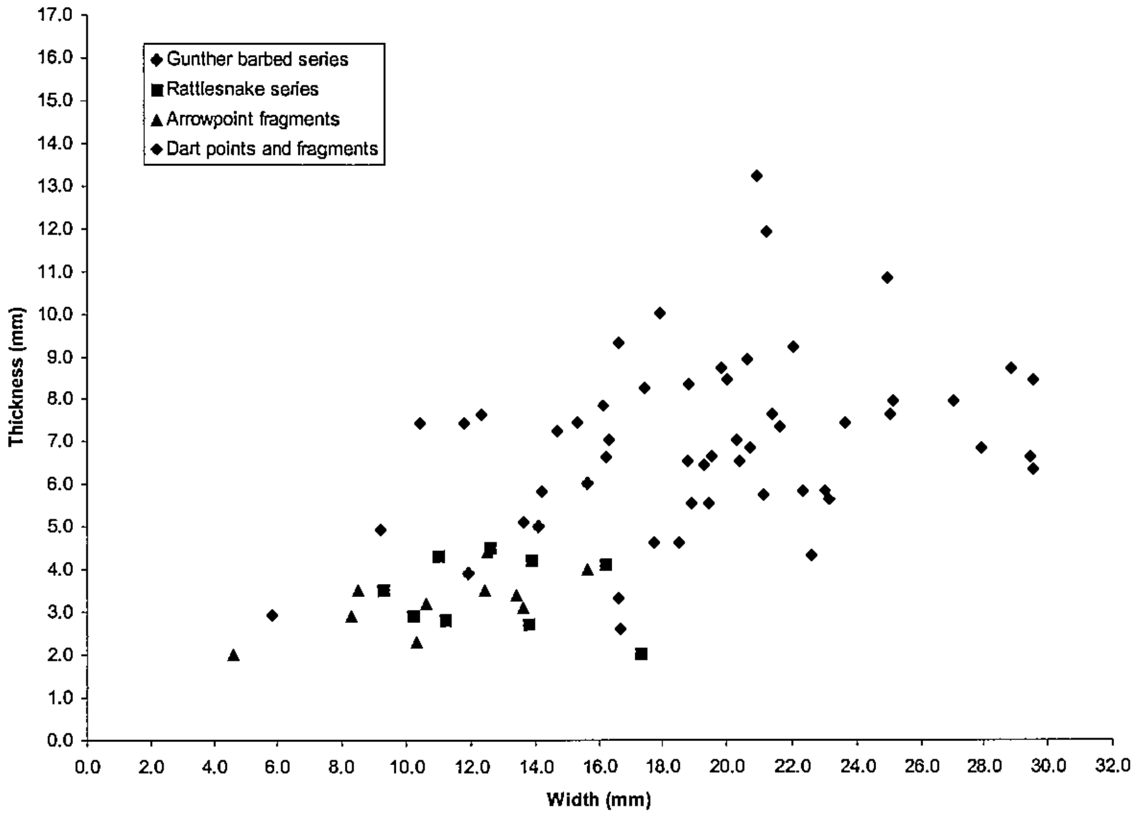


Figure 42: Relationship between thickness and width, all projectile points and fragments other than margins.

The narrow-necked variants were marked by small blades and maximum neck widths <9.0 mm. All six specimens were submitted for obsidian studies. Three were made of Borax Lake obsidian, yielding hydration rims of 1.5 to 3.0 microns (AVG=2.0 microns). Three were made of Napa Valley obsidian, yielding hydration rims of 1.5-3.0 microns (AVG=2.3 microns)

Distribution

Gunther barbed series points were recovered from three components, Col-246/H (n=1), Col-245/H (n=4), and Col-158B (n=4).

A single specimen recovered from the Col-246/H midden fill (<400 BP)) is problematic because it is fragmentary and has an unusual bifurcated base (Figure 43, h). It is made of Napa Valley obsidian and had a hydration rim value of 1.5 microns. Four Gunther points were recovered from Col-158, all four from Locus B (1030-1175 CAL BP). The four included one specimen of basalt, two of Borax Lake obsidian and one of Napa Valley obsidian. The obsidian specimens had rim values between 1.5 -1.6 microns. Four specimens were recovered during investigations at Col-245/H (815 CAL BP). The large white chert specimen (Figure 43, o) was found during the Fairgrounds recovery, and two Napa Valley obsidian points were found in mixed spoils screened at the Col-245/H vault pit. None of the three specimens can be attributed to a specific chronostratigraphic component. However, a Borax Lake obsidian specimen recovered from the buried midden at Col-245/H (Stratum 5) yielded an obsidian hydration rim of 3.0 microns, indicating it was most likely derived from the buried midden.

Arrowpoint Fragments

A total of 16 arrowpoint fragments too fragmentary to determine stylistic type was recovered. Distinguished from dart point fragments by their narrow maximum width (WMX AVG: 13.9 mm), thin cross section (THK AVG: 2.9 mm) (Figure 42), and fine flaking, the specimens consisted of 12 tips, three margins, and one midsection. Only one specimen was submitted for geochemical source characterization, a basalt tip fragment sourced to "Unknown 1." The remaining specimens were characterized based on visual properties. Two of these were attributed to Napa Valley obsidian, eight to Borax Lake obsidian, and five of uncertain source attribution.

Distribution

Arrowpoint fragments were recovered from the same three components producing Gunther barbed and Rattlesnake series points, Col-246/H (n=4), Col-245/H (n=3), and Col-158 (n=9).

Arrowpoint Preforms

A total of 20 arrowpoint preforms and fragments was recovered. These are interpreted as trimmed flakes staged to arrowpoint preforms for transport and trade. They are all bifacially worked. Specimens with complete dimensions ranged between 17.8-35.3 mm long (AVG: 26.7), 15.4-25.2 mm wide (AVG: 19.8 mm), and 3.0-7.3 mm thick (AVG: 5.5). Compared against the dimensions of complete arrowpoints, it appears that most final trimming would have been done on the margins and would have resulted in a decrease in thickness by about one-third (Figure 42).

Triangular Preforms. Six specimens are worked to a stage just prior to corner or side-notching, fully invasively flaked and finished to a triangular form (Figure 44, a-d). Three of these were submitted for obsidian studies, including two of Borax Lake obsidian and one of Napa Valley obsidian. Obsidian hydration rim values ranged between 1.3-2.6 microns (AVG=1.7 microns). Three complete specimens averaged 21.4 mm long, 17.7 mm wide, and 4.3 mm thick.

Rough Preforms. Four specimens were fully invasively flaked but had a rough finish and ovate plan view shape (Figure 44, e-g). Three of these were submitted for source characterization, including two of Gold Lake basalt and one of Napa Valley obsidian. The latter (Figure 44, f) produced an obsidian hydration rim value of 1.5 microns.

The remaining ten specimens are simple edge-trimmed flakes oval to angular in plan view (e.g., Figure 44, h-j). Visual inspection indicates all ten specimens were made of Borax Lake obsidian.

Distribution

Arrowpoint preforms were recovered from the same three components that produced arrowpoints and fragments, Col-246/H (n=2), Col-245/H (n=8), and Col-158A (n=6) and Col-158B (n=4).

Contracting-Stemmed Dart Points

Description

A total of 12 contracting-stemmed dart points was recovered (Figures D and E). Complete specimens ranged between 27.5-71.4 mm long (AVG: 51.9 mm), 16.3-29.5 mm wide (AVG: 25.0 mm), 5.7-8.7 mm thick (AVG: 7.6 mm), and 3.2-11.5 gm in weight (AVG: 6.9 gm). Notably, ten of the 12 specimens (83.0%) were complete (counting as complete two "conditionally complete" pieces with tip ends missing). All 12 specimens were submitted for geochemical and obsidian studies. A narrow range of source materials were represented, with two specimens of Borax Lake obsidian and ten specimens of basalt. The latter included two of Morgan Valley (Lake County) basalt, two of Gold Lake basalt, and five of unknown basalt source materials. The two Borax Lake specimens had rims of 5.9 microns and "no visible band."

Focusing on stem variation only the contracting-stemmed points were quite uniform, with square to contracting stems (AVG PSA=79.4) averaging 10.0 mm maximum neck width. However, two morphological variants can be identified which show significant differences in source materials and stratigraphic distribution indicating the difference has temporal meaning. Using a simple calculation for "blade area" (width blade X length blade), seven specimens had *large blades* (>950 mm^2) and five had *small blades* (<950 mm^2).

Large Blade Contracting-Stemmed. Large blade contracting-stemmed points (Figure 45) had blades which were on average longer and wider, and stems that were longer than the small blade examples. The large blade specimens averaged 58.6 mm long, 25.3 mm wide, and 8.9 gms weight. Stems averaged 9.0 mm long. All six specimens were carefully worked and thin in relation to length and width. Two specimens were serrated, and two had stems with deliberately squared bases. These points bear similarities to the Houx contracting-stemmed points of Clear Lake basin (Fredrickson 1961, 1973; White and Fredrickson 1981; White 1984; White *et al.* 2002), and to Martis (Heizer and Elsasser 1953; Elsasser 1960) or Mesilla contracting-stemmed points (Ritter 1970; Kowta 1988) of the western slope of the Northern Sierra.

All six large blade contracting-stemmed points were submitted for geochemical source characterization. All six were basalt, four of these from unknown sources (U4, U8, U9) and two from Gold Lake. Thus, the source characterizations would support the Sierran (Martis/Mesilla) ties.

Small Blade Contracting-Stemmed. Small blade contracting-stemmed points (Figure 46) had blades which were on average shorter and narrower, and stems that were shorter than the large blade examples. The small blade specimens averaged 39.3 mm long, 20.2 mm wide, and weighed 4.0 gms weight. Stems averaged 6.8 mm long. They ranged from carefully worked to rough and edge-trimmed but were thin in relation to length and width. Two had deliberately squared stems. There were no serrated specimens. These points bear similarities to small Houx contracting-stemmed points or Mendocino contracting-stemmed points of Clear Lake basin (White 1984; White *et al.* 2002), and small Martis or Mesilla contracting-stemmed points of the western slope of the Northern Sierra (Heizer and Elsasser 1953; Elsasser 1960; Ritter 1970; Kowta 1988).

The small blade contracting-stemmed points were marked by significant source material variability. One specimen was of a dark gray chert (Figure 46, a). The remaining five were submitted for geochemical source characterization. Three of these were basalt, two from the Morgan Valley source (eastern Lake County) and one from an unknown source (U3). Two obsidian specimens were both of Borax Lake obsidian. One of these produced a rim value of 5.9 microns. Thus, and in contrast to the large blade variants, small blade source characterizations support the Coast Range (Houx/Mendocino) ties.

Distribution

Contracting-stemmed points were recovered from two sites Col-158 (n=1) and Col-247 (n=11). All six of the large blade variants were recovered from Col-247. They were associated primarily with Stratum 1 (1675-2755 CAL BP). Two specimens from deeper levels were probably intrusive via (now disturbed) burial associations. Five of the small blade variants were found at Col-247, primarily associated with Stratum 2 (2755-3295 CAL BP). One of the small blade variants was found at Col-158B, indicating a trace Archaic component at that site.

Corner and Side-Notched Dart Points

Description

A total of six corner and side-notched dart points was recovered (Figure 47). Complete specimens ranged between 26.9-55.0 mm long (AVG: 36.9 mm), 15.7-29.4 mm wide (AVG: 21.2 mm), 5.5-6.8 mm thick (AVG: 6.2 mm), and 2.6-5.3 gm in weight (AVG: 3.9 gm). Five of the six specimens were submitted for geochemical and obsidian studies. A wide range of source materials were represented, with two specimens of Tuscan (Cow Creek) obsidian and three of basalt (all three of unknown source materials, U5, U6, U7). The two Tuscan specimens produced rim values of 1.3 and 3.5 microns.

One of the notched points is a large, triangular specimen with a wide, short, square stem and heavily serrated blade (Figure 47, a). The specimen, made from basalt (U5), is morphologically closely similar to large side-notched points associated with the Martis Complex on the Sierra western slope (Heizer and Elsasser 1953; Elsasser 1960; Ritter 1970; Kowta 1988).

The remaining five specimens are corner to side-notched points similar to Willits series points from the central North Coast Ranges (Figure 47 b-e) (Meighan 1955; Baumhoff 1985; Slaymaker 1983; Basgall 1993; White *et al.* 2002). The five specimens include two of basalt (U6 and U7) and three of obsidian (Tuscan and not sourced).

Distribution

Notched dart points were recovered from one site, Col-247. The Martis side-notched point (Figure 47, a) was recovered from Stratum 2 (2755-3295 CAL BP). The Willits series points were found primarily in Stratum 1 and Stratum 2 (3295-1675 CAL BP).

Leaf-shaped Dart Points

Description

A total of five leaf-shaped dart points was recovered (Figure 48, a-e). Complete specimens ranged between 34.0-50.6 mm long (AVG: 43.5 mm), 11.8-27.0 mm wide (AVG: 18.7 mm), 5.8-7.9 mm thick (AVG: 7.1 mm), and 3.8-10.2 gms weight (AVG: 5.9 gm). As a group, the leaf-shaped points were similar to Excelsior series variants in the nearby central North Coast Ranges. The points can be assigned to Excelsior type 'D' (round based, non-shouldered), including variants 1D (Figure 48, a-c), 2D (Figure 48, d) and 3D (Figure 48, e) (per White *et al.* 2002). All five specimens were submitted for geochemical and obsidian studies. One specimen was of basalt of unknown source (U4), and four specimens were of Borax Lake obsidian. Three of these produced measurable rim values, ranging between 1.3 to 4.6 microns (AVG=3.4 microns).

Distribution

Leaf-shaped dart points were recovered from one site, Col-247. They were found primarily in Stratum 1 and Stratum 2 (3295-1675 CAL BP).

Mendocino Concave-Based Dart Point

A single Mendocino concave-based projectile point was recovered (Figure 48, f). The specimen is complete, and measures 35.8 mm long, 16.2 mm wide, 6.6 mm thick, 3.2 gms weight, and has a basal depth of 3.6 mm. Classification to the Mendocino concave-based series follows Baumhoff (1985), Basgall (1993), and White *et al.* (2002), and assignment to the shallow-based subtype follows White *et al.* (1982). The specimen was submitted for obsidian studies. It was identified as Borax Lake obsidian and had a hydration rim value of 6.1 microns, the thickest rim value recorded for a projectile point from the project. The specimen was recovered from Stratum 3 at Col-247 (3575-4385 CAL BP).

FLAKE TOOLS AND AND CORE TOOLS

Flake Tools

Description

Domed Scraper. Specimen 327-61-14 is the only well worked "formed" flake tool in the collection (Figure 49, c). The specimen measures 30.9 mm long, 25.3 mm wide, and 12.1 mm thick. The working edge has a spine-plane angle of 44^0. Based on ancestral arrises visible on the ventral and dorsal faces, the artifact probably originated as a fragment of a large biface blank, but was further worked unifacially around the perimeter to form a thick, domed, uniface circular in plan view with serrations around one margin. The artifact was submitted for obsidian studies. It is made of Borax Lake obsidian and had a hydration rim value of 5.9 microns.

Obsidian Edge-Modified Flakes. Six obsidian edge-modified flakes were recovered (e.g., Figure 49, b). Modifications are restricted to edge working only and the specimens lack deep invasive flaking, suggesting that the modifications are a product of use or expedient modification. They are quite small, averaging 28.3 mm long, 19.9 mm wide, and 6.1 mm thick. The working edges have spine-plane angles ranging between 37^0-72^0, averaging 56.80^0. Four of the six specimens have cortex on one or both faces, indicating that they derived from decortication debris, and may have been considered useless for other purposes. Four of the six specimens have two discrete edge units, and two have single edge units. Edge units included two specimens with single flat edge units and one concave/flat, one concave/convex, and two flat/flat combinations. One specimen (327-39-02) has distinct polish along one working edge. None of the specimens were submitted for obsidian studies.

Metasedimentary Spalls. Eight large spalls derived from coarse grained metasedimentary rock show additional modification such as secondary flakes or wear indicating use (e.g., Figure 49, a). All have some cortical surface indicating they were derived from the same kind of river pebbles used for cores and core tools, described below. In fact, five of the eight appear to be primary cobble decortication flakes probably removed during the initial stages of reduction of cores/core tools. The flakes were trapezoidal to irregular averaging 62.4 mm long, 39.6 mm, 17.7 mm thick, and 49.1 gm weight.

All five specimens have just one discrete working edge, or edge unit, generally flat to slightly convex in plan view. Three specimens (327-11-02, 327-74-03, and 327-93-17) have two to four simple percussion flakes removed from one margin to form a working edge, and these working edges also show some use wear in the form of light polish and nibbling. The remaining five specimens (327-17-04, 327-71-2, 327-141-02, 328-20-04, and 328-38-01) have use wear only, also in the form of light polish and nibbling. The working edges were fairly sharp in cross section, with spine plane angles averaging 46.7^0 (SD=14.0) considerably more acute angled than found on cores and core tools, described below.

It is notable that metasedimentary flakes and spalls were the dominant chipped stone material in all tested sites, especially common in Col-237, where 1/4" screen averaged 307 per m^3. Nevertheless, just these eight specimens showed clear signs of use or retouch. This evidence, combined with the light use wear and evidence for a discrete range of edge angles, indicates that a specific kind of sharp edged flake was occasionally used on an expedient basis for cutting tasks. Otherwise, it appears that cores/core tools more often served this function.

Distribution

Flake tools were found only at the Archaic site, Col-247. Within Col-247, metasedimentary spalls were widespread with one specimen found in Stratum 1 (1675-2755 CAL BP), five in Stratum 2 (2755-3295 CAL BP), and two in Stratum 3 (3575-4385 CAL BP). The serrated, domed scraper was found in Stratum 2 (2755-3295 CAL BP), while obsidian edge modified flakes were found almost exclusively in Stratum 1 (1675-2755 CAL BP).

Cores and Core Tools

Description

As defined here, *cores* are chunks or pebbles worked for the purpose of producing flakes, bearing no evidence of transitory or secondary functions. *Core tools* are cobbles or massive flakes which had sizeable flakes detached (technically qualifying the objects as cores), but showing morphological or wear features indicative of primary or secondary functions. The morphology, use-wear, and physical associations of core tools generally indicate that they were constructed outright for some specific purpose.

Small Obsidian Core. Specimen 325-04-05 (Figure 49, d) is a small obsidian core measuring 31.9 mm long, 25.2 mm wide, 17.4 mm thick, and weighing 11.0 gms. The specimen is bifacial and ovate in plan view, faceted on all surfaces. The worked edges are scarred by several ranks of hinge fractures, which appears to have exhausted its purpose. Platform angles ranged between 65^0 to 90^0 averaging 76^0. The specimen was not subject to obsidian studies, but appears to have been made of Borax Lake obsidian.

Metasedimentary Cores. Ten specimens are cores and core remnants (Figure 50). All are water worn river cobbles of dark grey to dark grey-green, coarse grained metasedimentary material. They averaged 62.8 mm long, 47.1 mm wide, 36.5 mm thick, and 138.9 gm weight. They range from single-struck "test" cobbles (327-74-05) to multifaceted core remnants (327-25-03, 327-42-05, 327-83-23, 327-108-11, and 328-27-03). All of the specimens have at least one striking platform. Generally, flakes were struck obliquely through the midsection of the cobble, indicating that the flakes would be less than 40.0 mm long.

Cores/Hammers. Ten specimens are spalled and battered water worn river cobbles used as hammers (Figure 51). There were five complete and five fragmentary specimens. The complete specimens averaged 71.6 mm long, 61.8 mm wide, 47.0 mm thick, and 312.5 gm weight. Each of the specimens has several scars indicating that large and small flakes were detached at some point in its use life. However, these were generally short

Table 16: Chronostratigraphic distribution of flake tools, cores, and core tools from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-245/H	Col-158A	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**815 BP**	**800 BP**	**< 400 BP**	**Total**
Metasedimentary spalls	1	5	2	-	-	-	-	8
Domed scraper	-	1	-	-	-	-	-	1
Cores/hammers	-	7	3	-	-	-	-	10
Cores/choppers (large)	-	3	2	-	-	-	-	5
Edge modified flakes	-	1	4	-	-	-	-	5
Cores/choppers (small)	-	2	3	2	-	-	-	7
Small obsidian core	-	-	-	-	-	-	1	1
Metasedimentary core	2	2	3	2	-	1	-	10
Total	3	21	17	4	0	1	1	47

flakes, many with hinge or step fractures. Platform angles were obtuse, ranging between 66° to 103°, averaging 89.8°. The striking platforms were also heavily worn, blunted, and rounded by a dense pattern of battering scars. All nine specimens are made from a dense, coarse grained metasedimentary material. One is dark reddish-brown and the others are dark grey to dark grey-green.

One of the hammers (327-115-07) has been battered on all sides, and is so blunted by the battering that it is nearly spherical in shape (Figure 50, a). The four other complete specimens (327-35-02, 327-83-22, 327-85-15, and 327-120-04) are similarly battered on several surfaces but hammer use was concentrated on one battered and spalled end backed by an opposing, rounded end (e.g., Figure 51, b). The fragmentary specimens all appear to be working ends of the latter form.

The high frequency of incomplete specimens is consistent with heavy spalling and battering indicating rough use. Based on the intensity of use wear, these were probably used for stone-on-stone battering, most likely in the manufacture of milling tools or other shaped stone implements.

Cores/Choppers. Sixteen specimens are identified as cores/choppers (Figure 52). Like the cores and cores/hammers described above, they are derived from water worn river cobbles of dark grey to dark grey-green coarse grained metasedimentary material. There are two distinct size classes. "Large cores/choppers" are made from baseball sized cobbles weighing more than 220 gm (n=5). "Small cores/choppers" are made from smaller, flat "skipping stone" pebbles weighing less than 140.0 gm (n=7). Three specimens (327-56-10, 328-76-01, and 328-79-01) are workin g edge fragments indeterminate as to type.

Large Cores/Chopper. Large cores/choppers were made from spherical to ovate cobbles averaging 74.8 mm long, 70.8 mm wide, 44.2 mm thick, and 268.9 gm weight. All five have a classic "horsehoof" or domed form, chipped along one margin to form an ax-like or wedge-like bevelled edge with a substantial cortical "backing" opposite the chipped edge (Figure 52). The bit edges were all unifacially worked, consisting of a few broad, trapezoidal primary flakes overlain by a series of shorter, hinge and step fractured retouch flakes. Spine plane angles ranged between 43° to 79°, averaging 65°.

Small Cores/Choppers. Small cores/choppers were made from small, disk-shaped pebbles averaging 61.1 mm long, 51.6 mm wide, 24.5 mm thick, and 90.2 gm weight. They have been modified along one edge or around most of the perimeter with detachment of short, primary trapezoidal flakes, leaving one edge for rounded "backing." Two of the specimens (327-77-04 and 327-95-16) are unifacially worked and four (327-85-16, 327-110-14, 328-52-03, and 328-56-02) are bifacially worked.

Both large and small specimens possess nibbling and light polish on one or more edge indicating use as scrapers or planers.

Distribution

Cores and core tools were widespread in the project area, found at Col-247, Col-158, and Col-246/H. Unmodified metasedimentary cores were especially widespread and found in nearly all project components. Metasedimentary cores/hammers and large cores/choppers occurred exclusively at the Archaic site Col-247, with ten specimens found in Stratum 2 (2755-3295 CAL BP) and five in Stratum 1 (1675-2755 CAL BP). The small obsidian core was found at the contact period site Col-246/H (<400 BP).

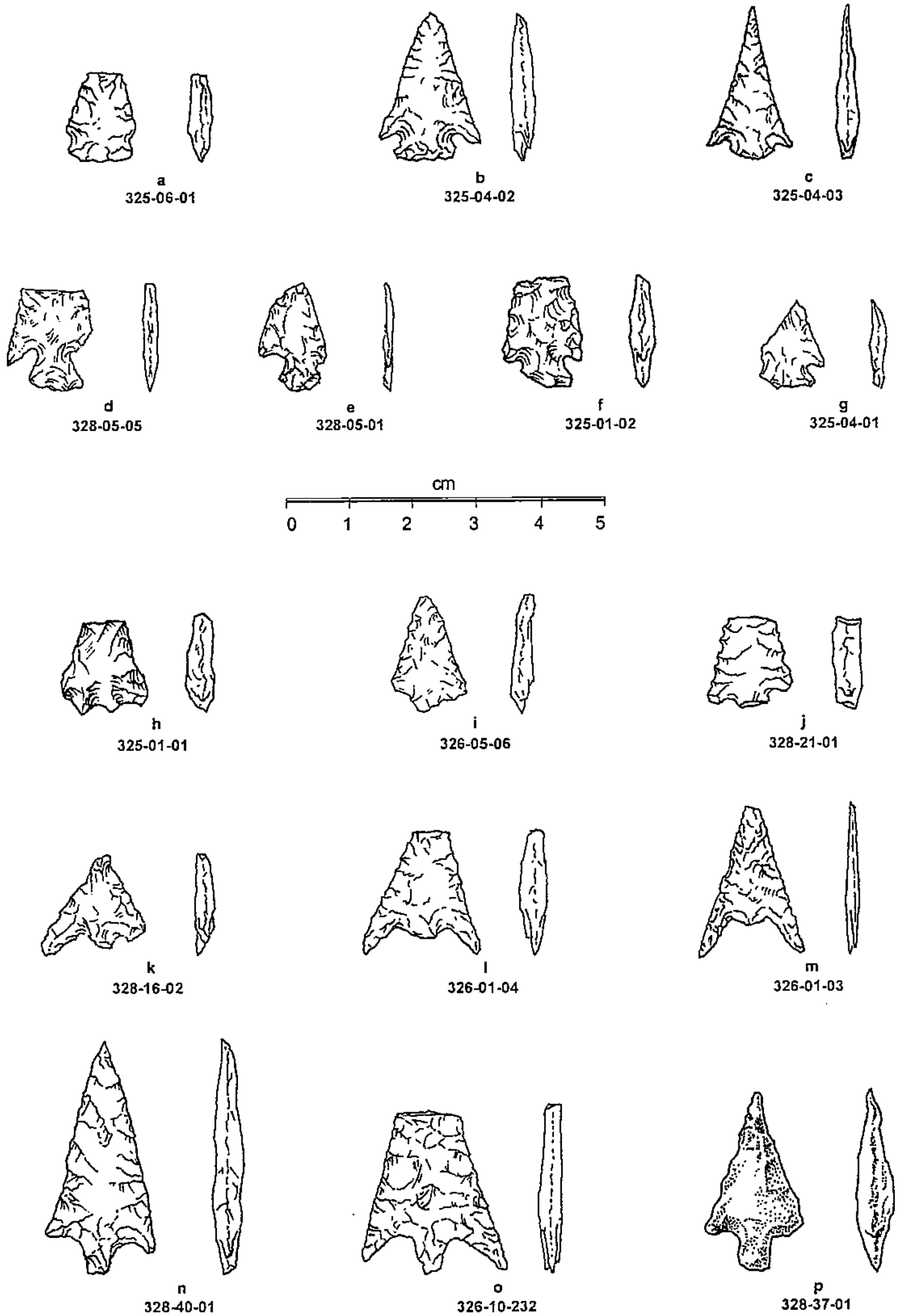


Figure 43: Rattlesnake corner-notched (a-g) and Gunther-barbed points (h-p).

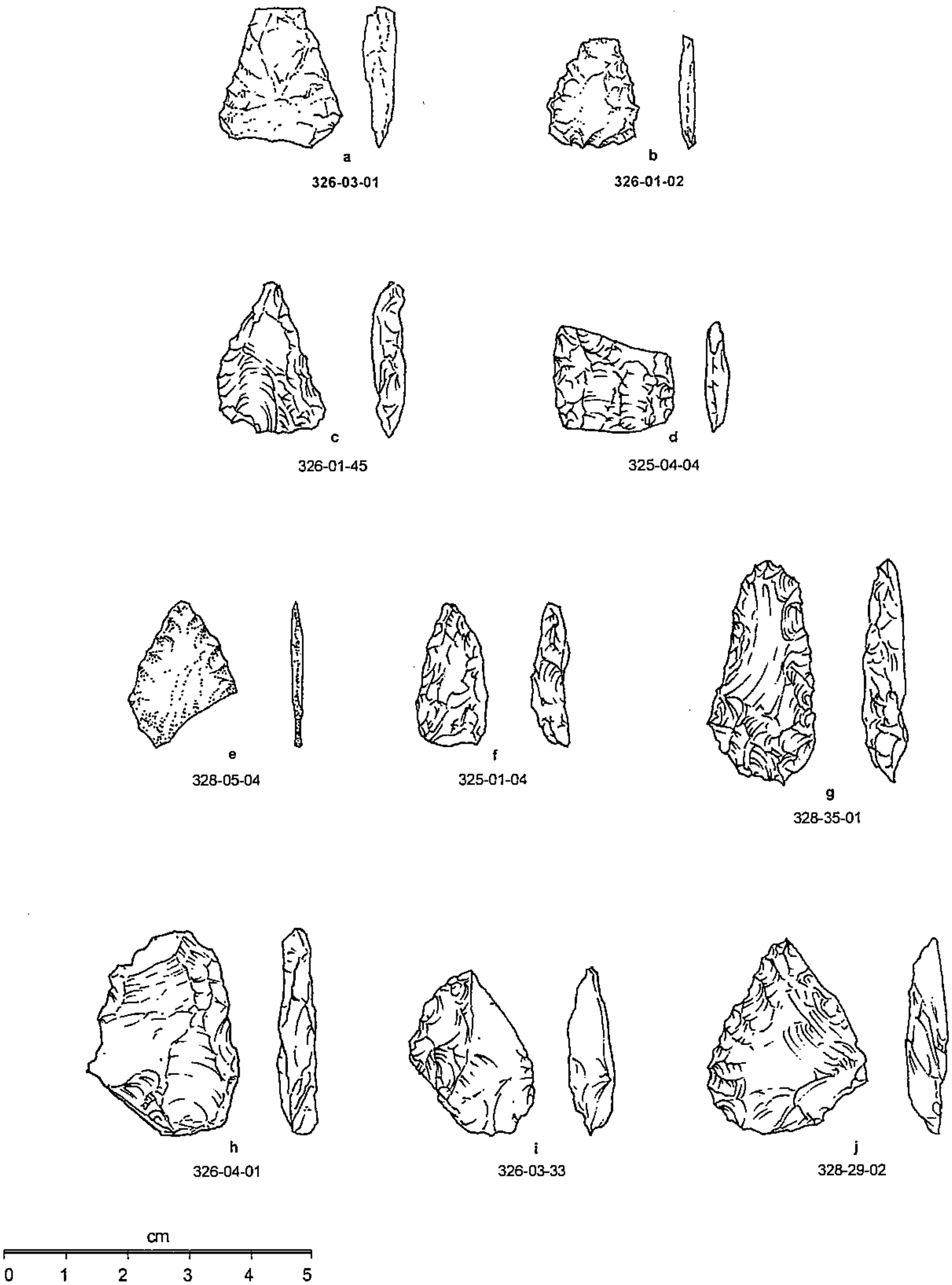


Figure 44: Arrowpoint preforms.

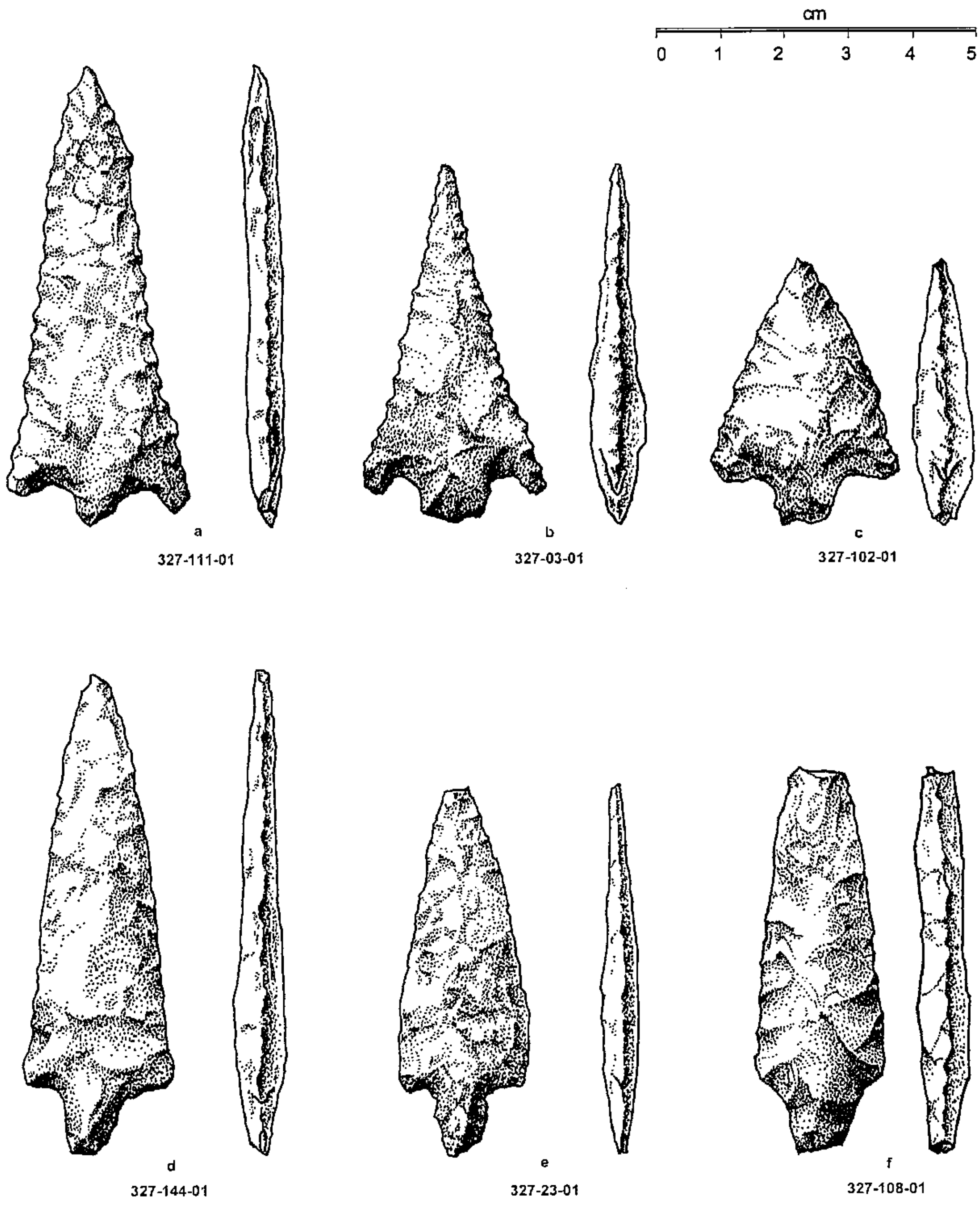


Figure 45: Large-blade contracting-stemmed points.

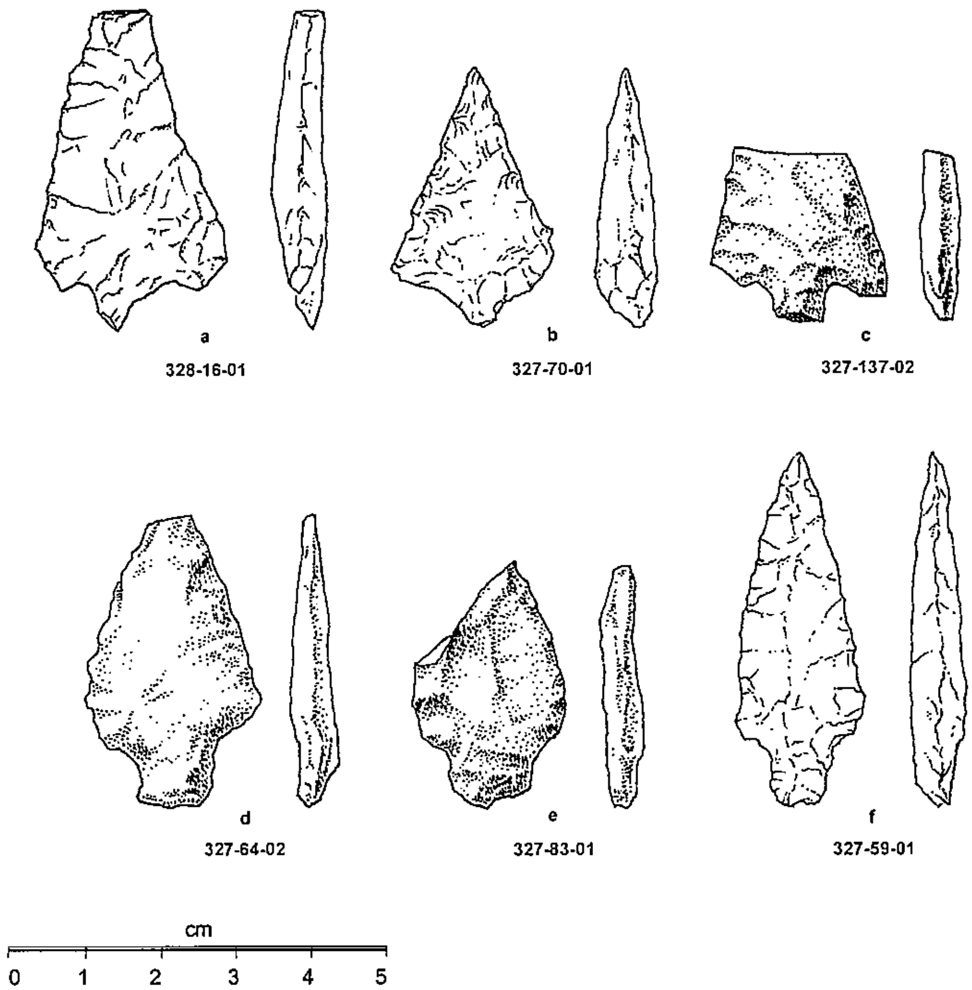


Figure 46: Small blade contracting-stemmed points.

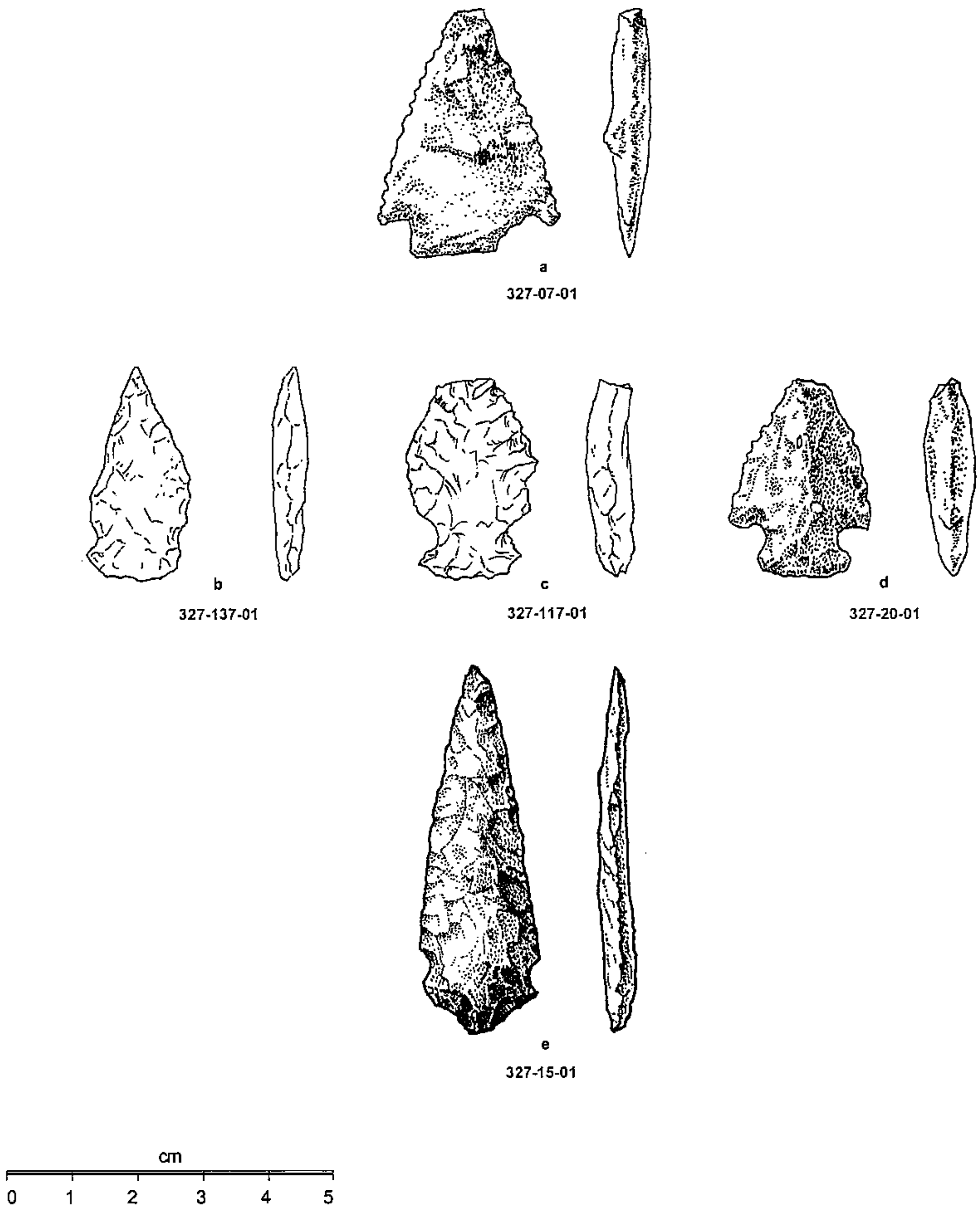


Figure 47: Martis side-notched (a) and Willits side and corner-notched points (b-e).

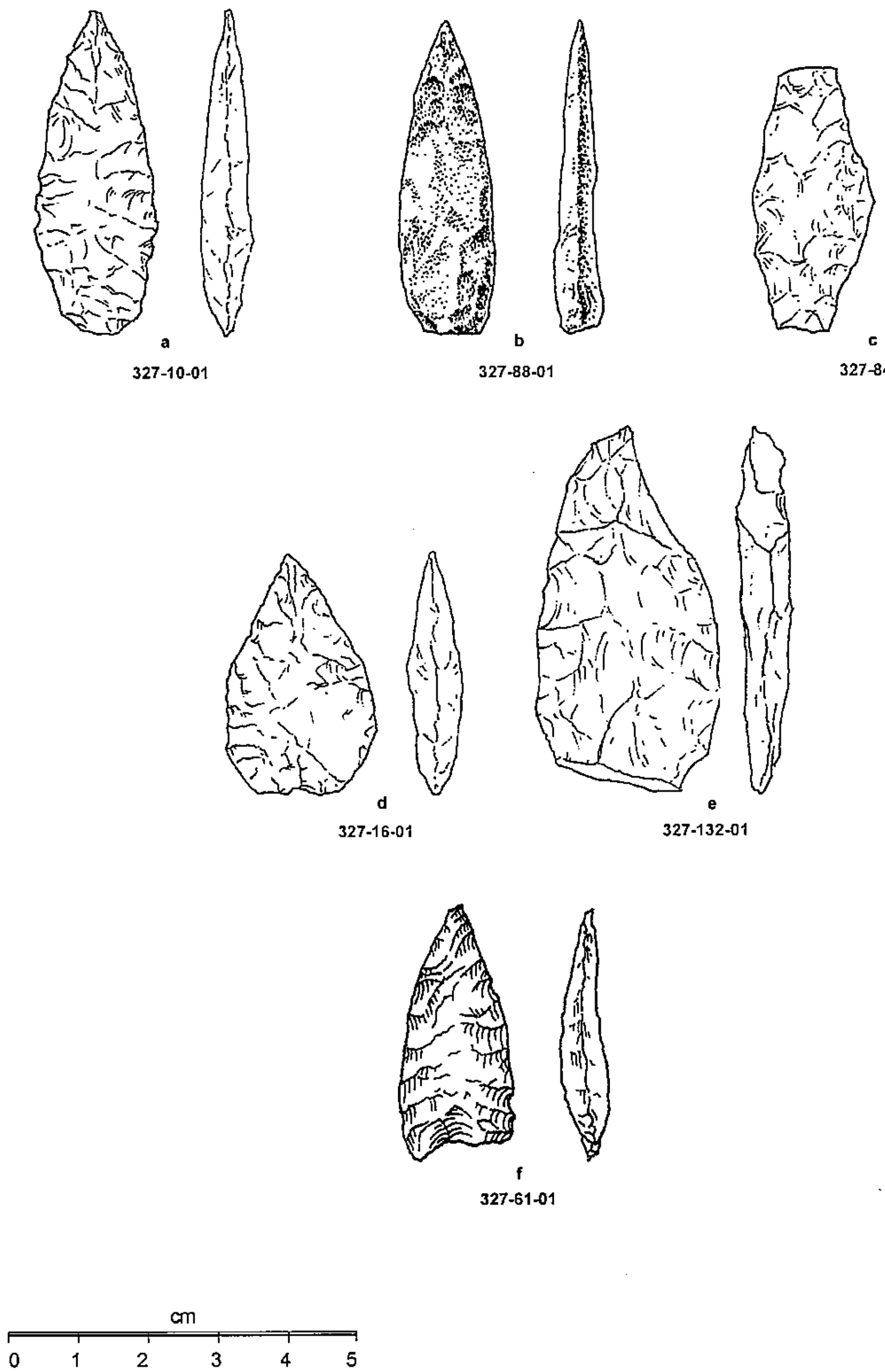


Figure 48: Narrow leaf-shaped (a-c), broad leaf-shaped (d-e), and concave-based points (f).

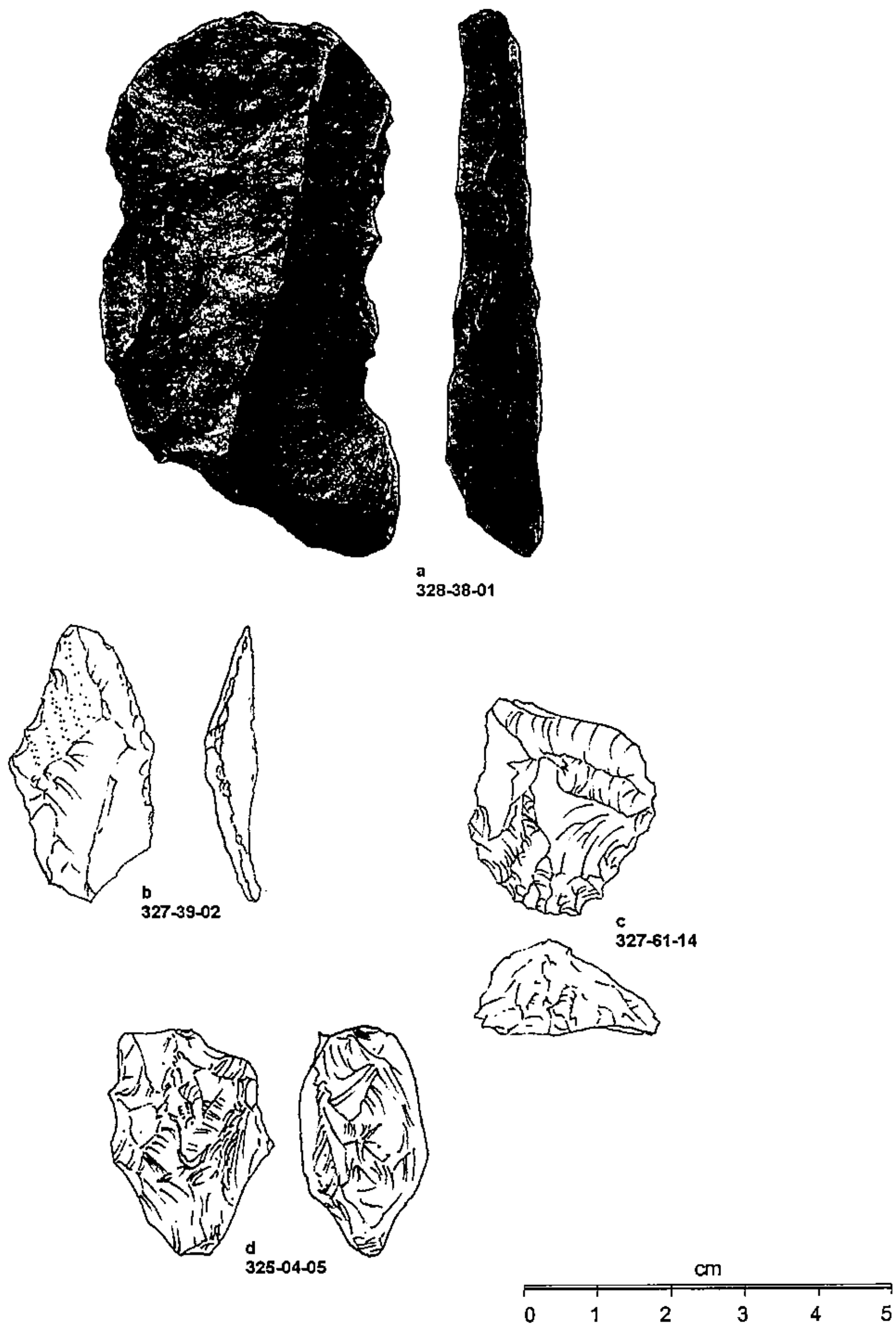


Figure 49: Flake tools and small core.

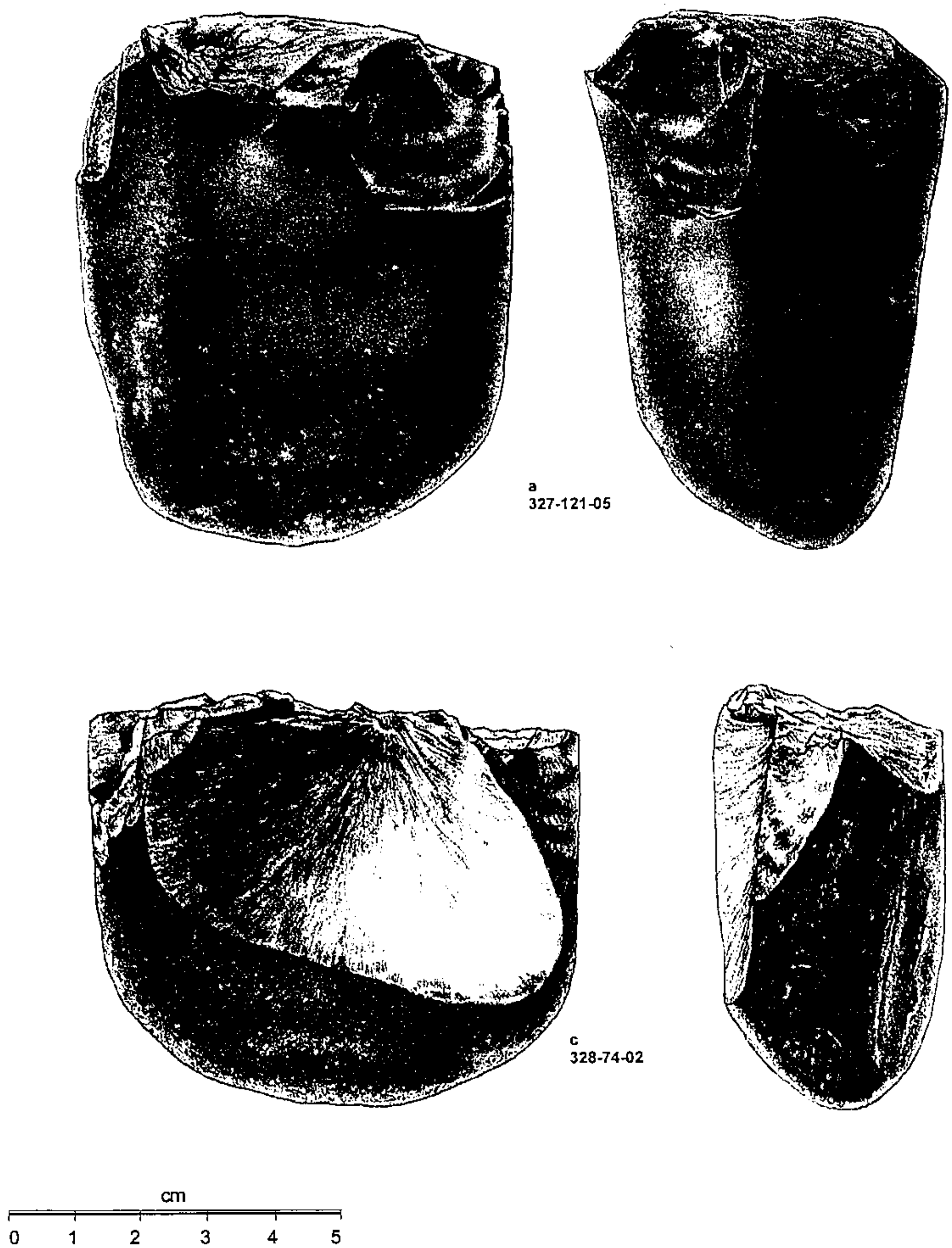


Figure 50: Large cores.

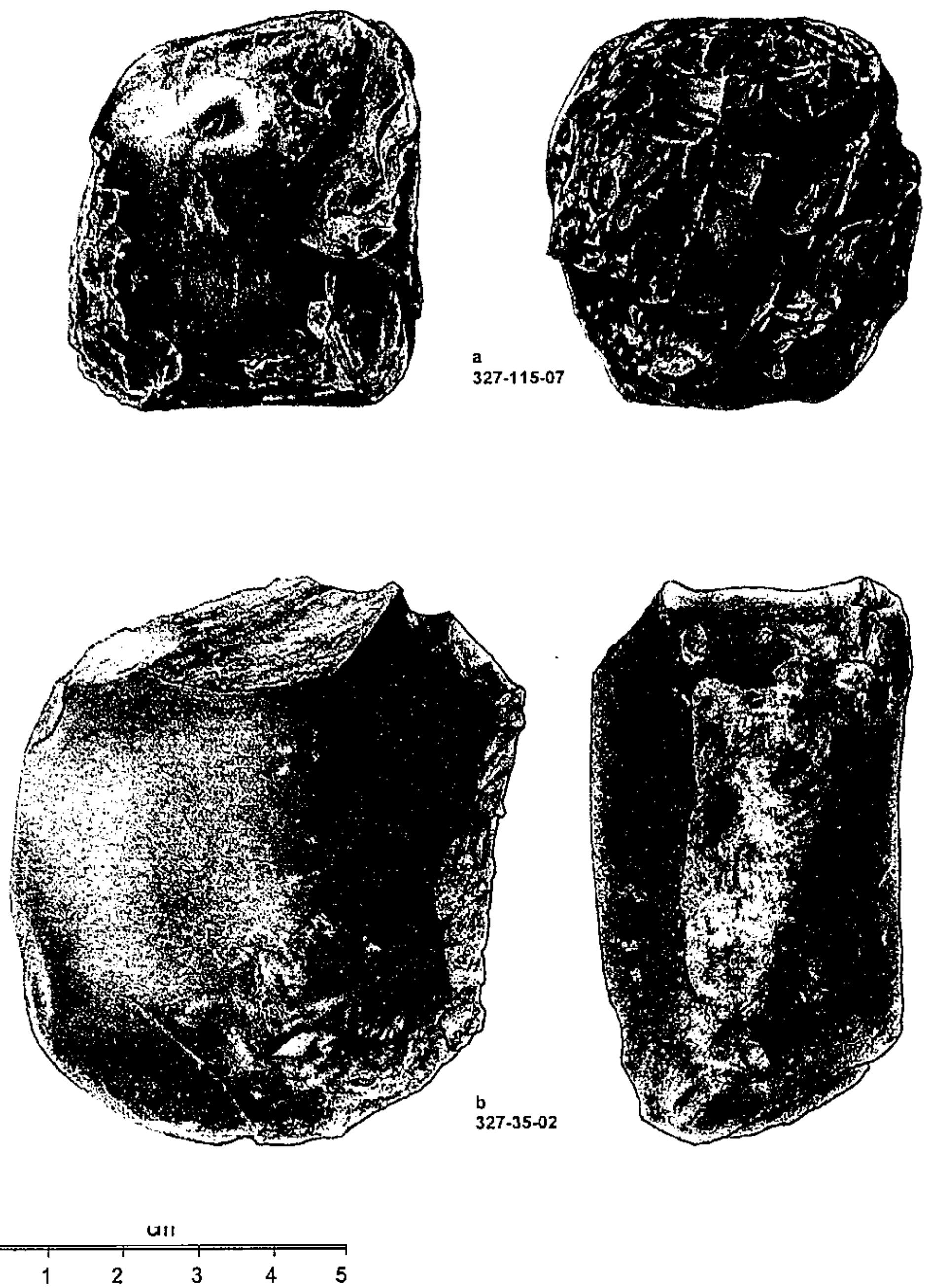


Figure 51: Cores/hammers.

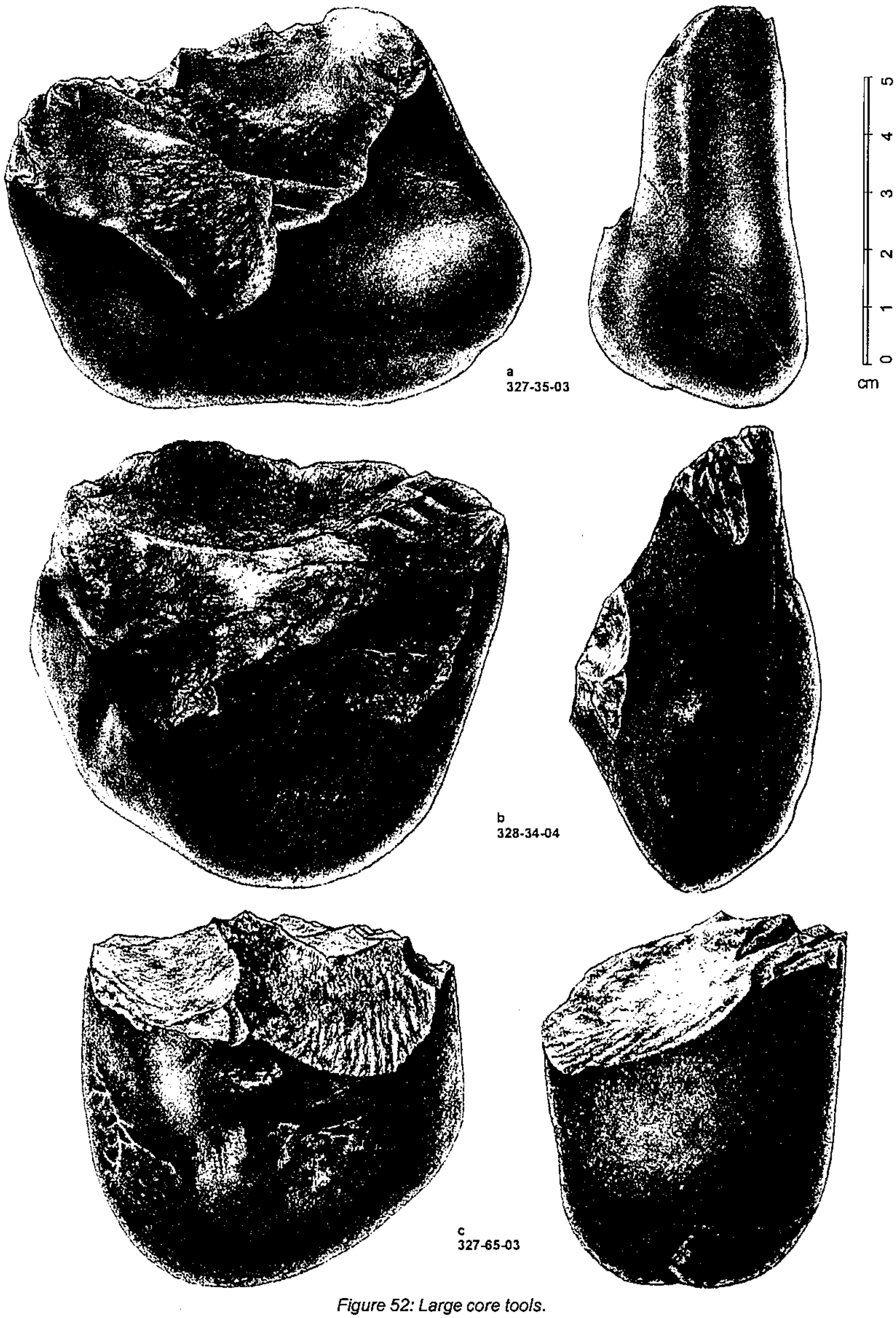


Figure 52: Large core tools.

GROUND, POLISHED, AND BATTERED STONE

INTRODUCTION

A total of 99 ground, polished, and battered stone artifacts was recovered during the Hwy 45 project. All worked and used stone other than chipped stone and fire-affected rock is included in this category, consisting of a considerable diversity of types and source materials. Artifacts include 19 handstones, six pestles, two millingslab fragments, nine hammerstones, two net sinkers, nine plummets, one soapstone bowl fragment, two slate pendant fragments, two ocher pebbles, and a stratigraphic sample of 47 sling stone pebbles.

MILLING TOOLS

Handstones

Description

A total of 19 handstones and fragments was recovered by the Hwy 45 investigation, including one complete specimen and 18 fragments. As a group the handstones were thoroughly shaped, heavily used, and made from distinctive stone materials. Also notable was the predominance of grinding and polish and lack of pecking and battering. Two contrastive morphological variants were identified: disk-shaped and wedge-shaped.

Disk-Shaped Handstones. A total of seven disk-shaped handstones was identified. They were round in plan view, with bifacial shaping and wear and fully shaped, squared sides. Wear patterns were unusual and distinctive. On all seven specimens both wear faces were characterized by flat to slightly convex profiles (per Mikkelsen 1985). No impact shatter, spalls, or battering was observed. Fracture types indicate all seven specimens were broken as a product of heat shatter or failure along an inclusion. All grinding faces were highly polished, with shoulders ranging from rounded (n=4) to moderately abrupt (n=3). The grinding faces of five specimens (327-72-04, 327-76-06, 327-131-04, 327-139-17, and 327-162-04) were smooth and planar, typical of stone-on-stone grinding on a stone milling surface. In contrast, the grinding faces of two specimens (327-47-04 and 327-71-03) were highly polished yet erratic (i.e., slightly "lumpy"), with polish extending across high and low features, suggesting stone-on-wood grinding, perhaps on a wood milling surface. All seven disk-shaped handstones were made from granite.

The single complete disk-shaped handstone, specimen 327-47-04 (Figure 53), was 96.5 mm in diameter, 55.3 mm thick, and weighed 1,207.2 gm. Remnant scars indicate that faces and sides were originally shaped by stone-on-stone pecking followed by grinding and use polish. One wear face is flat and the other flat to slightly concave. Broad, relatively deep pecked-out pits (30.0 by 8.5 mm) occur in the center of both faces. Wear faces exhibit erratic wear polish indicative of stone-on-wood grinding. Use polish is highly developed, and extends across both faces, into the center pits, and on all sides. Wear faces are bordered by rounded and poorly defined shoulders.

Table 17: Chronostratigraphic distribution of millingtools from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-158A	Col-245/H	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**800 BP**	**815 BP**	**< 400 BP**	**Total**
Wedge-Shaped Handstones	2	5	-	-	-	-	-	7
Millingslab Fragments	-	2	-	-	-	-	-	2
Disk-Shaped Handstones	-	6	1	-	-	-	-	7
Handstone Fragments	1	3	1	-	-	-	-	5
Pestles	1	-	3	-	2	-	-	6
Total	4	16	5	-	2	-	-	27

The six fragments are all corner to side sections. Each exhibits a portion of both faces and a side. Specimen 327-131-04 with planar grinding faces, has a red pigment stain on the side facet. The pigment stain is absent from both faces, perhaps ground off. Four of the fragments (327-72-04, 327-74-06, and 327-139-17) were friable, burned, and blackened by fire.

Wedge-Shaped Handstones. A total of seven wedge-shaped handstones was identified (Figure 54). They were oval to ovoid in plan view and had a distinctive wedge-shaped profile. With one exception, wedge-shaped handstones exhibited no shaping or other modifications other than the wear faces. The exception, specimen 327-139-18, was a margin fragment exhibiting a pecked and polished side. The single near-complete example, specimen 327-170-02 (Figure 54, b), was 108.6 mm long, 55.4 mm thick, and weighed 425.2 gm.

No impact shatter, spalls, burning, battering, or pigment stains were observed. Fracture types were indicative of failure along an inclusion. Three specimens had bifacial shaping and wear (327-23-07, 327-63-13, and 327-139-18), and four were unifacial (327-13-04, 327-59-04, 327-105-13, and 327-170-02). Wear patterns were highly developed, indicative of sustained use. Grinding face wear patterns ranged from high polish (327-63-13) to light scoring and polish overlying light pecking (327-13-04 [Figure 54, a], 327-23-07, 327-59-04, 327-105-13, 327-139-18, and 327-170-02 [Figure 54, b]). Wear faces on all specimens were flat to slightly convex in profile (per Mikkelsen 1985), and all wear faces were smooth and planar, typical of stone-on-stone grinding on a stone milling surface. Wedge-shaped handstones were made from dacite (n=5) and metasedimentary (n=2) materials.

Indeterminate Fragments. Five handstone fragments include three face fragments and two sides indeterminate as to type. Handstone fragments were made from dacite (n=2), biotite (n=1), micaschist (n=1), and limestone (n=1).

Distribution

Handstones were found only at the Archaic site, Col-247. Within Col-247, two fragments were found associated with Stratum 1 (1675-2755 CAL BP), 14 with Stratum 2 (2755-3295 CAL BP), and three with Stratum 3 (3575-4385 CAL BP). The two specimens found in Stratum 1 were in the vicinity of a house floor feature located in Unit A17, and are considered intrusive from deeper levels.

The two handstone types had different stratigraphic distributions. Wedge-shaped handstones were the older type, found associated with Stratum 3 (42.8%) and Stratum 2 (57.1%). Disk-shaped handstones were all found associated with Stratum 2.

Millingslab

Description

Two millingslab fragments were recovered by the Hwy 45 investigation. Specimen 327-07-09 is a fragment triangular in plan view with a long section of margin (Figure 55, a). The specimen measures 109.7 mm long, 79.3 mm wide, and 29.6 mm in maximum thickness. The specimen was fully shaped. The margin is pecked and ground flat and square. Both faces exhibit light pecking overlain by grinding to a smooth, planar polish. The grinding surfaces on both faces were slightly concave, forming shallow basins. Specimen 327-96-04 is a spall fragment from a grinding basin surface. It is concave, indicating the slab had a moderately deep basin. It has planar polish and polished-over pecking scars suggesting it was resharpened and used shortly before fracture. Both millingslab fragments are made from a grainy, friable, quartz-rich sandstone typical of Great Valley sequence rocks found in the foothills west of the project area.

Distribution

Both millingslabs were found associated with Col-247 Stratum 2 (2755-3295 CAL BP).

Pestles

Description

A total of six pestles and fragments was recovered by the Hwy 45 investigation. Five are fully shaped forms. The single complete example, specimen 327-129-30 (Figure 56), was 51.1 mm in diameter, 224.6 mm long, and weighed 1,207.2 gm. The pestle is roughly cylindrical, though slightly wider in the center of the shaft, double-ended and fully shaped by pecking and grinding. The sides of the shaft exhibit a high degree of handling polish. Both ends of the pestle have distinctive wooden mortar pestle wear: the ends are nipple shaped with a series of smooth striations radiating out from the tips, culminating in rounded shoulders. Specimen 327-133-04 is a half section distal end fragment. Sufficient side and end surfaces are present to determine that the original piece was also a fully shaped wooden mortar pestle closely similar to 327-129-30.

Specimen 328-04-01 (Figure 57) is a half-section distal end fragment. The side exhibits some pecking and a high polish. The distal, working end is round in cross section, marked by light scoring and striations and bordered by a light shoulder. Specimen 328-83-01 is a proximal end fragment of a single-ended, fully shaped cylindrical pestle (Figure 58). The sides and apical end are pecked, ground, and polished. Specimen 327-54-04 is a midshaft margin spall from a cylindrical, shaped pestle. Pestles were made from metasedimentary (n=3), greenstone (n=1), and sandstone (n=1) materials.

Specimen 327-117-12 is the only cobble form, a distal end spall fragment. The artifact has a heavily pecked, rounded working end surface with only light polish on high spots.

Distribution

Pestles were limited to two sites, Col-158 Locus A and Col-247. Both wooden mortar pestles and one pestle margin spall were found in Col-247 Stratum 1 (1675-2755 CAL BP). One cobble pestle fragment was found in Stratum 3 (3575-4385 CAL BP). The other two pestle fragments were associated with late prehistoric deposits at Col-158A (800 CAL BP).

SHAPED AND USED STONE

Hammerstones

Description

A total of nine hammerstones was recovered by the Hwy 45 investigation. The specimens range in size, shape, and degree of use. Five specimens (327-27-10, 70-06, 104-16, 104-18, and 106-03) are rounded, baseball-sized cobbles with edge battering. Three of these (327-104-16, 104-18, and 106-03) are end or margin fragments with extensive battering. The extent of crushing and pitting on the battered face suggests stone-on-stone impact. Specimens 327-83-05 and 327-95-15 are distal end fragments of long, thin, waterworn pebbles exhibiting light end battering. Specimen 328-01-01 (Figure 59, a) is a complete, waterworn pebble hammer measuring 109.6 mm long, 53.5 mm in diameter, and weighing 446.6 gm. It is round in cross section and ovoid in side view, with a small patch of pecking at the tip of each end. Specimen 327-80-03 (Figure 59, b) is a fragment of a small, flat, disk-shaped waterworn pebble with crushing and light spalling all around the perimeter. The edges are crushed and ground flat. Hammerstones were made from granite (n=1) and metasedimentary (n=4) materials.

Distribution

Hammerstones were limited to two sites, Col-158 Locus A and Col-247. The granite pebble hammer (Figure 59, a) was found associated with late prehistoric deposits at Col-158A (800 CAL

Table 18: Chronostratigraphic distribution of shaped and used stone artifacts from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-158A	Col-245/H	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**800 BP**	**815 BP**	**< 400 BP**	**Total**
Sinkers	1	-	1	-	-	-	-	2
Nonperforated Plummets	3	1	-	-	-	-	-	4
Slingstones (Sample)	4	26	17	-	-	-	-	47
Perforated Plummets	1	2	2	-	-	-	-	5
Ocher Pebbles	-	2	-	-	-	-	-	2
Slate Pendant Fragment	-	1	1	-	-	-	-	2
Hammers	1	6	1	-	1	-	-	9
Soapstone Bowl	-	-	-	1	-	-	-	1
Total	10	38	22	1	1	0	0	72

BP). The disk-shaped pebble hammer (Figure 59, b) was associated with Col-247 Stratum 1 (1675-2755 CAL BP), and the two heavily battered nodular hammers and small, flat pebble hammer were found associated with Col-247 Stratum 2 (2755-3295 CAL BP).

Net Sinkers

Description

A total of two pebble net sinkers was recovered by the Hwy 45 investigation. Both are simple, waterworn pebbles oval in plan view and thin in cross section, both with notches at the midpoint on both sides. Specimen 328-27-04 is a metasedimentary pebble 100.0 mm long, 75.4 mm wide, 8.6 mm thick, and weighing 107.0 gm (Figure 60, a). The notch on one side is made by knocking out a small spall on one face, and on the opposite side by battering and abrasion. Specimen 327-139-04 is a dacite or metavolcanic pebble 87.8 mm long, 65.6 mm wide, 15.6. mm thick, and weighs 109.6 gm (Figure 60, b). All four specimens were fully shaped forms. The notches on both sides are made by bifacial battering and removal of small spalls.

Distribution

The net sinkers were found at two sites, Col-158 Locus B and Col-247. The Col-158B specimen was associated with a late prehistoric deposit (1065 CAL BP), and the Col-247 specimen was associated with Stratum 2 (2755-3295 CAL BP).

Plummets

Description

A total of nine shaped stone plummets was recovered by the Hwy 45 investigation. All nine were fragments. As a group, they were thoroughly shaped by grinding, highly polished, and made from distinctive stone materials. All nine specimens were round in cross section, but varied in overall morphology. Five of nine fragments were perforated (327-12-04, 22-03, 31-02, 117-04, and 158-05), the perforations consisting of well defined biconical drill holes further polished and altered by string wear. Traces of additional binding polish are visible on three specimens (327-12-04, 22-03, and 31-02) Owing to the nature of the fragments, it cannot be determined if the four fragments lacking perforations (327-25-07, 26-04, 16-03, and 118-04) were actually fragments of non-perforated plummets. They may be distal end fragments of perforated plummets, proximal end fragments snapped off above the perforation, or fragments of non-perforated plummets.

Specimen 327-22-03 is the largest perforated fragment (Figure 62, a), 56 2 mm long, 35.1 mm in diameter, and weighing 80.5 gm. It is perfectly round in cross section, and though it lacks the distal end, apparently was oblate and ovoid in side view. It is made from a distinctive gunmetal blue serpentinite with gray-green mottling. Specimens 327-12-04 (Figure 62, d), 327-31-02 (Figure 62, e), and 327-117-04 (Figure 62, c) are proximal end fragments of perforated plummets flattened by grinding on the perforated faces. All three are also ground flat on the apical end to form a square facet. Specimen 327-12-04 has an additional groove ground over the end linking the perforations.

Specimen 327-116-03 is the largest plummet fragment (Figure 61, b), 107.5 mm long, 39.8 mm in diameter, and weighing 161.7 gm. The surface is rugged, indicating it has been shaped by pecking. It is broken above a bulbous center which grades into a long, conical end terminating in a rounded tip. It is made from a coarse-grained limestone. Specimen 327-26-04 (Figure 61, a), measuring 95.1 mm long, 37.2 mm wide, 31.9 mm thick, and weighing 157.0 gm, has limited shaping scars but spalling on one end and extensive battering on the other, and may be considered a hammerstone. It is made from a fine-grained, banded slate.

Distribution

Plummets were found only at the Archaic site, Col-247. Within Col-247, two plummets were found associated with Stratum 1 (1675-2755 CAL BP), three with Stratum 2 (2755-3295 CAL BP), and four with Stratum 3 (3575-4385 CAL BP). Notably, the Stratum 3 sample consisted of three non-perforated fragments (327-25-07, 327-26-04, and 327-118-05) and the perforated tip fragment with a groove over the end (327-12-04). Thus, Stratum 3 plummets were mostly non-perforated and Stratum 1 and Stratum 2 plummets were all perforated, assuming the bulbous fragment (specimen 327-116-03) was also perforated.

Soapstone Bowl

Description

Specimen 328-74-01 (Figure 62, h) is a fragment of a broad, shallow, flat-bottomed soapstone bowl measuring 102.1 mm long, 60.6 mm wide, weighing 41.3 gm. The artifact appears to be an end fragment broken on a diagonal. The original specimen is estimated to have been broad and oval in plan-view, approximately 130.0 mm long, 110.0 mm wide, and 55.0 mm thick. Wall thickness ranges between 12.8 mm at the edges of the basin to less than 9.0 mm near the rim. Depth and volume of the bowl is difficult to ascertain due to the type of fragment and absence of the rim, but the bowl had a minimum interior depth of 50.0 mm. The artifact was made from a large nodule of soapstone carved on the exterior and interior by gouging and abrasion, then ground smooth. Grinding was not sufficient to remove all gouging scars, which clearly show the carving method.

Distribution

The soapstone bowl was found at Col-158B (1103 CAL BP).

Slate Pendant Fragments

Description

Two slate pendant fragments were recovered. Specimen 327-135-05, measuring 25.9 mm long, 14.4 mm wide, 4.8 mm thick, and weighing 3.0 gm, is a margin fragment of a ground and polished rod-shaped slate pendant. The specimen shows deep, lengthwise scoring and faceted polish. Specimen 327-115-26 measuring 13.1 mm long, 11.1 mm wide, 1.6 mm thick, and weighing 0.4 gm, is a margin fragment of a thin, tabular worked slate. Both faces show high polish, and the remaining edge is also polished and rounded. The material is a black slate.

Distribution

Both slate pendant fragments were found at Col-247. The rod-shaped pendant fragment was found associated with Stratum 1 (1675-2755 CAL BP), and the tabular pendant fragment was found associated with Col-247 Stratum 2 (1675-3295 CAL BP).

Ocher Pebbles

Description

Two worked ocher pebbles were recovered by the Hwy 45 project. Both artifacts (327-59-06 and 327-83-17) were dark yellow-red (10 YR5/6 to 5YR6/8), rich in iron oxides. They lack ground facets but are smooth and rounded. They averaged 25 mm long, 15 mm wide, and 12.0 mm thick.

Distribution

Both ocher pebbles were found at the Archaic site, Col-247, associated with Stratum 2 (2755-3295 CAL BP).

Possible Sling Stones

Description

A stratigraphic sample of 47 possible sling stone pebbles was recovered from units B1 through B6 in Col-247. The possible sling stones were small, waterworn pebbles of a consistent spherical to slightly oval form, ranging between 30.0-45.0 mm in diameter and 26.0-34.0 gm in weight. The cultural deposit occurred in a clayey silt otherwise lacking natural stone, and the possible sling stones were distinct from fire-affected rock found in the deposit which tended to be larger, fragmented stones.

Distribution

Sling stones were found only at the Archaic site, Col-247. Within the B-unit sample, sling stones were almost exclusively associated with Stratum 1 and Stratum 2, spanning (1675-3295 CAL BP) (Table 18).

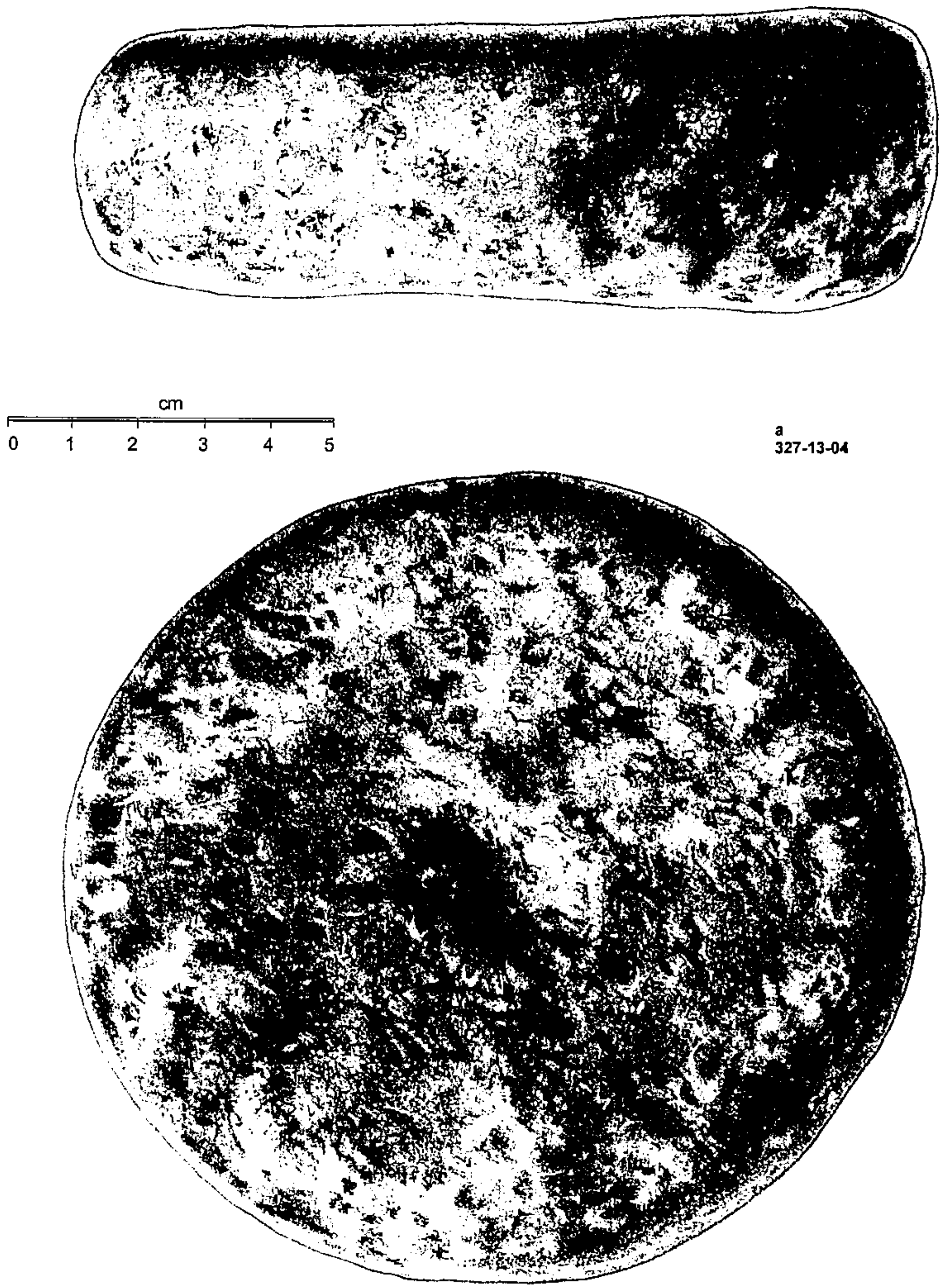


Figure 53: Disk-shaped handstone.

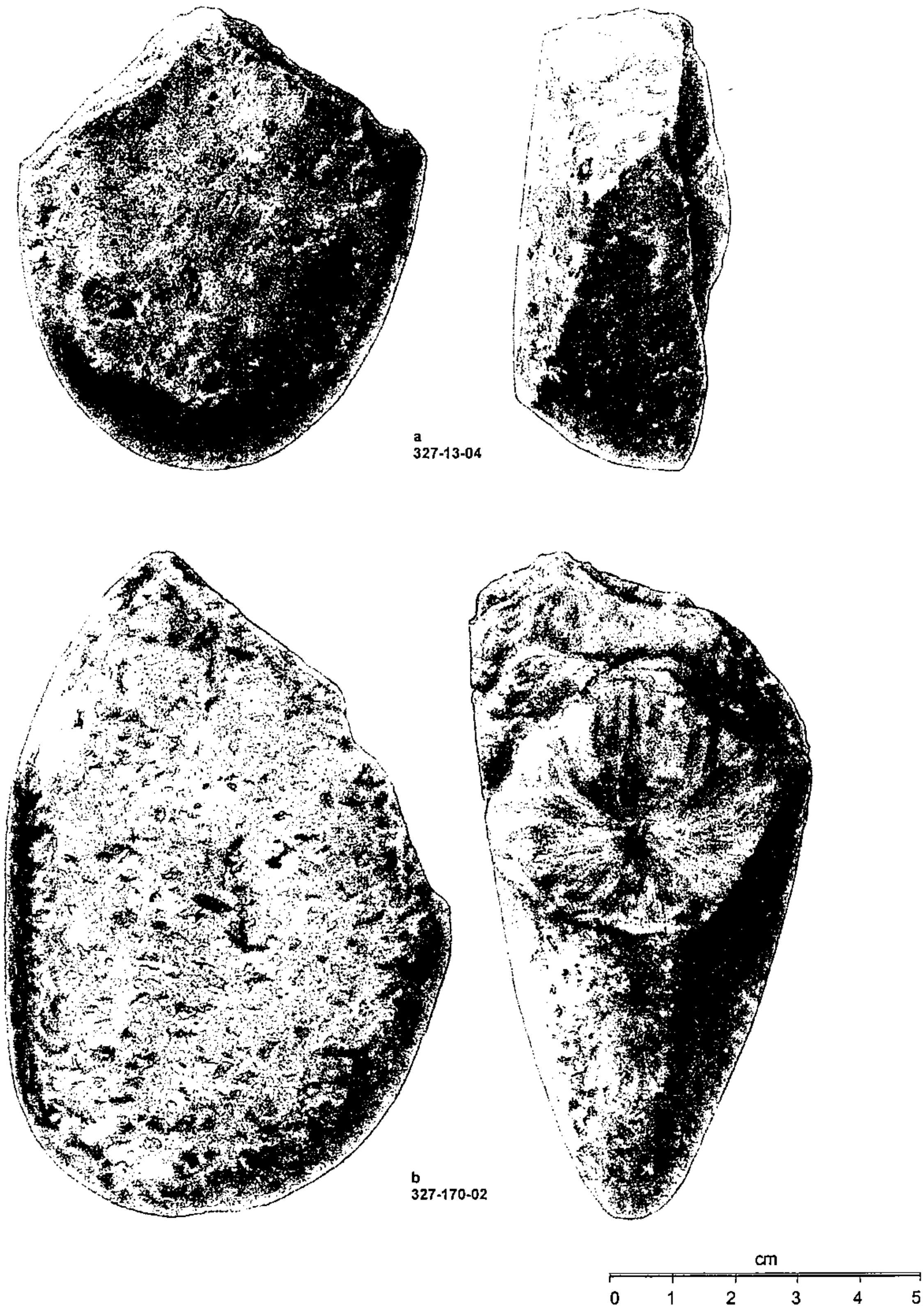


Figure 54: Wedge-shaped handstone fragments.

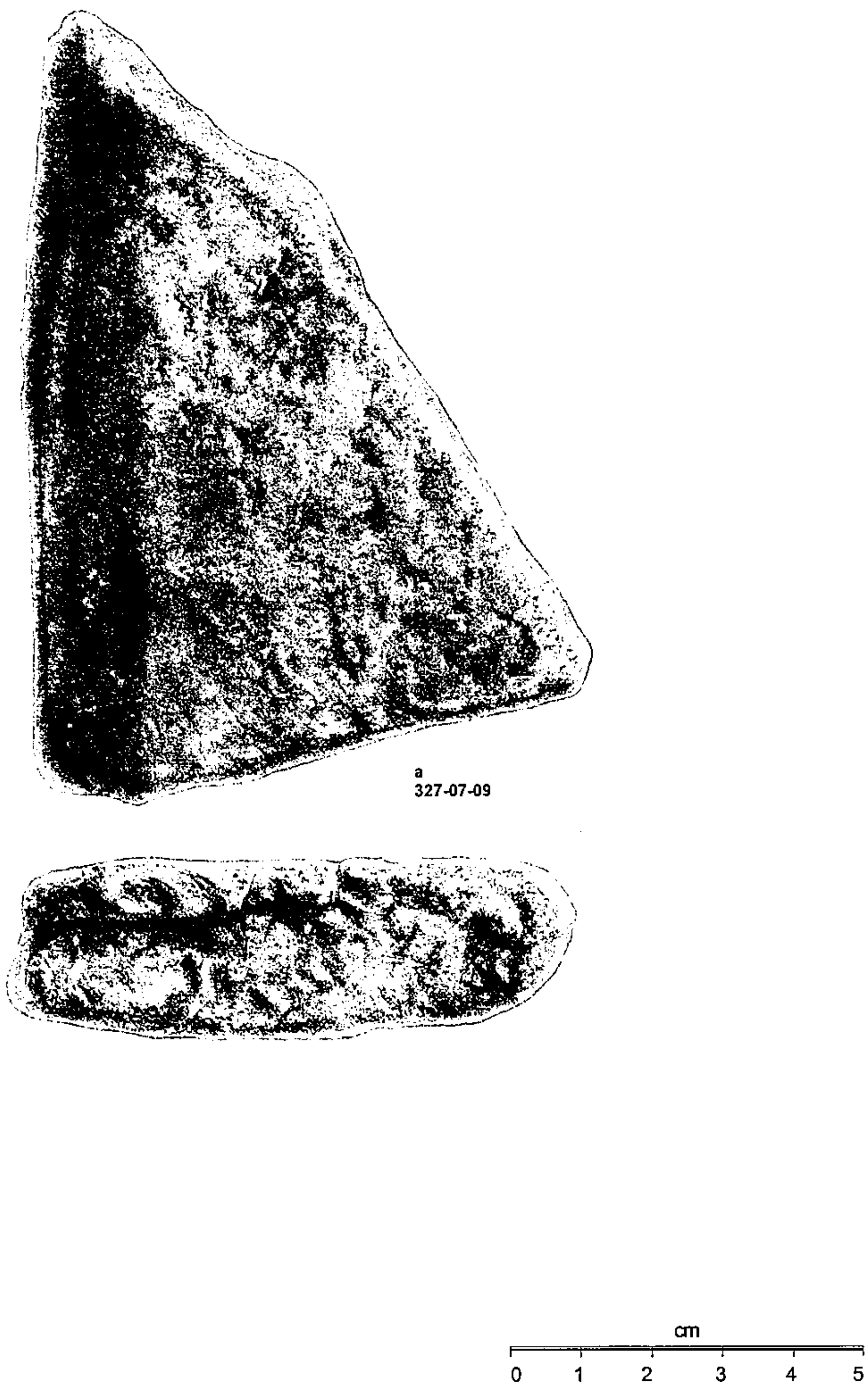


Figure 55: Millingslab fragment.

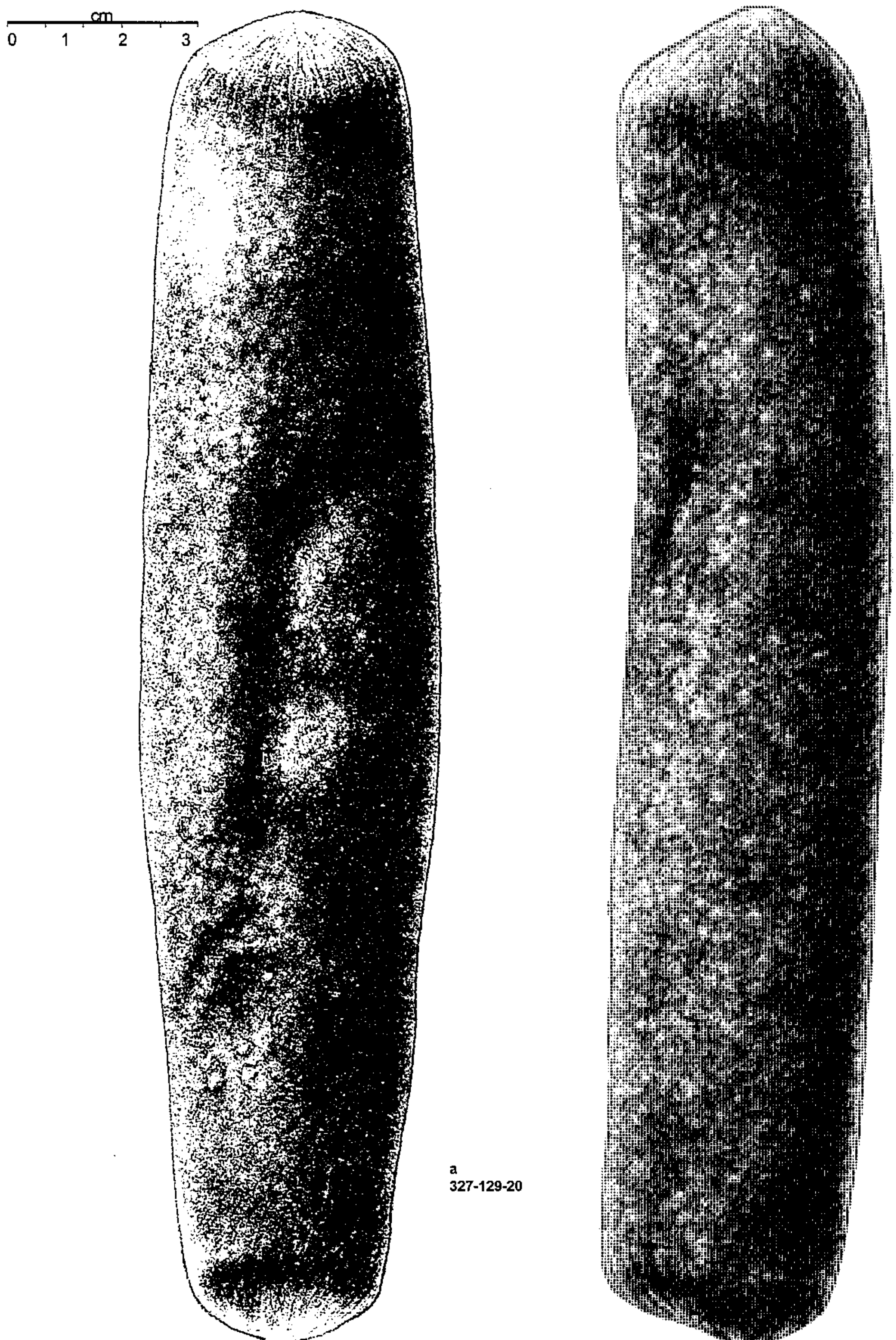


Figure 56: Shaped wooden mortar pestle.

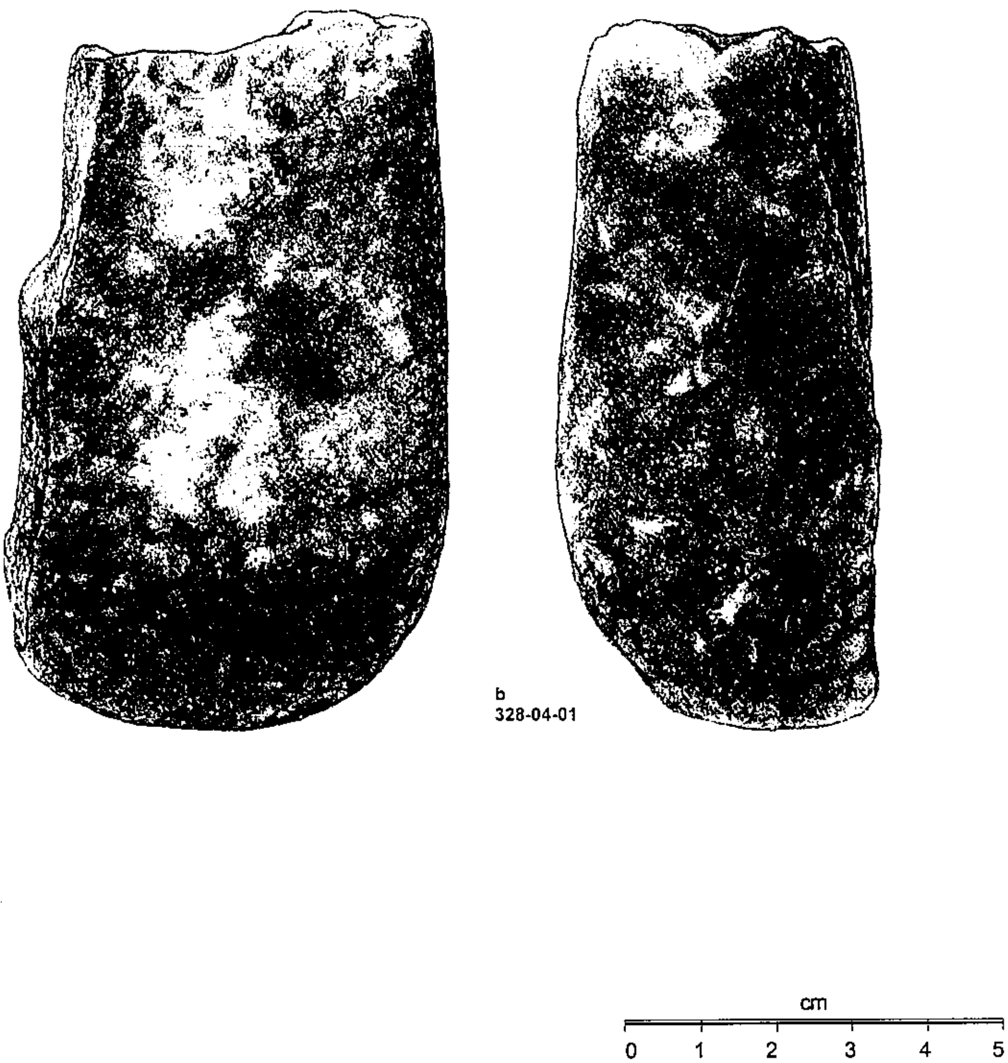


Figure 57: Shaped pestle fragment.

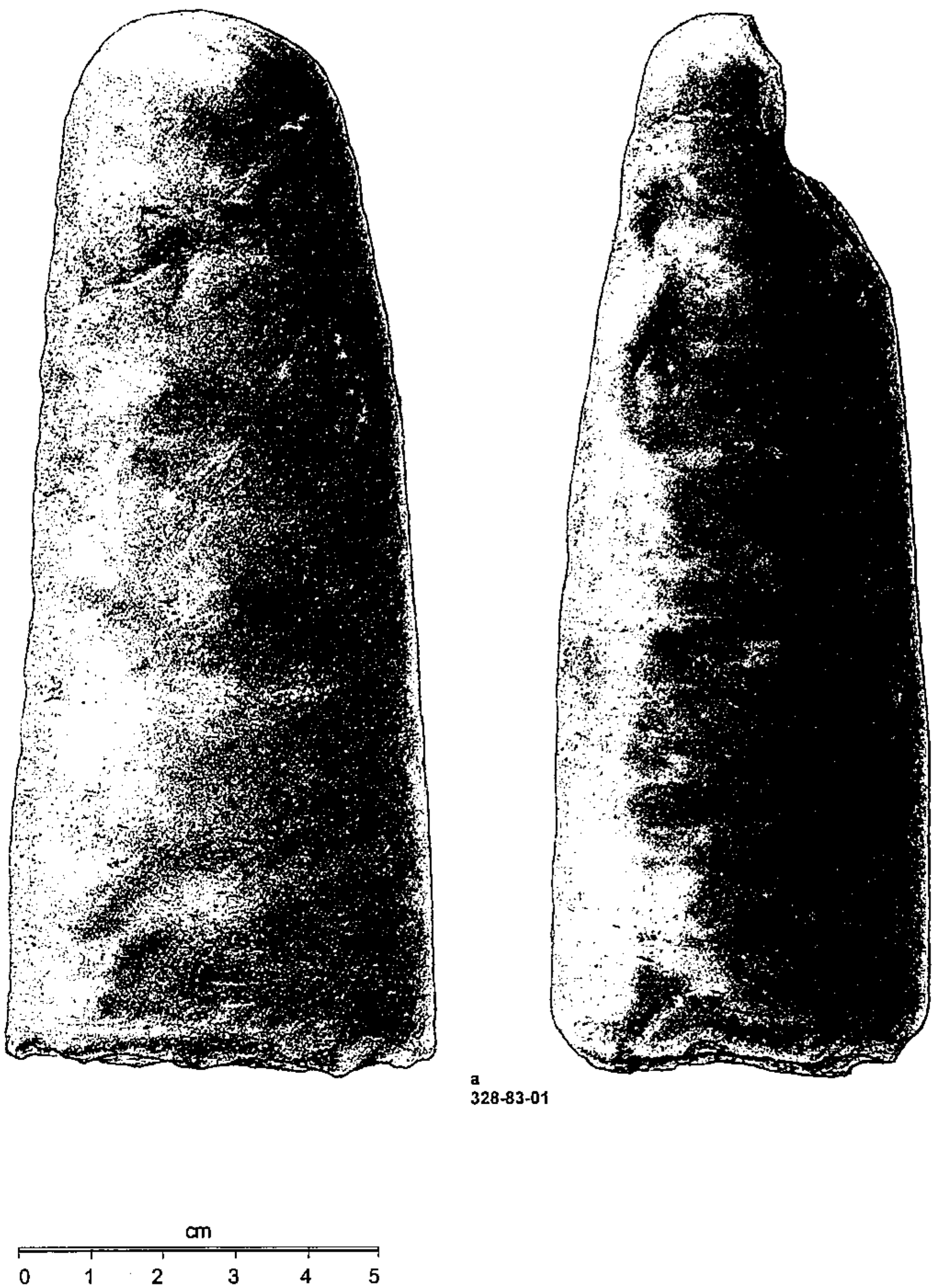


Figure 58: Shaped pestle fragment.

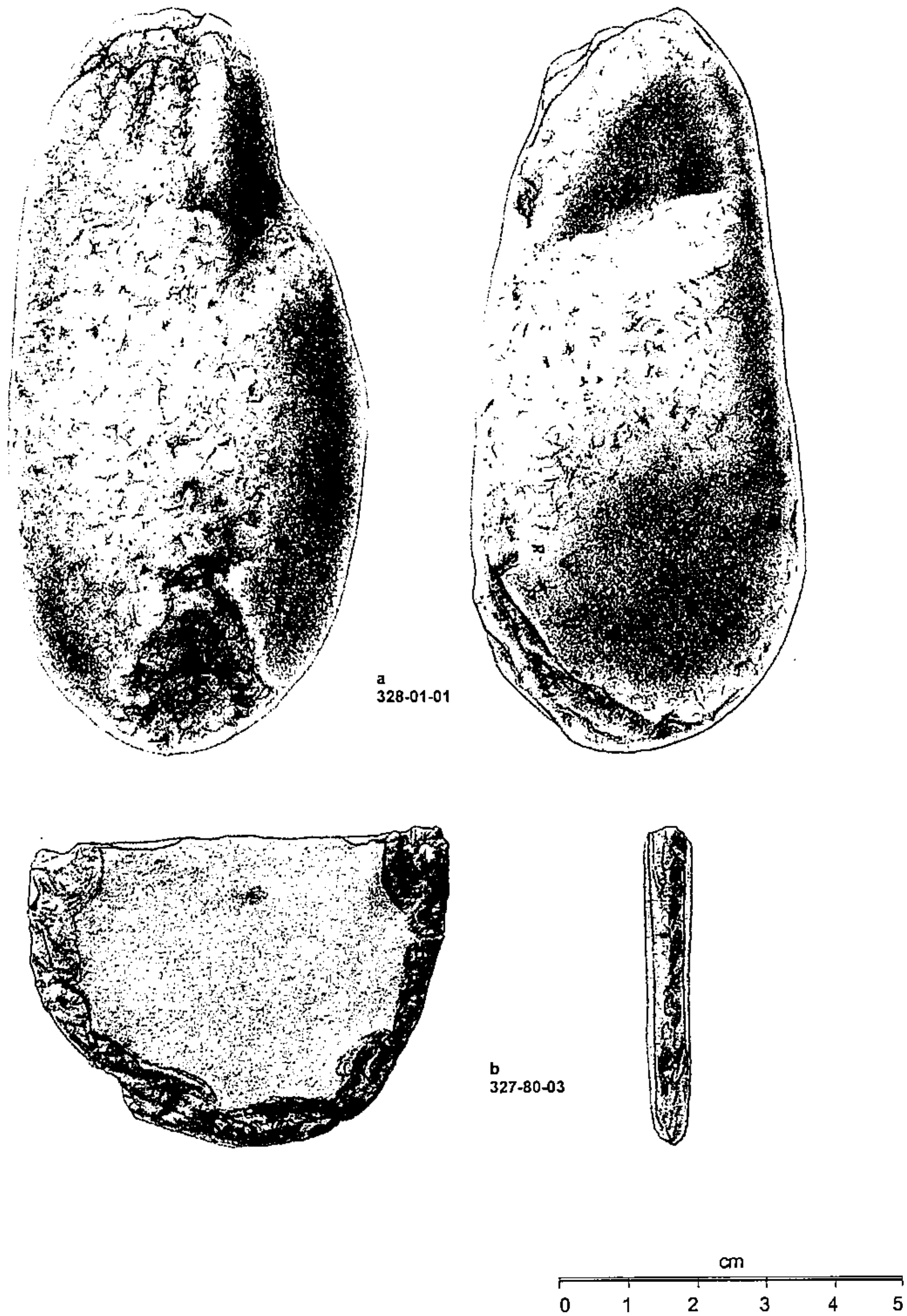


Figure 59: Hammerstones.

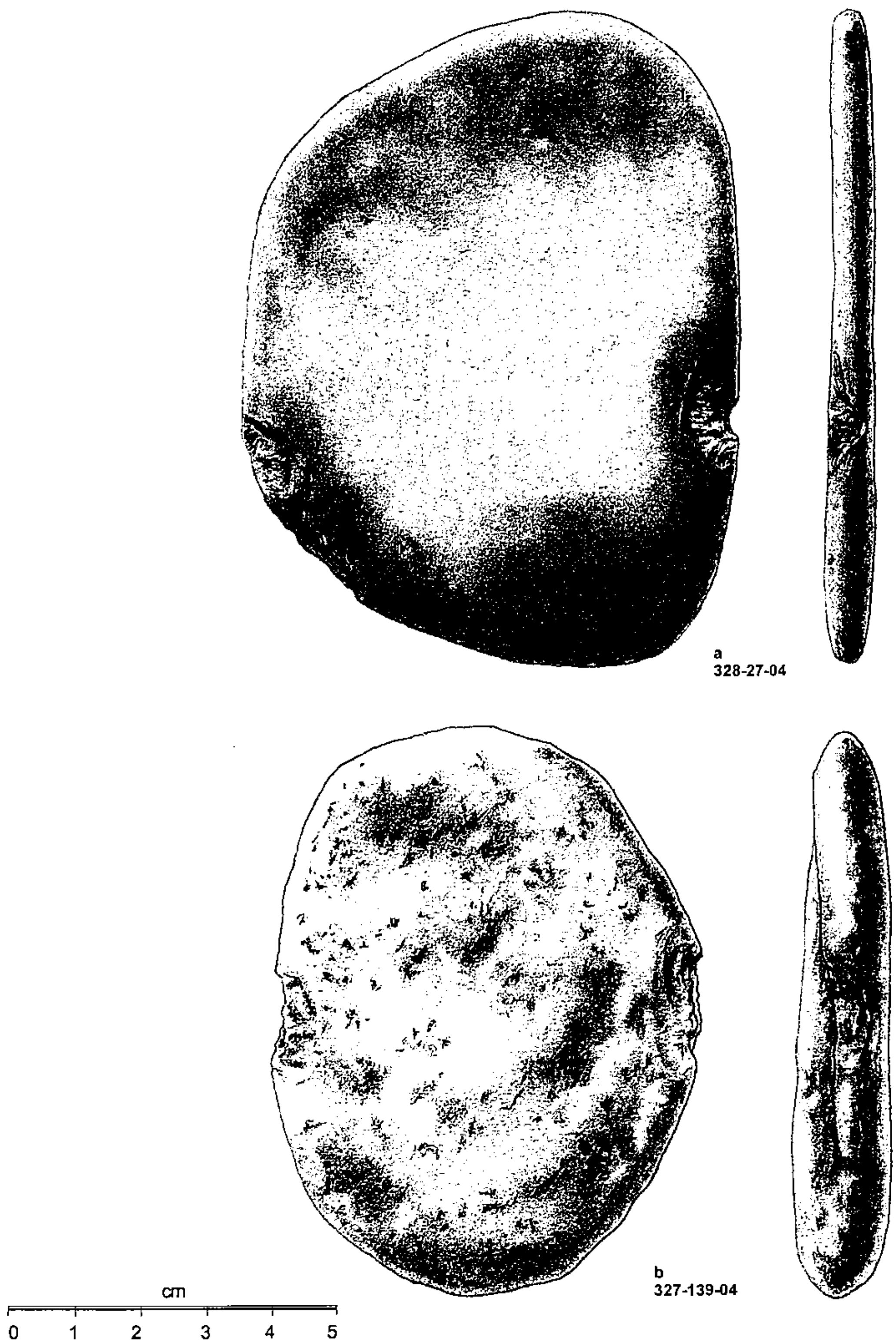


Figure 60: Pebble net sinkers.

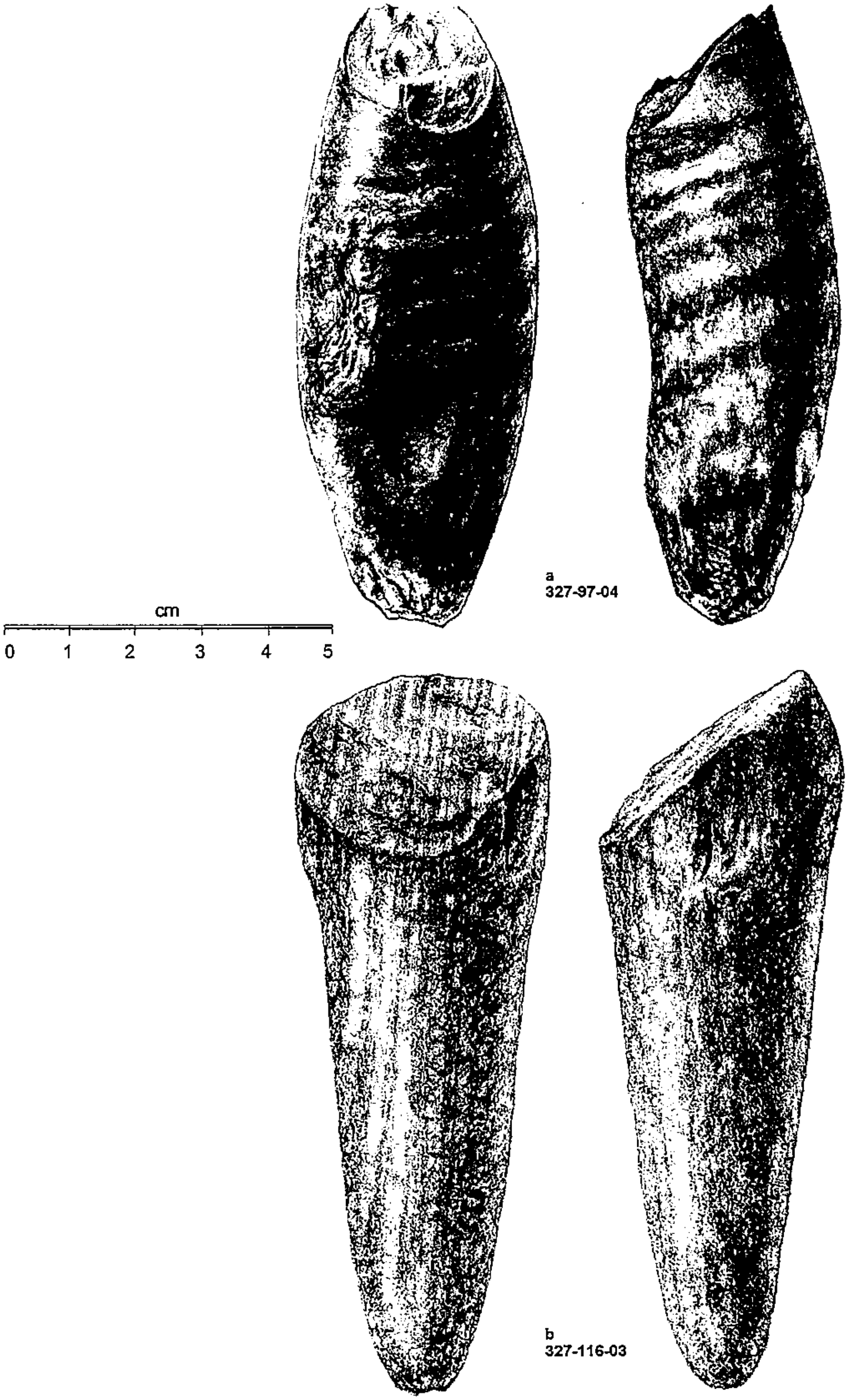


Figure 61: Plummets; a = end-battered, b = "spinner" fragment.

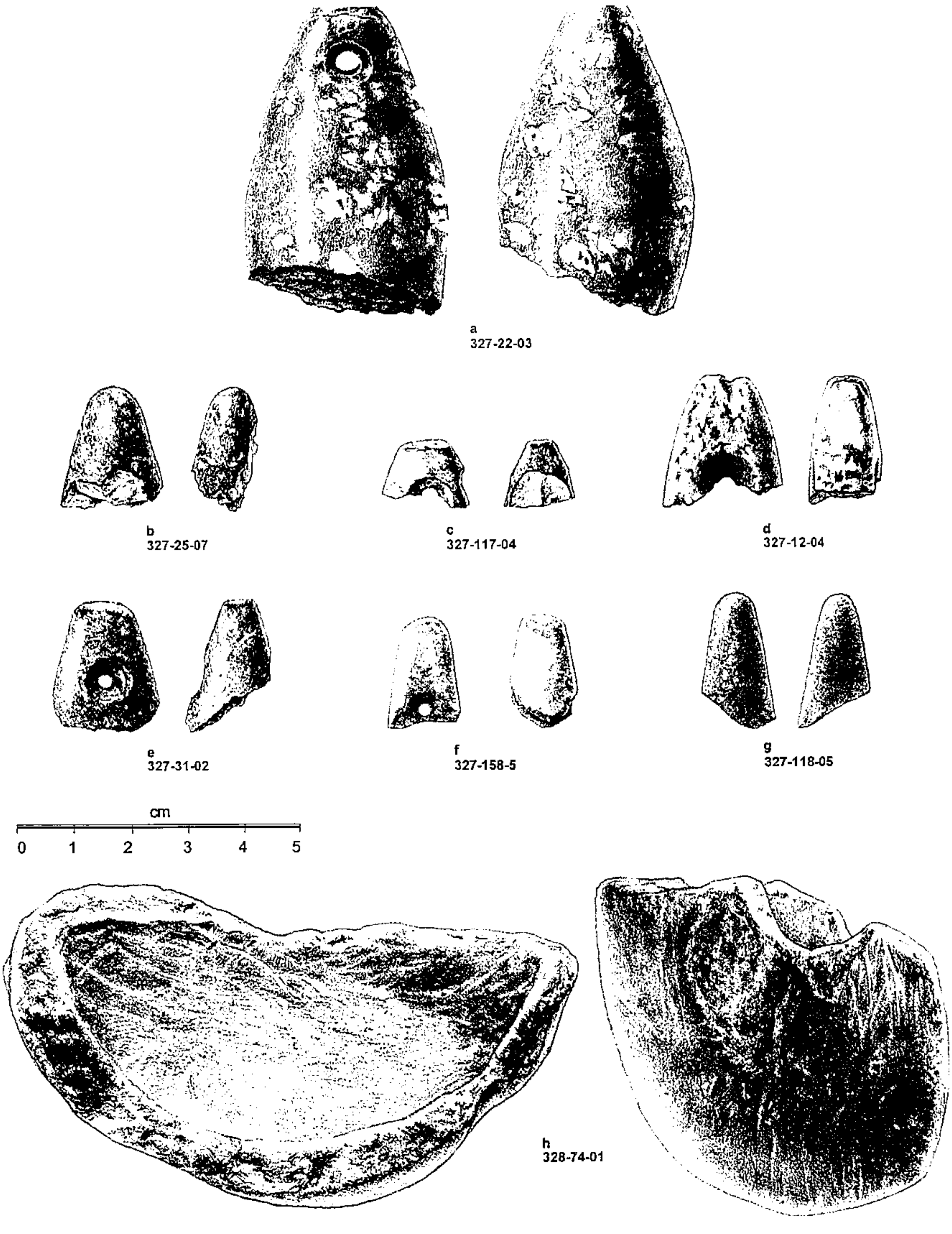


Figure 62: Plummets and carved soapstone bowl.

WORKED BONE AND ANTLER

Introduction

A total of 47 worked bone and antler artifacts was recovered during the Hwy 45 project. Classification follows conventions established by Gifford (1940) with regional modifications developed by Bennyhoff (1953) and White (White *et al.* 2002). The collection is divided into nine types: awls (n=20), flat and cylindrical pins (n=11), daggers (n=9), worked bone tubes (n=3), bipoint gorge hooks or harpoon barbs (n=2), antler wedge (n=1), antler pendant (n=1), strigil (n=1), and J-shaped hook (n=1).

Awls

Description

A total of 17 awls was collected (Figure 63, a-g). Eight specimens were complete enough to determine element and species (326-05-12A, 326-05-12C, 326-05-13, 327-39-06, 327-139-05, 328-01-06, 328-48-06, and 328-66-02), all consisting of artiodactyl cannon bones (metapodials), most likely deer (*Odocoileus hemionus columbianus*) but of a size range also consistent with pronghorn (*Antilocapra americana*). Three complete or nearly complete specimens (326-05-12A, 326-05-13, and 328-48-06; Figure 63, a-c) indicate that the type consisted of worked longbones carved, ground, and polished to form a blunt handle end opposed by a sharp piercing end. There were two types of awls, differentiated based on the method of manufacture: split metapodial awls (n=14) and sulcus awls (n=3).

Split Metapodial Awls. A total of 14 split metapodial awls was identified. In manufacturing this tool, "advantage was taken of the natural intermetatarsal grooves" (Bennyhoff 1953:297) to split the bone along the axial plane into medial and lateral halves one or both of which could be ground to form a tool. Two complete and one nearly complete specimen (326-05-12A, 326-05-13, and 328-48-06) show that the form consisted of quarter-sections of proximal metapodials ground on all faces to a triangular to oval cross section and a handle end carved from the proximal condyle (Figure 64, a-c). Specimen 328-48-06 is the largest of the complete awls, measuring 125.7 mm long, and 14.5 mm wide and 9.7 mm thick at the handle end (Figure 64, a). Specimen 326-05-13, the other complete awl, measures 100.6 mm long, and 13.6 mm wide and 6.9 mm thick at the handle end (Figure 64, b). The difference in length appears to be a product of the more extensive use of the shorter tool,

Table 19: Chronostratigraphic distribution of worked bone and antler artifacts from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-158A	Col-245/H	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**800 BP**	**815 BP**	**< 400 BP**	**Total**
Antler Wedge	1	-	-	-	-	-	-	1
Flat Pins	2	-	4	-	-	-	-	6
Daggers	1	3	5	-	-	-	-	9
Strigil	-	1	-	-	-	-	-	1
Antler Pendant	-	1	-	-	-	-	-	1
Bipoint Gorge Hooks	-	-	-	2	-	-	-	2
J-Shaped Hook	-	-	-	1	-	-	-	1
Cylindrical Pins	-	1	2	-	-	2	-	5
Worked Bone Tubes	1	-	1	-	-	1	1	4
Awls	-	1	1	5	4	4	2	17
Total	5	7	13	8	4	7	3	47

which also exhibits more handling polish. Specimen 326-05-12A, measuring 91.4 mm long, and 12.7 mm wide and 5.2 mm thick at the handle end (Figure 64, c), is nearly complete lacking only the tip end.

The 12 fragments were identified based on the presence along the margin of the distinctive metapodial sulcus and/or their rounded "V-shaped" cross section, and their ground and polished finish. Three of the fragments (328-26-05, 37-04, and 66-02) are unusually thick (5.5-7.7 mm thick), have blunted tips, and may represent pieces broken near the end of their use lives after repeated resharpening (Figure 63, d-f).

Sulcus Awls. A total of three sulcus awl fragments was identified. Sulcus awls were split along the medial plane and incorporate the intermetapodial groove as an axial feature. They are otherwise fully ground on all surfaces, oval to rectangular in cross section, with grinding on the ventral face sufficient to remove all signs of the marrow channel. All three specimens (328-01-06, 327-139-05, and 327-39-06) are midsections and appear to be heat-treated to a brown color and highly polished from burnishing and handling wear. The type is the predominant awl form in eastern Clear Lake basin (White *et al.* 2002:333-335).

Distribution

Awls were found in all sites, and there was an interesting pattern of temporal distribution. Two of the three sulcus awls were found associated with Archaic deposits at Col-247, including one each from Stratum 2 (3205 CAL BP) and Stratum 1 (1675-2755 CAL BP). The third was found at Col-158A (800 CAL BP). In contrast, all of the split metapodial awls were found in late components, including five from Col-158B/C/D (1030-1175 CAL BP), four from Col-245/H (815 CAL BP), three from Col-158A (800 CAL BP), and two from Col-246/H (<400 BP).

Pins

Description

A total of 11 bone pins was collected. Pins were made from longbone wall modified by grinding and polish on all surfaces such that no landmarks were left that could be used to identify the bone element. Classification into "flat" and "cylindrical" subtypes follows Gifford (1940), Bennyhoff (1953), and White *et al.* (2002). A total of six flat pins and five cylindrical pins was collected. Figure 63 shows a clear morphological difference between flat pins and cylindrical pins in the Hwy 45 collection, with flat pins very thin compared to width (thickness/width ratio <0.50), and cylindrical pins possessing thickness greater than two-thirds of width (thickness/width ratio >0.67).

All six of the Hwy 45 flat pins are fragments, including one tip, two midsections (e.g., Figure 66, c), and three margins (327-03-05, 11-04, 14-06, 93-04, 125-05, and 127-03). They are lenticular in cross section, ranging between plano/plano to slightly plano/convex in cross section. They are relatively narrow, ranging between 8.0-9.0 mm wide. The tip fragment (327-127-03) is tapered to

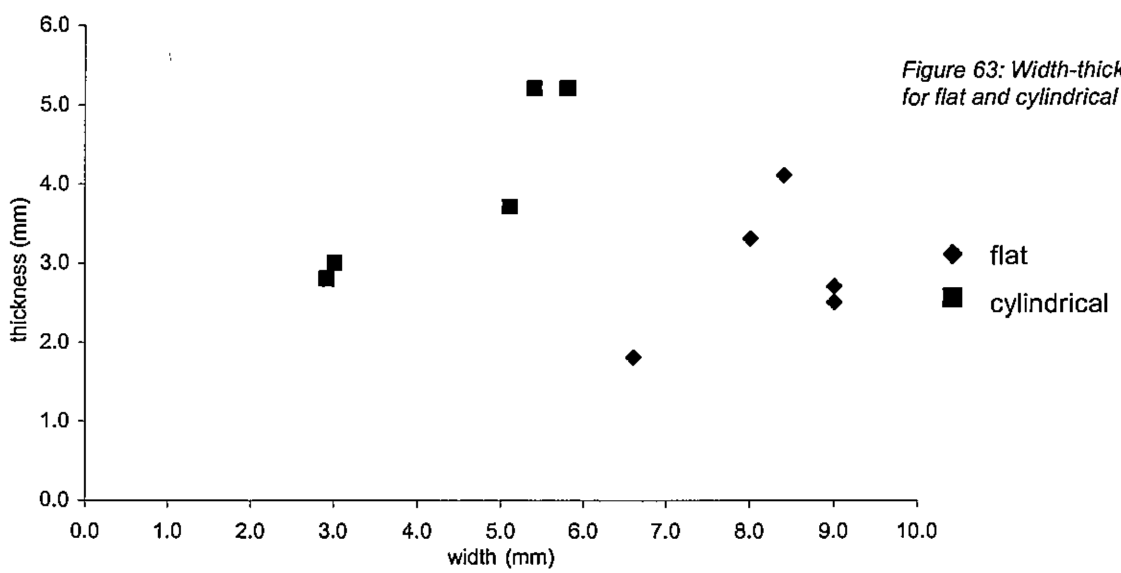


Figure 63: Width-thickness ratios for flat and cylindrical pins.

a slightly rounded tip end. All four appear to have been heat-treated to a brown color, and are polished to a smooth luster. None of the specimens exhibit evidence of decoration or applique. Based on archaeological finds and ethnographic evidence, flat pins are assumed to have been hairpins (Gifford 1940; Bennyhoff 1953).

All five of the Hwy 45 cylindrical pins are fragments, including two tips and three midsections. The cylindrical pins are round in cross section and finely finished on all surfaces. They were quite small, ranging between 2.9 - 5.8 mm in maximum diameter. The two smallest specimens are apparent needle fragments, one a midsection of a finished specimen (327-150-04) and the other a fragment of apparent manufacturing debris (326-05-12D). The two tip fragments are shaped to a tapered, sharp tip end. Ten of the specimens appear to have been heat-treated to a brown color, and the needle manufacturing fragment is fully calcined. Cylindrical pins are assumed to have been needles, punches, and hairpins (Gifford 1940; Bennyhoff 1953).

Distribution

Pins were found in just two sites, Col-245/H and Col-247. Two flat pin were recovered from Stratum 3 at Col-247 (3575-4385 CAL BP) and four from Stratum 1 (1675-2755 CAL BP). Cylindrical pins were more widespread, with two found at Col-245/H (815 CAL BP), two found at Stratum 1 at Col-247 (1675-2755 CAL BP), and one found at Stratum 2 at Col-247 (3205 CAL BP).

Worked Bone Tubes

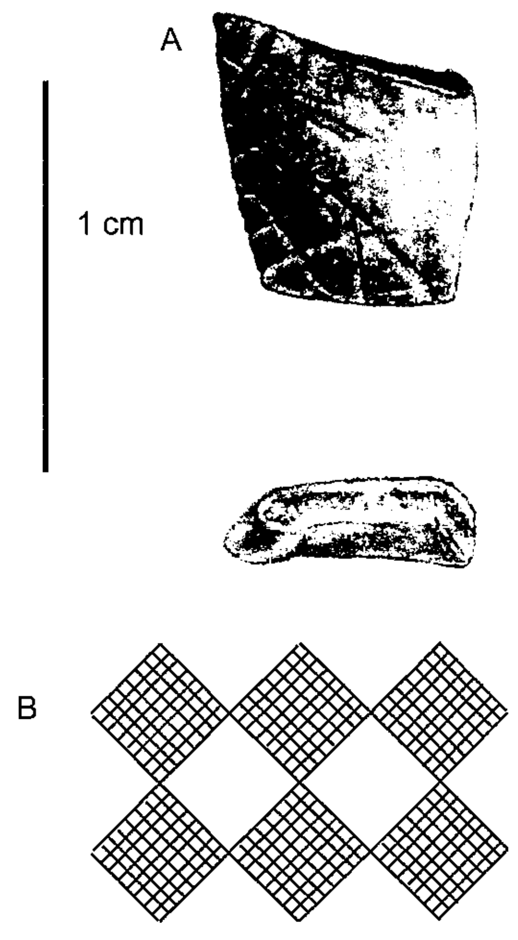
Description

A total of four worked bone tubes was collected (Figure 67, f). All four appear to have been made from bird longbone diaphyses. All four are fragmentary, including two wall fragments (325-01-15 and 327-134-04) and two midshaft fragments (326-05-12B and 327-24-03). The midshaft fragments range between 7.0 - 9.2 mm in maximum diameter. With respect to identification of the specific bones used for manufacture of the objects, the articular ends have been carved away and the objects have been fully polished, resulting in the removal of most identification landmarks. None of the four specimens exhibit ulnar papillae or midshaft foramina, but one does possess a linea aspera marking it as a likely femur. All four specimens are consistent with the shape and size of anseriform femurs or tibias.

Specimen 325-01-15 is a small tube fragment with a distinctive incised design (Figure 64, a). The artifact is decorated with an incised diamond crosshatch "panel within a panel," which may be a central Sacramento Valley Patwin motif (Figure 64, b).

Two fragments with sections of worked ends (326-05-12B and 327-134-04) both appear to have been manufactured by girdling a perimeter incision near the condylar end. The tool used was probably a stone cutting tool or graver, judging by the "skip cuts" paralleling the cut groove. All four specimens are characterized by a moderate to high polish. The polish appears to have been a product of handling wear rather than deliberate burnishing.

Figure 64: A - specimen 325-01-15, bone ear tube or whistle fragment; B - schematic of cross-hatch panel form.



Three of the specimens are heat-treated to a brown color, while the incised ear tube fragment is burned to a calcined white.

Bird bone tubes are a widespread morphological type in Central California. Most specimens are interpreted as whistles, beads, and ear ornaments (Gifford 1940; Bennyhoff 1953).

Distribution

Worked bone tubes were widespread, found in four components. One specimen each was recovered from Stratum 3 at Col-247 (3575-4385 CAL BP), Stratum 1 at Col-247 (1675-2755 CAL BP), Col-245/H (815 CAL BP), and Col-246/H (<400 BP).

Bone and Antler Daggers

Description

A total of nine bone and antler daggers was collected. There were three distinctive specimens, each with unusual material and manufacturing characteristics, and one subtype composed of six closely similar specimens. As a group, the artifacts are carved from longbone or pieces of antler shaft, are well-shaped and have a polished finish.

Six specimens are made from carved longbone shafts (327-27-04, 85-03, 109-04, 112-06, 128-10, and 131-05). All six are fragments, including one tip, three midsections, and two margins. While no identification landmarks remain on the specimens, they are all of a size to have derived from tibias of adult deer (*Odicoilus hemionus*) or pronghorn (*Antilocapra americana*). They appear to have been one-half sections of longbone shaft cut away by engraving deep, parallel incisions down the long axis of the bone. The cuts were followed by grinding a tip end to a tapered, relatively sharp tip. The artifacts have not been ground flat like hairpins, and are "U-shaped" in cross section. The current sample includes no fragments large enough to indicate original length, and no handle ends were recovered.

Specimen 327-160-07 is a large, carved metapodial measuring 119.5 mm long, 37.2 mm wide, and 17.2 mm thick (Figure 66, a). Consisting of the medial aspect of a proximal left tule elk (*Cervus elaphus nannodes*) metatarsal, the bone had been split lengthwise down the medial plane through the anterior sulcus then thoroughly ground and polished on the fractured edges. The artifact bears polished-over gouges and incisions from carving. The distal end is missing, but the artifact was likely shaped to a tapered, blunted tip and was probably originally around 140 mm long. The proximal end is unmodified, and because it lacks battering scars the specimen is taken to be a "dagger" rather than a splitting wedge. The artifact has not been heat-treated, and exhibits no stains or applique.

Specimen 327-115-08 is a long, spatula-shaped section of carved antler measuring 102.2 mm long, 27.5 mm wide, and 3.6 mm thick (Figure 67, c). It was made from the main shaft of a large tule elk (*Cervus elaphus nannodes*) antler, split from the shaft face then ground smooth on all surfaces, particularly the dorsal and ventral faces which were ground sufficient to make an extremely thin cross section. The artifact exhibits very few carving scars, apparently the result of polish from handling wear. The distal end is tapered to a rounded, blunt end. The tip shows no evidence of use-wear. The handle end is missing, but the artifact was likely squared at the proximal end, based on close similarities with Giffords's type 'N2' "Shoehorn-Shaped Objects" (Gifford 1940:174, 216). The artifact bears no obvious evidence of heat-treatment, and exhibits no stains or applique.

Specimen 327-30-04 is a fragment of a thick, carved longbone measuring 37.6 mm long, 27.1 mm wide, and 13.0 mm thick (Figure 66, b). Owing to the removal of condylar bone and bone wall, the artifact could not be confidently identified as to species and bone element. However, the artifact is clearly a proximal end fragment of an overall form similar to Gifford's type 'B' "Tibia Daggers" (Gifford 1940:170, 204-207), and the curved proximal end of the fragment is consistent with the size and shape of a distal tibia of a medium-bodied mammal, perhaps a deer (*Odocoileus hemionus columbianus*). The artifact bears a few polished-over gouges and incisions from carving, but is otherwise highly polished. The bone had been ground thoroughly on all faces, and the "U-shaped" curve of the base had been gouged out, probably with a stone tool. The distal end is missing, but the artifact was probably shaped to a tapered, blunted tip and was probably originally around 70-90 mm long. The artifact has been heat-treated to a dark brown color.

Distribution

Daggers were found exclusively in the Archaic site, Col-247. One dagger was recovered from

Stratum 3 (3575-4385 CAL BP), three from Stratum 2 (3205 CAL BP), and five from Stratum 1 (1675-2755 CAL BP).

Unique Artifacts

Antler Wedge Fragment. A fragment of an apparent antler splitting wedge was recovered (Figure 67, g). The specimen (327-26-06) consists of the end of a carved and polished antler artifact tapered to a blunt, bevel-shaped tip end. The artifact is similar to antler wedges described by Gifford as his type 'HH' (Gifford 1940:182, 231), and specimens recovered from Archaic sites in nearby Clear Lake basin (White *et al.* 2002: Figure 153, k-o). The artifact is highly polished and burned to a calcined white to grey.

Strigil Fragment. Specimen 327-107-06 is a fragment of a carved deer (*Odocoileus hemionus columbianus*) rib. The artifact, a midshaft fragment measuring 19.5 mm long, 6.9 mm wide, and 3.3 mm thick, is curved lengthwise at an angle suggesting it is a distal or proximal rib section, with sufficiently thick bone wall (3.0 mm) to make the latter most likely. The bone has been split along the medial plane, exposing the hollow bone, then thoroughly polished on all surfaces. The artifact has been lightly heat-treated to a light brown-grey color on one face.

Antler or Bone Pendant Fragment. Specimen 327-97-05 is a fragment of a carved bone or antler artifact measuring 16.5 mm long, 13.9 mm wide, and 2.8 m thick (Figure 67, e). The artifact is a proximal end fragment broken across a single, distinct, uniconically drilled perforation. The artifact appears to have been an antler splinter or bone wall fragment ground to a thin, flat cross section, drilled and ground on the edges to a rectangular form. The artifact is similar to pendants recovered from the Ellis Landing and Emeryville shellmound sites, described as type 'Q' by Gifford (Gifford 1940:175, 218-219). The artifact has been heat-treated to a dark brown color.

Gorge Hooks or Fish Barbs. A total of two possible gorge hooks or fish spear barbs was recovered (Figure 67, a-b). Specimen 328-48-05 (Figure 67, a) is a tiny bipointed bone artifact measuring 19.5 mm long, 2.5 mm wide, and 2.2 mm thick. Apparently originating as a small bone splinter, the specimen is facetted by grinding on four faces. On one end it has been ground to a distinct, bevelled facet reaching about half the length of the specimen. The artifact exhibits no heat-treatment or mastic residues. The specimen is closely similar to Gifford's bipoint type 'T1h' (Gifford 1940: 223). He speculates that the bevelled end was hafted, and that it was intentionally ground at an angle sufficient to prop the opposing end out to form a barb on a composite harpoon (Gifford 1940: 177, 223). Specimen 328-23-04 (Figure 67, b) is a large bipointed bone artifact measuring 55.4 mm long, 5.1 mm wide, and 4.3 mm thick. The artifact is also derived from a bone splinter, and is facetted by grinding on a number of faces. The artifact is heat-treated to a dark brown to black color. The specimen is similar to Gifford's bipoint type 'T1a' or 'T1b' (Gifford 1940: 176, 221-222). The artifact may represent a composite harpoon barb or a "gorge hook."

J-Shaped Fish Hook. Specimen 328-50-02 is a complete J-shaped fishhook measuring 27.5 mm long, 14.0 mm wide, and 2.6 mm thick (Figure 67, d). The artifact is roughly rectangular in plan-view and thin in cross section. It appears to have been made from the thin wall of a medium-sized mammal longbone. Analogizing to the closely similar J-shaped hooks from Clear Lake basin (White *et al.* 2002), it is likely that the piece started out as a rectangular "blank" ground flat, followed by grinding and cutting out the center to form the basic J-shaped plan view of the hook. The gape, barb, and shank of the Hwy 45 specimen are considerably wider and less finished than specimens found in adjoining regions, thus the object may actually represent a final stage in manufacture rather than a finished form. For example, the specimen is similar to White's Clear Lake basin "Stage 3" fishhook blanks (White *et al.* 2002:339-341). Notably, while shell and bone fishhooks were widely reported for coastal California archaeological sites (e.g., Heizer 1949), they had been considered rare and only found in widely dispersed sites in the interior. For example, a single J-shaped hook was noted for the Lower Berkeley levels of the West Berkeley shellmound (Wallace and Lathrap 1975:33), a single specimen was recovered from the Blossom site (SJo-68) in lower Sacramento Valley (Ragir 1972:69-70), a possible fishhook was recovered from Son-348/H (Schwaderer 1992:63-64), and small J-shaped fishhooks were also recovered from late prehistoric contexts at lower Cosumnes River site Sac-117 (Heizer 1949:92) and Lak-48 near Lakeport (Werner 1985:Plate 3). The largest assemblage yet recorded is from Upper Archaic midden deposits near Lower Lake, which produced an array of bone J-shaped hooks and hook manufacturing debris, leading to a reassessment of previously reported archaeological assemblages and the revised identification of other Clear Lake basin hook fragments and manufacturing debris (White *et al.* 2002:339-341).

Distribution

Unique bone artifacts were widespread, found in three components. The antler wedge fragment was recovered from Stratum 3 at Col-247 (3575-4385 CAL BP). The antler or bone pendant and the strigil were both recovered from Stratum 2 at Col-247 (3205 CAL BP). The J-shaped bone fishhook and bone gorge hooks or harpoon barbs were all found at Col-158B/C/D (1030-1175 CAL BP).

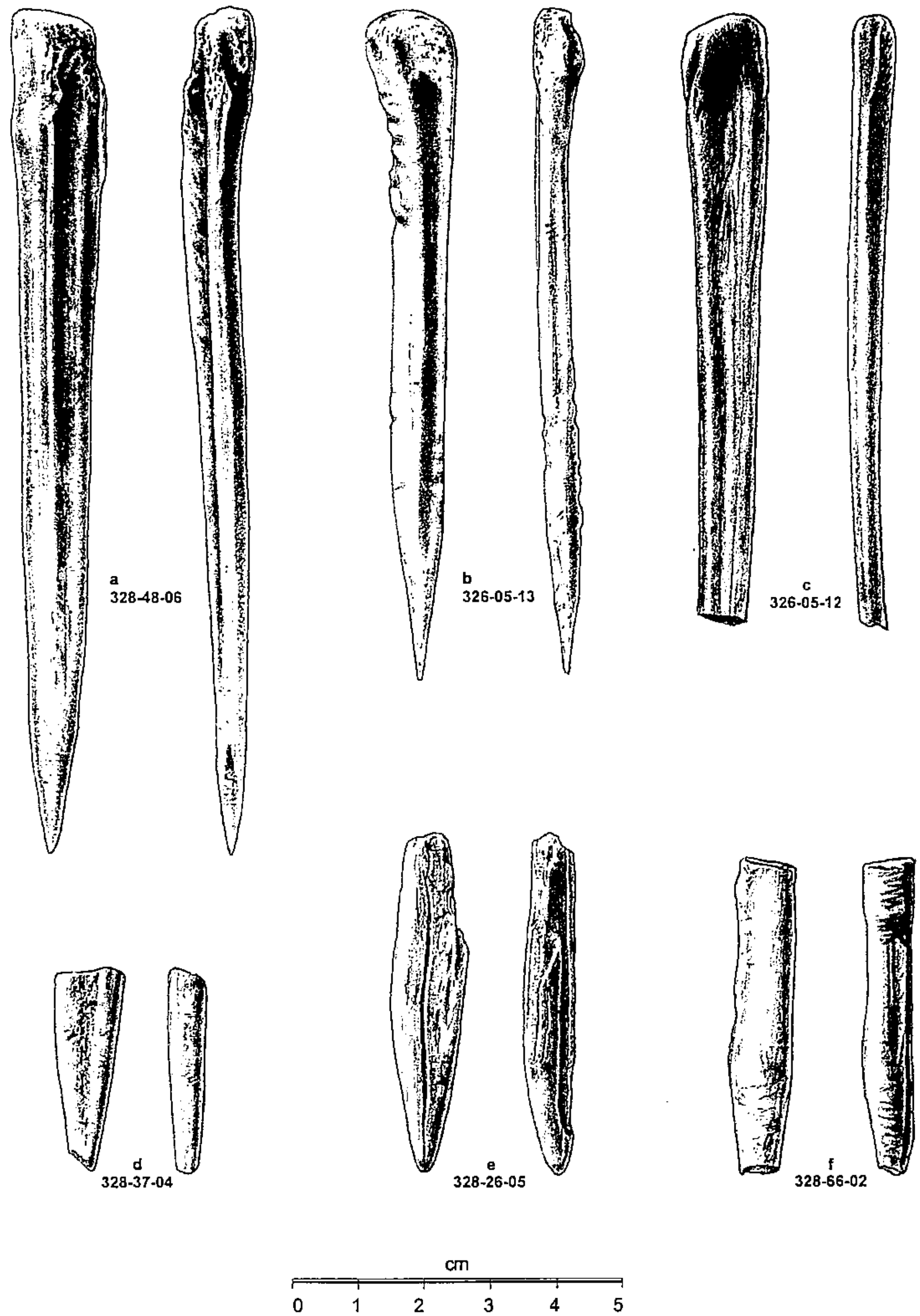


Figure 65: Awls from the Hwy 45 Project.

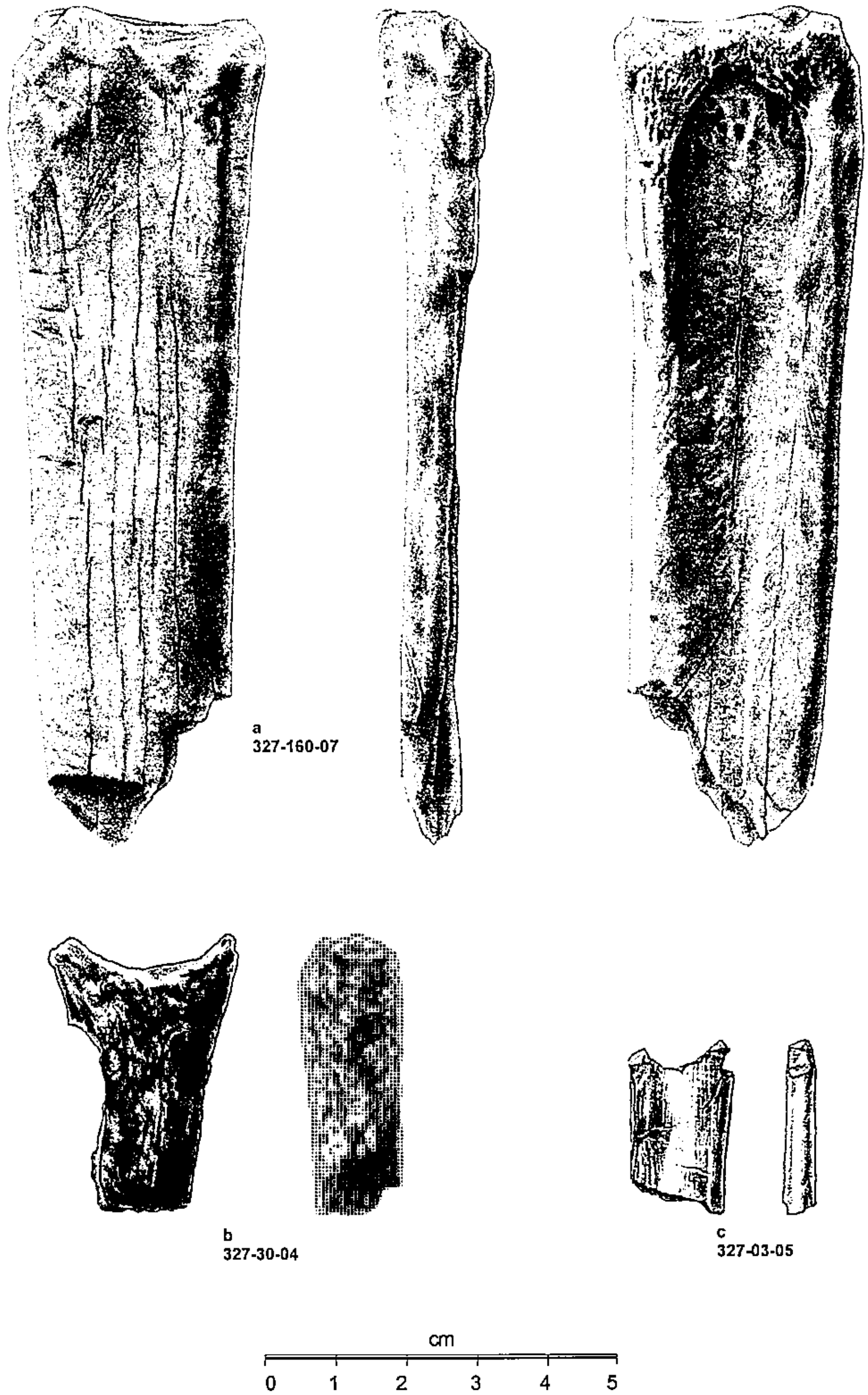


Figure 66: Bone daggers (a-b) and a bone pin (c) from the Hwy 45 Project.

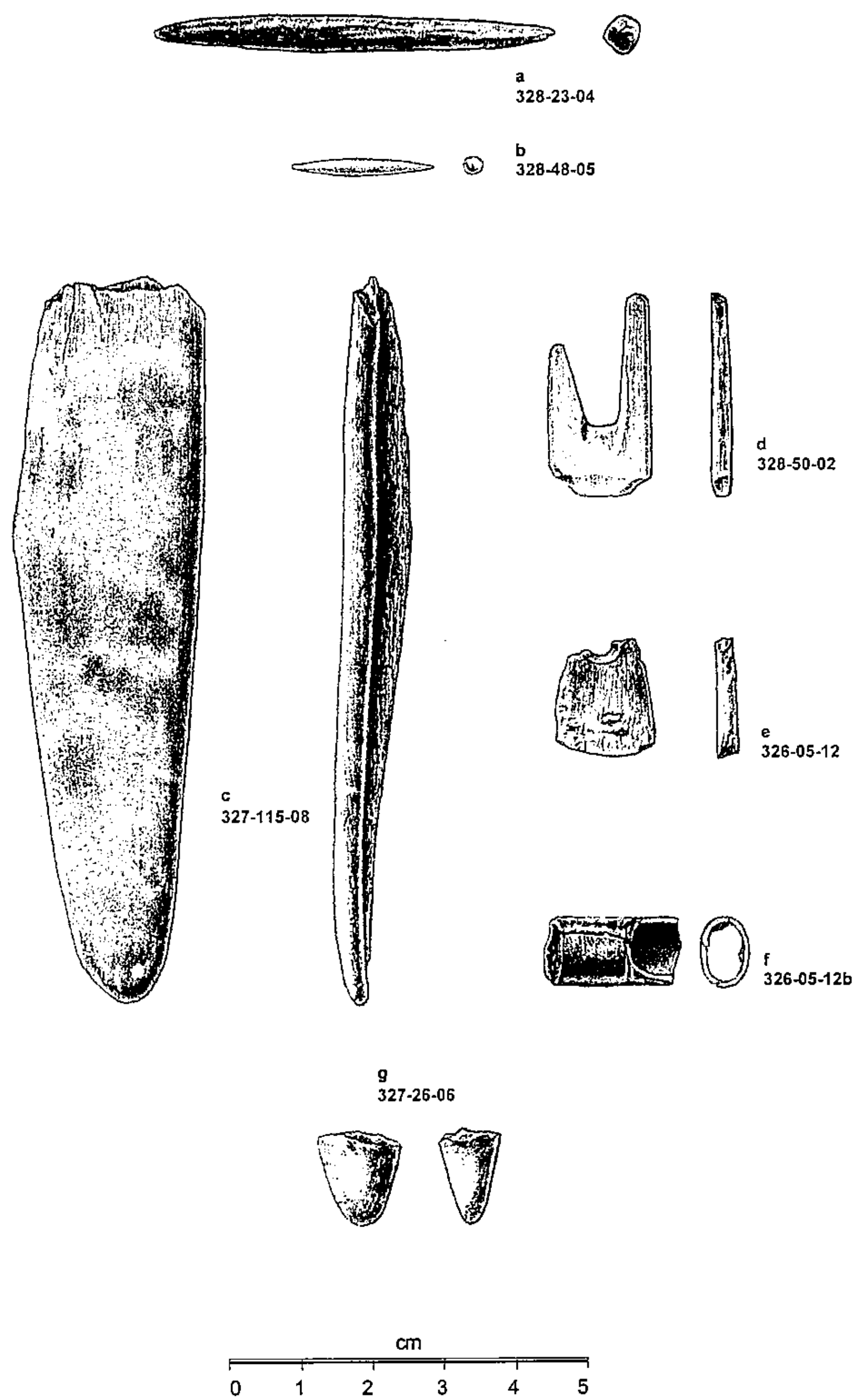


Figure 67: Gorge hooks or fish barbs (a-b), antler dagger (c), J-shaped hook (d), antler or bone pendant (e), worked bone tube (f), and antler wedge (g) from the Hwy 45 Project.

SHELL BEADS AND ORNAMENTS

Introduction

A total of 84 shell beads and ornaments was recovered during the Hwy 45 project. There was a small number of beads but a considerable range of bead types. Classification follows conventions established by Bennyhoff and Hughes (1987) with modifications developed by Dr. Randall Milliken (personal communication, 2001).

Beads

Description

A Series Olivella. Six "A-series" spire-lopped beads were found (Figure 69, u-y). These were otherwise complete olive shells with the spire removed by grinding perpendicular to the long axis of the shell, removing two or more sections of the apex. No additional modifications were observed. Five complete specimens ranged between 7.3-9.2 mm maximum diameter (AVG=7.8 mm), indicative of the "A1b" medium spire-lopped. They ranged between 11.1-14.2 mm in axial length (AVG=12.2 mm), and had a maximum apical perforation diameter of 2.1-3.7 mm (AVG=3.0 mm). A single fragment (327-72-12) is a section of spire and wall from a larger bead, probably an A1c spire-lopped. Two A1b specimens (327-84-07 and 327-131-06) were fire-darkened.

C Series Olivella. One "C series" split shell bead was recovered (Figure 68). Specimen 327-164-04 was a half-shell with ground edges and a center perforation, classified as a C3 split oval bead. The specimen measured 8.0 mm long, 6.3 mm wide, with a 2.7 mm maximum perforation diameter.

F Series Olivella. Two "F series" saddle beads were recovered (Figure 70, a-b). Both specimens (328-1-07 and 328-49-07) are fragmentary sections of curved wall beads with ground edges and a center perforation. Both specimens are too fragmentary to determine original dimensions, and either or both may be classified as F2 "oval or full saddles" or F3 "square saddles." One specimen (327-48-07) is fire-blackened.

G Series Olivella. A total of 42 "G series" saucer and ring beads was collected (Figure 70, h-u). The specimens (all cataloged under 327-164-04) were disk-shaped wall beads, roughly circular in plan view, with a perforation at or near the center. Saucers and rings are differentiated based on

Table 20: Chronostratigraphic distribution of shell beads and ornaments from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-158A	Col-245/H	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**800 BP**	**815 BP**	**< 400 BP**	**Total**
Haliotis Square	1	-	-	-	-	-	-	1
Large Haliotis Pendant	-	2	-	-	-	-	-	2
Olivella L2	-	1	-	-	-	-	-	1
Macoma Disk	-	2	3	-	-	-	-	5
Haliotis Disk	-	-	2	-	-	-	-	2
Small Haliotis Pendant	-	-	2	-	-	-	-	2
Olivella C3	-	-	1	-	-	-	-	1
Olivella G2/G3	-	-	42	-	-	-	-	42
Olivella F2/F3	-	-	-	1	1	-	-	2
Olivella M1	-	-	-	2	2	-	8	12
Clamshell Disk Beads	-	-	-	-	-	-	9	9
Olivella A1	-	2	1	-	1	-	2	6
Total	1	6	51	3	4		19	84

perforation size (Bennyhoff and Hughes 1987:132-135).

The 42 G series beads included 21 "G2" normal saucer beads (Figure 70, h-q) ranging between 5.4-7.3 mm maximum diameter (AVG=6.2 mm), and 1.3-2.7 mm maximum perforation diameter (AVG=2.3 mm). The G2 saucers included one specimen more than 6.8 mm in maximum diameter, qualifying it as a "large normal saucer." The remaining 20 were between 5.4-6.8 mm in maximum diameter, representing "small normal saucers."

The 42 G series beads also included 21 "G3" ring beads, with center perforations greater than 2.7 mm (e.g., Figure 70, r-u). They ranged between 5.1-7.3 mm in maximum diameter (AVG=6.3 mm), and 2.7-3.5 mm in maximum perforation diameter (AVG=3.0 mm). The G3 rings included six specimens more than 7.0 mm in maximum diameter, qualifying them as "large rings." The remaining 15 were between 5.1-7.0 mm in maximum diameter, representing "small rings."

L Series Olivella. There was one L2 Small Thick Rectangle bead (Figure 70, v), measuring 6.6 mm long, 4.4 mm wide, 1.3 mm thick, and 2.3 mm maximum perforation diameter. The L2 is similar to the M1 rectangle, but the L2 bead is:

> distinguished from Class M by greater average thickness (1.5 mm), larger perforation diameter (typically 2.0 mm), more frequent shelving (10%), and more frequent grinding of the edges of the ventral face [Bennyhoff and Hughes 1987:137].

Dimensions of the Hwy 45 L2 bead fall into the specified range, however, it is not shelved, and the ventral face is not ground.

M Series Olivella. There were 12 M1 sequin beads (Figure 69, i-t). These are small, rectangular beads. One specimen (328-5-09), also notable because it is narrow and had an offset perforation (Figure 69, j). The remaining 11 specimens had center perforations. All perforations were quite small and drilled from the ventral face. All 12 beads had ground edges and were ground on the ventral face to form distinct facets in all four corners. They ranged between 6.5-9.1 mm long (AVG=7.7 mm), 3.7-6.9 mm wide (AVG=5.2), and 0.8-1.9 mm maximum perforation diameter (AVG=0.9). One specimen (325-5-04) was fire-blackened.

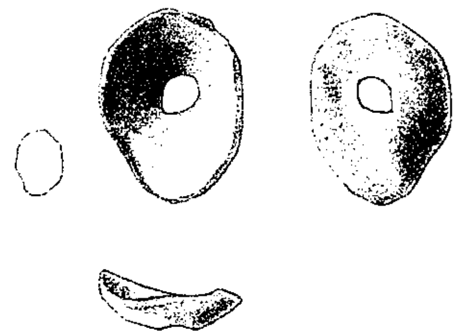


Figure 68: Olivella C series bead from Col-247.

Macoma Irregular Disk Beads. There were five *Macoma nasuta* irregular disk beads (Figure 70, c-g). These were rough disks of irregular size and variable perforation diameter. The edges of the beads were apparently chipped to form, then ground in facets until a rough disk shape was achieved. They are distinguished from *Saxidomus* and *Tresus* clam disk beads based on a lack of ventral ribbing, lack of an nacreous layer, and a relatively thin and distinctive wedge-shaped cross section. They ranged between 4.3-9.2 mm in maximum diameter (AVG=6.6 mm), 1.3-2.0 mm thick (AVG=1.8 mm), and 2.1-2.8 mm in maximum perforation diameter (AVG=2.3 mm). Specimens 327-39-07 and 327-152-03 (Figure 70, c-d) were quite small, between 4.7-5.2 mm in diameter.

Haliotis Disk. There were two *Haliotis* spp. (probably *H. rufescens*) disk beads (Figure 71, a-b). These area rough disks with chipped and ground edges, carved from the thin lip of the shell, ground on the dorsal faces sufficient to polish the epidermis. The two were closely similar in size, averaging 10.3 mm in maximum diameter, 2.0 mm thick, and 3.2 mm in maximum perforation diameter.

Haliotis Square. There was one *Haliotis* spp. (probably *H. crackerodii*) square bead or applique (Figure 71, e). The specimen (327-12-05) is ground to form flat sides and distinct corners, and is quite thin, ground on the dorsal face sufficient to remove the epidermis. It measures 8.7 mm long, 7.0 mm wide, 0.9 mm thick, and 3.0 mm in maximum perforation diameter.

Saxidomus/Tresus Clam Disk Bead. There were nine clamshell disk beads made from *Saxidomus* spp. or *Tresus* spp. shells. All specimens had one or both faces ground smooth, making it difficult to determine species. The edges were ground and polished to form into nearly perfect circles. They ranged between 6.0-12.4 mm in maximum diameter (AVG=8.8 mm), 1.9-4.4 mm thick (AVG=2.9 mm), and 2.7-3.6 mm in maximum perforation diameter (AVG=3.2 mm). Specimens 327-39-07 and 327-152-03 (Figure 70, c-d) were quite small, between 4.7-5.2 mm in diameter. One specimen (325-6-02) was burned.

Distribution

Shell beads were found in all sites and components except Col-245/H. There was a very definite pattern of temporal distribution. The oldest deposit, Stratum 3 at Col-247 (3575-4385 CAL BP), yielded just one bead, the *Haliotis* square. Stratum 2 at Col-247 (3205 CAL BP) produced five beads, including one *Olivella* L2, two *Macoma* disks and two A1 spire-lopped *Olivella*. Stratum 1 at Col-247 (1675-2755 CAL BP) yielded 49 beads, including three *Macoma* disks and one *Olivella* A1 bead found in the general midden matrix, as well as 45 beads found associated with Burial 6, including two *Haliotis* disks, one *Olivella* C3, 21 *Olivella* G2, and 21 *Olivella* G3.

A completely different set of bead types was encountered in the late prehistoric deposits at Col-158 and Col-246/H. Col-158B/C/D (1030-1175 CAL BP) produced one F series saddle *Olivella* and two M1 *Olivella* sequins. Col-158A (800 CAL BP) yielded an identical combination of one F series saddle *Olivella* and two M1 *Olivella* sequins, in addition to one A1 spire-lopped *Olivella*. Col-246/H (<400 BP) produced eight M1 *Olivella* sequins, nine clamshell disks, and one A1 spire-lopped *Olivella*.

Shell Ornaments

Description

Large Haliotis Disk Ornaments. There were two large *Haliotis* spp. disk ornaments (specimens 327-169-01 and 327-169-02). They are made from thin, wavy shell with a dull pearlescence, probably *H. crackerodii*. Both specimens were in a condition of extreme decay marked by exfoliation of fine, friable lamina. For the purposes of analysis, specimen 327-169-01 was secured by immersion in an epoxy-based cement. Specimen 327-169-01 (Figure 71, f), roughly oval in plan view, measures 70.9 mm long, 63.9 mm wide, and 1.8 mm thick. The artifact is nearly complete, lacking a small portion of the edge as a result of trowel damage. The ventral face is slightly concave but contoured by a series of narrow ripples broken by a wavy cross-grain. The nacre reflects a matte silver, varying in faint pink to yellow-green tones. The edges of the artifact were ground smooth and the margin of the nacreous face was decorated with a series of incised, tightly spaced tick marks between 1.5-2.5 mm long, 0.6-1.0 mm apart around the entire perimeter. A pair of perforations measuring 3.0 mm in diameter were drilled in the center of the artifact. The perforations were 7.0 mm apart and aligned along the long axis of the ornament. The perforations are uniconical and drilled from the dorsal face.

Specimen 327-169-02 is considerably more fragile and was recovered in fragments and lamina. The artifact is a quarter-section fragment shaped like a pie slice, with a quarter of the margin. Overall, the artifact appears to have been similar in size, shape, and manufacture to 327-169-01, but scalloped around the margin, and with larger center perforations set farther apart. The dorsal face has exfoliated, but portions of the original surface are preserved, exhibiting patchy epidermis and a porous, subepidermal nacre flattened and marked by fine striations from scoring and abrasion. The ventral face exhibits the same wavy contour (though considerably less rugose than 327-169-01), and the same matte silver reflective properties, but bleached out by weathering and exfoliation. One complete center perforation and one-half of a second perforation was present, the complete perforation measuring 5.0 mm in diameter, uniconical, and drilled from the dorsal face. The perforations were 17.0 mm apart and also probably aligned along the long axis of the ornament. There was no suggestion of tick marks or other incisions on either face, however, the preserved margin was scalloped, a modification made by carving broad, shallow notches every 4.0-5.0 mm.

Small Haliotis Eccentric Ornaments. There were two small *Haliotis* spp. (probably *H. rufescens*) ornaments or appliques (Figure 71, c-d). Specimen 327-164-03A (Figure 71, d), measuring 18.1 mm long, 4.5 mm wide, and 2.0 mm thick, is ground on both faces and all edges sufficient to remove the epidermis. The artifact is thin in cross section and shaped like a claw or broad crescent in plan view. The artifact may have been perforated, but this cannot be determined because one end is broken off. The opposite end is rounded by grinding. Specimen 327-163-11C, measuring 10.4 mm long, 6.9 mm wide, and 0.4 mm thick, is also ground on faces and edges sufficient to remove the epidermis. The artifact is shaped like a triangle. A small perforation 3.5 mm in diameter has been drilled on the narrow end.

Drilled Gonidea. There were two fragments of drilled *Gonidea angulata* shell (Figure 71, a-b). Specimen 327-18-07 (Figure 71, g) is a small fragment from the flange portion of the shell. The uniconical perforation, measuring 3.0 mm in diameter, was drilled from the exterior. Specimen 327-50-06 was a piece of a fragmentary, exfoliated shell exhibiting a single perforation measuring 4.1 mm in diameter. No other modifications were observed.

Distribution

Shell ornaments were found only in the Archaic site, Col-247. The two large, disk-shaped ornaments were found associated with Burials 8/9 in Stratum 2 (2755-3295 CAL BP). The two small, eccentric *Haliotis* ornaments were found associated with Burial 6 in Stratum 1 (1675-2755 CAL BP), and were part of the bead lot described above. The drilled Gonidea were both found in general midden deposits associated with Stratum 1 (1675-2755 CAL BP).

Figure 69: Late prehistoric bead types.
Rows 1 and 2=clamshell disk beads; Rows 3 and 4=<u>Olivella</u> M series, and Row 5=<u>Olivella</u> A series.

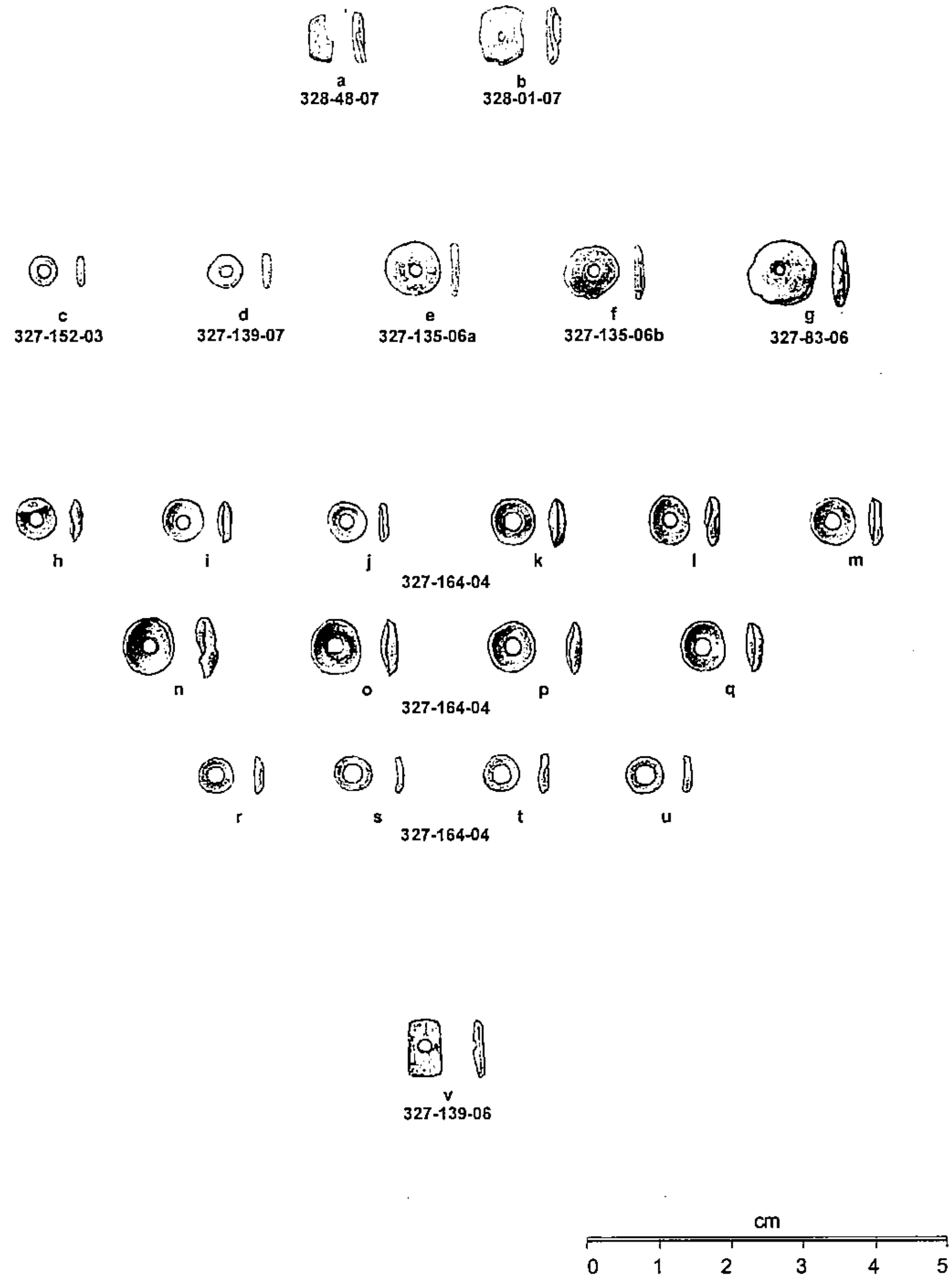


Figure 70: Archaic Olivella bead types.
Row 1=Olivella F series; Row 2=Macoma irregular disk; Rows 3 through 5=Olivella G series, and; Row 6=Olivella L series.

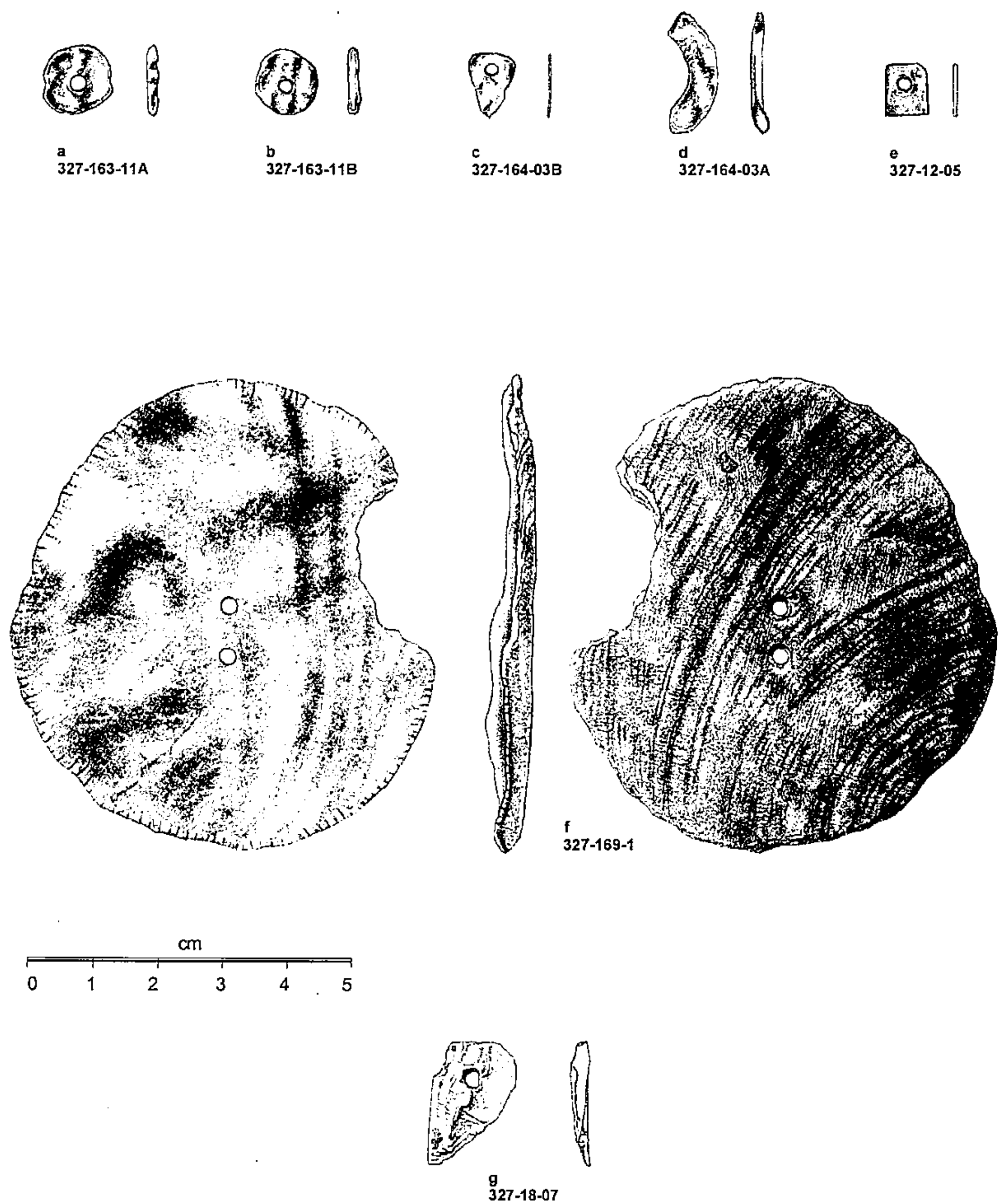


Figure 71: Haliotis beads and ornaments and drilled Gonidea.

CERAMICS AND FIRED CLAY

INTRODUCTION

Definition

In keeping with another recent study (White *et al.* 2002) a distinction is made between ceramics versus fired clay. *Ceramics* are defined as objects made from clayey sediments intentionally shaped and deliberately fired, as well as pieces representing by-products of this process. *Fired clay* is defined as the by-product of the human use of fire unintentionally affecting native soils. We avoid the term "baked clay"—which has a long history of vernacular use in the local archaeological literature, in favor of the term "ceramic" which has a wide use in the broader archaeological literature where it is a covering term for similar, intentionally manufactured clay objects and materials.

Sample

A total of 5,581 ceramic objects weighing 14,927.0 gm and a controlled sample of fired clay weighing 97,266.5 gm was recovered during the Hwy 45 project. Col-247 produced the majority of the material, including 98.2 percent of the ceramic artifacts (n=5,483, 14,079.9 gm), and 78.1 percent of the fired clay (control sample of 75,980.3 gm). Col-158 components A through D combined produced 0.5 percent of the ceramic artifacts (n=29), and 7.1 percent of the fired clay (7,100.0 gm). Col-246/H produced 1.0 percent of the ceramic assemblage (n=55) and 1.2 percent of the fired clay (1,197.7 gm). Col-245/H and the Fairgrounds redeposit combined produced 0.2 percent of the ceramic artifacts (n=14) and 13.3 percent of the fired clay (12,988.5 gm).

Ceramic Production

No detailed chemical or trace element studies were conducted. However, a number of generalities are suggested by basic observation and limited experimentation. Variation in grain, texture, and color was observed, and definite co-association with morphological types was also observed indicating that specific controls were applied during the manufacture of specific types and classes of ceramics. Generally, formal ceramic objects such as pottery, eggs, beads, figurines and paint daubers were made from fine-grained clays, molded by kneading, rolling, and pinching, with carefully shaped and smoothed exteriors, fired to a dark brown to light grey color.

Origin of Paste

Paste used for manufacture of ceramic objects was most likely derived from local, water deposited, clay-rich muds. The paste's alluvial origin is indicated by its fine grain (predominance of clay over silt and sand), roundedness of particles as observed under low magnification (100X), and the organic content of the parent material.

The well-shaped ceramics exhibit several characteristics that suggest the paste was prepared in some way. First, cross sections show no sign of soil markers such as ped structure, root hairs, worm holes, or leaf fragments. The specimens also exhibit a uniform, fine-grained paste comparable to some commercial clays. These characteristics indicate that dried clay was ground in a mortar and/or moist clay was kneaded extensively.

In contrast, "fired clay" is considered most likely a by-product of intentional and accidental fires associated with habitation. The Hwy 45 sample includes apparent burned house floor sections, hearth linings, and household wall or smoke hole daub. Derivation of the parent material from soil is indicated by variation in grain, presence of worm holes and fine root tracks, and impressions of fine organics.

Firing

Of particular interest in our study were color phases produced by firing, ranging from light yellow-brown to dark yellow-red. Examination of the collection coupled with lab experiments found the following sequence of color phases (Figure 72):

> Brown. Initial firing incompletely or inefficiently carbonized the organic content of the clay.
>
> Grey. Further firing immolated more of the carbon, turning the paste eventually to a dark to light grey phase.
>
> Pink. More intensive firing, including higher heat or more sustained heat, vaporized all carbon from

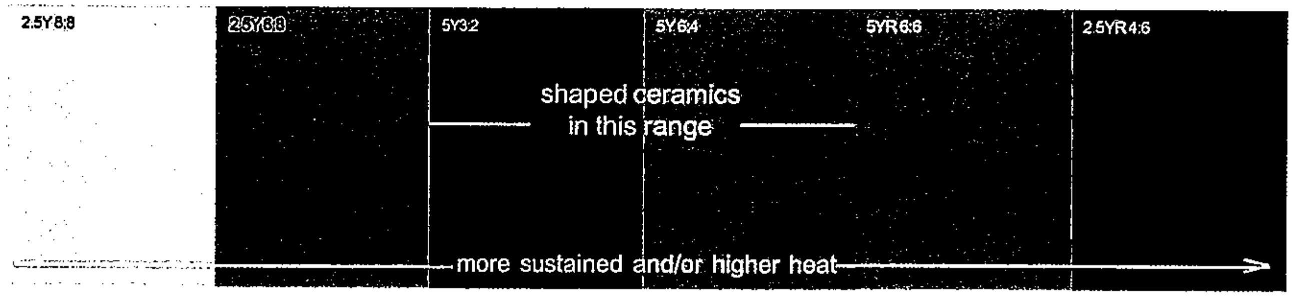


Figure 72: Color phases of ceramic artifacts from the Hwy 45 project.

the paste and began to oxidize the iron content of the clay, turning the paste a pink color phase.

Red. Sustained firing turns the paste bright red. In this final phase the paste was also noticeably light in weight, fragile in composition, and pumiceous, indicating that sustained or especially high heat was sufficient to deplete all organic and some inorganic fraction, and further alter the crystalline structure of mineral constituents.

This phylogeny of color was repeated in the ontology of individual lumps. Archaeological specimens broken open to reveal the interior showed these color phases in layers. However, in many cases the incompletely fired objects actually showed the dark layer limited to the outer cortex only, surrounding a light tan interior. We assume this means that during initial firing the immolated carbons migrated to the exterior, leaving the interior a tan color. Further, the objects fired to a red phase—when exposed in cross section—often exhibited a lack of significant interior color phases, indicating that the pumiceous state was fully metamorphic.

The ceramic artifacts exhibited a considerable range in hardness, even within types. This was consistent with color variation reflecting limited control of firing conditions. However, most of the well-shaped ceramics described below—especially the egg-shapes, pottery, beads, and rolled pieces—were consistently gray to black in color indicating a systematic attempt to control color via temperature or atmosphere. In general, it appears that the Colusa ceramics were fired at temperatures that could have been reached by open firing. No archaeological evidence was found for a ceramic oven nor was its existence implied by the ceramic finds.

Table 21: Distribution of ceramic artifacts from the Hwy 45 project.

	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-158A	Col-245/H	Col-246/H	
AVG Date (CAL)	**3807 BP**	**3205 BP**	**2215 BP**	**1103 BP**	**800 BP**	**815 BP**	**< 400 BP**	**Total**
Sinkers	1	-	1	-	-	-	-	2
Nonperforated Plummets	3	(1)	-	-	-	-	-	4
Wedge-Shaped Handstones	3	4	-	-	-	-	-	7
Slingstones (Sample)	4	26	17	-	-	-	-	47
Perforated Plummets	(1)	2	2	-	-	-	-	5
Ocher Pebbles	-	2	-	-	-	-	-	2
Disk-Shaped Handstones	-	6	(1)	-	-	-	-	7
Handstone Fragments	-	3	(1)	-	-	-	-	4
Pestles	-	-	2	-	2	-	-	4
Hammers	-	3	2	-	-	-	-	5
PestleSoapstone Bowl	-	-	-	1	-	-	-	1
Total	12	47	26	1	2	-	-	88

Shaping

The small average size of the ceramic artifacts, prevalence of rounded forms, and presence of finger and palm impressions indicates that the artifacts were shaped by squeezing, rolling, and pinching with the hands, including some composite forms but no coiling.

CERAMICS

Pottery

Description

A total of six pottery fragments was collected during the Hwy 45 project (Figure 73). There were four rim fragments and two wall fragments. All six of the artifacts appear to have been from small, shallow bowls or cups, roughly 10.0-15.0 cm wide and round in plan view, and 5.0-10.0 cm high and flat to oval in side-view. The original specimens must have been roughly similar to the soapstone bowls described above, albeit with substantially thicker walls. The bowls appear to have been shaped by pinching and kneading a single large ball of paste. Rims were pinched, upturned, and rounded, and walls and base pinched to form. One rim fragment (Figure 73, e) was decorated with a double line of punctate impressions around the outer rim. Three specimens (Figure 73, a, b, d, and f) were stained a dark brown color on the interior wall and may have been used to hold burning materials.

Wall Fragments. Two wall fragments from broad, shallow pots or cups were recovered. Specimen 328-37-05 (Figure 73, a) measures 60.0 mm long and 31.6 mm wide. Wall thickness ranges between 13.0-17.0 mm. The clay is a medium grained paste, and not as fine grained as the other ceramics. It has been fired to a dark brown and gray. Specimen 328-48-12 (Figure 73, b) measures 39.2x21.6 mm with a wall thickness between 9.8-10.0 mm. The clay is fine grained, fired to a dark grey, and is unusually hard. The exterior surface has been well smoothed, with a slightly uneven texture. The inner wall is polished or burnished.

Rim Fragments. Four pottery rim fragments were recovered. Specimen 325-01-18 (Figure 73, e) measures 34.6 mm long, 25.9 mm wide, and is 15.0 mm thick, a rounded rim fragment from a well finished, well hardened bowl. It is decorated with two rows of small, square holes around the rim. The top row, about 12.0 mm down from the lip of the rim, consists of a series of 11 punctures made with a square-tipped awl, stick, or a grass stem. The holes in the second row are not as well defined, but number about eight. Specimen 327-80-04 (Figure 73, c) measures 43.0 mm long, 44.5 mm wide, with a nonuniform, thick wall measuring 15.3-19.8 mm thick. The clay is relatively soft and unevenly fired, with patches of dark brown to black. Specimen 327-06-05 (Figure 73, d) measures 44.1 mm long, 32.8 mm wide, with a wall thickness between 5.9-11.8 mm. The wall and rim are well smoothed, and in cross section the fragment clearly shows a dark brown interior wall in contrast to a gray rim and exterior wall. Specimen 325-01-19 (Figure 73, f) is a small section of wall from small, finely finished cup. It is smooth on the interior and exterior surfaces. The wall is 19.5 mm thick, thinning to 12.9 mm near the rim.

Function

The pottery vessels likely served as personal gear for food consumption. Based on their projected size, an adult could have held the vessel in one hand. We estimate their capacity at no more than 250 ml (8.4 oz) of liquid.

Distribution

Pottery was found in three sites including two specimens each from Col-158, Col-246/H, and Col-247. Two specimens were associated with Stratum 1 at Col-247 (1675-2755 CAL BP), one each at Col-158B and Col-158D (1030-1175 CAL BP), and two specimens at Col-246/H (<400 BP). Notably, other ceramics types were found but pottery was absent from Stratum 2 and Stratum 3 at Col-247 (3205-4385 CAL BP).

"Egg-Shaped" Ceramics

Description

A total of 133 ceramic "egg-shaped" artifacts and fragments was encountered during the Highway 45 investigation (Figures 74 and 75). Their resemblance to small (bantam-sized) eggs is unmistakable. They are round to slightly oval in section, ovoid in side view with tapered ends, and highly formalized in shape and size, all falling within 10.0 mm of one another in length and width. The smallest specimen is 44.4 mm long and 23.6 mm thick (Figure 74, a), the largest is 50.3 mm long and 32.0 mm thick (Figure 75, d). Weight of complete specimens ranged between 20.3-35.4

gm. Twelve complete or nearly complete specimens were found along with 121 fragments.

The clay used to create the egg-shapes appears to have been ground to a finer paste than other ceramic artifacts. They appear to have been shaped by kneading and rolling a single ball of paste in the palms of the hands, probably rolled at an angle to create the tapers. However, the smooth surface common to the specimens suggests they were moistened to finish. A distinctive pattern of crosshatch impressions occurs on the side balance point of a number of specimens (Figure 75, a-d) suggesting they were mounted on a wicker frame for firing. All of the egg-shaped artifacts were fired to a uniform brown to grayish brown color, suggesting significant control of firing temperature and duration. The sole example of possible decoration occurs on one specimen (Figure 75, c) with a small dimple on the apical end.

Function

Function of these artifacts remains a mystery. There is no ethnographic mention and the archaeological record produced no specific evidence of association or context indicative of function. There were no patterns of tool use or reworking, no hafting or binding scars, and no evidence of mastic, pigment, or other stains. Further, the pattern of breakage and fragment types doesn't reveal anything about function.

However, the absence of evidence is in itself quite interesting, especially given the obvious effort which the prehistoric occupants dedicated to production of these objects. The absence of evidence might be taken to indicate functions that involved either careful handling on-site or off-site activity resulting in loss or patterned breakage. We favor the idea that they were used as sling shot, appropriate given their weight, size, aerodynamic shape, and likely tendency to right themselves and impact with the heavy end first if released with a hard spin.

Distribution

The egg-shaped ceramics were found only at the Archaic site, Col-247. Further, within Col-247 the egg-shaped ceramics were found associated with Stratum 1 (n=96) and Stratum 2 (n=35), dating between (2755-3295 CAL BP). Two specimens found in Stratum 3 are probably intrusive from overlying levels. No caches were identified, however, two egg-shaped ceramic objects were found in the pelvic girdle of Burial 3, associated with Stratum 2 at Col-247.

Paint Daubers

Description

A total of four "paint daubers" was collected during the Hwy 45 project (Figure 76, a-d). They have a distinctive form, morphologically similar to but up to double the size of a Hersheys "Kiss." The specimens range in size but are similar to one another in form and manufacture. They each appear to have been made from a dollop of paste rolled to a thick, tear drop form, then pressed on the fat end to make a bulbous or mushroom shape and pinched on the skinny end to make a slightly curved prong or tab. The specimens are between 23.1-34.5 mm long and 14.0-32.2 mm wide on the bulb end. The tab end has been snapped off on all four specimens and the bulb end is missing from one specimen. All four have been made with a very fine paste and are fired to a brown to dark gray color. Except for imperfections related to decomposition, the bulb faces are quite smooth.

Specimen 328-48-10 (Figure 76, b) is among the best examples of ceramic technology from the project area. It has a rounded and slightly flattened base measuring 22.0 mm in diameter. From this rounded end, a curving stem extends about 22.0 mm to a break. Specimen 327-07-04 (Figure 76, d) has the broadest bulb end of all the specimens, oval in plan view and measuring 23.9 x 30.4 mm, with a broken-off stem 15.8 mm in diameter that was probably originally more than 30.0 mm long. Specimen 327-113-08 (Figure 76, c) is the smallest example, with a very smooth bulb end round in plan view and measuring 16.0 mm in diameter. The handle is also broken off at the stem. Specimen 327-121-09 (Figure 76, a) is the handle end only, the bulb end having crumbled or snapped off.

Function

Their identification as "paint daubers" is based on a combination of evidence. Closely similar artifacts were recovered from another Central Valley site, Sol-363, near Dixon (Rosenthal and White 1994). Rosenthal and White proposed that the artifacts served as paint applicators based on the obvious attempt on the part of the manufacturers to achieve a smooth-faced bulb or "applicator" end, and the presence of red pigment on the bulb end of one specimen. Ethnographic records of ceremonial paint designs indicate that rows or clusters of dots about this size were common in the Central Valley (e.g., Sherwin 1963). The Hwy 45 artifacts would make round to oval stamps. In contrast, the Solano County examples would have made comma-shaped stamps.

Distribution

Paint daubers were found in two sites, Col-158 and Col-247. The artifacts also had a limited temporal distribution. Three specimens were associated with Stratum 1 at Col-247 (1675-2755 CAL BP) and one with Col-158D (1030-1175 CAL BP).

Rolled Tapers

Description

A total of 87 "rolled" clay artifacts and fragments was encountered during the Highway 45 investigation (Figure 76, e-h, Figure 77, a-d). They exhibit considerable variation in grain, finish, and color. They range from large, pencil-sized specimens 8.6-13.5 mm in diameter (Figure 76, e-h) to small tapers 4.8-8.5 mm in diameter (Figure 77, a-d). All are fragmentary, but the longest fragments indicate that the longest "large" variants were no more than 56.0 mm long, and the longest "small" specimens no more than 27.0 mm long.

The rolled clay artifacts appear to have been made by rolling palm-to-palm and finished by pinching the ends. Two items (327-76-06 and 327-66-03) exhibit fingerprint impressions on all sides. One of these (327-76-06) is 54.0 mm in length, and appears to have been rolled between the palms until eventually breaking from the rest of the taper (Figure 76, e). About a third of the rolled clay pieces have been smoothed and are fairly uniform. The remaining pieces are slightly irregular with cracking. Three specimens (327-60-05, 327-96-14, and 327-134-09) have been fired to a dark gray color.

Function

Function of the rolled clay is unknown, however, it is likely that the specimens include waste products from the manufacture of other ceramic forms. Alternatively, some of the artifacts may have served as snare anchors, pegs, figurines, or dance dress "tinklers."

Distribution

Small and large rolled tapers had essentially identical spatial distribution patterns. Four small specimens were found at Col-158, and the remaining 52 small specimens and all 31 large specimens were found at Col-247. Rolled tapers were relatively widespread across time, with 20 specimens associated with Stratum 3 deposits at Col-247 (3575-4385 CAL BP), 18 associated with Stratum 2 deposits at Col-247 (3205 CAL BP), 46 specimens associated with Stratum 1 at Col-247 (1675-2755 CAL BP), three specimens at Col-158D (1030-1175 CAL BP), and one specimen at Col-158A (800 CAL BP).

Figurines

Background and Classification

A total of 14 figurine fragments was collected (Figure 77, e-k). All are made from fine grained clay, manufactured by kneading and rolling, and fired to a gray to brown phase. All but one are fragmentary so the original forms are generally impossible to ascertain. However, each specimen shows an unusual morphology indicative of intentional shaping to attain zoomorphic or anthropomorphic features.

Two artifacts are fragments of objects morphologically similar to Central California plummet forms (i.e., "charmstones"). Specimen 325-01-22, measuring 24.4 mm long and 26.5 mm wide, consisted of a fragment of an object that was cylindrical in cross section with a well shaped, smooth neck and well rounded head (Figure 77, e). The original artifact was probably shaped like a squat bowling pin, similar to the Central California "piled" type plummet. Specimen 327-12-11, measuring 32.6 mm long and 21.8 mm in diameter, is an end fragment split lengthwise (Figure 77, f). The fragment is narrow and conical in form with a finely shaped, smooth exterior. The mold of a small twig or grass stem runs axially through the piece, and a dimple occurs on the apical end which is probably the exit scar. The original artifact was probably shaped like a teardrop or bipointed plummet, and it may represent a spinner or top.

Ten of the figurine fragments are similar in construction to the rolled tapers, but have additional shaping to create curves and well finished, rounded to pointed ends. Specimen 327-114-05 (Figure 77, j) is the only complete figurine, a small object measuring 24.9 mm long and 7.9 mm wide, shaped like an open "Z" coming to a dull point at each end. The artifact is closely similar to bird effigies recovered from sites in the Sacramento-San Joaquin delta region (e.g., Sac-6, Heizer 1939; Kielusiak 1982). Five artifacts (327-19-03, 327-56-06, 327-109-05, and 327-140-03 are possible bird effigy fragments, but each was bent at a sharp angle and they look more like crooked arms suggesting they were parts of anthropomorphic figurines or effigies. Specimen 327-19-03 (Figure 77, i), measuring 19.5 mm long and 7.3 mm in diameter, has the shape of a shoulder, flattened at the broad end, and appears to have been pressed into another piece of clay. Specimen 327-109-05 (Figure 77, g), measuring 29.6 mm long and 12.8 mm in diameter, also has a pressed end suggesting it was part of a composite form. Specimen 327-56-06 (Figure 77, h) is an "elbow" fragment 16.1 mm in diameter. The smallest figurine fragment, specimen 327-140-03, (Figure 77, k) measures 12.0 mm long and 4.2 mm in diameter and was shaped to a fine point and bent at a right angle.

Function

Function of the figurines is unknown, however, they may have served as dolls or ceremonial items.

Distribution

Figurines had a limited distribution, with 13 specimens found at Col-247 and a single specimen from Col-246/H. Figurines were also relatively limited in temporal distribution, with six specimens associated with Stratum 2 deposits at Col-247 (3205 CAL BP), seven specimens associated with Stratum 1 at Col-247 (1675-2755 CAL BP), and one specimen from Col-246/H (<400 BP).

Beads

Description

A total of 26 clay beads was collected (Figure 78). The artifacts were manufactured by rolling clay around a thin grass stem or twig which was subsequently burned out. Like the rolled tapers, the beads were apparently rolled palm-to-palm, with the exterior walls shaped by pressing and moistening. Two specimens (327-77-06 and 327-141-04) were fired to a dark gray to black color and the remaining to a light yellow-brown. Of the 26 beads, four are wall fragments, the remaining 22 are small beads or midsection fragments.

The cylinder diameter to inner channel diameter ratio varies. Most of the specimens measure between 6.0-7.0 mm in diameter and between 7.0-12.0 mm long. The largest bead, specimen 327-93-05 (Figure 78, i), measures 15.3 mm in diameter, and is a wall fragment exhibiting a small inner channel 1.9 mm wide. The smallest bead, specimen 327-125-08 (Figure 78, t) measures 4.8 mm in diameter with an inner shaft of 1.0 mm. Specimen 327-105-03 (Figure 78, u) exhibits two, parallel inner channels of the same size, the cylinder is 9.3 mm in diameter, 15.7 mm in length, with the inner channels measuring 1.6 mm in diameter. Specimen 327-134-11 is a wall fragment roughly conical in side view which tapers out at one end to 11.7 mm in diameter.

Distribution

Clay beads had a limited distribution, with one specimen each found at Col-245/H and Col246/H, and the remaining 24 specimens found at Col-247. Clay beads were also relatively widespread across time, with four specimens associated with Stratum 3 deposits at Col-247 (3575-4385 CAL BP), seven with Stratum 2 at Col-247 (3205 BP), one associated with Col-245/H (815 CAL BP), and one at Col-246/H (<400 BP).

Rolled Balls

Description

A total of 142 rolled balls was encountered. Two types were identified: (1) *small spheres* ranging between 8.0-30.0 mm in diameter (n=33), and (2) *pinched and pressed spheres,* originating from small spheres but pinched in the middle or pressed into something to make small tablet, bean, cup, or torus shapes (n=109). Pinched spheres were further subtyped into: (a) pinched or pressed balls (n=56), (b) pressed with textile impressions (n=41), and (c) pressed with plant impressions (n=12).

Small Spheres. Small spheres vary in degree of shaping and finish. All appear to have been made by rolling palm-to-palm. About one-half of the balls are small and well rounded (e.g., Figure 78, f-i) and the remainder are lumpy, irregularly finished subround to oval shapes, often cracked in firing (e.g., Figure 78, b-e). The majority of specimens are fired to a light tan to light grey color, although three are dark gray (327-109-08, 327-95-10, and 327-88-04) similar to the egg-shapes described above, and specimen 327-66-8 is quite dark, apparently imbued with organic oil or asphaltum.

While the majority of specimens are spherical, two specimens (327-38-05 and 327-80-06) are carefully shaped ovoids, both around 26.0 mm long and 18.0 mm in diameter, made from very fine paste and finely finished. They appear to be deliberately made "egg-shaped" miniatures (e.g., Figure 79, i).

Several specimens have distinctive impressions that appear to have been deliberate decorations. For example, specimen 327-38-05 (Figure 79, i) a miniature "egg-shape" 25.4 in long and 29.8 mm in diameter, has a number of faint palm or fingerprint impressions, and at the center on two opposing sides are small dimples which give the piece the appearance of a gaming die. Both dimples were made by pressing a small fingertip into the wet clay. The dimples are each capped by a distinct lunate-shaped fingernail impression.

Four balls are girdled by distinctive grooves produced either by wrapping the objects with nonwoven fiber or sinew, or rolling a thick grass stem or small branch across the surface of the ball before firing. Specimen 32-86-06 is the largest of the small balls, measuring 33.8 mm long, 32.8 mm wide, and 29.9 mm thick. The specimen is poorly finished, lumpy and impressed with narrow grooves at odd angles, indicating that the ball was wrapped irregularly. Specimen 327-107-08, measuring 25.3 mm long, 19.6 mm wide, and 16.5 mm thick, has a finer finish but was also wrapped irregularly. In contrast, specimen 325-01-21, measuring 27.1 m long, 26.1 mm wide, and 21.1 mm thick (Figure 79, a), is girdled by two parallel, deep grooves and a series of fainter parallel grooves. The margins of the deepest groove overhang slightly, suggesting that the wrapping was left in place as the clay was fired. The ball was fired to a dark gray phase on one face. While considerably smaller, specimen 327-64-08 has similar groove impressions, but set at right angles suggesting a wicker-work-like pattern similar to impressions on the egg-shapes described above.

Pinched or Pressed Balls. The pinched or pressed balls (e.g., Figure 79, j-l, Figure 80, a-c) appear to have been rolled palm-to-palm in the same fashion as the clay balls, but then pinched or pressed to create flatter shapes. A total of 26 specimens (46.4%) had distinctive palm or finger prints (e.g., Figure 80). Impressions on specimen 327-97-10 clearly show that the piece was pinched between the thumb and crooked first finger (Figure 80, a). Specimen 327-90-7 is the most distinctive example (Figure 79, j), made by pressing a ball of moist, very fine grained clay into the palm with the thumb to a point that the clay took the shape of the palm, making a distinctive miniature cup. The outer face retains a distinctive palm impression, and the inner face retains an obvious thumb impression. The piece has been fired to a hard consistency and a light brown color. Specimen 327-76-07 was made in a similar way but was not as finely finished, made from a lumpy, coarse paste which cracked on firing.

Twelve small balls (327-69-7, 327-69-8, 327-70-8, 327-70-11, 327-83-8, 327-84-10, 327-86-11, 327-95-9, 327-109-9, 327-121-8, 327-121-11, and 327-134-12) were pressed into sedge or grass bundles and are impressed on one or both sides with patterns of aligned or cross-aligned grass or sedge leaf impressions. Specimen 327-69-06 has a single rod-shaped impression made by a grass stem or stripped willow weft. Specimen 327-121-11 has a distinctive feather ferrule impression.

Pressed Balls with Textile Impressions. A total of 41 specimens were textile-impressed clay balls consisting of small, tabular pieces with a reverse impression of woven basketry or cordage on one face and a flattened, irregular to finely finished opposing face (Figures 81 through 83). All of the specimens were made from fine-grained paste and fired to a gray to tan color and hard consistency. The specimens are all flattened pieces 3.0-14.0 mm thick with rounded edges. The textile impression was almost always on just one face, and while some impressions were faint others appear to have been pressed hard enough to extrude into inter-stitch spaces. It appears that rolled pellets or balls of moist clay were intentionally pressed firmly into the textile and smoothed to a specific wall thickness and finish. Perhaps most telling for the conditions of manufacture, the impressed face was always excurvate to flat, suggesting that the clay was most often pressed into the inner wall of the vessel.

Among the diagnostic specimens a variety of weave types were represented, including open and closed twined basketry impressions, light and heavy cordage, and possible netting. Even within these specific weave styles, variety was observed in the size of the warp and weft and types of materials incorporated into construction. No clear examples of coiled basketry were identified, but some specimens could not be exclusively ruled twined or coiled (e.g., 327-102-11, Figure 81, j; 327-24-05, Figure 82, e; 327-63-04, Figure 81, h; and 327-86-07, Figure 83, d). Some of the problems we encountered in identifying weave types are due to the faintness, irregularity, and small size of the impressions. Most exhibit only one to four wefts or warps. No apparent impressions of basket rim finish or foundation were noted. Likewise, no weaving characteristics such as split stitching were apparent. Though the imprints of the fibrous materials are visible, the plant materials used are not strictly identifiable as to species. In addition, there is no information on dyes or overall basket morphology and function, attributes which are otherwise imperative for determining cultural affiliation (Elsasser 1978; Kroeber 1905).

Identifiable twined impressions include specimen 327-131-08 (Figure 81, c), which appears to be an example of close diagonal twining, S twist weft. Specimen 327-77-05 (Figure 83, c) has the impression of a twined basket measuring four rows of wefts per 10.0 mm and four rows of warps per 15.0 mm. Specimen 327-112-10 (Figure 81, e) bears the impression of a tight twine which appears to be close-diagonal twining Z twist weft with five rows of wefts per 9.0 mm and five rows of warps per 15.0 mm. Specimen 327-109-07 (Figure 82, f) is an excellent example of an open-twined diagonal weave resembling a cradleboard, measuring three rows of warps per 10.4 mm, and about two rows of wefts per 12.0 mm.

One cordage impression, 327-129-08 (Figure 82, h), has warps measuring 3.7 mm thick and wefts 2.3 mm thick, with two rows of wefts per 10.9 mm. Specimen 327-144-08 has two parallel impressions of thick, double-twist cordage similar to a heavy twine or light rope (Figure 83, f).

Function

Based on the fine degree of finish and intentional impressions on the majority of specimens, it is assumed that the small balls were intentionally manufactured and fired. The objects range in size and shape from small, smooth pellets to textile-impressed coin sized tablets. Specific function cannot be deduced, but it is likely that the specimens included counters, gaming pieces, or rattle pellets.

Distribution

Small ball variants were found in all sites and components except Col-245/H. One each was found at Col-158A, -158B, and -158D, eight were found at Col-246/H, and the remaining 134 were found at Col-247. Rolled clay was relatively widespread across time, with 11 specimens associated with Stratum 3 deposits at Col-247 (3575-4385 CAL BP), 47 associated with Stratum 2 deposits at Col-247 (3205 CAL BP), 76 specimens associated with Stratum 1 at Col-247 (1675-275S CAL BP), two specimens at Col-158B/C/D (1030-1175 CAL BP), one specimen at Col-158A (800 CAL BP), and one specimen at Col-246/H (<400 BP).

Clay Loaves

Description

A total of 28 clay loaf fragments was encountered (Figure 84, e-g, Figure 85). The loaves are large, tennis ball to softball-sized clumps of shaped and fired clay. They appear to have been formed by kneading a single, large ball of clay. Fragments permit a view of the inner structure, which indicates the artifacts were finished by rubbing and twisting on the surface, creating a shear that resulted in a number of "cortical" fragments. The outer surface is smooth, suggesting a wet finish. Specimen 327-78-01 is a small quarter-section fragment with several palm or fingerprints on the outer surface. Five very large fragments were found (326-10-62 and 326-10-107, 327-92-7, 327-114-08, and 327-135-09), weighing between 75.0-130.0 gm (Figure 85, a-c). Specimens 325-10-62 and 326-10-107 are fragments from clay loaves that originally may have been shaped like large ovoids (Figure 85, a-b). Specimen 327-114-08 (Figure 85, c) is the second-largest example from the project area, exhibiting the spherical form common to all other fragments. The remaining fragments, large and small, appear to have been cortical pieces or quarter-sections, suggesting that the type fractured readily.

Nine specimens represent a distinctive subtype (325-01-20, 327-40-50, 327-51-3, 327-97-08, 327-109-07, 327-121-07, 327-125-07, 327-132-08, and 327-133-06). While represented by fragments only, all nine exhibit textile impressions, generally of a knotted, open weave form like a tray, mat, or net bag. The artifacts also have a distinctive morphology indicated by the three largest fragments, all corner sections of rectangular loaves suggesting the form of a rounded brick (Figure 84, f-h). The artifacts appear to have been made by kneading a single large ball of clay, pushing the faces to form a flat loaf, then while still moist, rolling over or in a textile.

Function

The clay loaves are so distinctive it is likely they had a specific functions. The large spherical forms may have served as proxy "cooking stones" as reported elsewhere in Central California (e.g., Heizer 1939, 1949), although the Hwy 45 specimens appear to have been larger than those reported elsewhere. The two ovoids (Figure 85, a-b) are also possible proxy "cooking stones" but can also be considered possible large figurine fragments.

The textile-impressed bricks are the most distinctive variants. A closely similar specimen is illustrated by Heizer (1949: Figure 5, f), who offers no information or speculation. Function remains a mystery, but we suspect they may have included ceremonial items, pillows, or weights.

Distribution

Clay loaves were widespread in the project area, with one specimen from Col-246/H, three from Col-245/H (the latter including two from the Fairgrounds redeposit), and the remaining 24 from Col-247. Clay loaves were also widespread across time, with seven associated with Stratum 2 deposits at Col-247 (3205 CAL BP), 17 specimens associated with Stratum 1 at Col-247 (1675-2755 CAL BP), three specimens at Col-245/H (815 CAL BP), and one at Col-246/H (<400 BP).

Miscellaneous Worked Clay

Description and Function

A total of 5,131 pieces of miscellaneous worked clay was recovered from the Hwy 45 investigation, weighing 12,127.9 gm. These artifacts are made from the same paste used to make the shaped artifacts, exhibiting mixing, kneading, and shaping indicative of working and firing activities. Some exhibit fingernail impressions, while others have impressions of fiber or grass. The objects vary in size, shape, color, and texture. About two-thirds of the specimens appear to be manufacturing debris, including some obvious by-products of working formal types, such as surplus tabs or lumps pinched off in finishing formal types. The remainder may represent objects intended to be formal ceramics but discarded before completion or after unsuccessful firing.

Distribution

Miscellaneous worked clay was spatially and temporally widespread in the project area, found in all sites and components.

FIRED CLAY

Acorn-Impressed Clay Nodules

Description

A total of nine acorn-impressed clay nodules was recovered (Figure 84, a-e). They are coarse grained, brittle, and fired to a dark reddish-brown. The coarse grain of these objects stands in contrast to the shaped ceramics described above, indicating that they were made from fired soil, not prepared paste.

All nine specimens exhibit the clear impressions of acorn meats. Most remarkable is the nature and condition of the impressed seed. Their veined structure indicates they were at a mature stage of development, and their medium to large size indicates they may have been valley oak *(Quercus lobata)*, blue oak *(Quercus garyana)*, or white oak *(Quercus wizlenzii)*, the former a local tree that produced a large nut, the latter representing foothill species that generated a medium-sized issue. Further, the presence of veined impressions on most of the specimens indicates that the acorns had been shelled and also stripped of their skin before being pressed into the clay balls.

Function

Were these accidental or a product of intentional action? Presumably, on a seasonal basis acorns would have been common at the residential base, and at any point while they were being processed may have been unintentionally compressed into clayey site soils and unintentionally fired. However, three observations argue against this: (1) excepting grasses, fibers, and textiles, no other impressions processed or discarded food items were observed during analysis, and in fact, all other impressions identified here were the deliberate production of human action or adjunct to deliberate manipulation of prepared clay; (b) the prevalence of shelled *and* skinned nuts is too exclusive to be accidental, and; (c) most of the specimens complete enough to exhibit a portion of the exterior surface showed deliberate smoothing indicating the clay was deliberately molded to encase the nut and rolled before firing (e.g., Figure 84, a-c).

Thus, we conclude that the objects are the residue of intentional activity. Specifically, it appears that hulled and skinned nuts were pressed into simple soil balls, which were then intentionally fired. We assume that the balls were retrieved and cracked open. Presumably, firing would have baked the nut, and thermal desiccation of the clay case might have siphoned off oils bearing tannic acid. Gifford's survey of *California Balanophagy* describes baking acorns but makes no mention of clay balls (Gifford 1936).

Distribution

Acorn-impressed clay nodules had a limited distribution, with all nine specimens found at Col-247. Acorn-impressed clay nodules were also relatively limited in temporal distribution, with five specimens associated with Stratum 2 deposits at Col-247 (3205 CAL BP), and three specimens associated with Stratum 1 (1675-2755 CAL BP).

Roof, Floor, and Hearth Lining

Description and Function

A total of 97,266.5 gm of fired clay was recovered during the Hwy 45 project. As described above, "fired clay" is considered a by-product of intentional and accidental fires associated with habitation. Examples from the Hwy 45 investigation include apparent burned hearth linings, house floor sections, and household daub from walls or smoke holes. Derivation of the parent material from soil is indicated by variable grain size, presence of worm holes and fine root tracks, and impressions of fine organics. Notably, few fired clay specimens contained cultural materials, indicating that much of the soil was harvested from nonsite contexts. Further, many of the fired clay specimens show smoothed surfaces indicative of packing, for example, a smooth-packed clay house floor or exterior or interior clay house wall linings.

All recovered samples of fired clay were collected from excavations at Col-158, Col-245/H, and Col-246/H. A controlled sample of fired clay was recovered from Col-247 Excavation Units B1 through B6 and A14 through A18, with an approximate total weight of 68,204.9 gm.

Distribution

Fired clay was spatially and temporally widespread in the project area, found in all sites and components.

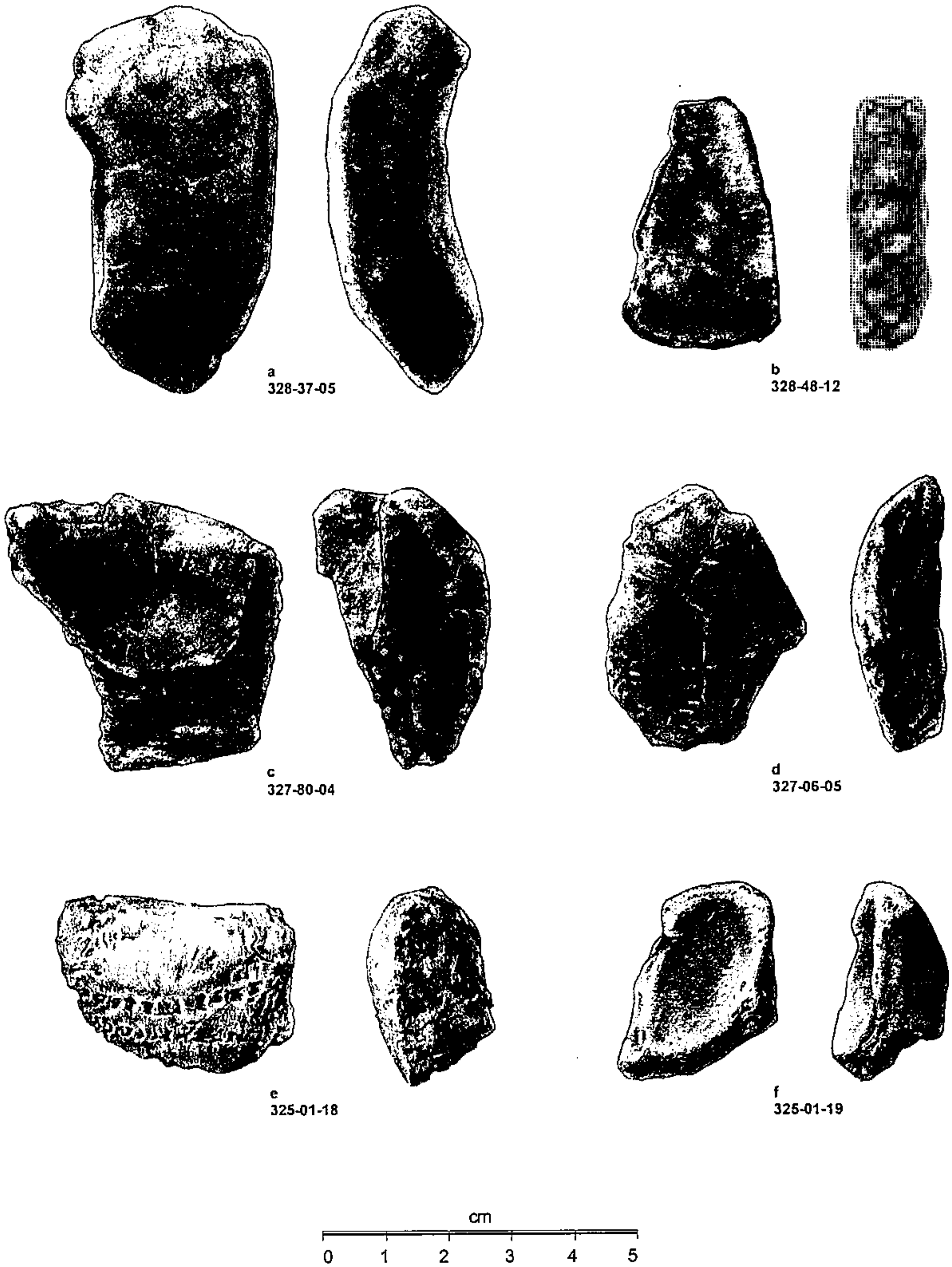


Figure 73: Pottery fragments; a-b = wall fragments, c-f = rim fragments.

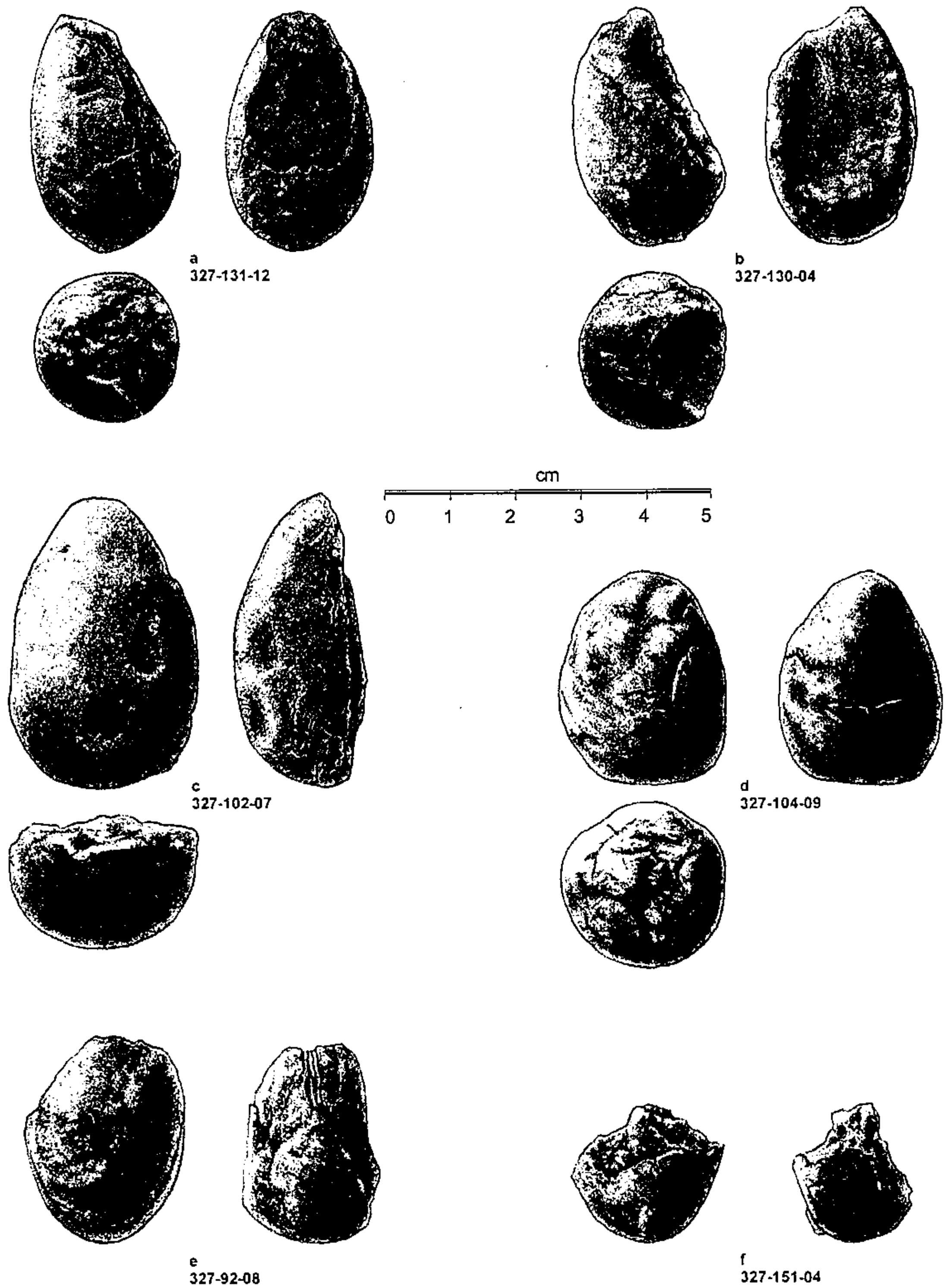


Figure 74: Egg-shaped artifacts.

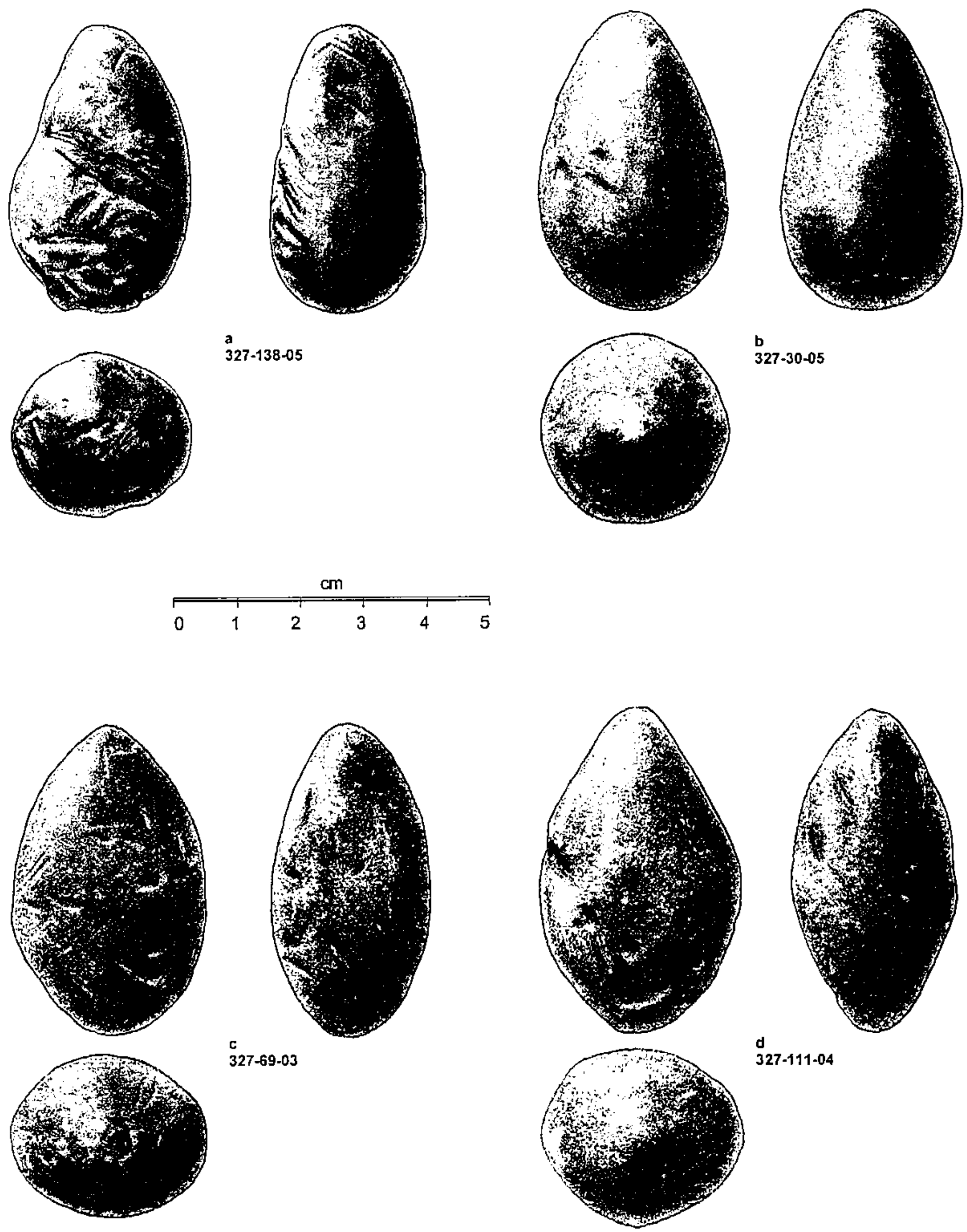


Figure 75: Egg-shaped artifacts.

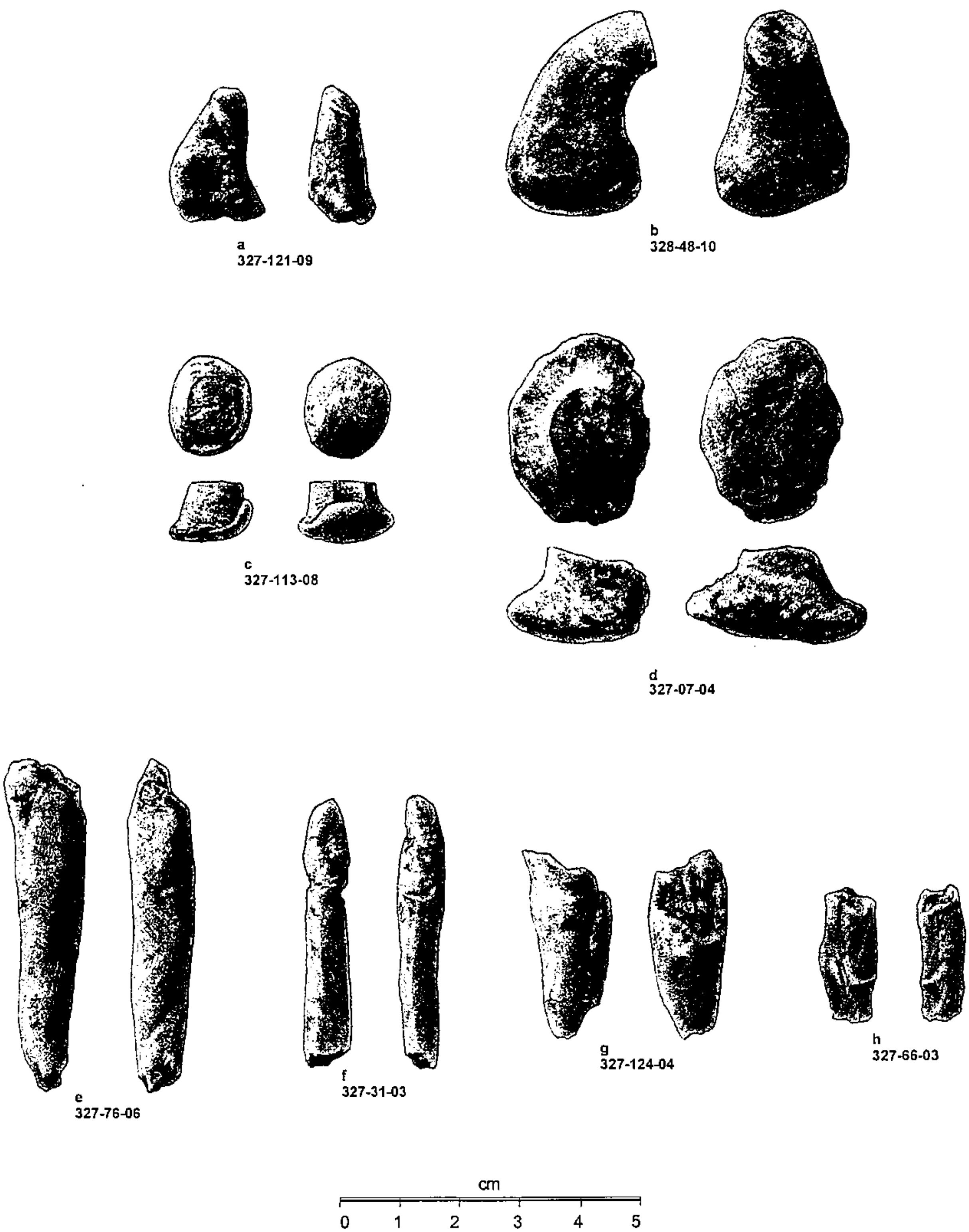


Figure 76: a-d = paint daubers, e-h = large rolled tapers.

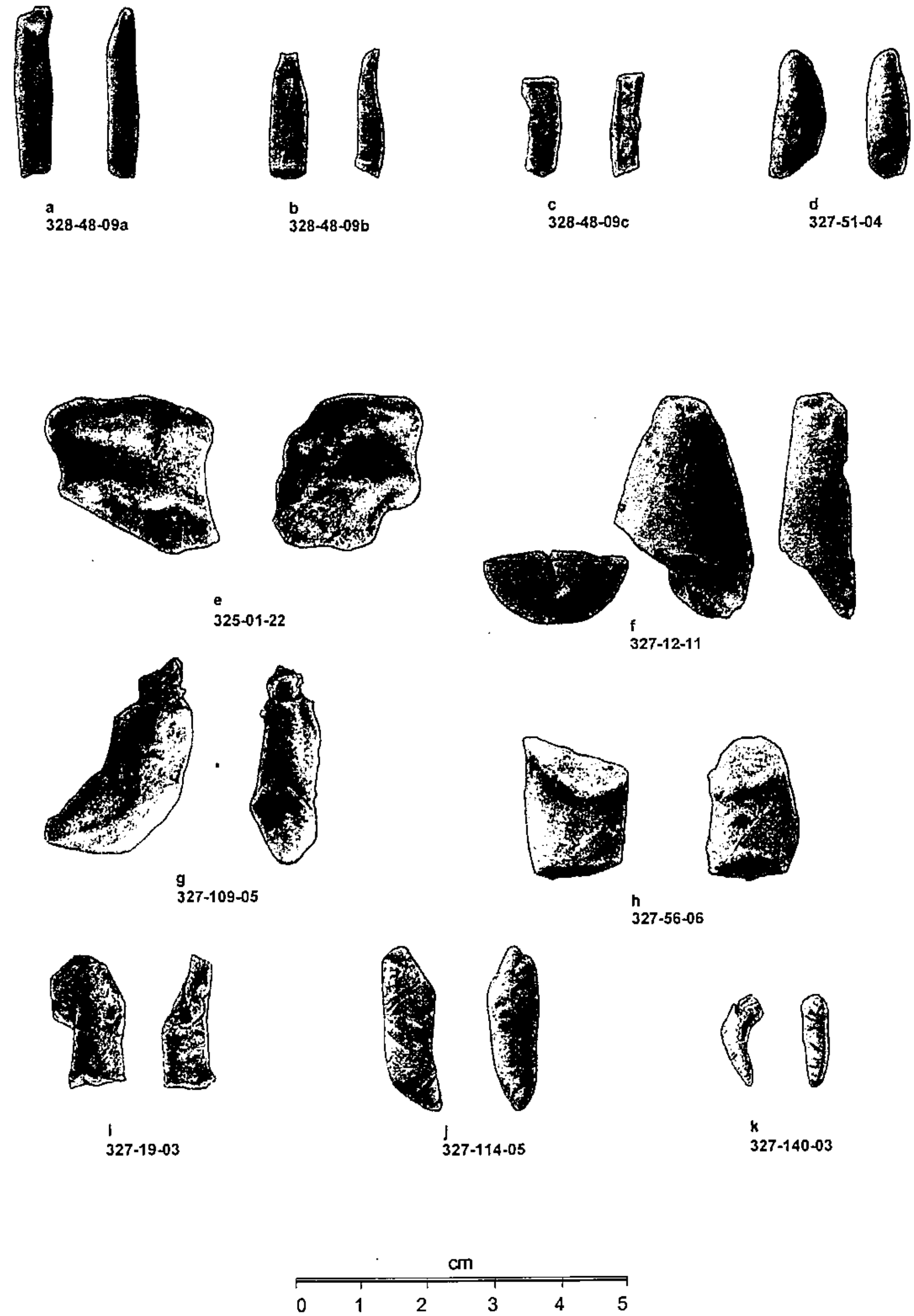


Figure 77: a-d = small rolled tapers, e-k = figurine fragments.

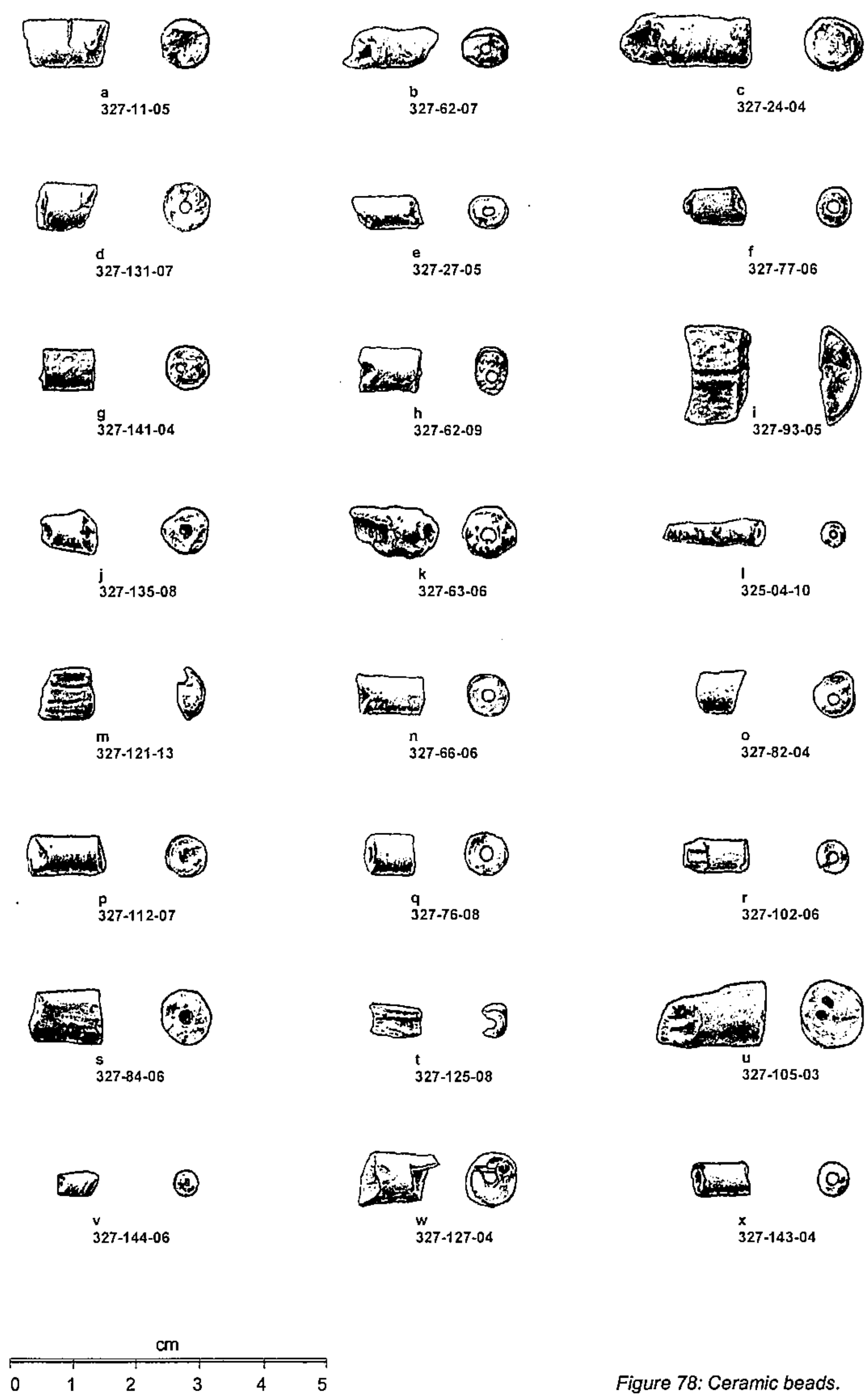


Figure 78: Ceramic beads.

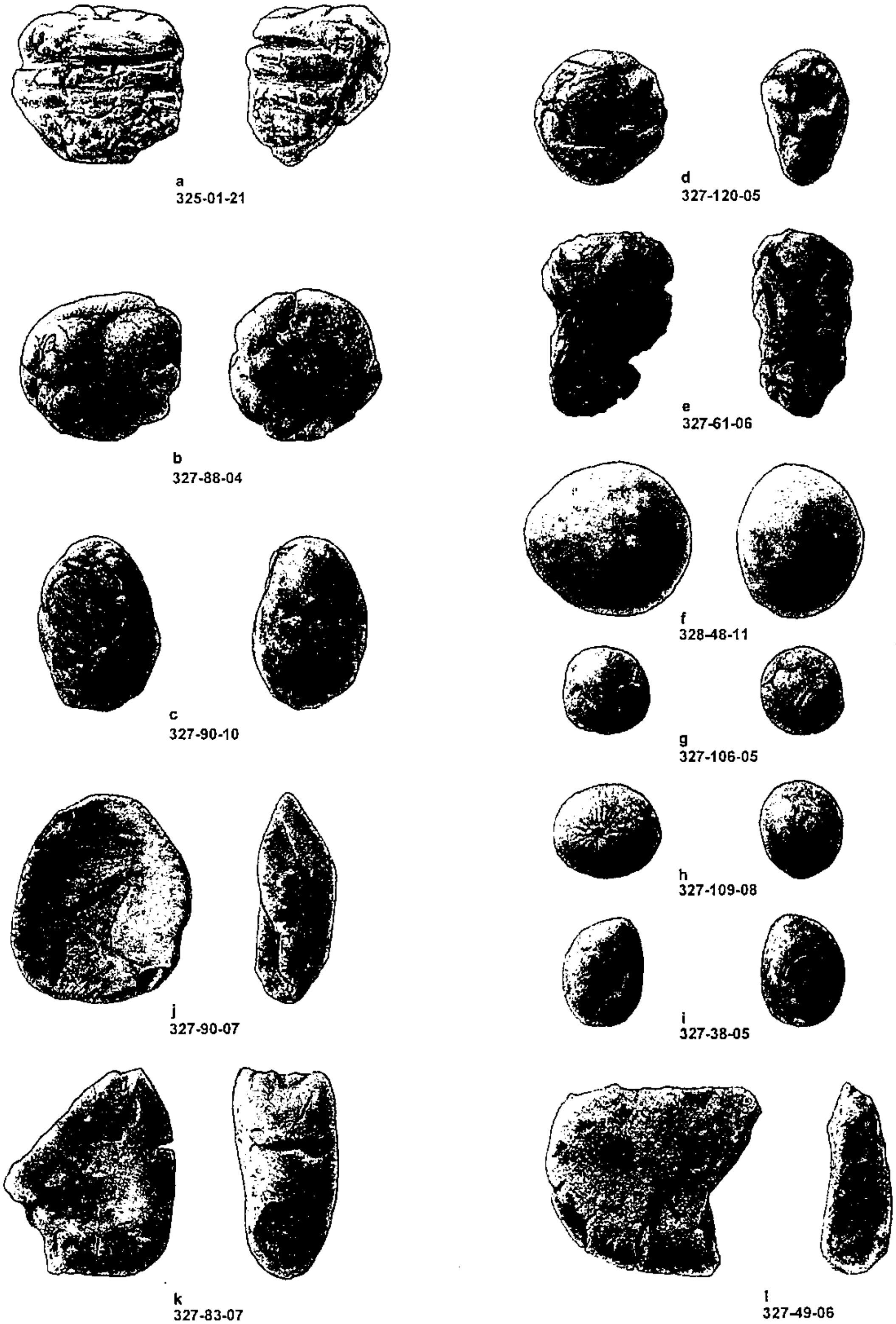


Figure79: a-i = small spheres, j-l = pinched and pressed balls.

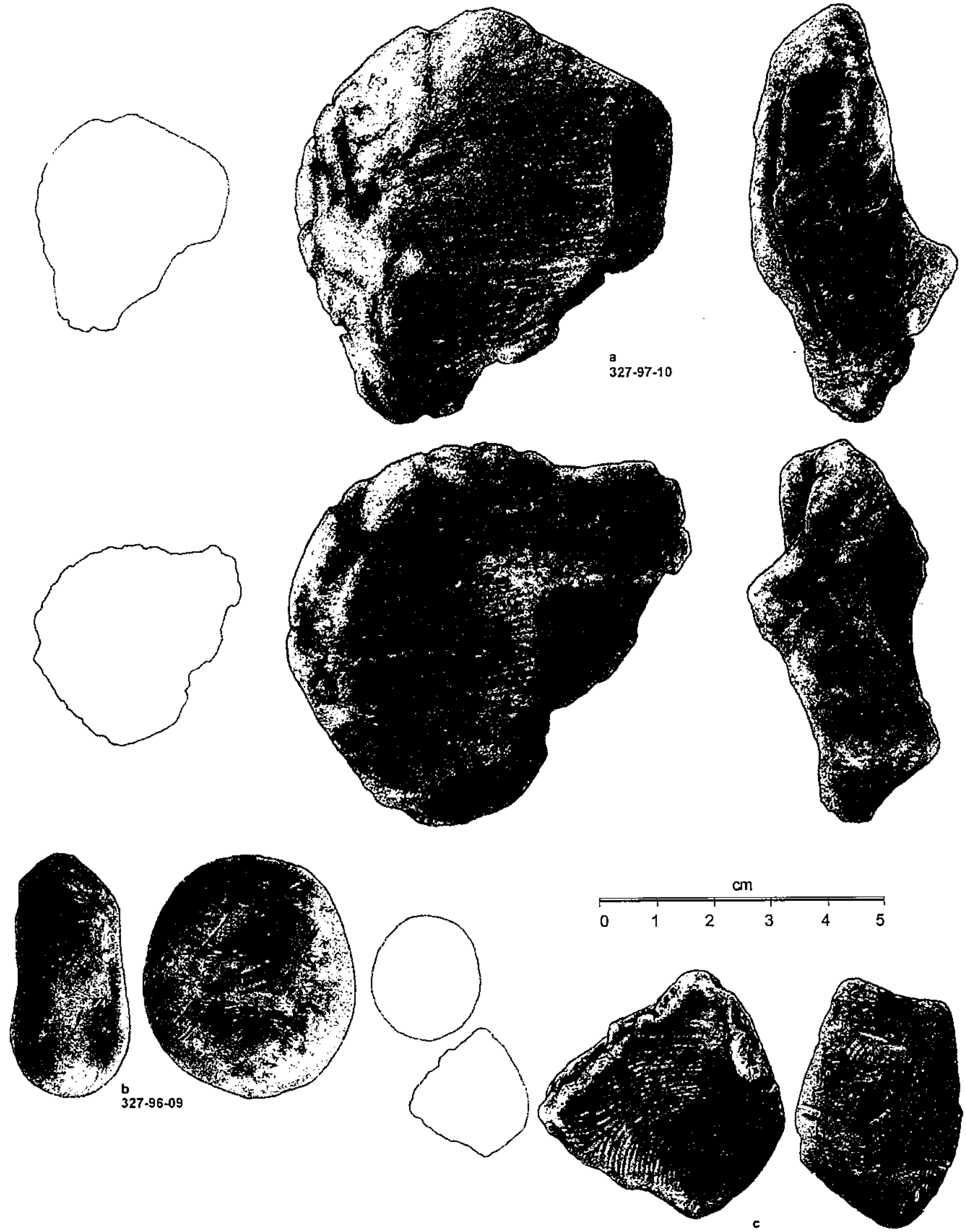
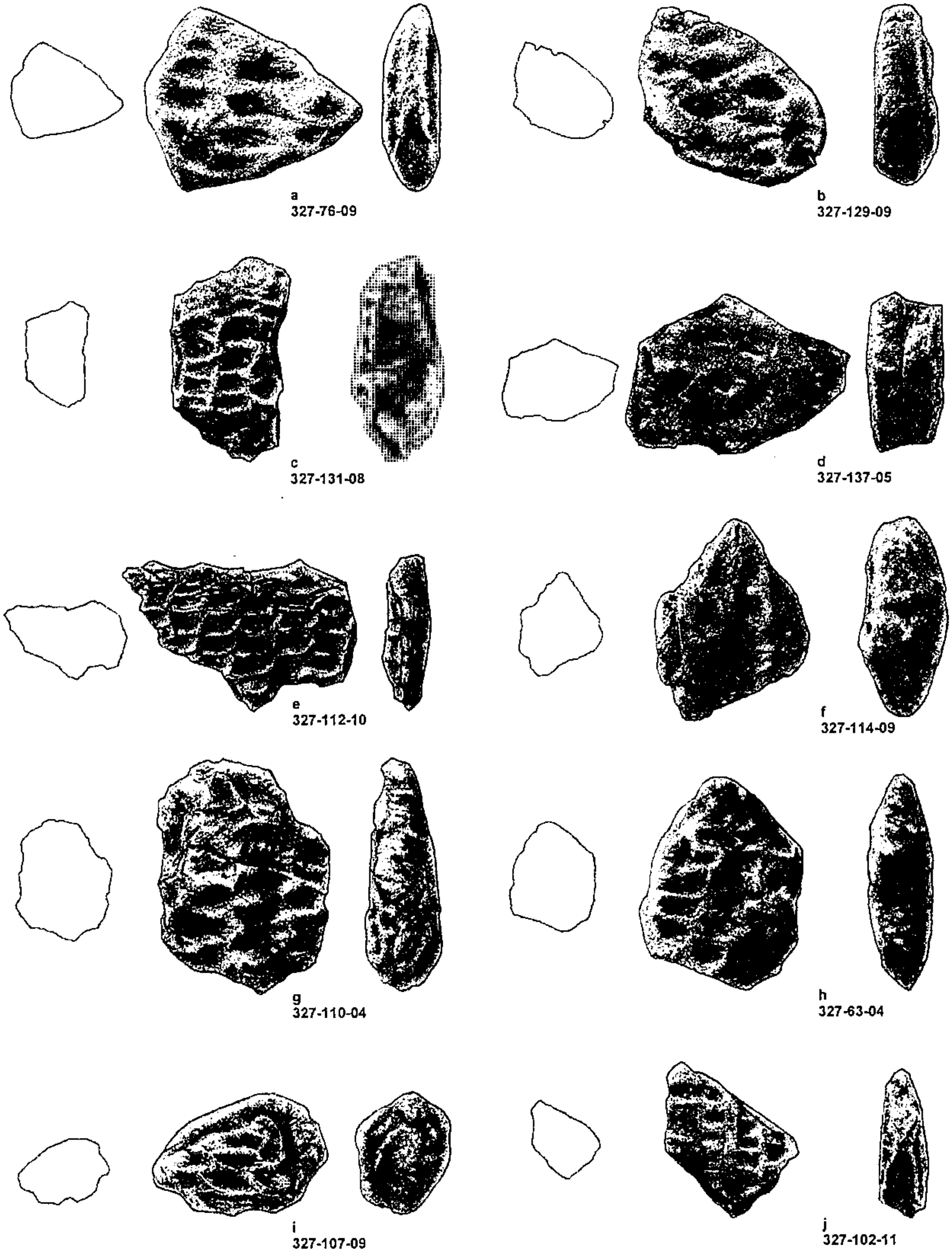


Figure 80: Pinched and pressed balls with fingerprint impressions. Outlines show actual size.



cm
0 1 2 3 4 5

Figure 81: Textile impressed pressed clay balls. Outlines show actual size.

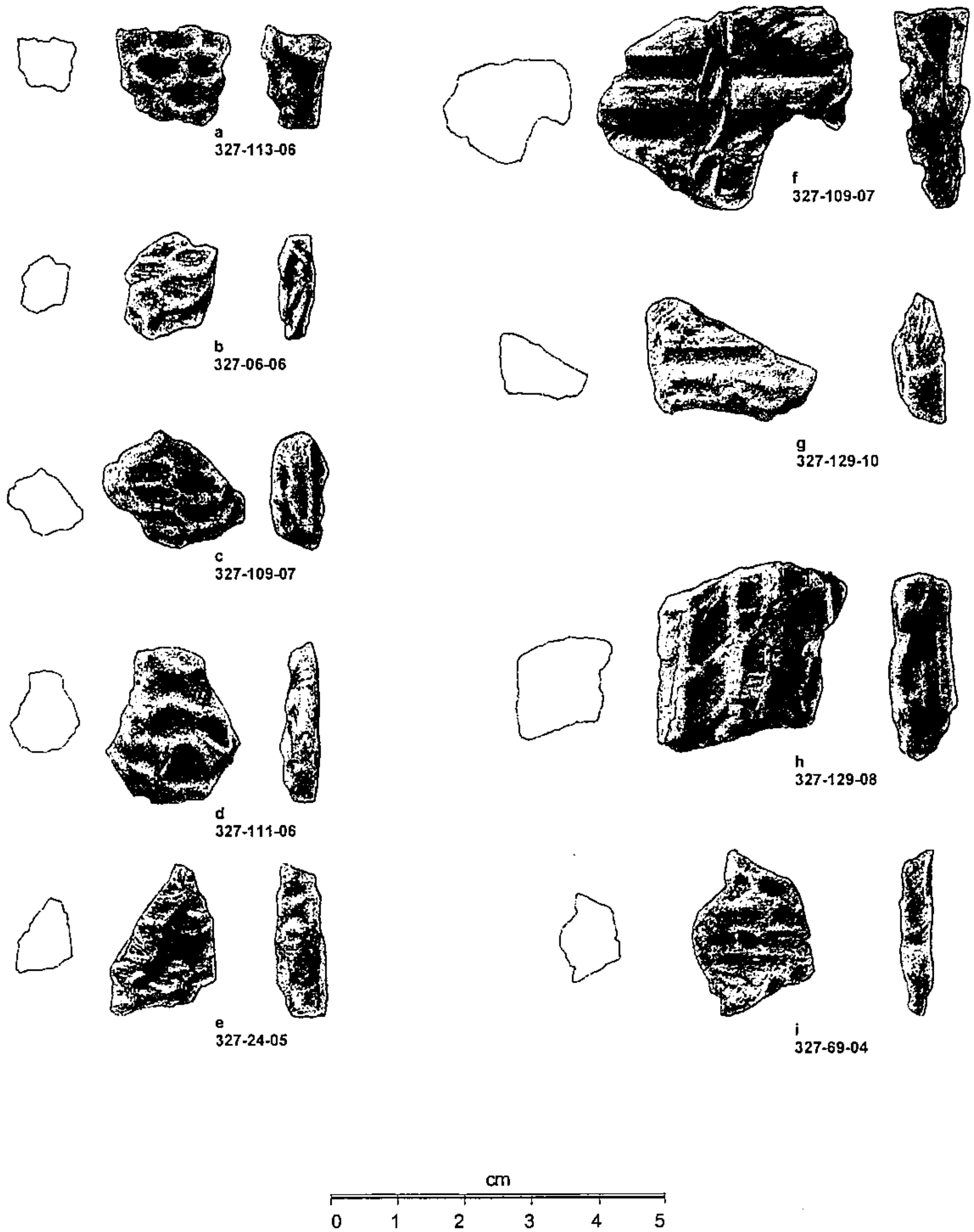


*Figure 82: Textile impressed pressed clay balls.
Outlines show actual size.*

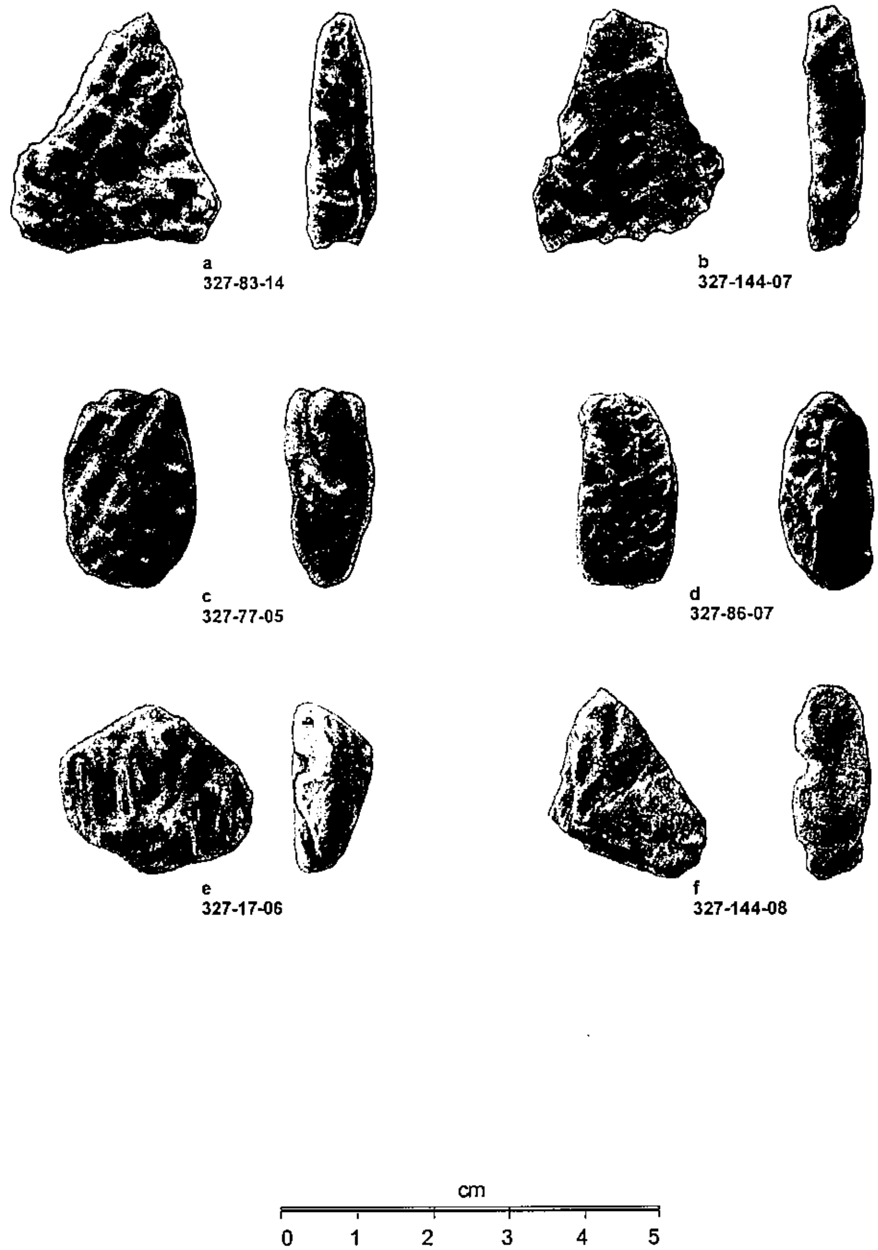


Figure 83: Textile impressed pressed clay balls.

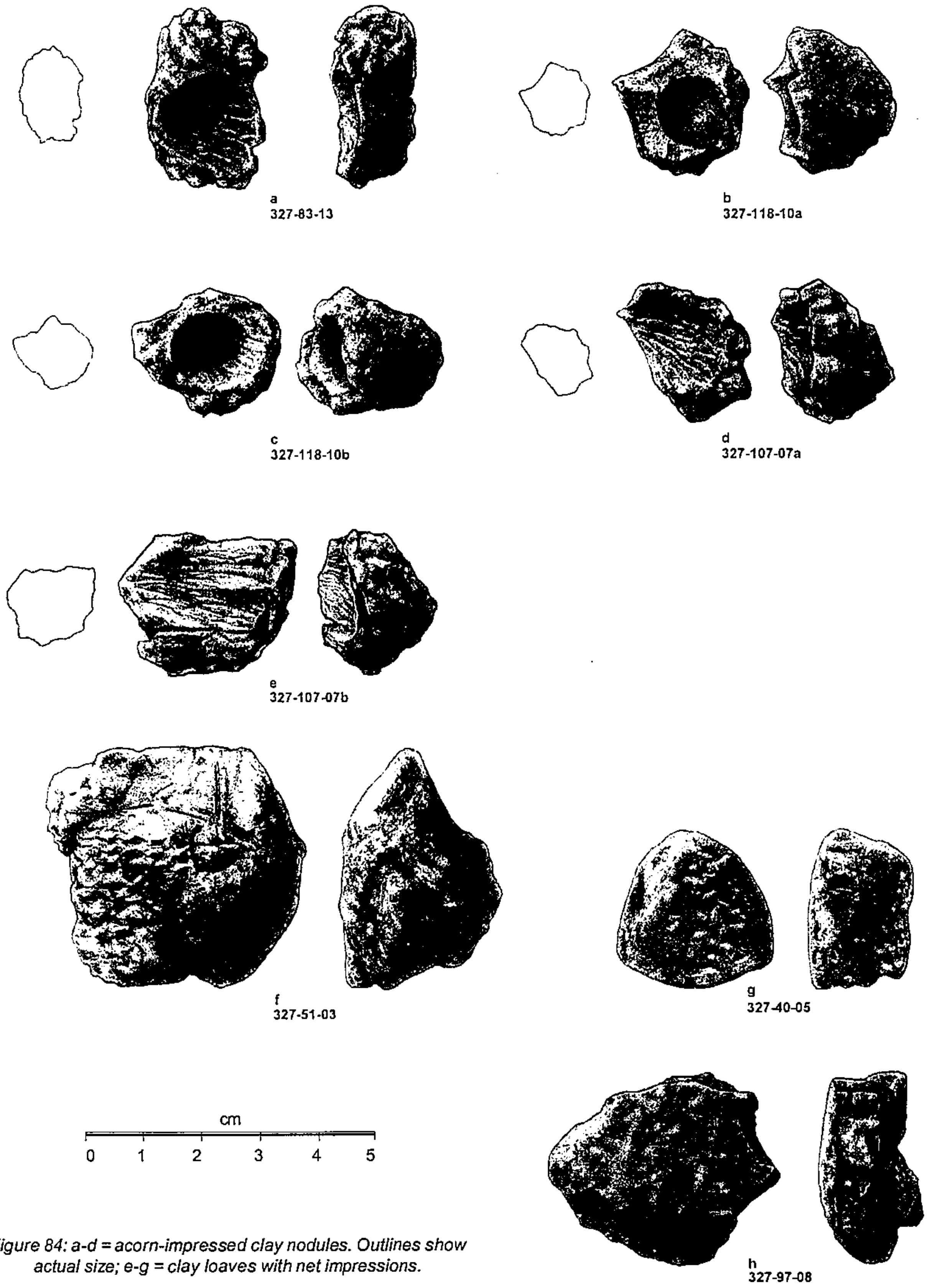


Figure 84: a-d = acorn-impressed clay nodules. Outlines show actual size; e-g = clay loaves with net impressions.

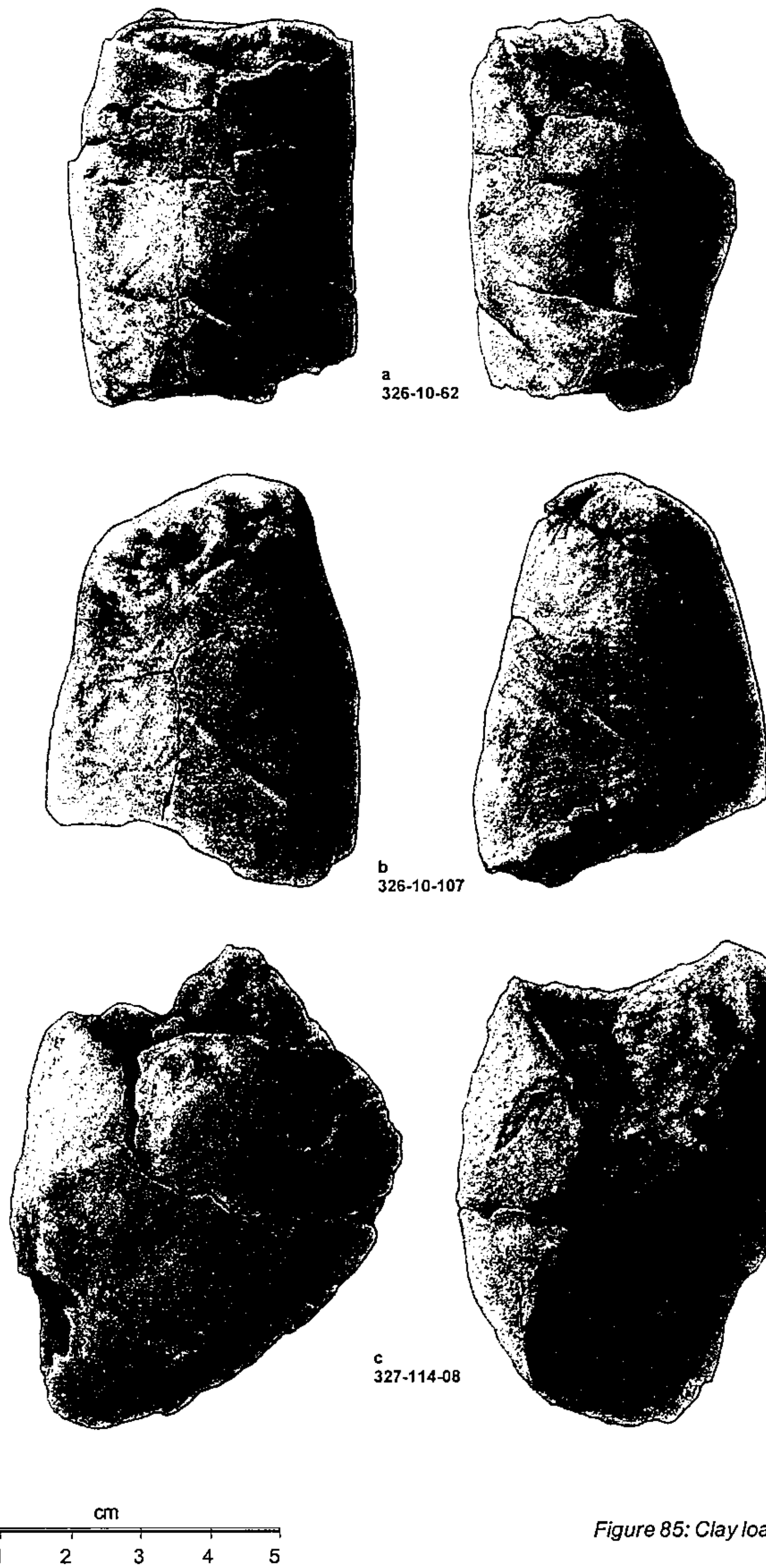


Figure 85: Clay loaves.

HISTORICAL ARTIFACTS

INTRODUCTION

A total of 3,427 historical artifacts was recovered during the Hwy 45 project. The majority of specimens are small glass fragments and rusted metal not diagnostic as to age, type, or function. However, most appear to have been manufactured in the 20th century. In fact, consistent with the road shoulder context of our digs at Col-158 and Col-247, all historical materials from these two sites appear to be the residues of recent roadside garbage or farm activities, and these are described in this report only in the context of tracking site integrity (see **Site Reports**). However, the two downtown Colusa sites, Col-245/H (Market and 7th) and Col-246/H (Colusa County Courthouse) produced features and fill layers containing artifacts derived from mid 19th to mid 20th century domestic and commercial contexts. These artifacts are described below.

DESCRIPTIONS

Ca-Col-245/H Historical Artifacts

A total of 504 historical artifacts was recovered during the Col-245/H dig. An additional 82 historical artifacts were recovered from the Colusa County Fairgrounds in the area where a portion of the Col-245/H vault backfill had been placed (see **Col-245/H Site Report**). The artifacts were all attributable to the mid to late 20th century. Glass represents 33.0 percent of the collection, metal 29.5 percent, and the remainder a mixture of construction materials, personal items, and ceramics.

Buttons

One button was recovered from Col-245/H. Artifact 326-01-13 is a saucer shaped button manufactured from freshwater shell with four fastener holes. Commercially manufactured shell buttons did not become common until 1850 when they began to be imported from France into the United States. Buttons manufactured of freshwater shell were produced here in the United States while buttons made of more exotic types of shells were typically imported from Europe (Luscomb 1967). The Col-245/H button is probably a shirt or blouse button

Marbles

One marble (326-10-246) was recovered. It is white glass with blue swirls. This type of marble is machine made and known as solid or as a "Chinese checker marble" because of this style's affiliation with the game introduced about 1938 (Randall 1977).

Other Items

Two mid to late 20th century crown top metal soda caps and a screw top bottle cap were recovered. Two light bulb bases were found, both appear to be from mid to late 20th century

Table 22: Distribution of historical materials from the Hwy 45 project.

	Col-245/H	Col-246/H	Total
Glass	194	605	799
Marbles	1	4	5
Buttons	1	8	9
Coins	2	3	5
Ammunition	0	1	1
Brick	38	68	106
Ceramic Tiles	49	0	49
Concrete	11	0	11
Wood	26	384	410
Nails	94	136	230
Metal Fragments	173	632	805
Trade Beads	0	3	3
Ceramics	19	87	106
Total	608	1931	2539

automobile headlamps. Four fragments of leather, a straight pin, a vinyl record fragment, and several fragments of plastic were also recovered.

Coins

Two coins were recovered from Col-245/H. The first, artifact 326-02-04, is a 1936 Indian Head nickel. It was recovered from the gravel fill level. These coins were produced between 1913-1938 (Yeoman 1993). The second coin, artifact 326-10-245, is a 1958 Jefferson nickel and was recovered from the Colusa County Fairgrounds. These coins entered into production in 1938 and continue to be produced to the present day. The specific style of Jefferson nickel recovered was produced between 1946 and 1964 (Yeoman 1993).

Construction Materials

One hundred seventy three individual fragments of metal were collected from Col-245/H. Although unidentifiable fragments represent the majority of the metal collected, 93 round nails and one square nail were identified. Square nails dominated the market before 1888, after which round nails became commercially more popular in the United States. Square nails continue to be manufactured in small quantities to the present day (Kraft 1998).

Wood (26 fragments), brick (38 fragments), and concrete (11 fragments) were common in the deposit, and 50 tile fragments were found. A portion of a wooden paintbrush was also recovered.

Ceramics

Nineteen ceramic fragments were recovered. There were five porcelain fragments, seven brown glazed crockery fragments, a fragment of terra cotta, and 13 stoneware and earthenware fragments. None was identifiable as to vessel style or functional type.

Glass

A total of 194 fragments of glass was collected from Col-245/H. The majority of the glass, 63.0 percent, was clear in color. The remaining specimens were a mixture of aqua, amber, green, cobalt, puce, and milk glass. Among the clear glass, fragments of a Mason jar were identified along with a fragment with embossing of indeterminate shape. All bottle tops recovered were machine made.

Among the 22 fragments of aqua tinted glass recovered, a midsection of one Coca-Cola bottle and the base of another was recovered. It does not appear that the two fragments are from the same bottle. Both bottle fragments are from a style of bottle known as the Hobbleskirt and produced throughout the 20th century.

Faunal Remains

Dietary bone and shell possibly associated with the historical period were recovered in the upper fill and mixed deposits at Col-245/H. The upper silt, gravel, and mixed deposits contained 1491 fragments of dietary bone weighing 520.4 gm. Also recovered from the upper silt, gravel, and mixed deposits were 245.6 gm of local *Gonidea* shell. The Fairgrounds spoils accounted for an additional 105 fragments of dietary bone weighing 87.4 gm, and 382.16 gm of local *Gonidea* shell.

Distribution

The Col-245/H historical artifacts were recovered from the upper fill layers and the mixed deposits and Fairgrounds spoils which incorporated significant amounts of the upper fill.

Ca-Col-246/H
Historical Artifacts

A total of 1,475 historical artifacts was recovered during the Colusa County Courthouse sidewalk excavation. A variety of samples of faunal material, milled redwood lumber fragments, and charred wood attributable to historic period occupation were also recovered. Small fragments of glass (41.0%) and rusted metal (42.8%) dominated the collection. The remaining artifacts included various personal items, construction material, ceramics, and ammunition, described below.

Glass

A total of 605 fragments of glass was recovered. The glass was all transluscent in shades of green, aqua, cobalt, ambler, puce, and black. None of the fragments were determined to be diagnostic as to specific vessel type or function. Green glass, including light and dark olive tints, was the most abundant tint of glass recovered, totalling 285 items (47.1%). Aqua glass was the second most abundant, totalling 228 fragments (37.7%). Aqua became a very common glass color beginning in 1860 and continuing into the early 1900s (McKearin and Wilson 1978), and was generally used for food and medicine containers (Kendrick 1967). Black glass was represented by 54 fragments (8.9%), including one fragment of a bottle base too damaged and fragmentary to be of diagnostic value. The relative rarity of black glass is interesting because black glass was the most popular and dominant form of glass used in bottle making for much of the 17th, 18th, and 19th centuries. It began to decline in popularity in 1860 but was still used until about 1880 (Tibbetts 1997). This form of glass is actually just a very deep, dark green that appears black, and it is distinctive because it is much thicker than bottles made later. The remaining colors of glass were found in sparse quantities.

Marbles

Two porcelain marbles, one clay marble, and a ball bearing probably used as a marble were recovered from Col-246/H (Figure 87, d-g). Artifact 325-01-25 (Figure 87, d), is a hand painted porcelain marble with five concentric, fine red rings encircling each pole. Overlaping green leaves encircle its equator. Artifact 325-01-26 (Figure 87, e), is a hand painted porcelain marble encircled by two pairs of fine, parallel lines. Two red lines intersect and are perpendicular to two blue lines. These marbles are often referred to as "Chinese marbles" because many were imported into the United States from China. However, they were actually manufactured in Germany and imported to China. The commercial manufacture of these marble began in the 1840s. During the 19th century, Germany was the primary manufacturer of toy porcelain marbles until the beginning of World War I (Block 1998).

Artifact 325-03-03 (Figure 87, g) is a ceramic marble slighly smaller than the porcelain marbles and undecorated. Germany also commercially manufactured clay marbles from as early as the 18th century until the outbreak of World War I. Some clay marbles were also commercially produced in America between 1884 and 1918 (Randall 1977).

Artifact 325-01-27 (Figure 87, f) is a small ball bearing 12.6 mm in diameter, weighing 8.2 gm. The specimen lacks wear facets or other signs of use as a bearing, and considering context and association, was most likely used as a marble. Ball bearings called "steelies" were used as marbles in children's games in the 19th through mid 20th centuries (Randall 1977).

Buttons

Eight buttons were recovered from Col-246/H (Figure 86, a-d). The buttons were manufactured from shell, glass, and metal. Artifact 325-01-28 is a saucer shaped shell button containing two fastener holes (Figure 86, b). The specimen is made from nacre, most likely abalone or oyster. Artifact 325-04-14 (Figure 86, e) is a small saucer shaped button made from milk glass with three fastener holes. Artifact 325-01-29 (Figure 86, c) is a saucer button made of steel with four fastener holes and a textured border. Artifact 325-06-04 (Figure 86, f) is the cap of a small brass shank-style button with a small star on the front. The remaining four metal buttons are convex shank style buttons highly corroded with rust.

Metal buttons were the most common type of buttons manufactured during the 1800s (Kraft 1998). Both steel and brass were used button manufacture during the 19th century.

Coins

Three metal coins were found at Col-246/H. Artifact 325-01-24 is a silver seated U.S. Liberty dime dated 1853 (Figure 87, c). This style of dime was produced from 1853 to 1856 (Yeoman 1993). Artifact 325-03-04 is a silver wide-border U.S. dime of undetermined date (Figure 87, a). Although the date of this dime could not be determined, this style was produced only between 1809 and 1837 (Yeoman 1993). Artifact 325-05-01 is a U.S. silver Seated Liberty quarter dated 1846 (Figure 87, b). This type of quarter was produced between 1838 to 1853 (Yeoman 1993).

Ammunition

There was only one item of ammunition recovered from Col-246/H. Artifact 325-01-33 is a brass rimmed centerfire .44 shell cartridge (Figure 86, g). The top of the shell has been eaten away making it difficult to determine its length or the presence or absence of a crimp. The cartridge contained no head stamp or other maker's identification mark.

Construction Materials

A total of 68 brick fragments weighing 156.6 gm was recovered from the site. They were all fragments of standard red construction brick. About half of the specimens exhibit fire damage. A total of 50.5 gm of wood samples was recovered.

The wood is from two contexts. First, samples of highly decomposed redwood were recovered from the remains of a boardwalk kick board assumed to represent the Market Street boardwalk burned by the 1856 Colusa fire (see **Cultural Context** and **Ca-Col-246/H Site Report**). Viewed in situ, the wood appeared to represent a 1x6" milled board set on edge in a narrow slit trench. The collected samples show no specific earmarks of the size of the board or manner of cut. Second, a variety of charcoal and partly burned milled pine lumber was recovered. These all appear to be fragments of construction wall or floor boards.

A total of 136 square cut nails and fragments of various lengths and 632 metal fragments not identifiable as to type or function was recovered from Col-246/H. Most of the metal scraps were heavily rusted or fire damaged.

Trade Beads

Three glass trade beads were collected from Col-246/H. During the 19th century, Venetian glass manufacturers held a monopoly on production of glass beads that were used for trade all over the world. Countless variations of glass beads were produced. Titchenal (1994) evaluates glass bead seriation in Central California, including a rich assemblage from nearby Col-1. Artifact 325-03-02, measuring 5.8 mm long and 7.4 mm in diameter, is an opaque white oblate-spheroid. The bead was produced using the cane method, where beads were made by cutting sections from hollow canes of glass. According to Titchenal (1994) this bead type was used in Central California between 1864 to 1880. Artifact 325-05-03, measuring 3.1 mm long and 3.9 mm in diameter, is also an opaque white, oblate-spheroid manufactured using the cane method, but considerably smaller in size. According to Titchenal (1994) this bead type was used in Central California between 1830 and 1849.

Artifact 325-03-05 is a tubular shape and appears a dark purple or black color. It is probably an historical decorative bead and a specific date could not be determined.

Ceramics

A total of 87 ceramic fragments was recovered from Col-246/H. Seventy-seven of the ceramic fragments (88.5%) were stoneware. The remaining 10 specimens (11.5%) were earthenware fragments. There were no makers marks. However, 12 fragments, all stoneware, had decorative patterns. Of these, seven had a white base with blue decorations and five had a white base with black decorations. The remaining specimens had simple white glaze. The majority of the specimens appear to have been fragments of plates and vessels, and were most likely fragments of simple utility tableware from one or two commercial establishments.

Most stonewares were imported into the United States from England, especially after 1840. Simple white stoneware was most popular from the 1850s until the 1870s when the American public began to demand printed wears which had first been popular in the early 1800s (Miller 1991).

Faunal Remains

Dietary bone and shell possibly associated with the historical period were recovered from two strata at Col-246/H. A total of 803.0 gm of shell, exclusively local *Gonidea*, was recovered, the majority from Stratum 3. In addition, a total of 3083 items (1181.2 gm) of dietary bone was recovered, again the majority from Stratum 3.

Distribution

The Courthouse sidewalk deposits consisted of a series of discrete strata representing event-specific features dating between the 1850s to the present. Historical materials described here were associated with two 19th century strata: Stratum 2 and Stratum 3. Stratum 2 was the boardwalk burn layer dating to September, 1855. Strtatum 3 was the post-1855 fill probably deposited primarily between 1859-1861 as the block was rebuilt concurrent with construction of the Colusa County Courthouse (see **Site Reports**). Additional fill may have been added as the current sidewalk alignment was established between 1880-1950.

The Stratum 2 artifacts are peculiar, conditioned by their unusual context and in a sense filtered because they were probably deposted as they fell between cracks in the boardwalk slats. They are small and from an odd combination of personal affects such as hasps, buttons, and coins presumably lost by passersby, and small fragments of ceramics and glassware probably residual to storefront sweepings. Stratum 2 artifacts included: all three glass beads, two of the three coins (undetermined U.S. dime and the 1846 U.S. silver Liberty quarter, both burned), 221.1 gm of shell (local *Gonidea* only), and 486 items (516.5 gm) of dietary bone.

Stratum 3 artifacts are dominated by construction materials and bulkier refuse. Stratum 3 artifacts included: the 1853 U.S. Liberty dime, 581.9 gm of shell (local *Gonidea* only), and 2,597 items (664.7 gm) of dietary bone.

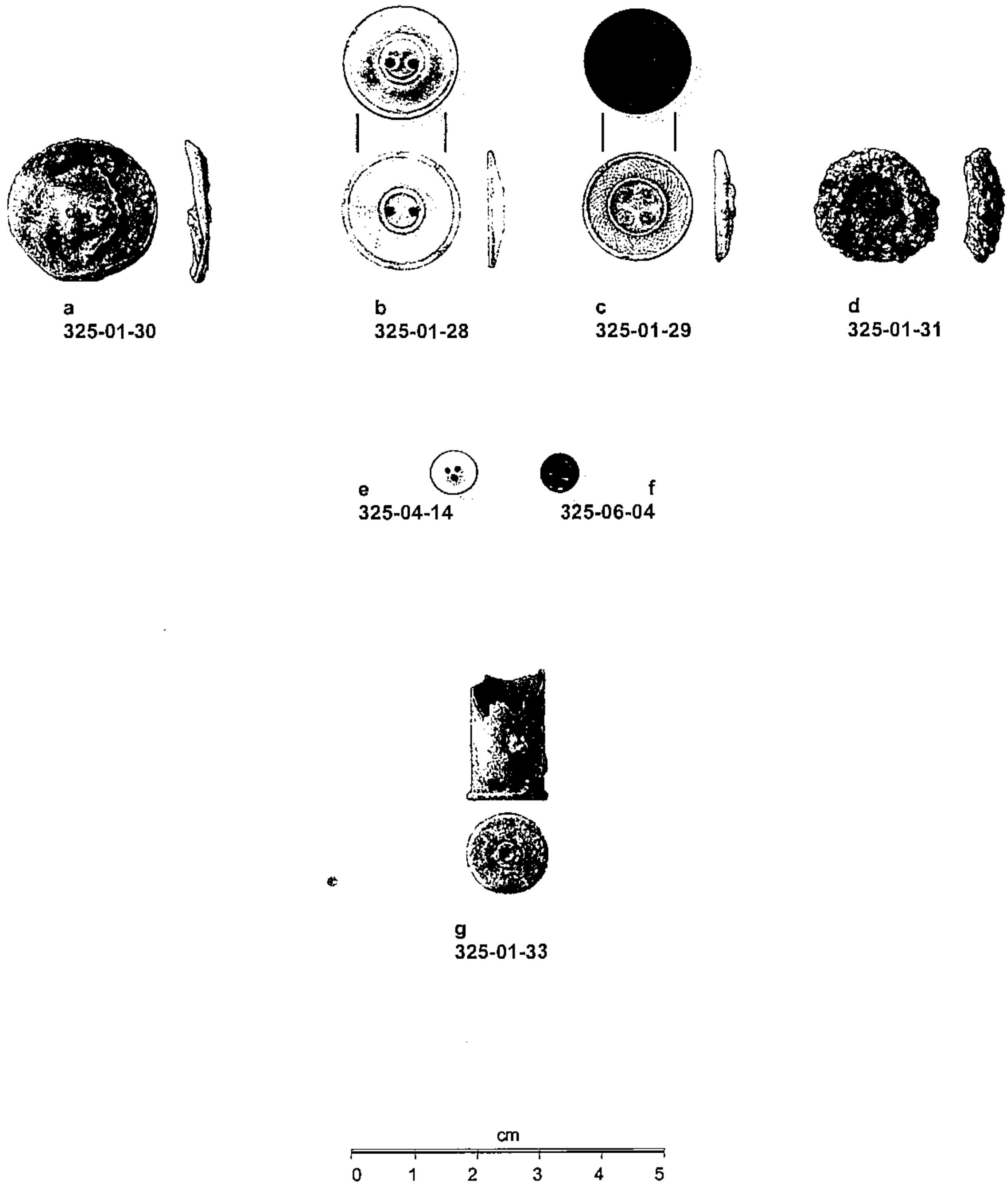


Figure 86: Buttons and a .44 shell cartridge from Col-245/H and Col-246/H.

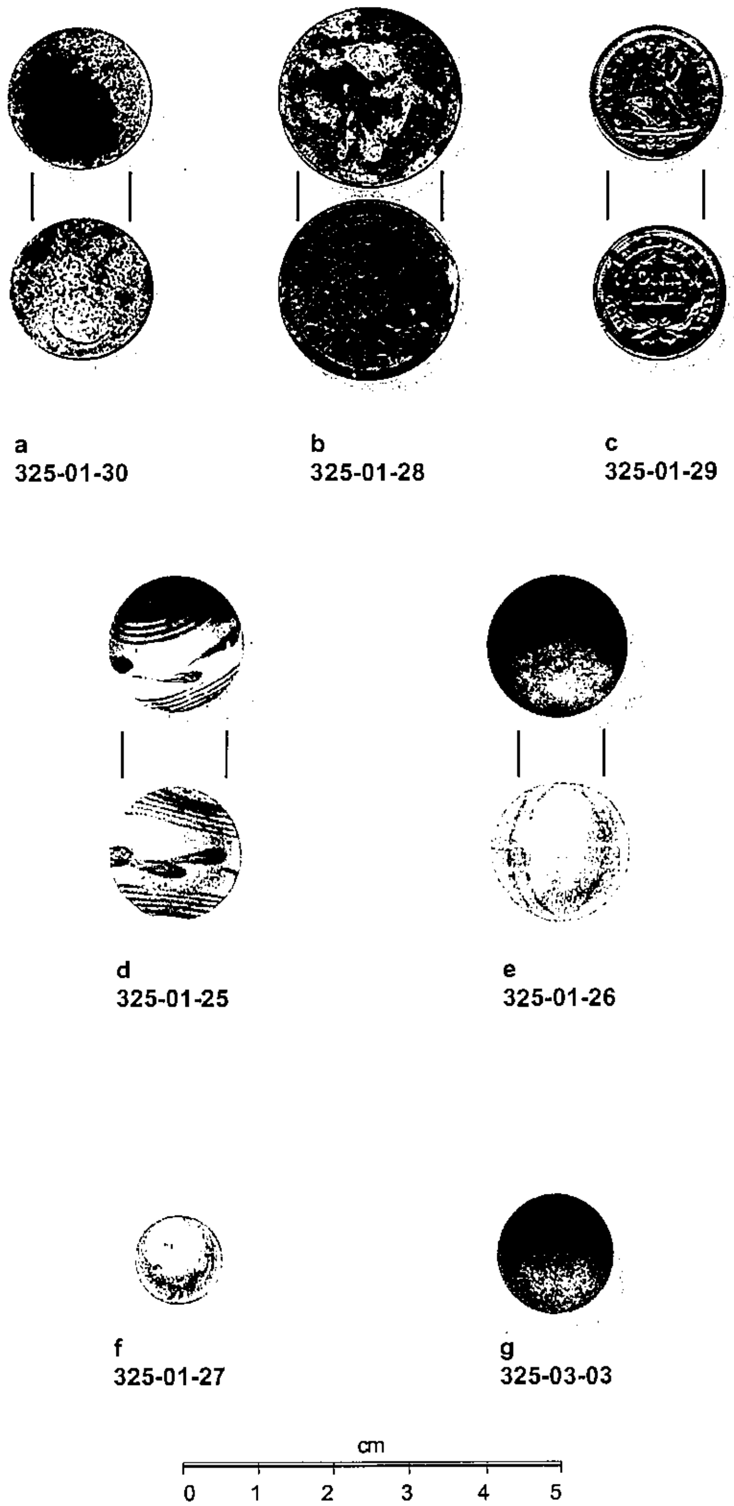


Figure 87: Coins and Marbles from Col-245/H and Col-246/H.

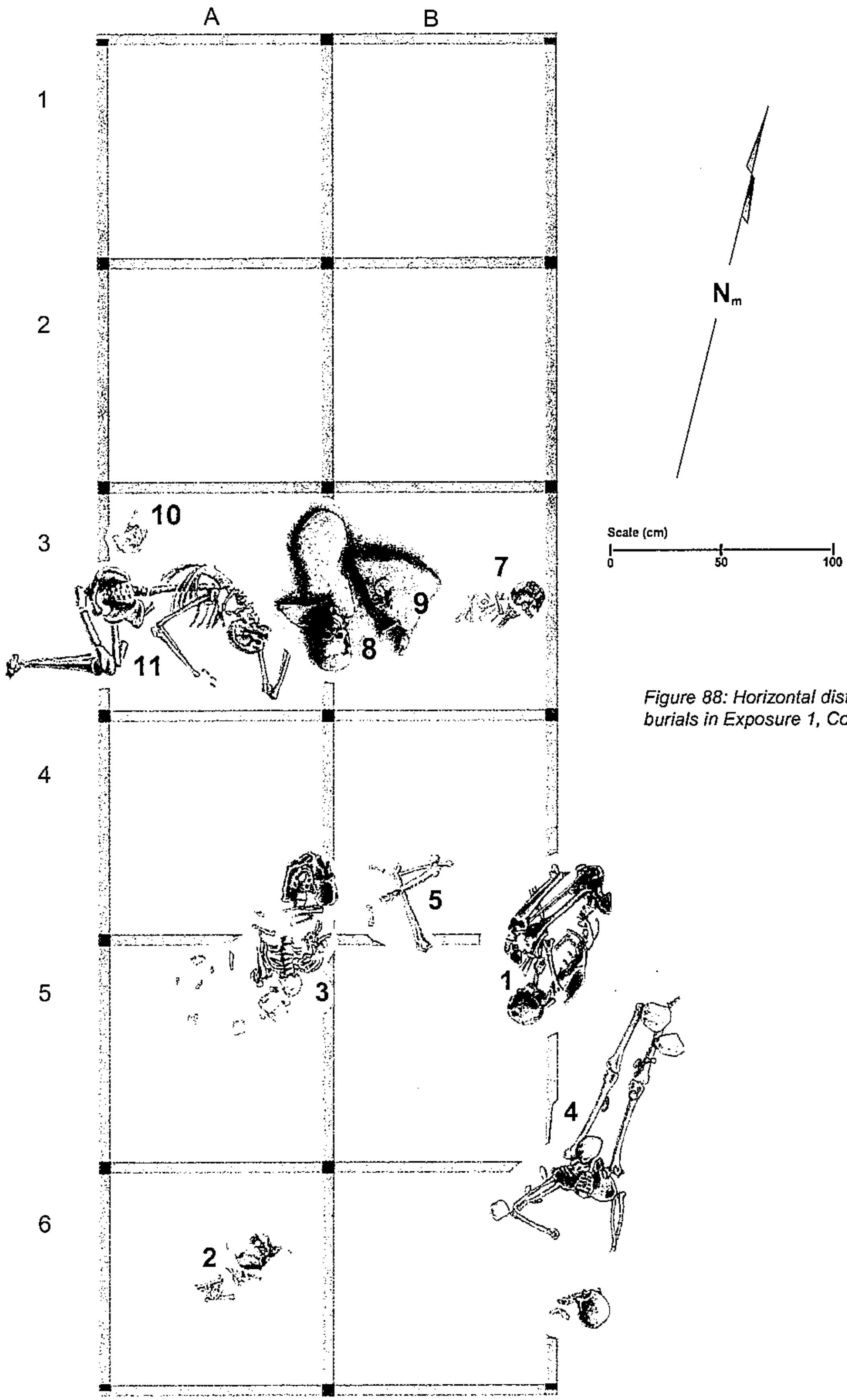


Figure 88: Horizontal distribution of burials in Exposure 1, Col-247.

BURIALS AND HUMAN REMAINS

INTRODUCTION

Summary of Findings

Definition

A "burial" is here defined as an aggregate of bone from one or more skeletons contained in a single-event grave, the aggregate consisting of complete or trace evidence of unspecified portions of the skeleton(s). The purpose of this definition is evident below, where it assists in the examination of archaeological evidence for the intentional interment of more than one individual in one grave, and groups of bones representing preinterment intentional dismemberment or postinterment redeposition of bones from disturbed burials. All other bones were considered "isolated elements" including individual, fragmentary or complete bones and a few examples of grouped limb elements.

Sample

A total of 15 burials representing 16 individuals was observed during the excavation program, and 12 burials representing 13 individuals were fully excavated and recovered (Burial 9 consisted of two neonates). In addition, 193 isolated human skeletal elements and bone fragments were recovered. Burial data are summarized in Table 23.

Site	Date	n Burials	n Isolates
Col-246/H	<400 BP	-	-
Col-158A	740-910 CAL BP	-	-
Col-245/H	740-910 CAL BP	1	-
Col-158B/C	970-1180 CAL BP	-	1
Col-158D	970-1180 CAL BP	-	-
Col-247 Stratum 1	1550-2200 CAL BP	4	70
Col-247 Stratum 2	2750-3222 CAL BP	6	77
Col-247 Stratum 3	3460-4385 CAL BP	1	39

Table 23: Distribution of burials and human remains.

Methods

Excavation

An expert in the identification and analysis of human remains was present at all times during the excavation. Excavators and screeners were advised to alert the expert whenever a questionable item was found. When a potential human bone was encountered in the screen, the excavator was advised to double check exposed soils.

When a potential human bone was found in the unit, the item was first exposed enough to determine if the bone was in fact human, then further exposed to determine if the bone was an isolated element or part of a burial. If determined a burial, then a perimeter was established and marked by pin stakes, consisting of the maximum possible extent of articulated elements. The perimeter was generally oval to oblong, and might extend across two or more units. The burial perimeter was then dug to the depth of exposure of the uppermost bone in an effort to define a burial pit. Then, the affected unit(s) were dug to the next unit level, producing a low burial pedestal. Excavation of the burial commenced with systematic work inward from the sides and surface of the balk. During excavation, screening, and subsequent laboratory processing, a distinction was made between *exposure* and *matrix* proveniences. "Exposure" consisted of soils removed from the balk in digging to the perimeter of the skeleton. "Matrix" consisted of the soils immediately surrounding the bones and in the interstices between bones or associated artifacts. All soil contained in the burial pedestal was screened using 1/8" hardware cloth, and flotation and soil samples were extracted from several "burial matrix" samples.

Only Col-245/H Burial 1 was exposed by construction. All other burials were encountered during controlled excavation.

Preparation

As the first remains were brought back to the laboratory in preparation for analysis, problems arose during the drying process that required specific precautions. The Col-247 human remains were excavated from a dense, sticky clay matrix rich in silica and calcium carbonate. Freed from the clay, as the bones began to dry they underwent plastic deformation and fracturing. Those elements

Burial #	Age a	Sex	Position b	Bearing (mag.) c	Pit d	Stratgraphy	Date e	Assocaitions
Col-245/H #1	30-40 Y	M	Tight Flexed	IND	No Mod	n/a	815 BP (CAL)	None
Col-247 #1	30-45 Y	M	Flexed (R)	N161E	No Mod	Stratum 1	2215 BP (CAL)	None
Col-247 #2	8-16 M	-	Bundled (S)	N62E	No Mod	Stratum 1	2215 BP (CAL)	None
Col-247 #3	30-45 y	F	Extended (D)	N172E	PGPB	Stratum 1	2215 BP (CAL)	Baked clay pillow, 2 ceramic "eggs", *Gonidea* shell
Col-247 #4	30-45 Y	M	Extended (D)	N186E	No Mod	Stratum 2	3205 BP (CAL)	Large baked clay peds, canid mandible
Col-247 #5	18-35 Y	-	Redeposit	IND	No Mod	Stratum 2	3205 BP (CAL)	None
Col-247 #6	11-19 M	-	Bundled (S)	IND	No Mod	Stratum 1	2215 BP (CAL)	(1) Ceramic tube bead (1) small drilled *Haliotis* pendant (1) small *Haliotis* "talon-shaped" pendant (2) H3a *Haliotis* beads (1) C3 *Olivella* split-drilled bead (4) G1 *Olivella* ring beads (38) G2 *Olivella* saucer beads
Col-247 #7	2.5-4.5 Y	-	Flexed (R)	N97E	PGPB	Stratum 2	3205 BP (CAL)	None
Col-247 #8	15-25 Y	F	Redeposit	IND	Cairn	Stratum 2	3205 BP (CAL)	None
Col-247 #9A	Neonate	-	UNK	IND	No Mod	Stratum 2	3205 BP (CAL)	(2) Large *Haliotis* notched disk pendants
Col-247 #9B	Neonate	-	UNK	IND	No Mod	Stratum 2	3205 BP (CAL)	None
Col-247 #10	Neonate	-	Bundled (L)	N205E	No Mod	Stratum 2	3205 BP (CAL)	None
Col-247 #11	20-24 Y	F	SemiExtended (R)	N90E	PGPB	Stratum 3	4375 BP (CAL)	None

Table 24: Summary of excavated burial characteristics and associations.
a - Y=age in years, M=age in months; b - R=on right side, L=on left side, S=sitting;
c - east of magnetic north; d - No Mod=no modification, PGPB=pre-interment grave pit burning;
e - average ^{14}C date of stratum except Burial 11 date derived from pit wall burn matrix.

most affected were the cranial vault and epiphyseal regions. To prevent this from occurring, the bone was immersed in water to keep the clay matrix moist. Each bone was then individually cleaned and allowed to slowly dry in a dark, humid environment. All elements were cleaned using fine tools, and water. A diluted solution of Elmer's Glue © and water was applied to elements that exhibited signs of further cracking.

Analysis

All human remains from the Hwy 45 project were subjected to osteological analyses. One Col-247 burial (Burial 13) was partially excavated and only a few bones were available for analysis. Two other Col-247 burials (Burial 12 and Burial 14) were identified in the field but were not excavated and no remains were available for analysis. However, a summary of the field analysis of these two burials is provided below.

All measurements were taken using an osteometric board and digital, sliding, or spreading calipers. To measure long bone circumference a string was wrapped around the bones and the string was measured. All data was recorded according to standards set by Buikstra and Ubelaker (1994).

Adult age was determined using pubic symphyseal morphology (Suchey *et al.* 1986), auricular surface changes (Lovejoy *et al.* 1985), and stage of epiphyseal union. Subadult age was determined from dental eruption and development (Ubelaker 1989), long bone length (Scheuer *et al.* 1980), and epiphyseal union as outlined in Bass (1995). X-rays of the upper and lower dentition were taken to facilitate evaluation of dental eruption and development in subadult individuals.

Sex was determined based on criteria provided in Bass (1995). Whenever available, priority was given to pelvic morphology, followed by cranial features, when determining the sex of the individual. Standards provided by Dittrick and Suchey (1984) for measurements of the maximum femoral head diameter were used to determine the sex of one individual (Burial 5).

Stature was estimated whenever possible using Trotter and Gleser (1952, 1958). However, no standards are available for estimating stature of Californian Native American populations, and standards that exist for general Native American populations are not based on individuals of known stature. Therefore, the Trotter and Gleser formulae for Caucasians was used for an approximation of stature.

COL-247 Burials

Burial 1

Association and Context

The Burial 1 calvarium was first encountered in Unit B-5 at the 10-20 cm level. The burial extended into Unit B-4 and the east wall of the exposure. In order to complete the exposure, a trench window was excavated around the burial to a depth of approximately 40 cm, with a window extending into the east sidewall. Careful excavation continued until the bones were uncovered using the methods described above. Burial 1 was between 25-45 cm below datum, placing it in Stratum 1.

Burial 1 was very well preserved and mostly complete. The individual was buried in a flexed position, lying on its right side with arms folded across the chest. The burial's vertebral column was aligned to a southerly bearing, N161°E (Figure 89). An ephemeral pit outline was observed, but showed no signs of grave pit burning. Several large, unmodified baked clay fragments representing possible daub occurred in the matrix around the burial, but these were assumed to be incidental pit backfill. No artifact associations were identified.

Osteological Analysis

Burial 1 consisted of a 30-45 year old male. Age was based on the morphology of the pubic symphysis and auricular surface. Sex was based on the shape of the pubis, morphology of the ischiopubic ramus, width of the sciatic notch, robusticity of the nuchal region, size of the supraorbital ridge, angularity of the ramus, gonial flare, and development of glabella.

Although the remains were intact and in good condition most of the hand and foot bones were missing, probably due to the heavy rodent activity surrounding the burial. Also absent from this burial were the distal right tibia, proximal right humerus, most of the foot bones, and both pubic symphyses.

A large abscess was present on the right maxilla encompassing the second premolar and first molar. Both of the above mentioned teeth were lost pre-mortem, and alveolar resorption had remodeled the region. Severe dental attrition was noted for all teeth with the first maxillary and mandibular molars exhibiting only a thin line of enamel.

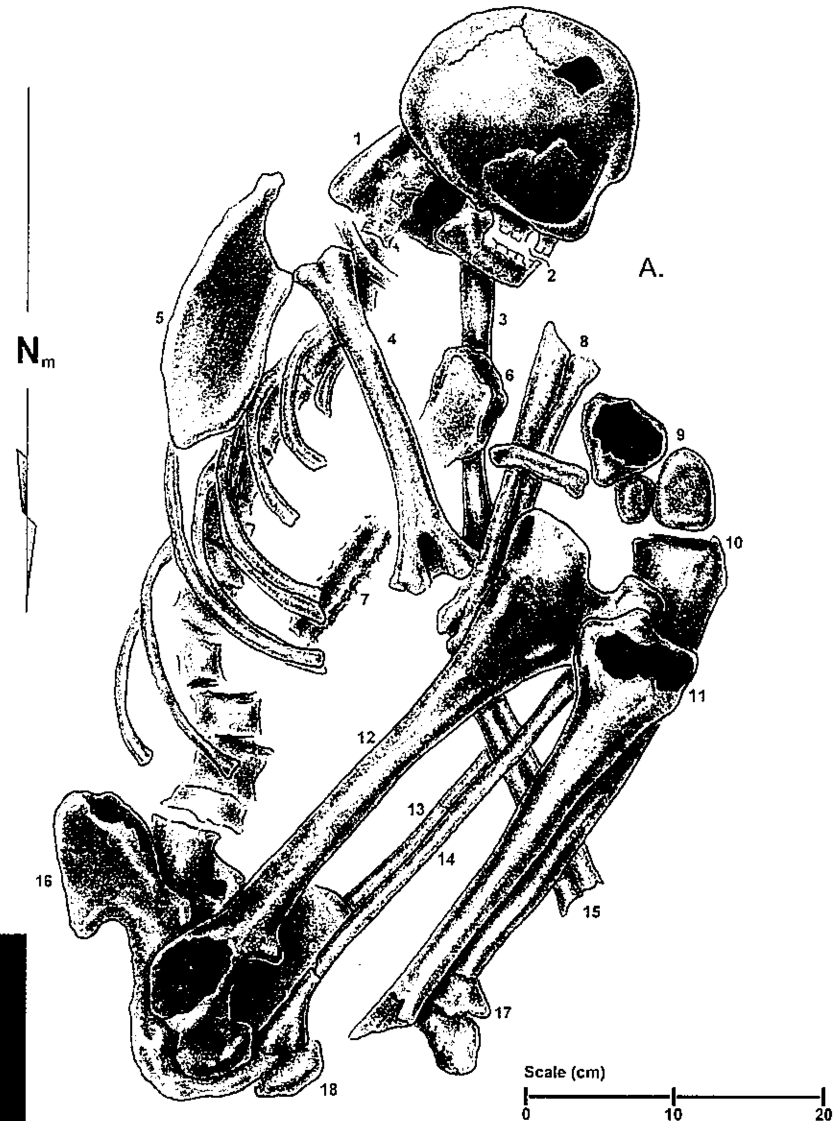
Approximately 2/3 of the right auditory meatus was obstructed by an auditory exostosis, and about 1/3 of the left ear was similarly obscured. Minor degenerative changes were noted on this individual. A small area (7x5 mm) of eburnation was noted in the trochlear notch of the left ulna. The centrums of vertebrae T12 to L2 were compressed. Osteophyte activity was moderate on the margins of these vertebrae in addition to the L3 to L5 lumbar vertebrae. Subchondral degeneration occurred on the left articular processes of C3 and C4. Osteophyte development surrounded the articular process and also occurred on the lateral margins of both vertebral bodies. Degeneration of the arthroidial joint occurred on the bodies of vertebrae C5 to C6, This degeneration was evidenced by slight lipping of the vertebrae and macroporosity.

This individual had sustained a series of traumatic injuries. A healed fracture was noted for the right vertebral arch of the first sacral element. This fracture displaced the spinous process to the right. A healed depressed fracture was observed on the right parietal near the midpoint of the sagittal suture. This lesion was approximately 14 mm in diameter and was confined to the outer table (Figure 89, A). Two unhealed circular depressed fractures were also present, one on the manubrium (Figure 89) and one complex fracture with its apex on the right frontal bone (Figure 89, B). On the cranium, the perforation created a large fractured area of bone (37x55 mm). The inner table exhibited internal beveling identifying this area as the point of impact. The perforating instrument, likely a spear or similar weapon, then impacted the inner table of the left occipital along the

Figure 89: Col-247, Burial 1 sketch and overview photographs.

<u>Key</u>:

1. Left scapula
2. Right PM2 abscess
3. Left humerus
4. Right humerus
5. Right scapula
6. Sternum
7. Manubrium
8. Right distal radius/ulna
9. Left/right patellas
10. Left tibia
11. Right tibia
12. Right femur
13. Left fibula
14. Right fibula
15. Left distal radius/ulna
16. Right illium
17. Left talus
18. Left ischium



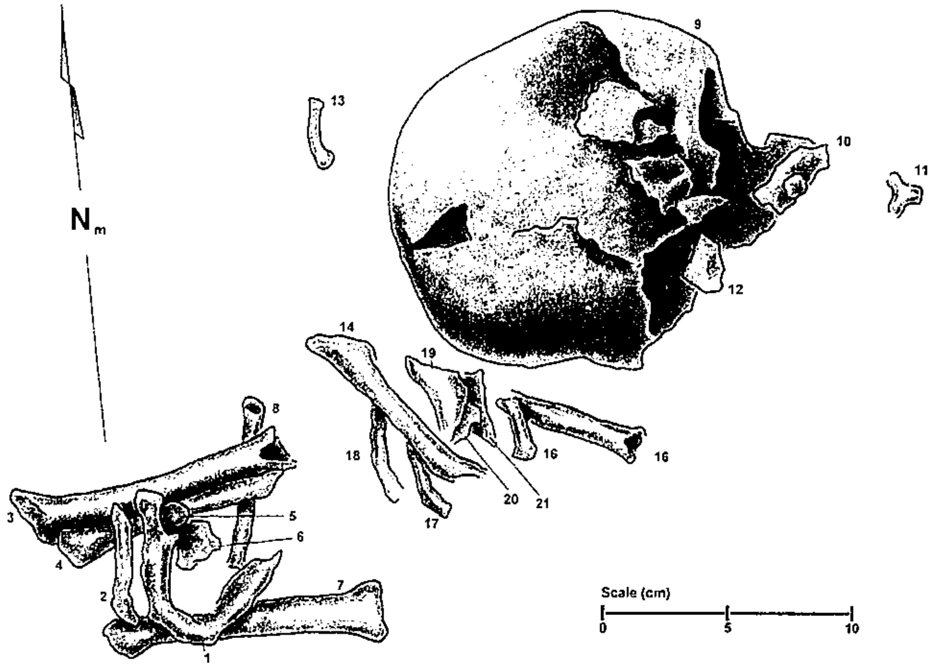
A.

B.

Figure 90: Col-247, Burial 2.

Key:

1. Mandible
2. Left clavicle
3. Right femur
4. Right tibia
5. Clay nodule
6. Basio-occipital
7. Left femur
8. Fibula
9. Cranium
10. Maxilla
11. Vertebral arch
12. Temporal fragment
13. Rib
14. Right humerus
15. Left humerus
16. Rib
17. Rib
18. Rib
19. Right scapula
20. Rib
21. Vertebrae



lambdoidal suture. The depressed fracture on the interior of the cranial vault measured approximately 10.5 mm in diameter. This impact caused the bone of the outer table to be pushed out. The damage to the back of the skull was done while the bone was still fresh, indicating this trauma occurred perimortem. The fracture on the manubrium measured approximately 11.0 mm in diameter. Based on the appearance of the fracture, this trauma also appears to have been inflicted perimortem.

Burial 2

Association and Context

Burial 2 was first encountered as a calvarium found at the 20 cm floor in the center of Unit A-6. A small perimeter balk was excavated and the remainder of the unit was dug to a depth of 40 cm. Trowel excavation continued until the individual was uncovered using the methods described above. Burial 2 was between 20-40 cm below datum, placing it in Stratum 1.

Burial 2 was well preserved and nearly complete. The individual was probably placed in a sitting position with its head up as determined by the location of the mandible, basioccipital, and left clavicle near the feet, the "slumped" appearance of the upper torso, and the 180° rotation of the cranium. The burial's vertebral column was aligned to an easterly bearing, N62°E (Figure 90). No artifact associations were identified and no grave pit was observed.

Osteological Analysis

Burial 2 was a nearly complete subadult individual between the ages of 8 and 16 months. The age of the individual was obtained through dental eruption and dental development. Portions of the cranium were damaged during postinterment and due to plastic deformation, and the cranium could not be reconstructed. Absent from this individual were both fibulas, right innominate, right forearm, and right scapula. No traumas or pathologies were noted.

Burial 3

Association and Context

Burial 3 first appeared as a right innominate encountered at the 50 cm floor in Unit A-4. A perimeter balk was excavated to a depth of approximately 70 cm in units A-4/5 and B-4/5. Trowel excavation continued until the individual was uncovered using the methods described above. The burial was 40-70 cm below datum, placing it at the contact between Stratum 1 and Stratum 2, presumably in a burial pit dug from a surface contained in Stratum 1.

This individual was lying in a dorsally extended position. The burial's vertebral column was aligned to a southerly bearing, N172°E (Figure 91). The substrate under the burial consisted of a layer of baked soil indicating preinterment burning. Heat-affect staining along the dorsal side of the vertebral column and ribs supports this conclusion. Two formal artifacts and several possible associations were found with this individual. Two ceramic "eggs" were found within the pelvis adjacent to the right innominate. A complete freshwater mussel shell was found in the abdomen between the lumbar vertebrae and left forearm. In addition, a group of three large baked clay nodules were placed directly under the superior end of the vertebral column and give the appearance of a baked clay "pillow" that would have been positioned beneath the skull, but the skull was missing.

Osteological Analysis

Burial 3 was in poor condition and fragmentary, composed of a torso but missing cranial and cervical elements, the sternum, the right arm and shoulder girdle, all cervical vertebrae, and all remaining portions of the appendicular skeleton. The right forearm was placed across the abdomen, and the left humeral head was still in articulation with the glenoid fossa. Most of the ribs on the right side were highly fragmentary and the vertebral bodies from the upper lumbar/lower thoracic region were heavily damaged.

Based on the wide greater sciatic notch, presence of a preauricular sulcus, and curvature of the sacrum, this individual was determined to be a female. An age estimation of 30-45 years was based on auricular surface morphology.

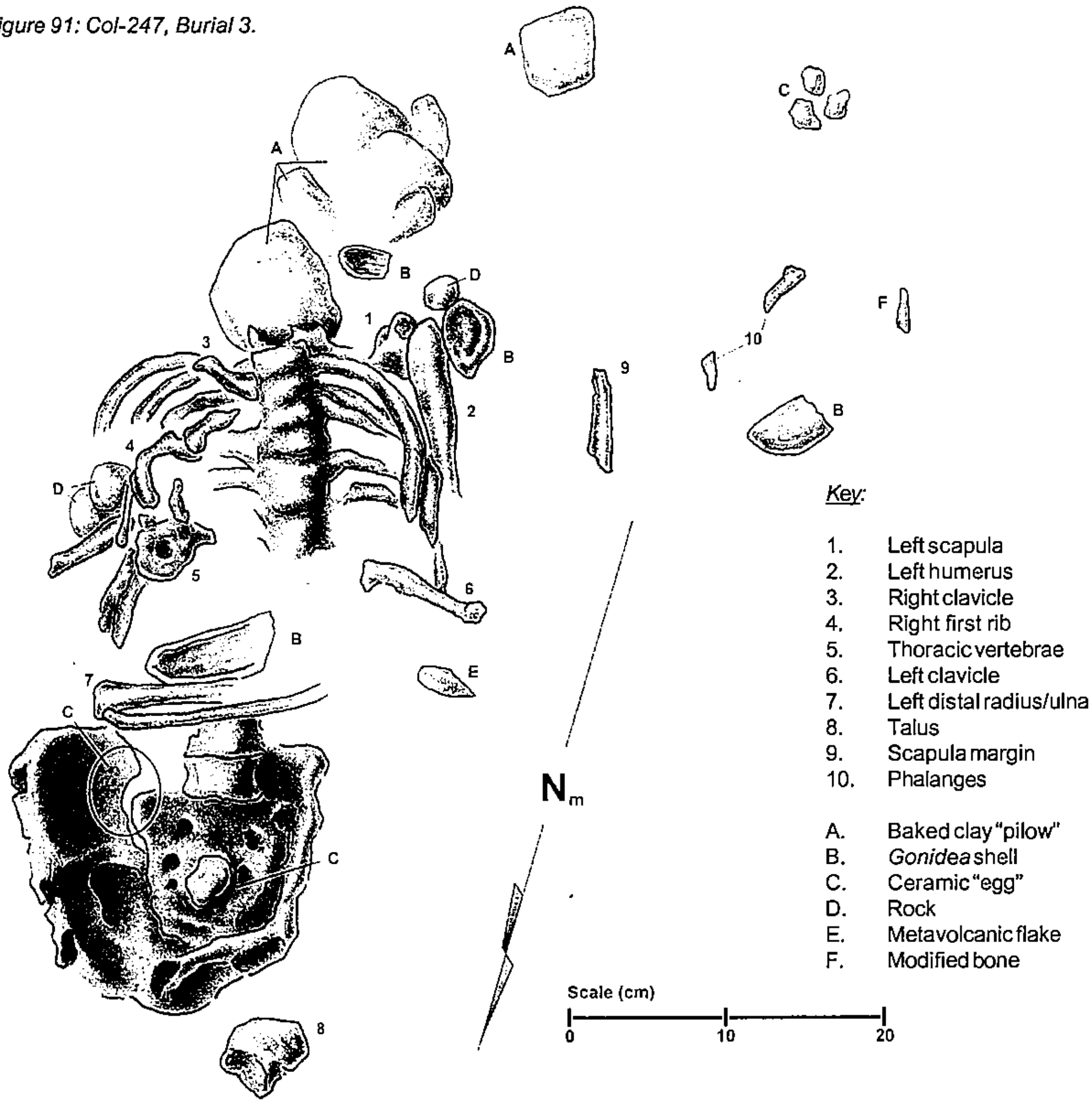
No discernible trauma or pathologies were noted. However, apparent postmortem breakage patterns did provide an interesting pattern. The breakage was confined predominantly to the lower thoracic region and the abdomen. Most of the anterior surfaces of the vertebral bodies from this region were heavily damaged. In addition, there were two thoracic vertebrae from this area that had been removed and were found placed within the chest cavity. Third, much of the left arm appeared to be removed post-deposition. This conclusion was based on the fact that the humeral head was still articulated with the glenoid fossa while the remainder of the humerus was missing. Further, while the bone was found residing in an articulated position, the proximal half of the left forearm was absent. Therefore, the damage sustained in the abdomen appeared to have been post-depositional, perhaps by subsequent pit digging.

However, evidence was also found for the apparent removal of the right arm and scapula prior to interment. Seeking an explanation for the complete absence of these elements, we found that not even any small fragments of the right scapula, clavicle, or hand bones were identified. Further, the right upper ribs and clavicle were present, and found in articulated position with no evidence of post-depositional disturbance, so no post-depositional force from above (necessary for removal of the arm elements) could also account for the scapula. Finally, we rule out the absence of the right arm and scapula as a congenital condition because there was no evidence of reorientation of the muscle attachments of the vertebral column or along the posterior ribs that would have accompanied such a condition.

The lower limbs and head and neck elements were also absent from Burial 3. Whether the loss of the lower limbs was post- or pre-depositional could not be determined. Stratigraphic relationships determined at the time of excavation indicated that, assuming Burial 3 was extended, a prehistoric pit might have intersected the burial at about the distal 1/3 of the femurs. Nevertheless, one right tarsal bone was found in the pelvis of Burial 3, and while no additional ankle or foot bones were found in the vicinity, the presence of the tarsal might indicate that Burial 3 was flexed. If so, it is likely that the lower limbs were superior to the pelvis, and thus may have been removed by the disturbance identified in this area.

The loss of the cranium and neck bones is similarly perplexing. No fragments of cervical vertebrae were found, nor were any teeth or other portions of the cranium. Thus, it is likely that either: (1) an intrusive pit clipped the skull and cervical vertebrae off precisely at the junction of the lowermost cervical and uppermost thoracic vertebrae, or (2) the head and neck of the individual were removed prior to interment.

Figure 91: Col-247, Burial 3.



Burial 4

Association and Context

Burial 4 first appeared as a proximal humerus identified in the east wall of Unit B-6 at the 70-80 cm level. The remainder of Burial 4 extended into the wall east of Units B-5/6. A window was removed from the east wall in order to excavate this burial. The overburden, primarily composed of trenching spoils, was removed to a depth of about 20 cm above the humerus, and was examined for diagnostic artifacts and then disposed. Trowel excavation continued until the individual was uncovered using the methods described above. The extent of this burial was 60-100 cm below datum, placing it at the base of Stratum 2.

Burial 4 was oriented in a dorsally extended position. The burial's vertebral column was aligned to a southerly bearing, N186°E (Figure 92). Four large baked clay nodules averaging about 20 cm in diameter were found surrounding the burial. Two nodules were placed at the feet, one between the thighs in the pubic region, and one adjacent to the left elbow. In addition, five whole *Gonidea* shells and an unmodified canid (dog-sized) mandible were uncovered 10 cm south of and approximately 10 cm below the left elbow of Burial 4. No grave pit modifications were observed.

Osteological Analysis

Burial 4 was a robust male between the ages of 30 and 45. Sex was determined from both the pelvis and cranium with both exhibiting highly masculine characteristics. Age was determined from the pubic symphyseal and auricular surfaces. Based on stature estimation for white males, a stature of 5'7" was estimated from the maximum femoral length.

The skeletal remains from Burial 4 were in excellent condition but only partially complete due to post-depositional disturbance. The abdominal and thoracic region superior to the fourth lumbar vertebrae was heavily disturbed and most of the elements were missing. The cranium and isolated fragments were secondarily deposited in a pile where the cranium would have been, assuming the burial was fully extended. Although no pit outline was noted in this region, there was a high quantity of shell found in the thoracic region which indicated that this burial may have been intersected by a cooking or refuse pit.

Burial 4 was mostly complete from the pelvis down. Nevertheless, the right fibula and portions of both feet were absent. The entire thoracic region was also missing (including the right and left scapula, clavicles, and right humerus) as were the cervical vertebrae and mandible. A series of hand and foot bones were found in the vicinity of Burial 4. However, due to the close proximity of Burial 5, the affiliation of these remains could not be accurately assessed.

The dental health of this individual was poor. The individual exhibited severe dental attrition on both the first and second maxillary molars from both sides. For both of the first molars, only a thin line of enamel existed on the disto-lingual aspect. The individual also suffered from dental caries on the occlusal root, and interproximal areas of the left molars. In addition, pulp exposure was present on two of the right molars that led to subsequent abscesses. One abscess, an apical abscess, was located on the buccal surface at the base of the right maxillary second molar. The second abscess occurred on both the buccal and lingual surfaces of the right maxillary first molar. A third abscess occurred on the left maxillary first molar. This molar also had begun to rotate in the crypt, exposing more of the root surface.

Auditory exostoses were noted in both ears. In both cases, the exostoses occluded less than 1/3 of the meatus. A subchondral lesion was present on the medial aspect of the distal left radius. This circular sclerotic lesion was less than 2.0 mm in diameter.

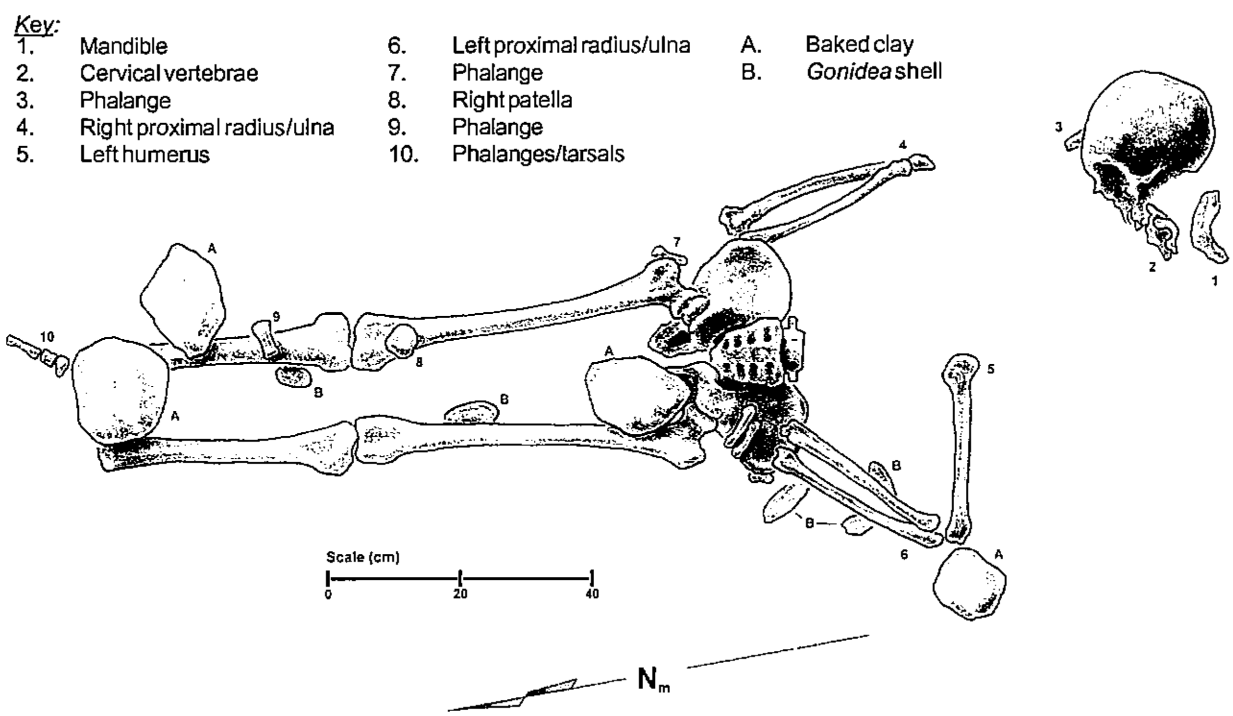


Figure 92: Col-247, Burial 4.

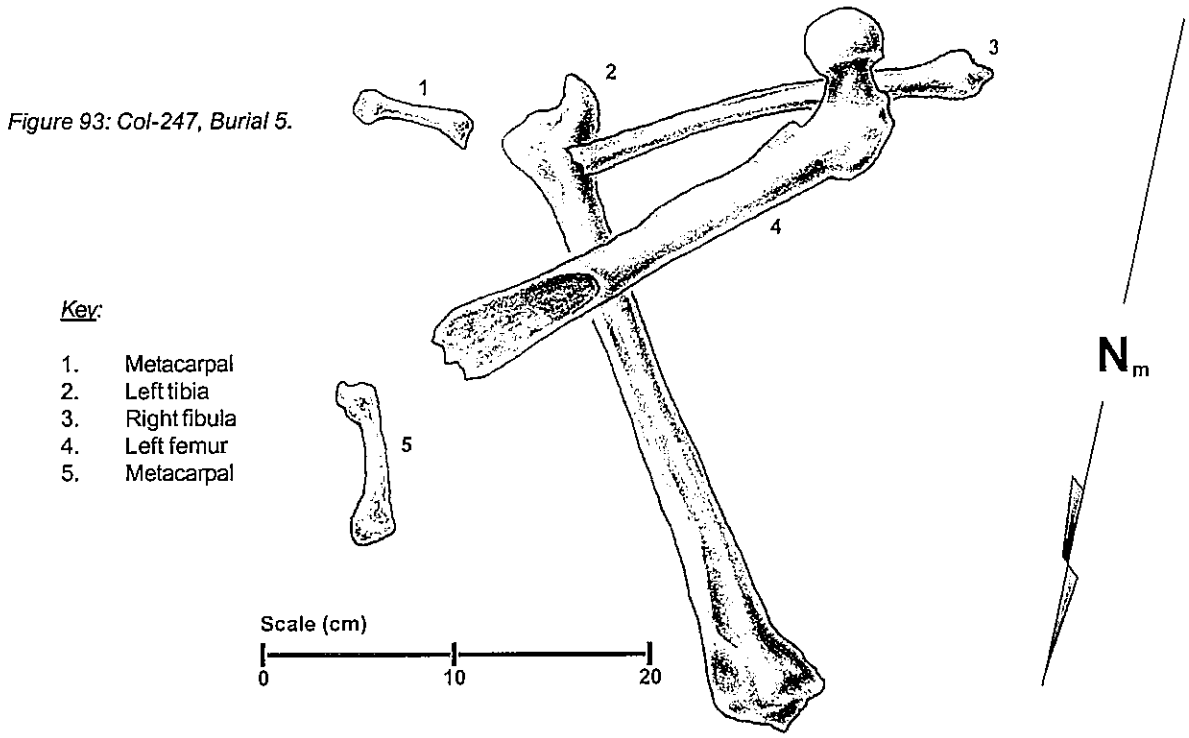


Figure 93: Col-247, Burial 5.

Perimortem trauma was also evident. A cut mark measuring 42.0 mm in length was present on the right frontal bone (Figure 92), beginning 20.0 mm superior to the superior-medial border of the right eye orbit and proceeding posteriorly, terminating at the coronal suture. The direction of the cut from anterior to posterior was evidenced by "skipping," increased shallowness, and widening of the cut posteriorly. Directly above this is a smaller cut measuring approximately 8.0 mm in length and oriented posterior-anterior. This cut appears to be a retracting cut that was dragged back over the original cut.

The individual also exhibited what appeared to be an entrance wound to the left temple. This wound exhibited internal beveling of the inner table and four radiating fractures emanating from the entrance wound. The entrance wound measured 15.0 mm by 21.0 mm. A third traumatic injury was evident on the anterior portion of the first sacral element. This injury, a circular depressed fracture measured approximately 10 mm in diameter. This injury occurred perimortem as evidenced by small bone fragments exhibiting a "pushed in" appearance characteristic of a green bone break. This circular fracture was nearly identical in appearance to the two depressed fractures present on Burial 1.

Burial 5

Association and Context

Burial 5 was first identified as a proximal tibia observed in the north edge of Unit B-5 at the 70-80 cm level. Burial 3 and Burial 5 were in a close spatial relationship (Figure 88), but were not directly associated. Burial 5 was 70-100 cm below datum, placing it at the base of Stratum 2.

Burial 5 was determined to be a secondary interment based on the unusual bunching and lack of articulation of elements. No orientation could be determined, no artifact associations were identified, and no grave pit was observed.

Osteological Analysis

Burial 5 consisted of a left femur and tibia, and a right fibula. The remains appeared to be from an adult individual aged 18-35 years, based on the identification of epiphyseal lines on the proximal tibia, proximal femur, distal tibia, and proximal fibula. Despite their proximity, Burial 3 and Burial 5 were determined to be from different individuals. In comparison to Burial 3, the individual represented by Burial 5 was slightly younger and significantly more gracile.

Three metacarpals (one left and two right) and one right hand phalange were also found in proximity to Burial 5. However, due to the close proximity of Burial 3, the affiliation of these remains could not be accurately assessed.

Burial 6

Association and Context

Burial 6 was first exposed as a calvarium on the 20 cm floor of Units A-14 and A-15. A perimeter balk was excavated to a depth of approximately 20 cm. Careful excavation continued until the bones were uncovered using the methods described above. Burial 6 was between the depths of 20-30 cm below datum, placing it at the top of Stratum 1.

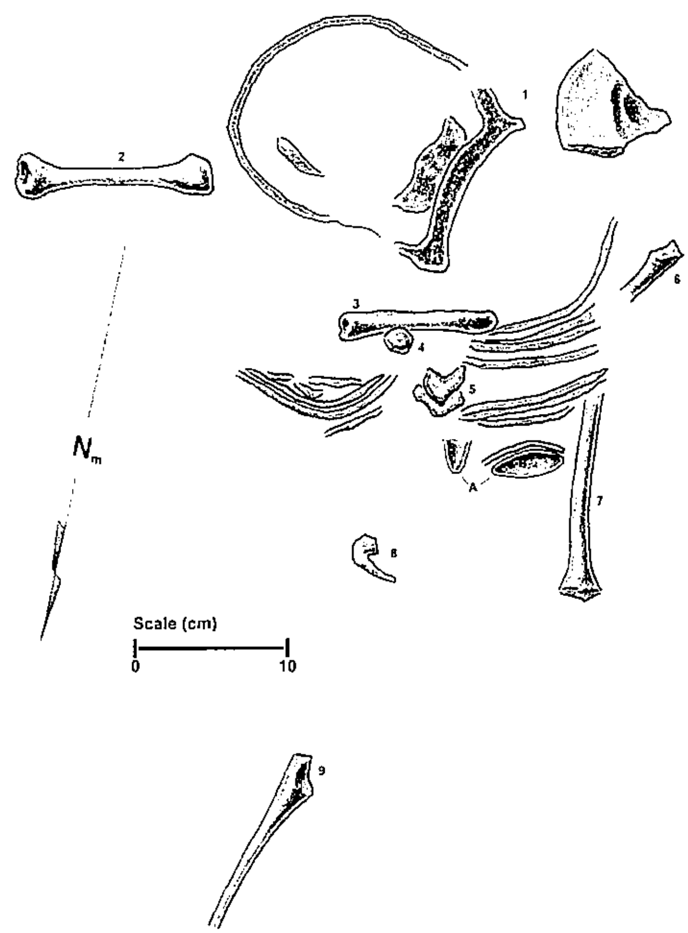
Burial 6 was well preserved and partially complete. The individual appeared to be interred in either an upright seated position or a kneeling position. This orientation was evidenced by the orientation of the vertebral column and posterior ribs placed over the knees and arms and the orientation of the face and cranium anterior and inferiorly. The burial's vertebrae were disturbed and alignment could not be determined (Figure 94). Burial 6 artifact associations included whole *Gonidea* shells (n=2), a ceramic tube bead (n=1), small, eccentric *Haliotis* pendants (n=2), *Haliotis rufescens* disk beads (n=2), G3 *Olivella* ring beads (n=21), and G2 *Olivella* saucer beads (n=21). No grave pit modifications were observed.

Osteological Analysis

Burial 6 was an infant aged 11-19 months, based on an assessment of dental development and eruption using X-rays of the mandible. Measurements of the long bones also produced age results consistent with the dentition studies.

Burial 6 was partially complete. The caudal and cervical vertebrae were absent. Rodent disturbance was present in the general vicinity of these two regions and appears to have been responsible for removing these skeletal elements. A number of infant vertebrae were found in the excavation unit

Figure 94: Col-247, Burial 6.



Key:

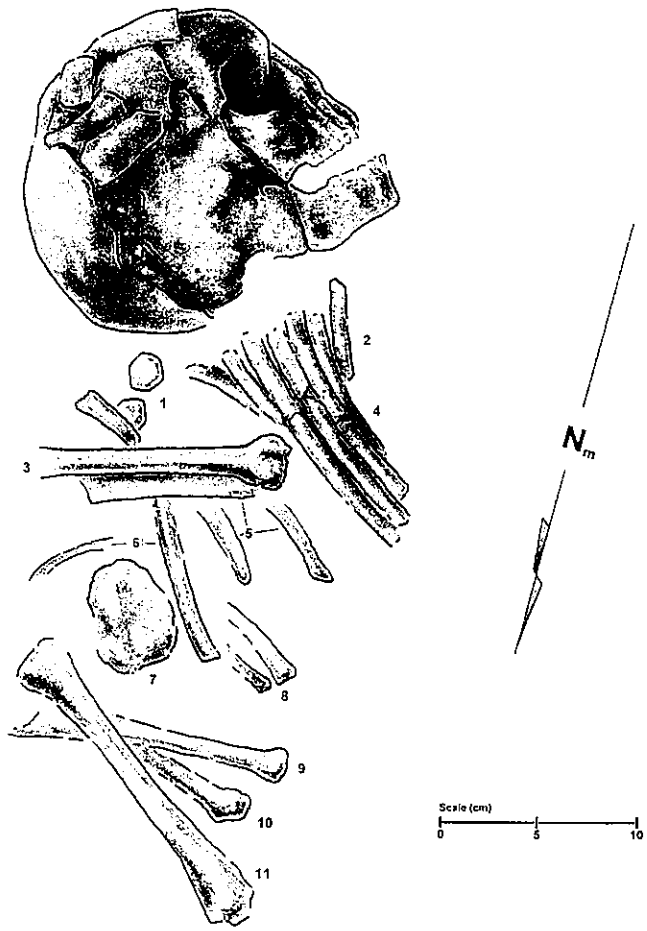
1. Cranium (fragments)
2. Left humerus
3. Tibia and fibula (side indet.)
4. Centrum
5. Vertebral arches
6. Ulna (side indet.)
7. Left femur
8. Vertebral arch
9. Ulna (side indet.)

A. *Gonidea* shell

Figure 95: Col-247, Burial 7.

Key:

1. Vertebrae
2. Clavicle
3. Right tibia
4. Ribs
5. Ribs
6. Ribs
7. Right illium
8. Right distal radius/ulna
9. Left femur
10. Left tibia
11. Left femur



adjacent to the burial, most or all of which were attributable to Burial 6. Also absent from this skeleton were the left lower leg, both feet, the entire pelvis, both hands, the left radius, scapula and clavicle, and the right humerus and scapula. In addition, the posterior portion of the calvarium was absent. This included the posterior halves of both parietals, the occipital, and the temporal bones. No discernible pathologies or trauma were noted for this individual.

Burial 7

Association and Context

Burial 7 was first exposed as longbones found in Unit B-3 at the 90 cm floor. A deep window and perimeter balk was excavated around this individual to a depth of 110 cm. Further exposure found that portions of the cranium extended into the east wall. A window was dug into the wall to allow for complete exposure. Careful excavation continued until the bones were uncovered using the methods described above. Burial 7 was between 90-105 cm below datum, placing it at the base of Stratum 2.

Burial 7 was placed in a flexed position on its right side. The burial's vertebral column was aligned to an easterly bearing, N97°E (Figure 95). Directly underneath the individual was a layer of burnt soil indicating preinterment grave pit burning. This burnt layer was orange in color and probably accounted for a stain pattern found on the left side of the skull. No artifact associations were observed.

Osteological Analysis

This individual was relatively complete and in good condition. A slight amount of mineralization was present on the remains. All right ribs were found fractured in situ and the right side of the calvarium was crushed.

Burial 7 consisted of the nearly complete remains of a 2.5-4.5 year old individual. This determination was made using x-rays to assess dental development and dental eruption. Support for this age assignment was provided by the analysis of long bone lengths.

Absent from this individual were the right humerus, distal right radius, left innominate, right pubis and ischium, sacrum, right fibula, and a majority of the feet elements. No discernible perimortem trauma or pathologies were noted. The breakage pattern on the ribs was intriguing in that they were all fractured at about the same location. However, no conclusive evidence could be provided identifying these fractures as occurring while the bone was in a fresh state. No determination as to the cause of the crushing damage to the right cranium could be provided.

Burial 8

Association and Context

Burial 8 was first encountered as a calvarium located in the west edge of Unit B-3 at the 80 cm floor. A perimeter balk was excavated to a depth of 90 cm, and careful excavation continued until the bones were uncovered using the methods described above. During excavation of the balk, a burnt clay house floor segment was identified. The burial pit appeared to interrupt this clay surface at about 250 cm south/95 cm west of datum. The burial was between 80-100 cm deep, placing it at the base of Stratum 2.

Burial 8 consisted of a single skull and mandible in full occlusion with no further postcranial remains in association. The face was oriented in a northerly position. A series of wedge shaped rocks were placed underneath the occipital region of the skull and the mandible in a manner that suggested the cranium was intentionally set upright and oriented during interment (Figure 96). The cranium was highly fractured in situ, probably due to the compressive forces of the soil deposited postinterment. Some plastic deformation was also visible. Two large notched *Haliotis* disk ornaments were found in the space between Burial 8 and Burial 9, making the determination of specific association inconclusive.

Osteological Analysis

Burial 8 consisted of a cranium from what appeared to be a female between the ages of 15-25. The age assessment was based on the presence of an unerupted left maxillary third molar and three-quarter development of the root, which can erupt as early as 15 years of age. Additionally, the degree of dental attrition was heavy on the first molars but slight to moderate on the second molars, also indicative of a young individual. Finally, the sphenooccipital synchondrosis was open indicating an age under 25. However, based on the development of the maxillary third molar root, a younger maximum may be warranted. The assessment of the sex was compounded by a pathological condition present in the frontal bone of this individual. However, this individual exhibited gracile muscle markings in the nuchal and mastoid region. A slight development of the supraorbital ridge was visible, albeit within the range of variation for females from native Central California populations. Craniometric analyses could not be performed due to the fragmented nature of the cranium and subsequent plastic deformation of the skull.

Burial 8 did not exhibit abscesses and only a single small carie on the occlusal surface of the mandibular left second molar. However, a slight degree of calculus deposition was noted for all maxillary teeth and some of the mandibular teeth. Linear enamel hypoplasias were found on maxillary and mandibular premolars, canines, and incisors. Most hypoplasias were located between 1.0-4.0 mm from the cemento-enamel junction. A unique wear pattern was noted on the maxillary central incisors. A small notch was worn into the mesial corner of both incisors for a combined notch width of approximately 3.0 mm. No complementary wear pattern was identified on the mandibular incisors.

A pathological development was noted on the frontal bone of this individual. This pathological condition of unknown etiology appeared as a hypertrophied development of the frontal crest. The crest extended two-thirds of the distance to the coronal suture and projected approximately 5.0 mm from the frontal bone at its greatest development. Lesions were noted along both sides of the frontal crest. These lesions were of unknown etiology but most likely related to the hypertrophied development of the frontal crest. Possibly associated with this hypertrophied frontal crest was a lateral and posterior sloping of the frontal bone originating at the midsaggital plane.

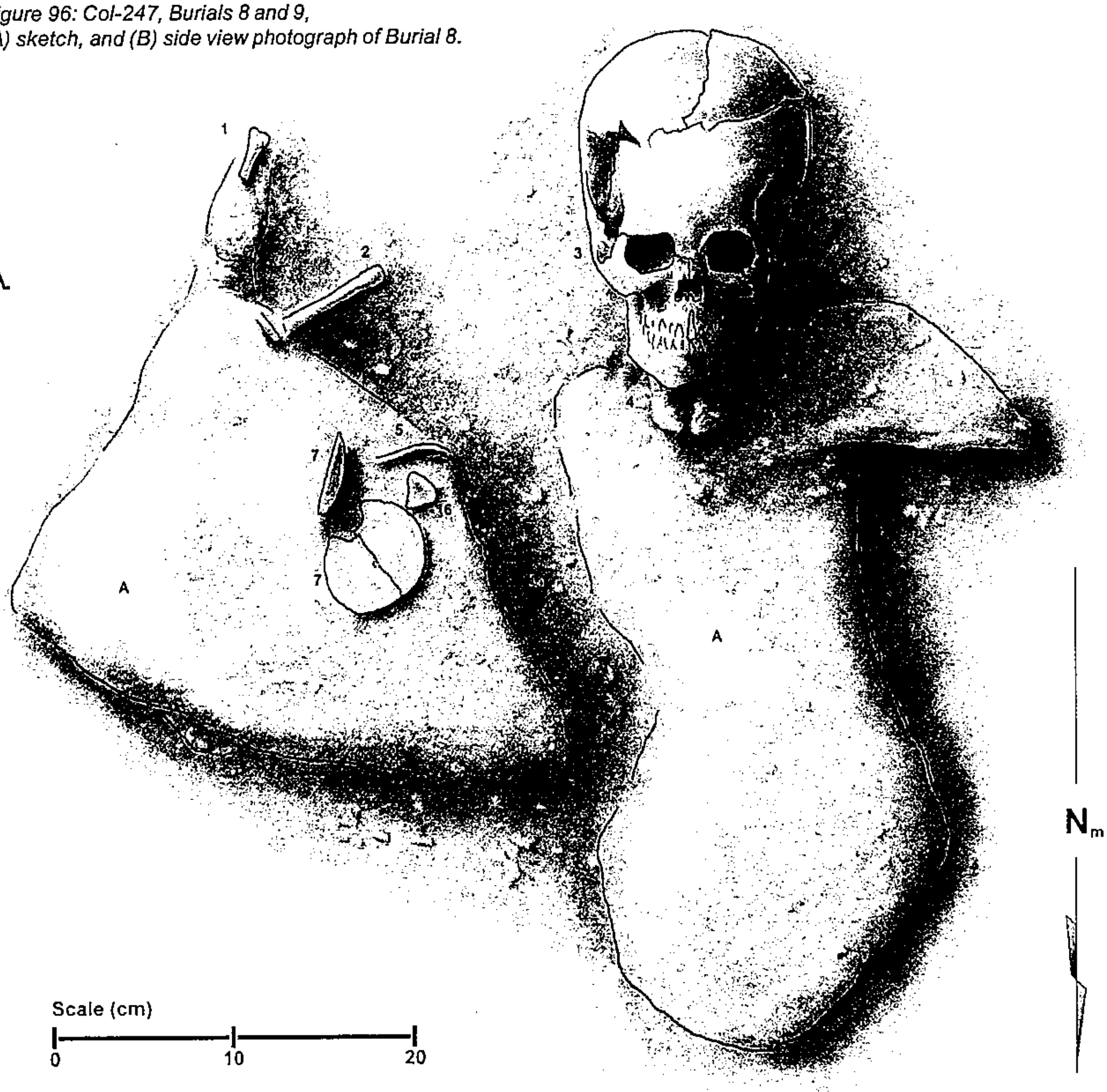
Burial 9

Association and Context

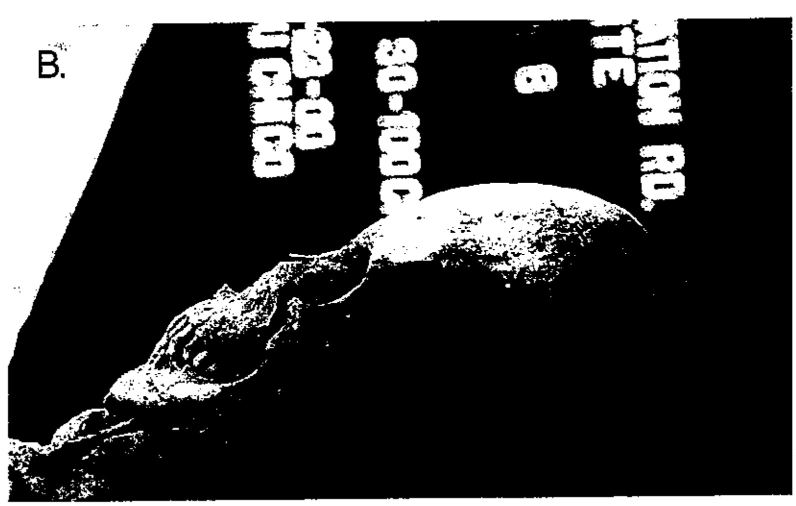
Burial 9 first appeared as scattered bones located in Unit B-3 in the 90-100 cm level, located

Figure 96: Col-247, Burials 8 and 9,
(A) sketch, and (B) side view photograph of Burial 8.

A.



B.



<u>Key:</u>

1. Burial 9 Right femur
2. Burial 9 Left femur
3. Burial 8 cranium
4. Burial 8 Rock platform
5. Burial 9 Left rib
6. Burial 9 left scapula
7. *Haliotis crackerodii* noched disk ornaments

A. Baked clay floor
B. *Gonidea* shell

20 cm east of the Burial 8 cranium. Excavation of these remains revealed a baked clay floor underlying this individual, on the same plane of deposition and in part contiguous with the baked clay surface underlying the Burial 8 cranium, at a depth of 100 cm below datum. Burial 9 had been heavily disturbed by rodent activity occurring along the interface of the hard-packed floor, and bones attributed to this burial were identified to a depth of 120 cm in Unit B-3. However, the superposition of larger longbones and nearby *Haliotis* ornaments on the floor makes it clear that the burial was associated with the base of Stratum 2.

Owing to the fragmentary, disturbed, and partial nature of the remains, position and orientation could not be ascertained. Two large notched *Haliotis* disk ornaments were found in the space between Burial 9 and Burial 8, making the determination of specific association inconclusive. No grave pit modifications were observed.

Osteological Analysis

Analysis found that Burial 9 consisted of the remains of two fetal infants. The burial was identified in the field, but owing to the disarticulated and partial nature of the remains the burial could only be fully assessed in the lab. Human remains attributed to this burial were also identified and collected from level bags associated with the 90-120 cm levels of Unit B-3.

Burial 9A accounted for the majority of the bones. Elements not present included portions of the cranium including the mandible, portions of the right innominate, half of the vertebral arch and centrum elements, 13 ribs, left humerus and ulna, right ulna, and all of the hand and foot elements. Due to a lack of dental remains, age assessment was based on long bone lengths using discriminant functions provided in Scheuer *et al.* (1980). The age estimate for this individual was between the 34.5th to 40.5th week of development, making it third trimester to neonate at the time of death. However, these estimates were based on a caucasoid sample and may not be directly applicable to the archaeological population. No discernible pathologies were noted for this individual.

Burial 9B consisted of three bones: a left tibia, left ulna, and right ilium. All of these elements were relatively complete, and using the Scheuer *et al.* (1980) discriminant functions, an age assessment of between the 32nd to 36th week of development was obtained. No discernible pathologies were noted for this individual.

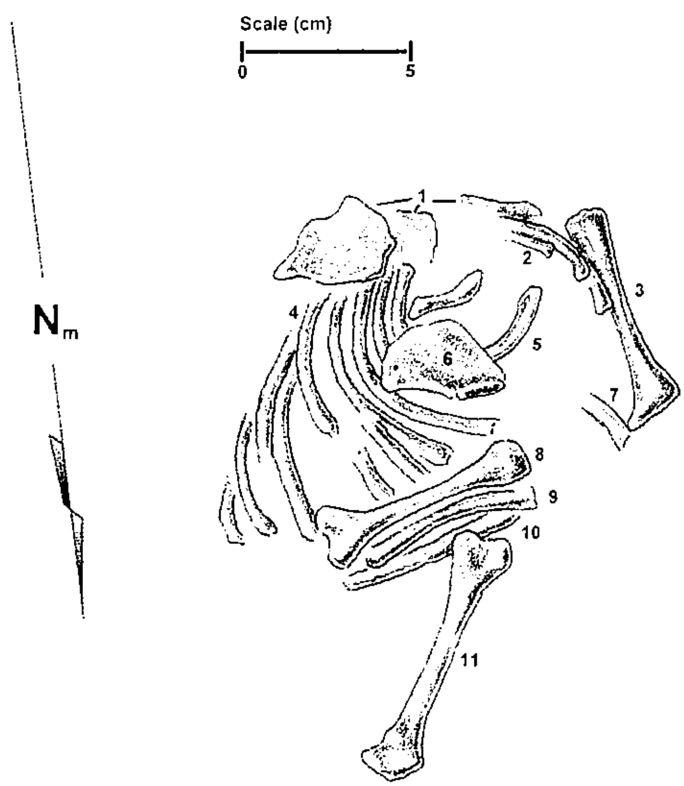


Figure 97: Col-247, Burial 10.

Key:

1. Cranium fragments
2. Left ribs
3. Left humerus
4. Right ribs
5. Right clavicle
6. Right scapula
7. Left rib
8. Right humerus
9. Right radius
10. Right ulna
11. Left femur

Burial 10

Association and Context

Burial 10 first appeared as articulated ribs along the west wall of Unit A-3 in the 90-100 cm level. A perimeter balk was excavated around this burial to a depth of 100 cm, and careful excavation continued until the bones were uncovered using the methods described above. Burial 10 was 96-100 cm below datum, placing it at the base of Stratum 2.

This individual was buried in a tight-flexed, or bundled position. The burial's vertebral column was aligned to a southerly bearing, N205°E (Figure 97). No artifact associations or pit modifications were observed.

Osteological Analysis

Burial 10 was very well preserved although heavily mineralized. The skeleton was mostly complete, but missing bones included half of the cranium, the sacrum, left and right innominate except the left ilium, left radius, left ulna, left femur, left and right tibia, left and right fibula, and all of the hand and foot bones. The burial was a neonate between the 38th and 43rd week of development, based on dental development and eruption using x-rays, and long bone lengths of the humerus, radius, and femur. No pathologies or traumas were discernible on this individual.

Burial 11

Associations and Context

Burial 11 first appeared as an articulated distal left humerus and proximal left ulna exposed in the floor of Unit A-3 in the 110-120 cm level. A perimeter balk was excavated around this burial to a depth of 140 cm, and careful excavation continued until the bones were uncovered using the methods described above, supplemented by regular bailing of accumulated groundwater. Burial 11 was found at a depth of 110-130 cm below datum, placing it within Stratum 3.

This individual was interred in a semiextended position. The pit outline beneath the burial was visible as a distinct black streak, indicating preinterment grave pit burning. The burial's vertebral column was aligned to an easterly bearing, N90°E (Figure 98). No artifact associations were identified.

Osteological Analysis

Burial 11 was heavily mineralized and the calcareous deposits could not be removed without damaging the remains. As a result, observations were limited. Absent from this individual were the lower left femur and the remainder of the lower leg and portions of the facial skeleton. The lower left leg was probably removed during the interment of Burial 14.

This individual appeared to be a female between the ages of 20 and 24. Age estimation was based on closure of the basilar suture, nonfused sternal clavicle ends, incomplete fusion of the ischial tuberosity epiphyses, and the presence of epiphyseal lines on all longbones. In addition, both the auricular surfaces and pubic symphyses yielded a Phase 1 stage of development. Sex determination was based on the wide subpubic concavity, presence of the ischiopubic ramus ridge, wide greater sciatic notch, presence of a preauricular sulcus, and a gracile cranium. Using the stature estimation formula for Caucasian females, this individual was estimated to be between 5'1" and 5'6" tall.

No carious lesions were noted for this individual. With the exception of the first molars, most teeth showed a moderate wear with a majority of the enamel rim complete. Dental calculus was slight to moderate on the anterior teeth, and present mostly on the mandibular dentition.

This individual exhibited an anteriorly compressed T7 vertebra. No further remodeling or pathological change was noted with this pathology. A series of greenstick fractures were noted on the left and right ribs. All fractures were on the anterior portions of the ribs, and these fractures occurred on ribs 3, 4, and 10 on the left side and on two undetermined right ribs. These fractures, created when the bone was still fresh, indicate that this trauma was sustained at or around the time of death. In addition, a series of fractures were noted on the cranium. It could not be determined if these cranial fractures were sustained perimortem or postmortem.

Burial 12

Associations and Context

This burial was identified in the north wall of Unit A-14 at the 30-40 cm level. The burial consisted of an exposed proximal tibia from an

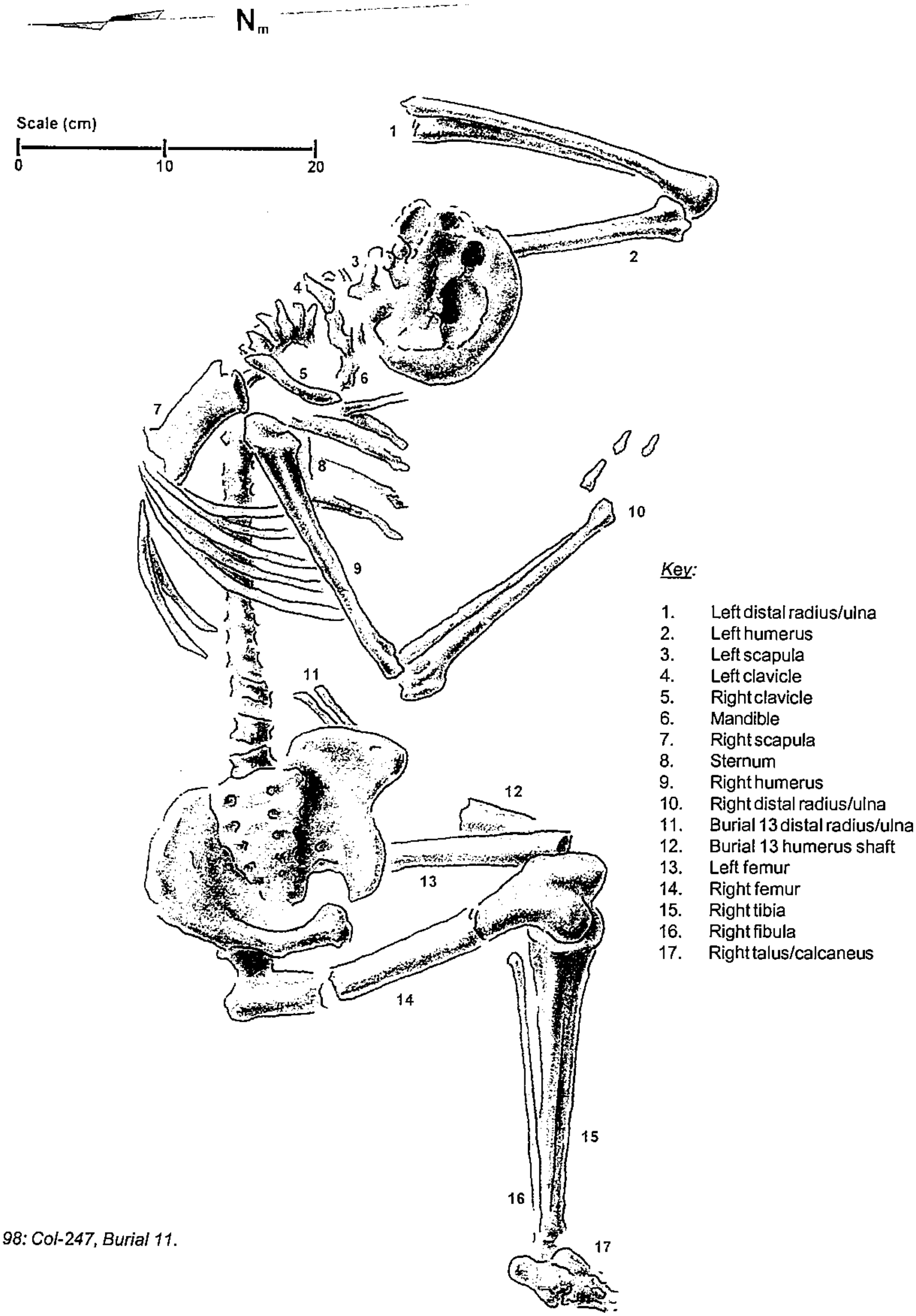


Figure 98: Col-247, Burial 11.

adult individual. This individual appeared to extend into the north wall of Exposure 2 and, due to time constraints, no further excavations were conducted on this burial.

Burial 13

Associations and Context

Burial 13 remains were found under the abdominal region of Burial 11 (Figure 98), and extended to depths greater than 150 cm below datum, well into the water table at the time of excavation. No further investigation of this burial was conducted. Only those remains that were incidentally removed during excavation of Burial 11 could be subjected to analyses.

Osteological Analysis

These remains appeared to be from a child aged between 1.5 and 2.5 years of age based on long bone lengths. The elements available for analysis included portions of both tibia, left ulna, a nonsided fibular shaft fragment, one right rib, a nonsided distal femur fragment, a sternum portion, one lumbar vertebral centrum, three metatarsal/carpal and/or phalange fragments, one unknown epiphysis, and a series of miscellaneous long bone fragments. No further analyses could be conducted on this individual.

Burial 14

Associations and Context

Burial 14 was recognized during excavation of Burial 11, and clearly extended well into the west wall of the exposure at about the same depth as Burial 11. The left leg from Burial 11 appeared to have been disinterred during the interment of Burial 14. Due to time constraints and a high water table, excavation of this burial was not conducted. Based on field observations, this appeared to be an adult individual. No remains were recovered from this burial.

COL-245/H HUMAN REMAINS

Burial 1

Association and Context

A large portion of this individual was removed during backhoe operations. As a result, the exact burial orientation and position could not be accurately assessed (Figure 99). As described in an earlier chapter (see **Site Reports**), large portions of the burial were transported among trenching spoils to temporary storage at the Colusa County Fairgrounds in the City of Colusa, then unknowingly spread in a gravel parking lot in the Colusa County Fairgrounds. Intensive field studies in the parking lot recovered a significant amount of bone from this burial.

The fragmentary nature of the remains also warranted a time-consuming laboratory reconstruction of the damaged human remains for the purpose of evaluating the success of the recovery effort and to analyze the remains. Aside from the fragmented nature of the remains, the bone was in remarkably good condition.

The burial's vertebral column was disturbed and alignment could not be determined. An ephemeral pit outline was identified in the field, but no artifact associations were observed.

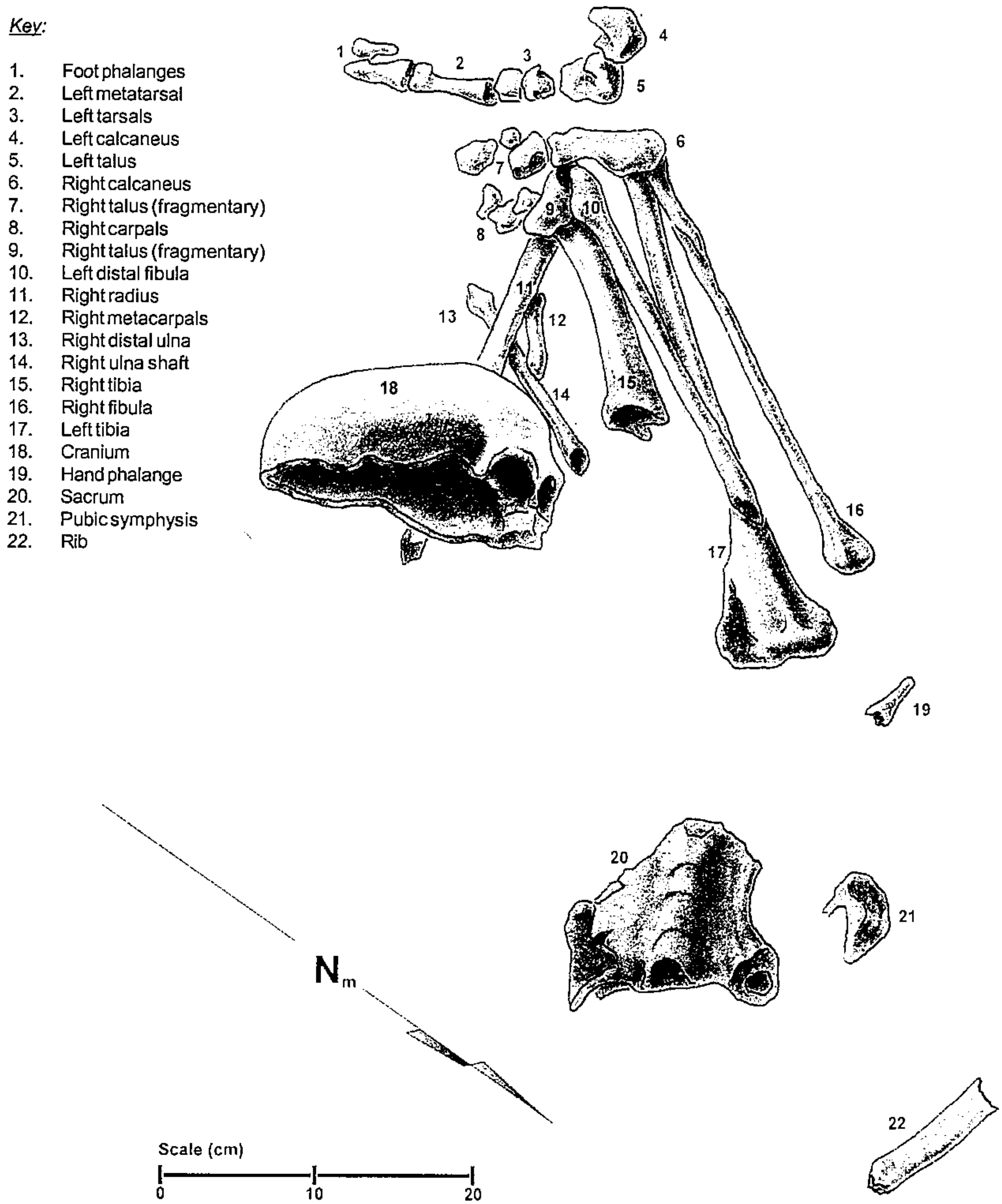
Osteological Analysis

Identification of sex and age was complicated by the absence of a complete pubic symphysis. However, based on auricular surface morphology, this individual was determined to be between the ages of 30-40. Based on pelvic girdle morphology, humeral head dimensions, and cranial morphology, Col-245/H Burial 1 was judged to most likely represent a male. Using the humerus and tibia, the height of this individual was estimated at between 5'5" and 5'9" using the stature formula for Caucasian males. The completeness of this individual was difficult to determine due to the highly fragmented nature of the remains.

This individual exhibited a slight osteophyte development in the lower lumbar region. No degenerative changes were noted in the appendicular skeleton. A small, well-healed circular depressed lesion was present on the left parietal near the bregma. This lesion was restricted to the outer table as no remodeling activity was identified on the inner table. The etiology of this lesion could not be determined.

This individual did not possess dental caries, pulp-exposures, or abscesses. A moderate degree of occlusal attrition was present on all teeth, and all teeth retained at least an enamel rim. However, a unique condition known as hypercementosis was present on the individual. This condition is caused

Figure 99: Col-245/H, Burial 1.



by the excessive secretion of dental cementum surrounding the root giving the root a bulbous appearance. This condition has been linked to Paget's disease in certain cases (Hillson 1996).

Isolated Elements

A total of 193 isolated human bones was found during the Hwy 45 project. Table 25 summarizes distribution by component and skeletal element.

A total of 192 isolated human remains were identified from the Col-247 excavation. These remains constituted a minimum of 7 individuals, four subadults and three adults. The minimum number of individuals (MNI) for adults was determined from the presence of three right third cuneiforms. The MNI for subadults were based on the presence of individuals from four age groups, fetal, infant, child, and late childhood/adolescence. A right ulna represented the fetal individual, the further evidence for the three remaining individuals was based on the presence of three right humeri from three different age groups.

A single molar crown was identified during excavations of Col-158. This tooth was from an adult individual and no root was present. A moderate degree of wear was present.

Table 25: Hwy 45 project distribution of isolated human bone.

Component	UNK	Skull[a]	Dentition	Trunk[b]	Innominate	Upper Limb[c]	Lower Limb[d]	Foot and Hands[e]	
Col-246/H	-	-	-	-	-	-	-	-	0
Col-246/H	-	-	-	-	-	-	-	-	0
Col-158A	-	-	-	-	-	-	-	-	0
Col-158B	1	-	-	-	-	-	-	-	1
Col-158C	-	-	-	-	-	-	-	-	0
Col-158D	-	-	-	-	-	-	-	-	0
Col-247 ?[f]	1	1	-	1	-	-	3	-	6
Col-247 1	6	12	1	20	1	10	4	16	70
Col-247 2	11	7	3	19	2	2	4	29	77
Col-247 3	3	4	1	7	-	3	-	21	39
Total	22	24	5	47	3	15	11	66	193

a Cranium and mandible
b Clavicles, ribs, vertebae
c Humerus, radius, ulna
d Femur, tibia, fibula
e Phalanges, carpals, tarsals
f ResRd construction finds

FEATURES

INTRODUCTION

A total of 12 prehistoric features was excavated during the Hwy 45 project. Notes on observed but unexcavated features appear below and in an earlier section (see **Site Reports**). The following describes prehistoric features found at three sites, Col-158, Col-245/H, and Col-247, including house floor sections (n=6), small hearths (n-2), refuse heap (n=1), baking pit (n=1), cache (n=1), and shell baking pit (n-1). Information is provided on provenience, excavation methods, associations, stratigraphic context, function, estimated age, and flotation results.

Master feature numbers were assigned in the field, a new series for each site. However, at Col-247 several assigned numbers were deleted when features from adjoining units were found to be related and other apparent features turned out to be burials. Thus, Col-247 feature numbers described below are not consecutive.

All feature contexts were screened using 1/8" shaker screens and water screens. Nine flotation samples were collected from seven features (Appendix G). Feature screen residues and flotation heavy fraction are stored with the collection (Table 26).

COL-158 FEATURES

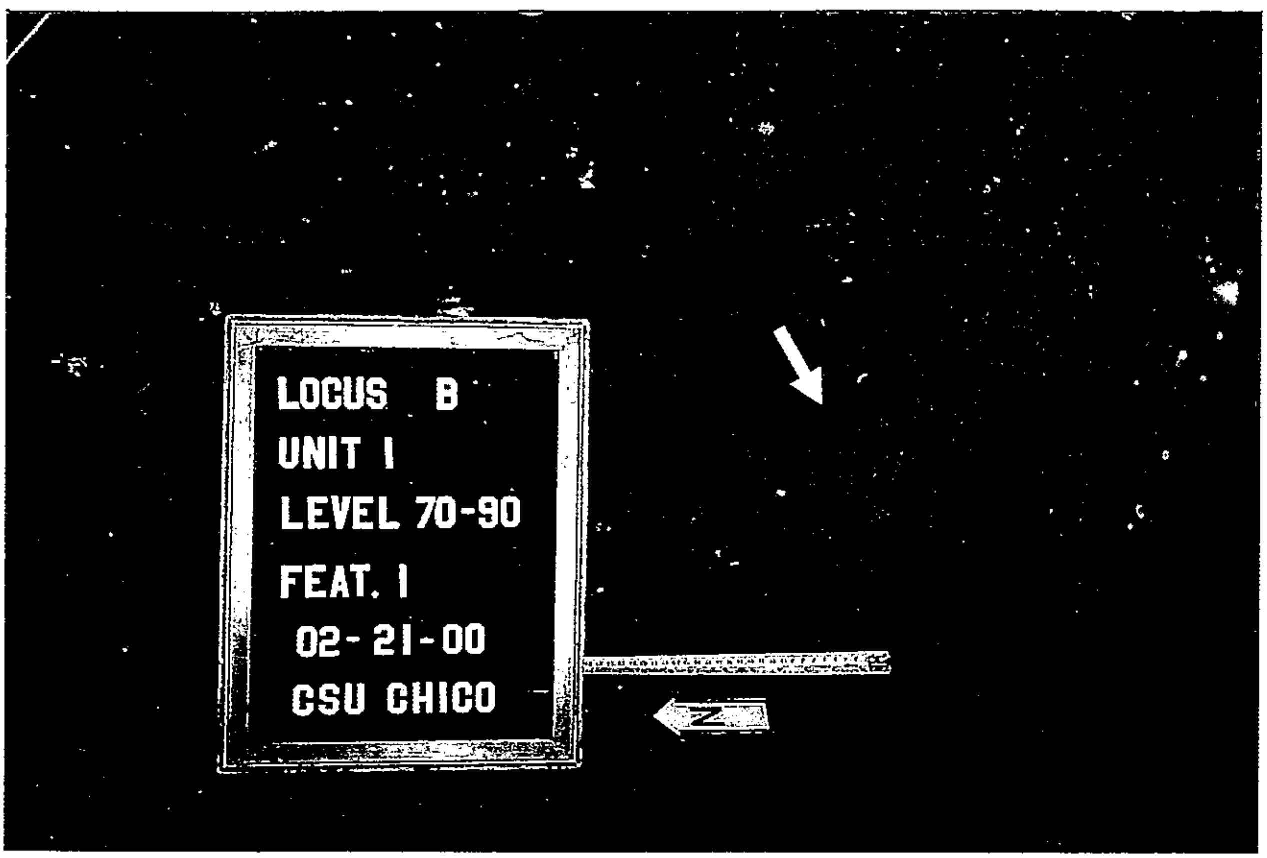
Features Encountered in Col-158 Test Trenches

Forty exploratory trenches were dug to define the boundaries of Col-158 and relationships between loci. When intact cultural deposits were encountered excavation halted, so exposures were limited. However, in a few cases features were encountered at or near the upper contact of the cultural deposits. No additional exposures were made, so identifications are tentative. Six prehistoric features were found. Two shell features were encountered (Trenches 6 and 8, in Locus D), both composed of lens-shaped concentrations of *Gonidea* shell. Based on available exposures, the features may have measured approximately 1.0 m in diameter and were 20-30 cm thick. One small, shallow pit feature was revealed in profile (Trench 34, in Locus A). There were also three apparent house floor features, one in Trench 7 (Locus D), one in Trench 33 (Locus A), and one in Trench 38

Table 26: Distribution of features.

Site	Feature #	Feature Type	Flotation #	AVG Date (CAL)
Col-158	1	Cache of fired earth balls	-	1130 BP
Col-245/H	1	Small hearth	1	815 BP
"	2	Baking pit	28	815 BP
Col-247	3	Refuse heap	-	2215 BP
"	4	House floor section	24	2215 BP
"	6/7	House floor section	7	3205 BP
"	8	House floor section	47, 52	2215 BP
"	9	Small hearth	-	3205 BP
"	10	Shellfish baking pit	-	3807 BP
"	11/14	House floor section	22, 37	3205 BP
"	12	House floor section	47	2215 BP
"	13	House floor section	-	3205 BP

Figure 100: Col-158 features, A - Possible house floor exposed in Trench 33; B - Feature 1, a cluster of fired clay balls.



(Locus A) (e.g., Figure 100A). The house floors were each marked by a bed of white ash overlying fire-hardened and reddened clay. Additional information on trench feature locations is listed in a previous section (see **Site Reports**).

A 10-liter soil sample was collected from the pit feature in Trench 34, and was processed for flotation sample #57. The sample produced a very high proportion of acorn of all large seeds (92.3%), and a high proportion of goosefoot (30.9%) of all small seeds.

Col-158 Feature 1

A cluster of eight of fired earth balls was found in Col-158 Locus B, Unit B-1, at a depth of 55-75 cm. The cluster was located in the southeast corner of the unit. A pedastle was maintained in the corner of the unit until the feature's maximum depth was evident, at which point a small window was excavated into the corner of the unit to expose the entire feature, which measured 25 cm in diameter and 20 cm deep (Figure 100B). The balls may have been contained in a small, narrow pit, but no pit wall or soil color or texture differences were observed.

The balls were made of fired earth, indicated by variable grain size, worm holes, fine root tracks, and impressions of fine organics. They had a coarse and lumpy finish, with no fingerprints or obvious molded surfaces. The purpose of the balls and feature could not be determined.

COL-245/H FEATURES

Feature 1

Col-245/H Feature 1 was encountered on the south wall of the Col-245/H vault excavation, at a depth of 135-145 cm below sidewalk. The feature had been carved up by rodent runs and possibly by subsequent prehistoric pit digging, and only two remnants of the feature margins were found. The remnants consisted of small lenses of white ash and charcoal sloping toward each other, indicating that the original feature may have been a dish-shaped hearth measuring approximately 70 cm across and up to 15 cm deep. The feature was probably a small hearth.

A 3.5 liter soil sample was processed for flotation sample #1, producing a wide range of charred plant remains including manzanita, acorn, and wild cucumber among the large seeds, and a high proportion of goosefoot (42.4%) of all small seeds.

Feature 2

Col-245/H Feature 2 was encountered on the west wall of the Col-245/H vault excavation, at a depth of 130-160 cm below sidewalk. Feature 2 was ephemeral and not observed during the excavation, but was visible in the west wall as a broad, lens-shaped pit containing a high density of charcoal (Figure 34, e). The feature was probably a small baking pit.

A 16.5 liter soil sample was processed for flotation sample #28, producing a wide range of large seeds, primarily acorn (nut, shell, and cap fragments, but also including manzanita, acorn, hazel, wild grape, and bulbs. The small seed assemblage had a high proportion of goosefoot (40.7%) and maygrass (22.1%) of all small seeds.

COL-247 FEATURES

Feature 3

Col-247 Feature 3 was a small refuse pile consisting of a cluster of three objects: two large fired earth nodules and one fire-affected rock fragment. The feature was found in unit B4, situated from 55-80 cm south and 10-35 cm east of the unit's NW corner. The feature was 10-20 cm below exposure "0," placing it in the upper portion of Stratum 1 (1675-2755 BP). The matrix consisted of fired midden soil, and was thus likely to represent house floor or roof pack remnants. Feature 3 was at the same depth and presumably contemporaneous with a larger house floor remnant in Exposure 2 (Feature 8).

Feature 4

Col-247 Feature 4 was a large patch of fired earth found stratigraphically inferior to Burial 3 in units A-4 and B-4. The feature measured 65 cm N-S by 55 cm E-W, and occurred at a depth of 40-70 cm below exposure "0." Feature 4 was composed of fired earth baked light tan to slightly red. The matrix contained midden constituents, indicating that it was probably baked in place. The feature had a hard packed surface that sloped down slightly to the north. While the feature was proximate to Burial 3, based on stratigraphy, the feature was determined not to be associated with

Burial 3. The fired clay extended out on all sides of the burial perimeter, and was clearly not coterminous with the burial pit, and the Burial 3 burial pit may have been halted due to the difficulty of digging through the fired clay. Thus, Feature 4 was determined to be a house floor or other living surface remnant. Feature 4 was assigned to the lower levels of Stratum 1 (1675-2755 BP).

A 2.0 liter soil sample was processed for flotation sample #24, yielding a mix of acorn (53.8%) and wild cucumber (46.1%) of all large seeds, and a wide range of small seed species, including red maids, goosefoot, wild barley, and maygrass (22.2% each). Notably, this sample produced the lowest proportion of acorn and highest proportion of wild cucumber (a summer season indicator) of any Col-247 flotation sample.

Feature 6/7

Col-247 Feature 6/7 was a large patch of fired earth found in unit B-3. The feature occupied an area measuring 80 cm E-W by 73 cm N-S, and occurred at a depth of 70-90 cm below exposure "0." Feature 6/7 was composed of fired earth baked light tan to slightly red. The matirx contained midden constituents, indicating that it was probably baked in place rather than being an imported, packed clay floor. The feature had a hard packed surface that was relatively flat. Based on the superior position of Feature 4 and its slope down to the north, toward Feature 6/7, these two features may once have been sections of one floor later separated by prehistoric pit digging and rodent disturbance. However, no relationship between these features could be established based on our field observations. Feature 6/7 was assigned to the lower levels of Stratum 2 (2755-3295 BP).

A 6.5 liter soil sample was processed for flotation sample #7, yielding a mix of acorn (65.8%) with some wild cucumber and bulbs among the large seeds, and a wide range of small seed species, including red maids, goosefoot (44.9%), maygrass (22.4%), and Clarkia, sunflower, and bean (10.9% each).

Feature 8

Col-247 Feature 8 was a large patch of fired earth found in Exposure 2, units A-17, A-18, and B-18. Only a portion of the feature was exposed. The feature occupied nearly the entire surface area of unit B-18 and A-17, and the northeast corner of unit A-1, an area measuring 200 cm E-W by 200 cm N-S. The feature surface occurred at a depth of 2-5 cm below exposure "0," and extended an unknown depth. Feature 8 was composed of a fired earth baked light tan to slightly red. The clay contained midden constituents, indicating that it was probably baked in place. The feature had a hard packed surface that was relatively flat, and is interpreted as a fragment of a house floor or other living surface. Feature 8 was assigned to the upper level of Stratum 1 (1675-2755 BP).

Two soil samples were processed for flotation. Sample #47 (15.0 liters), collected from an ash lens in unit A-18, yielded a very high proportion of acorn (96.5%) with a mix of gray pine nut shell, wild grape, wild cucumber and bulbs among the large seeds, and a wide range of small seed species, including bedstraw (38.7%), maygrass (13.7%), and wild barley and sunflower (11.2% each). Sample #52 (17.6 liters), collected from a floor section in unit A-17, yielded a relatively low proportion of acorn (68.1%) with a mix of hazel nut shell, Clarkia, wild grape, wild cucumber and bulbs among the large seeds, and a wide range of small seed species, dominated by bean (28.9%), wild barley (28.9%), and bedstraw (17.5%).

Feature 9

Col-247 Feature 9 was a small, dish-shaped hearth or baking pit found in the southwest corner of unit A-5, 55-70 cm below grid "0." Only about one-half of the feature was exposed. The feature measured just 30 cm in diameter and was just 15 cm deep. No soil or flotation samples were recovered.

Feature 10

Col-247 Feature 10 was located in unit B-1. The feature occupied an area measuring 55 cm E-W by 75 cm N-S, and occurred at a depth of 100-115 cm below exposure "0." The feature was composed of a dish-shaped lens of dense *Gonidea* shell, including separated half-shells and bivalves still attached at the hinge (Figure 101). A high density of charcoal, fired earth, and fire-affected rock were present in the shell matrix. Fish and mammal bones were also present in the matrix, but these appeared to be incorporated in the pit fill and were included in the general zooarchaeological analysis. Charcoal streaks and a thin ash lens were observed in the pit floor, indicating that the feature was a baking hearth, probably used to steam open the shellfish. Feature

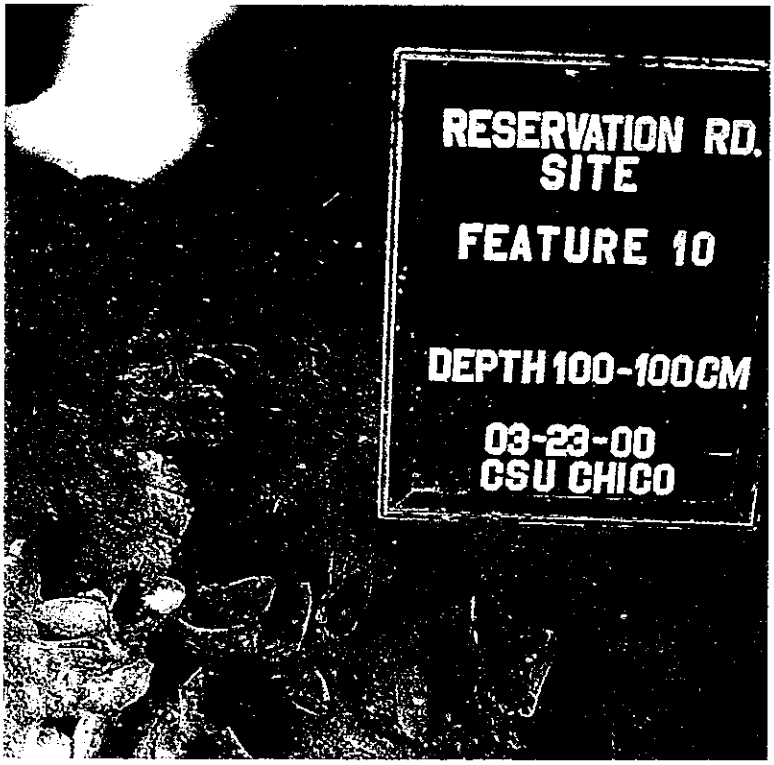
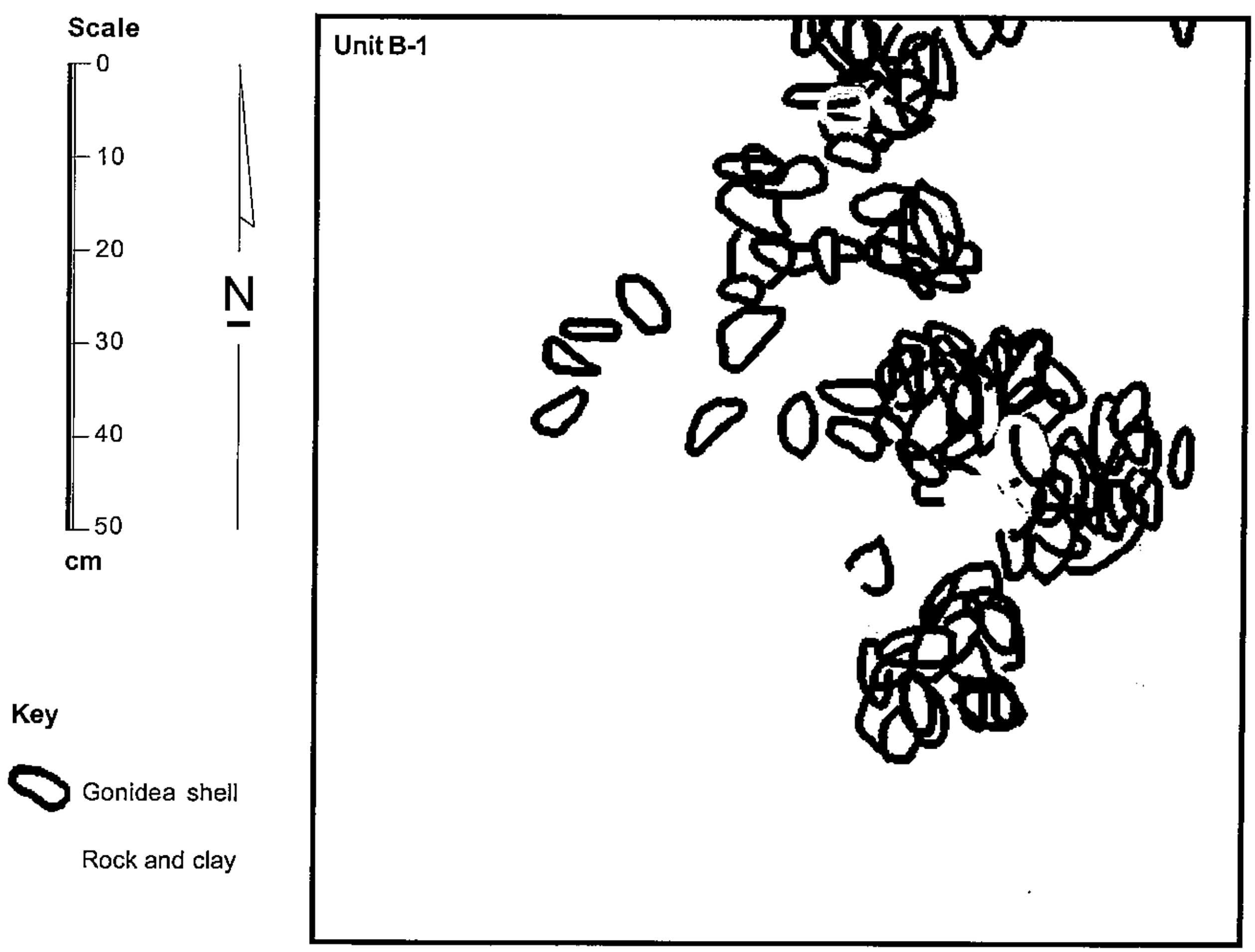


Figure 101: Col-247 Feature 10,

A - closeup of shell and ash;

B - plan view of feature, three layers combined (100-115 cm).



10 was assigned to the lower levels of Stratum 2 (2755-3295 BP).

A 9.5 liter soil sample was collected from the feature, but was not processed and remains on file with the collection.

Feature 11/14

Col-247 Feature 11/14 was an aggregate of patches of fired earth found in units A-2/A-3/A-4 and B-2/B-3. The feature elements occupied an area measuring 145 cm E-W by 130 cm N-S, and occurred at a depth of 50-100 cm below exposure "0." The patches were composed of of fired earth baked light tan to slightly red. The clay contained midden constituents, indicating that it was probably baked in place. The feature patches each exhibited a hard packed superior surface, all appeared to be fragments of a single house floor or other living surface. The northernmost elements, found in unit A-2, were found at a depth of 50-70 cm below grid "0," and sloped slightly to the south following a plane to the elements found in units A-3 and B-2/B-3, which were at a depth of 90-100 cm below grid "0" and relatively flat.

The Feature 11/14 elements found in units A-3 and B-2/B-3 were stratigraphically inferior to Burials 8/9, and also appear in the Burial illustration, Figure 96. Based on stratigraphy, it was determined in the field that there was strictly a secondary association between Feature 11/14 and Burials 8/9. The fired clay extended out on all sides of the burial perimeter, and was clearly not coterminous with any burial pit. In fact, it appeared that the Burial 8/9 burial pits were halted due to the difficulty in digging through the fired clay layer, and the burials and associations were placed on clay floor sections exposed at the bottoms of the burial pits.

Feature 11/14 occurred in the vicinity of closely similar house floor sections described above as Features 4 and 6/7. Because these features occur in relatively close proximity and the slopes are in general agreement, these may have been sections of one floor later separated by prehistoric pit digging and rodent disturbance. However, the relationship between these features could not be demonstrated based on our observations in the field. Feature 11/14 was assigned to the lower levels of Stratum 2 (2755-3295 BP).

Two soil samples were processed for flotation. Sample #22 (12.0 liters), was collected from the relatively shallow house floor section found in unit A-2. This sample yielded a distinctive mix of large seeds including predominant acorn (75.1%), with some thin pine nut shell (probably yellow pine), hazel nut shell, Clarkia, and wild cucumber. A wide range of small seed species was also identified, including goosefoot (33.9%), maygrass (19.2%), bean (13.6%), and red maids (11.1%). Sample #37 (10.0 liters) was collected from the deepest house floor section, found in unit B-3. This sample yielded a relatively low proportion of acorn (55.2%), and a relatively high proportion of wild grape (44.8%). Small seed species were dominated by goosefoot (44.7%) and maygrass (15.9%).

Feature 12

Col-247 Feature 12 was a large patch of fired earth found in Exposure 2, unit A-14. The feature occupied an area measuring 50 cm E-W by 70 cm N-S, and occurred at a depth of 10-20 cm below exposure "0." Feature 12 was composed of fired earth baked light tan to slightly red, capped by white ash and charcoal. The matrix contained midden constituents, indicating that it was probably baked in place. The feature had a hard packed surface that was relatively flat. Burial 6 was interred in a pit dug into the Feature 12 floor, and the burial was likely associated with occupation of the floor. Charcoal light fraction from the Feature 12 flotation sample was submitted for radiocarbon assay, yielding a radiocarbon date of 1550 CAL BP. An *Olivella* G2a disk bead found associated with Burial 6 was submitted for an AMS radiocarbon assay, yielding a corrected, calibrated date of 2159 CAL BP, providing general agreement with the charcoal date placing the floor with the upper levels of Stratum 1 (1675-2755 BP).

A 13.0 liter soil sample was processed for flotation sample #47, yielding a mix of large seeds including predominant acorn (96.5%), with some gray pine nut shell, wild cucumber, wild grape, and bulb fragments. A distinctive set of small seed species was also identified, dominated by bedstraw (38.7%), and including maygrass (13.7%), goosefoot (33.9%), and wild barley and sunflower (11.2% each). The high proportion of bedstraw from this feature is matched by the flotation recovery from nearby Feature 8.

Feature 13

Col-247 Feature 13 was a small patch of fired earth found in units A-3, A-4. The feature occupied the border between these units, an area measuring 55 cm E-W by 25 cm N-S. The feature surface occurred at a depth of 90-100 cm below exposure "0." Feature 13 was composed of a fired earth baked light tan to slightly red. The matrix contained midden constituents, indicating that it was probably baked in place. The feature had a hard packed surface that was relatively flat, and is interpreted as a fragment of a house floor or other living surface.Feature 13 was assigned to the lower levels of Stratum 2 (2755-3295 BP). No soil samples were collected or processed.

CHRONOLOGY

INTRODUCTION

This chapter offers a chronological framework for project archaeological finds based on three independent lines of chronological evidence: (1) geoarchaeology, (2) radiocarbon dating, and (3) obsidian hydration analysis. The chapter concludes with a summary of archaeological components and a proposed culture chronology for the Colusa region.

GEOARCHAEOLOGY

The geological setting of the project area is described in an earlier chapter (see **Environmental Context**). The following focuses on geoarchaeological investigations conducted in tandem with the archaeological study. The purpose of the geoarchaeological investigation was to identify and interpret stratigraphy at the four archaeological sites and to place these sites within the larger framework of regional landscape formation.

Geomorphic Setting

Two distinct landforms occur in the project area, the Colusa Basin and the Sacramento River floodplain. The project area forms a corridor which intersects both landforms so that the basin and the floodplain converge and interdigitate throughout (Figure 100). These two landforms are very different in age and are characterized by different formation processes resulting in distinctive soils, sediments, and archaeology.

Floodplain Soils

In its natural state, the Sacramento River flooded annually, overreaching its banks and spilling flood waters on the adjoining floodplain. Annual flooding resulted in deposition of layer on layer on the immediate river banks, creating an elevated "prism" of sediments making up a natural levee system. Consequently, elevations actually rise from the basin to the river (Figure 102). The floodplain sediments were deposited on top of the older basin soils, and therefore, the floodplain soils are generally younger than the basin soils. However, the actual depth and age range of the river deposits is unknown. Based on a spatial analysis of abandoned meanders and their intersection with younger loops, Brice argues that the oldest discernible meander loops are a minimum of 1,000-2,000 years old (Brice 1977:48) However, very little radiocarbon dating of natural levee, channel, and floodplain deposits has been done, and the present effort is one of the first systematic studies of Sacramento River floodplain geochronology.

Floodplain deposits are primarily composed of well sorted sand, gravel, and silt. The floodplain is made up of numerous soil groups, two of which dominate the project area: Sycamore and Columbia Series soils. These series are made up of alluvial soils formed from transported materials that are predominantly granitic in character. Surface textures range from fine sandy to clayey loams, with loams and clayey loams the dominant textures. The soils have recent profiles characterized by indefinite horizons and irregular stratification in the subsoil. Geologic parent materials of the floodplain are generally noncalcareous except in the subsoils (Harradine 1948:6). Most of the alkaline content is believed to have originated from ground water percolation in the lower profile during wet years.

Basin Soils

The Colusa Basin is a low-lying physical feature composed of multiple smaller basins separated by streams and levees. During wet seasons the basins generally flooded and slow-moving waters deposited thin layers of sediment. Consequently, basin deposits incorporate fine layers of sediment composed largely of silt and clay. There was slow but persistent pedogenesis resulting in considerable stability and mature soil profiles. Due to the relatively small amount of transported sediment and the prevalence of alkaline soils inhibiting vegetation growth, there was a slow rate of accretion and the age of the basin deposits increases rapidly with depth. The basin deposits grade into younger alluvial fans to the west.

Soils of Colusa Basin vary by parent material, age, and location. Within the project area, basin

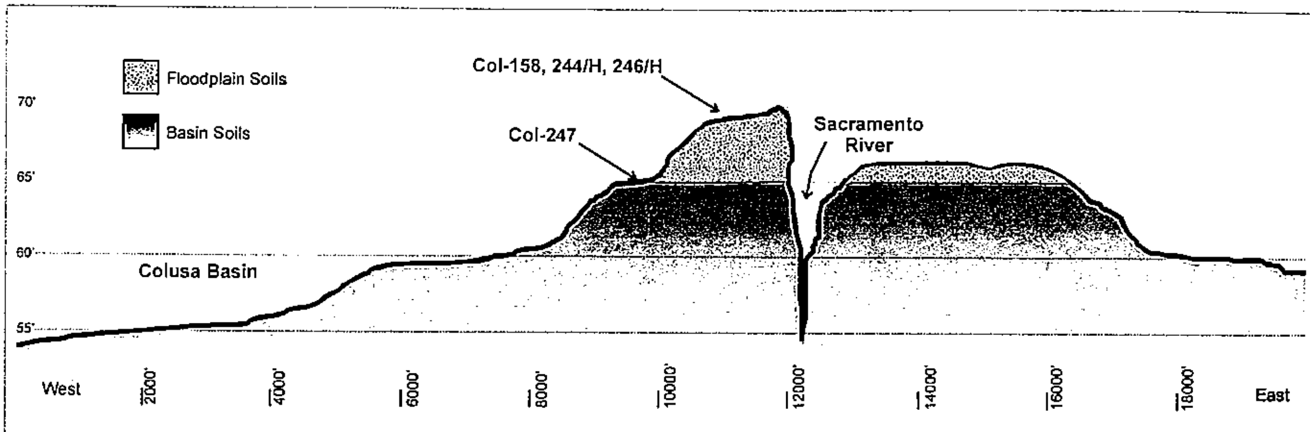


Figure 102: Schematic east-west cross section through the project area, showing the relationship between floodplain and basin deposits. Note that the floodplain deposits reside on top of older basin deposits. The nature of the contact between floodplain and basin deposits has not been determined. Vertical scale exagerated.

soils include Marvin, Willow, and Grimes Series which occupy the older, imperfectly drained, and nearly flat areas of the basin nearest the Sacramento River (Harradine 1948). The basin deposits contend with both high ground water and flooding during the wet season, causing poor drainage of minerals. As a result, alkali levels tend to be high depending on the location and depth of the soil, and cumulic A horizons and Bk horizons are common. Annual saturation and drying causes shrinking and swelling in the clayey soils, affecting soil development by continually breaking down soil structure. Consequently, it is difficult to identify and read soil structure.

Geoarchaeological Methods

Geoarchaeological field studies were conducted at all four archaeological sites. Geoarchaeological field investigations were performed at Col-158 on February 17-19, at Col-247 on March 16-20, 2000, and at Col-245/H and Col-246/H on April 6, 2000. In addition, site specific studies were augmented by a river bank jet boat reconnaissance from Colusa to Princeton on July 27, 2000.

Stratigraphic profiles observed in the project area are depicted in Figures 104-107. Stratigraphic units were identified based on physical composition, superposition, relative soil development, and the structure and texture of transitions. Each stratum was assigned a Roman numeral in sequential order (I, II, III) beginning with the lowermost, oldest stratum. Master soil horizons were designated by upper case letters (A, B, or C) and followed by Arabic numerals (2, 3, etc.) indicating that the horizon was associated with a different parent material (number 1 is understood but not shown). Subordinate soil horizons were designated by lower case letters as follows: "p" is a zone of artificial fill or disturbance; "b" is a buried horizon at the location where it was described (not used with C horizons); "t" is a subsurface (illuvial) accumulation of silicate clay; and "k" is a subsurface accumulation of pedogenic calcium carbonates ($CaCO_3$). A combination of these numbers and letters indicate the important characteristics of a particular soil horizon. These designations are consistent with those outlined by Birkeland *et al.* (1991), Schoeneberger *et al.* (1998), and the Soil Survey Staff (1998). Paleosols and buried soils, both representing older, stable ground surfaces, were identified in the field on the basis of color, structure, horizon development, bioturbation, lateral continuity, and the nature of the upper boundary with the overlying deposit (Birkeland *et al.* 1991; Retallack 1998). Finally, at each study area the strata were correlated in order to connect stratigraphic units and landscapes.

Findings

Col-247

According to Colusa County soil surveys consulted for this study, Col-247 is located at the contact between a small arm of Marvin Series basin soils and Columbia Series floodplain soils, an area likely to represent an older floodplain landform (Figure 101).

At Col-247, a large exposure was excavated by backhoe to reach buried archaeological deposits.

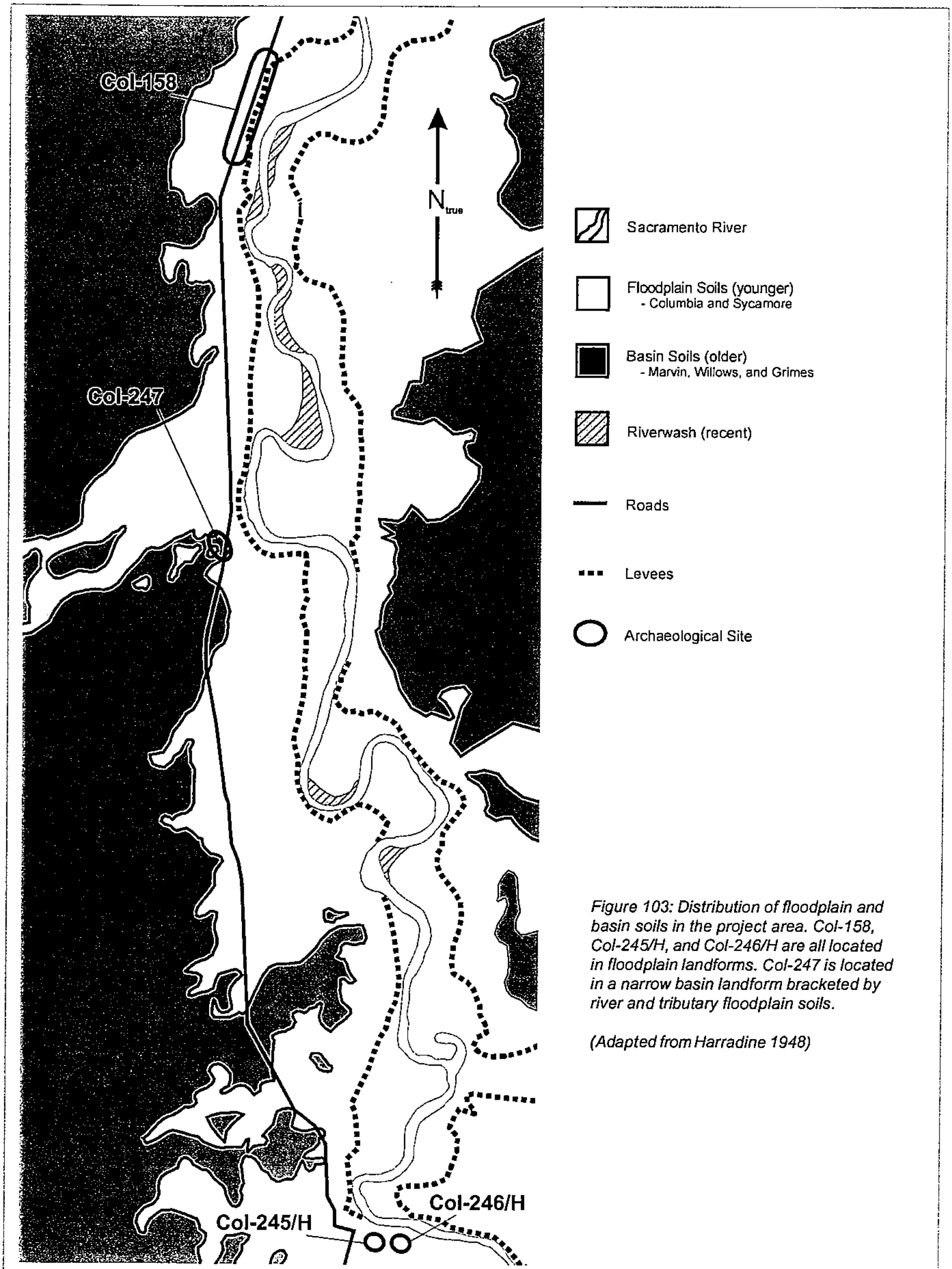


Figure 103: Distribution of floodplain and basin soils in the project area. Col-158, Col-245/H, and Col-246/H are all located in floodplain landforms. Col-247 is located in a narrow basin landform bracketed by river and tributary floodplain soils.

(Adapted from Harradine 1948)

The walls of the exposure provided adequate profiles to view archaeological and overlying deposits in their natural setting, and a hand auger was used to explore deeper deposits. The first auger hole (#3-16-B) was placed at the southernmost end of Exposure '2', located 18.8 m N180°E (directly south) from the site's main mapping datum. The second auger hole (#3-17-A) was placed at the northernmost end of Exposure '1' in the center of Unit B1.

Auger #3-16-B found a buried A and Bt horizon (Soil Unit I) 3.0 m below the surface (Figure 104). The strata consisted of silty clay loam with strong angular blocky soil development. The A horizon was approximately 40 cm thick and was underlain by a Bt horizon characterized by weak clay films located on ped surfaces. The presence of many fine root holes, shell fragments, and some charcoal flecks in the upper 40 cm of Unit I suggest that the deposit represented a stable land surface. A soil sample from the A horizon produced a radiocarbon date of 5230±60 BP (5970 CAL BP), making it the oldest soil identified during this study. Yet, given that the soils were observed from a small auger rather than in their natural setting, information regarding Unit I was limited. Archaeological evidence indicates that the shell and charcoal materials in the A horizon were culturally introduced (see **Site Reports**).

The A and Bt horizons from Unit I appeared only in auger #3-16-B. The stable surface associated with this unit may represent a difference in topography within the site, or the energy which deposited Unit II may have washed away Unit I at the #3-17-A location. In either scenario, Unit I ultimately escaped the erosion which was evident on the north end of the site.

Archaeological sampling was focused on Soil Unit II, a silty loam to silty clay loam with weak to moderate soil structure dating between 4385 CAL BP at the base and 1675 CAL BP at the top. Unit II is a package of alluvial sediment ranging between 2.0-3.0 meters in thickness with archaeological materials in an A horizon concentrated in the upper 1.5 meters. The parent material (C horizon) at the base of Unit II exhibited fine well sorted sand and gravel beds. Auger #3-17-A revealed a Bt horizon below the archaeological deposit, but a Bt did not appear in #3-16-B at the same level.

The thickness of Unit II is in part a product of cultural use and in part related to alluvial deposition. However, the nature of the A horizon and associated archaeological materials in Unit II infer that the land surface was stable for an extensive period of time, at least 2,700 years.

Overlying Unit II were two A horizons (Unit III). The lower of the two horizons exhibited calcium carbonate accumulations in the form of veins. The carbonates originated from either the soil's parent material or from ground water. Soil structure in Unit III was poorly developed (weak, angular, blocky peds) indicating the soil's youth. Both of the Unit III A horizons contained archaeological materials, but these were determined to be intrusive, having migrated upward in the profile from a Unit II source.

Col-158

At Col-158, a backhoe was used to determine the extent of archaeological deposits and their interfaces with non-archaeological deposits. Forty-five trenches were excavated along Hwy 45, leading to the identification of four archaeological loci (A, B, C, and D) (see **Site Reports**). Geoarchaeological investigations resulted in the excavation of an additional five trenches (Trenches 41-45) located in the interstices between cultural loci (Table 27). Several trenches were selected for formal profiling because they provided key information on the relationship between archaeological loci and lateral contact zones where archaeological and natural deposits converged.

Soils in the vicinity of Col-158 are mapped as Sycamore Series, a relatively young Sacramento River floodplain soil group consisting of loams and clay loams (Harradine 1948:22). Our geomorphic observations confirmed that the site was contained in a floodplain landform. Soils containing archaeological deposits were primarily silty loams that exhibited moderate soil structure and contained common roots and gravels. The texture of the natural deposits ranged from silty and sandy loams to silty clay loams, and clay content increased with depth. Natural soil structure consisted of coarse sized, moderately angular, blocky peds with friable consistency. Although soil formation was evident within the deposits, clay film development was not visible on any ped faces, supporting Harradine's findings that soils in this area are relatively youthful. In several trenches gravels and cobbles appeared in well sorted beds representing channel deposits or cut-and-fill facies. Otherwise, gravels were dispersed throughout the deposits, indicating occasional episodes of relatively rapid (high energy) alluvial deposition.

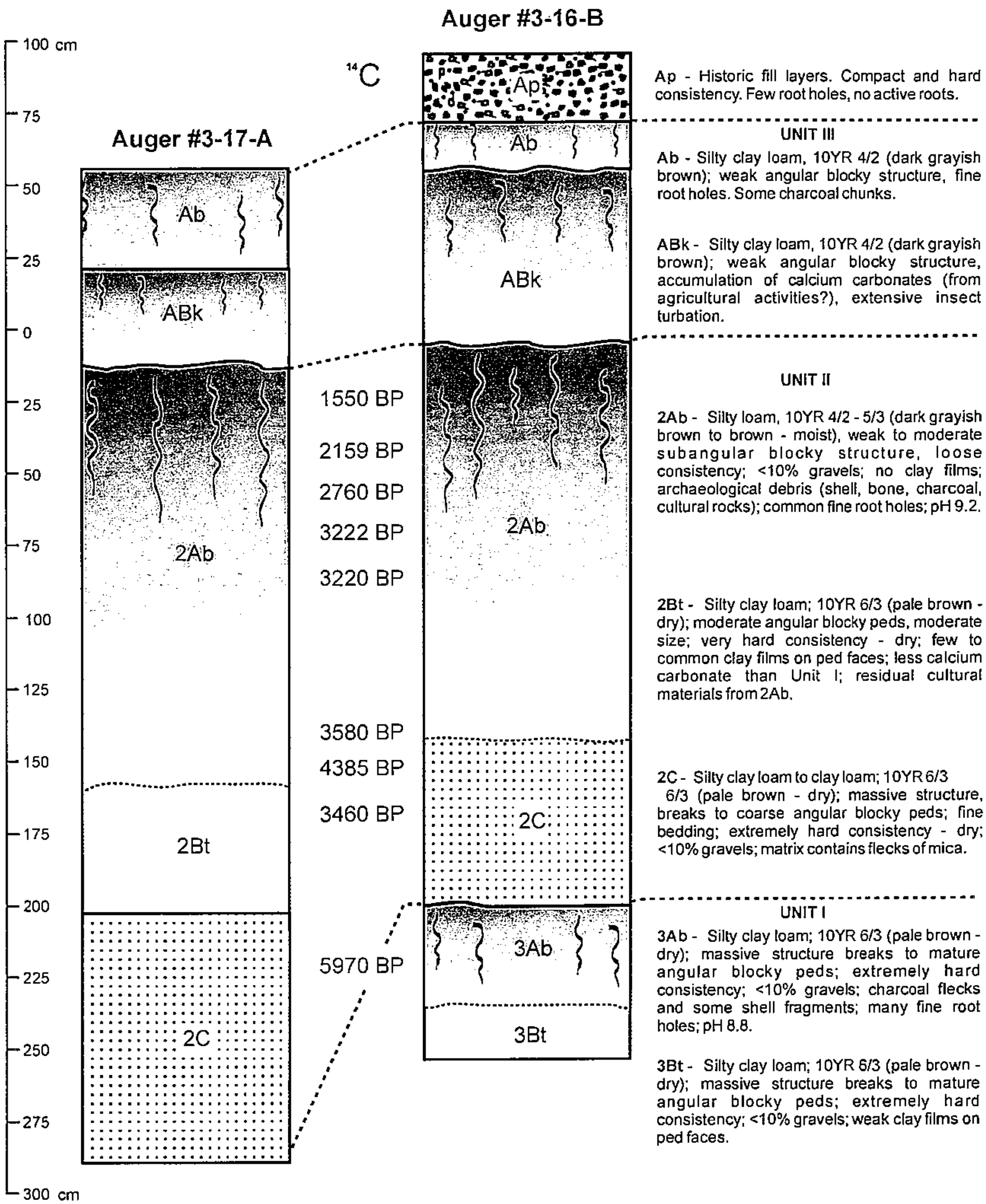


Figure 104: An older floodplain soil profile. Col-247 stratigraphy showing auger results and sidewall profiles combined. Radiocarbon dates are CAL BP average intercepts plotted at sample depth. Note: boundaries between deeply buried strata and horizons could not be determined from the two auger samples.

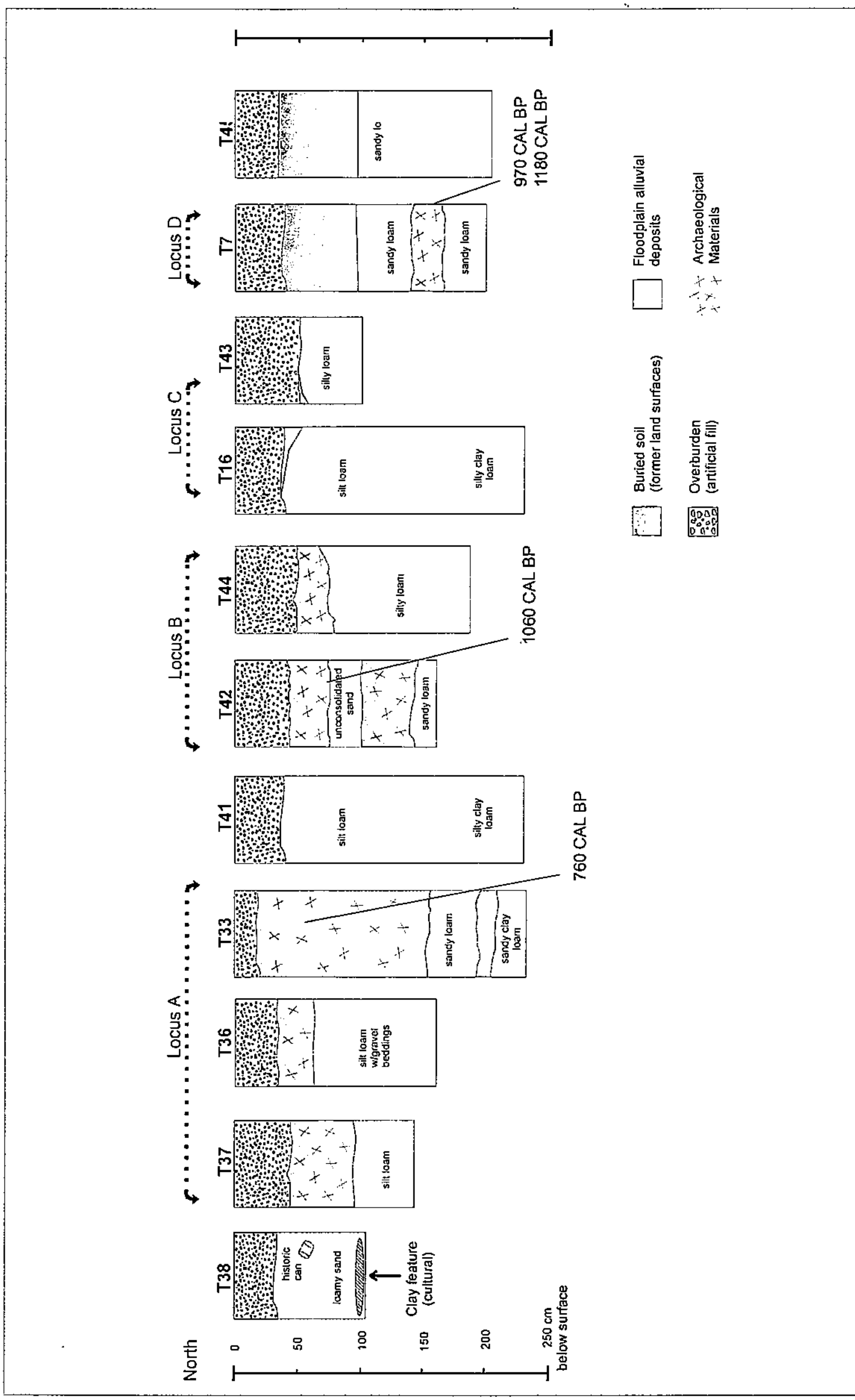


Figure 105: A floodplain soil profile. Col-158 locality trench profiles showing cultural loci and contact zones. Actual distance between trenches not depicted.

The four archaeological loci (A, B, C, and D) were discrete, separated by natural deposits. Contact zones between archaeological and natural deposits were located at the north end of Locus B, the south end of Locus C, and the south end of Locus D (Figures 36 and 105). The lateral contact zones at each location were diffuse, while most vertical boundaries were clear to abrupt (Figure 105). Diffuse lateral contact zones infer that floodplain deposition occurred concurrent with periods of occupation. In this case, sediments from the Sacramento River and related tributaries would have spilled out across Col-158 and intermixed with existing archaeological materials. The presence of cobbles and gravels in some trenches suggests channels or tributaries also intersected in the area and bisected portions of the site, creating the separate loci.

Col-245/H and Col-246/H

Col-245/H and Col-246/H were separated by one city block in downtown Colusa. Both sites reside on floodplain soils mapped as Sycamore Series (Harradine 1948). At both sites a complicated array of cultural and natural deposits were identified (see Site Reports).

At Col-245/H, two cultural components and two sterile alluvial deposits were observed in the excavation profile (Figure 106). The uppermost cultural deposit, a weakly developed A horizon between 30-80 cm below the sidewalk (bsw), was composed of a medium brown silty loam with weak to moderate angular, blocky soil structure. The soil breaks to crumbs and is composed of coarse to very coarse size peds with a friable consistency. The soil contained less than 10 percent gravels, many fine roots, and charcoal flecks. This did not appear to be a midden, but may have included graded or redeposited midden used as fill. The deposit produced a low density of mixed historical and prehistoric material. The base of this unit had a gradual, wavy boundary indicating that it developed on top of the underlying ABkb.

The uppermost alluvium, between 60-110 cm bsw, was a ABkb, light brown loam with weak to moderately angular, blocky structure, with friable peds. Constituents included less than 10 percent gravels. The deposit contained calcium carbonate veins and partial oxidation, and showed evidence of extensive bioturbation. This alluvium was most likely deposited by slow moving Sacramento River overflow, and the deposits had a series of characteristics consistent with a single flood event.

Table 27: Stegeman Locality geoarchaeological trench descriptions.

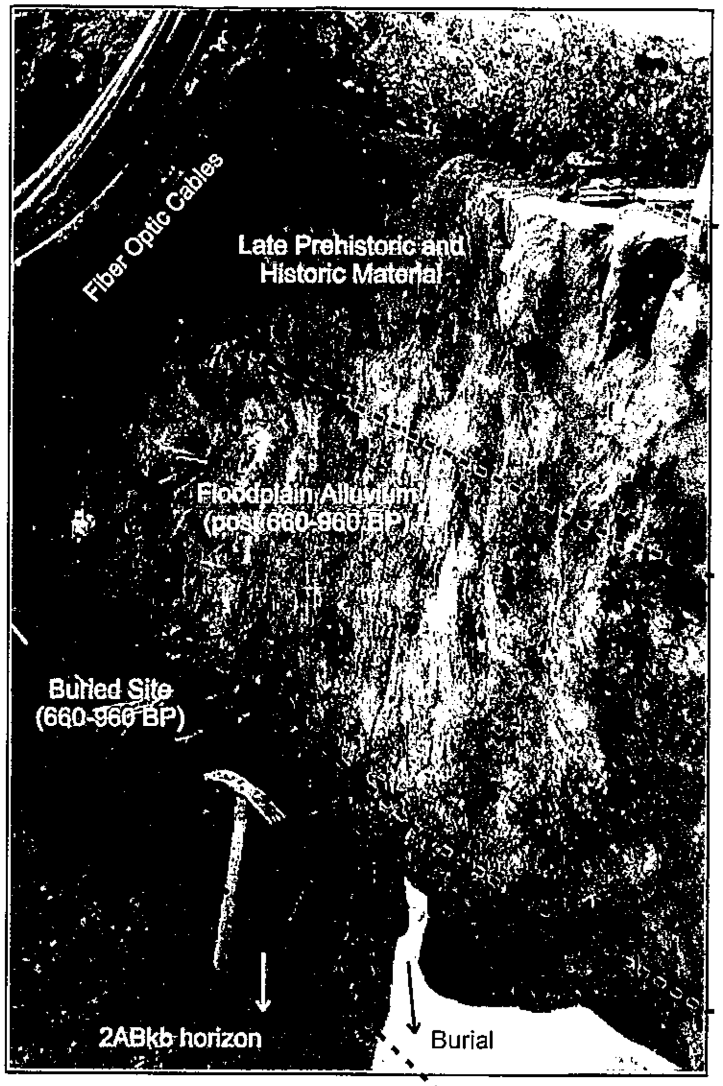
Trench #41: Located between T29 and T30. The center of T41 is 12 m north of the center of T29. Length 4.9 m, Width 1.1 m, Depth 230 cm bs. Top 35 cm is gravely fill mixed with topsoil. Next 190 cm is silty loam; homogenous in texture, structure, and color. Few large mussel shells (some whole) in lower half of trench – possibly naturally occurring. Clay content increases by 1.5 m. Some charcoal appears by 1.9 cm. Soil samples taken at 55-60 cm bs and 200-230 cm bs.

Trench #42: Located between T28 and T29. The center of T42 is approx. 54 m north of the center of T28 (north of excavation unit where Robin Cordero was excavating on 2/19/00). Length 5.3 m, Width 1.0 m, Depth 155 cm bs. Top 45 cm is gravely fill mixed with topsoil; 45-70 cm bs is archaeological deposit (shell, charcoal, baked clay); 70-100 cm is an unconsolidated/unweathered Cu horizon; 100-155 cm is a buried A horizon containing archaeological materials (baked clay and much charcoal). The two archaeological deposits in this trench appear to be separated by natural alluvium.

Trench #43: Located between T14 and T15. The center of T43 is 34 m north of the center of T14. Length 5.0 m, Width: 1.5 m, Depth 125 cm bs. No archaeological materials. Top 50 cm is gravely fill/topsoil. From 50 to 125 cm soil is very homogenous (similar color, texture, structure, root and gravel content). Silty loam with weak to moderate angular-blocky peds.

Trench #44: Located between T14 and T15. The center of T44 is 51 m. north of the center of T14. Length: 5.2 m, Width: 1.3 m, Depth: 190 cm bs. Hoped to find contact zone between natural and cultural deposits in this trench. Contact zone did not appear distinct or abrupt, but rather gradual/blended. Minimal archaeological materials: charcoal, shell, and some baked clay chunks. Top 45 cm is gravely fill/topsoil.

Trench #45: Located between T4 and T5. The center of T45 is 11 m north of the center of T4 (on south side of E/W gravel road running perpendicular to Hwy 45). Length 5.1 m, Width 1.4 m, Depth 125 cm bs. Some weak to moderate ped structure. Very friable, low clay content. No charcoal or archaeological materials. Top 60 cm is gravely fill/topsoil. Soil sampled between 70-80 cm bs. Did not encounter contact between T4 (natural) and T5 (cultural) – contact must occur north of this trench.



Ap - 0 to 30 bsw; top 12 cm is sidewalk; gravel bed below sidewalk (bsw); historic artifacts within gravel matrix; lower boundary is abrupt smooth.

A - 30 to 75 cm bsw; medium brown silty loam; weak to moderate angular blocky soil structure; breaks to crumbs; coarse to very coarse sized peds; friable consistency; <10% gravels; many fine roots; charcoal flecks; gradual, wavy lower boundary; historical artifacts postdate AD 1855.

Estimated 60 to 150 BP.

ABkb - 75 to 125 cm bsw; light brown loam; weak to moderate angular blocky structure; friable peds; <10% gravels; calcium carbonate veins; oxidation; extensive bioturbation; abrupt lower boundary.

Estimated 400 BP.

2Ab - 125 to 160 cm bsw; brown to dark brown silty loam; weak angular blocky structure; medium size peds; very friable consistency; no gravels; abrupt, wavy lower boundary.

740 CAL BP on top (burned surface)
910 CAL BP at base (pit feature)

2ABkb - 160 cm bsw to bottom of exposure and beyond; silty clay loam; moderate angular blocky structure; medium size peds; no gravels; many fine root holes, no active roots; calcium carbonates veins.

Buried alluvium and soil 160 to 330 cm visible in auger (see **Site Reports**).

Figure 106: A floodplain soil profile. Western wall of vault excavation at Col-245/H, showing archaeological deposits separated by floodplain alluvium.

The sediment had an abrupt, nonconformable contact with underlying midden. There were finely bedded, discrete sand layers at the base and a definite fining upward indicating the deposit initiated with a relatively high energy event.

The lowermost cultural deposit, between 110-160 cm bsw, was a buried midden (Figure 106). The midden was contained in a 2Ab soil, a brown to dark brown silty loam with weak angular blocky structure, medium size peds, and very friable consistency. No gravels were observed. The midden contained no historical material and moderate quantities of prehistoric cultural material including shell, bone, baked clay, and obsidian flakes and tools. Throughout the exposure, the midden was capped by a 3 cm thick layer of charcoal and ash suggesting that the habitation burned just prior to its burial by a flood event.

The lowermost alluvium, between 160-290 cm bsw, was a thick bed of culturally sterile silty to sandy clay. Similar to the upper alluvium, this deposit exhibited a pattern of fining upward and discrete lenses of sand and clay indicative of alluvial deposition. Single event deposition cannot be ruled out but cannot be demonstrated based on the limited exposure available for this study. An auger probe at the close of excavation found two more culturally sterile buried deposits: a buried soil at a depth of 290-330 cm bsw, and below this another silty to sandy alluvium. Insufficient profiles were available to conduct an analysis of these deposits, however, the buried soil had considerable pedological development, with distinct blockiness, numerous worm and root tracks and a mottled appearance. While some evidence of fire was identified, no cultural materials were identified. The underlying alluvium was a sterile silty to sandy clay which also contained discrete lenses of sand and clay. Single event deposition cannot be ruled out but also cannot be demonstrated based on examination of the limited exposure available to our team.

At Col-246/H, the cultural deposit resided on top of a Sycamore Series soil, making it comparable in age to the weakly developed surface A horizon soil at Col-245/H. The Col-246/H cultural deposit was made up of historical fill and prepared historical surfaces related to the location's long history as a sidewalk. Contact period Native American deposits attributed to the ethnographic site of *Coru* were contained in this layer, and were determined to be midden fill used to bring the sidewalk to grade after a fire in September, 1855.

Figure 107: Sacramento Riverbank near Col-247. Soils were observed in the dark area near the center of the photo.

An intact natural deposit was encountered beneath the burn layer, its top just 25 cm below the sidewalk surface. This was a silty, sandy alluvium consistent with the ABkb soil at Col-245/H.

The Col-245/H and 246/H findings clearly show that the City of Colusa is built on an active floodplain. At least two times within the last 1,500 years Sacramento River overflow spread out over the future townsite and deposited two to four feet of silty clay. Despite the relative instability of the landscape, humans have also occupied the area for at least 1,000 years, reestablishing settlements after each flood.

Sacramento River Bank Study

In order to search for natural cutbanks suitable for evaluating local stratigraphy, a survey was conducted by boat along the Sacramento River between Colusa and Princeton. Roughly 15 percent of the river banks between Colusa and Princeton had clear vertical faces available for study (Figure 107). The remaining 85 percent of the river banks were either covered in riparian vegetation or were covered by overburden. The survey focused on locating buried land surfaces near Col-247 and Col-158. While there were no open cuts available near Col-158, several profiles were found along the river adjacent to Col-247. Profiles were prepared with hand tools and examined for soil development, buried surfaces, and archaeological materials. Multiple buried surfaces could be seen in the profiles, but all appeared thin and poorly developed (Figure 107). We can conclude from this that periods of surface stability along the Sacramento River meander belt were relatively brief. Although moderate soil development occurred in some of the deeper strata, most soils were weakly developed and sediments were generally unconsolidated.

Radiocarbon Dating

Methods

A total of 16 samples was selected and submitted for radiocarbon dating (Appendix D). One of these samples (HWY 45 #10) produced insufficient charcoal for dating. The remaining 15 produced radiocarbon assays (Table 28). In keeping with provisions of our research design, radiocarbon dating focused on stratigraphic breaks or features representing key cultural surfaces. Component distribution of radiocarbon dates was as follows:

Component	*n samples*
Col-158A, Surface Midden	1
Col-158B, Surface Midden	1
Col-158C, Surface Midden	0
Col-158D, Buried Midden	2
Col-245/H, Buried Midden	2
Col-246/H, Redeposit	0
Col-247, Stratum 1	2
Col-247, Stratum 2	4
Col-247, Stratum 3	3
Col-247, Buried Soil	1

Col-158C and Col-246/H were both considered redeposits and unreliable sources for radiocarbon dates. Dating samples were distributed between analytically useful component contexts, focusing on the interesting buried components at Col-158D and Col-245/H, as well as the complicated stratigraphy at Col-247.

Three kinds of samples were submitted: (1) charcoal (n=12), (2) beads made from marine shells (n=2), and (3) soil organic matter (n=1). With respect to the charcoal samples, no individual, large chunks of charcoal were selected for dating. One charcoal sample (Sample #1) consisted of an aggregate of small charcoal found lining the burial pit of Col-247 Burial 11 and collected by hand from the feature matrix. Two samples (Samples #6 and #7) were composed of an aggregate of small charcoal found in the matrix of compacted house floor samples found during geoarchaeological trenching at Col-158A and Col-158B (see **Site Reports**) and collected by hand from feature matrix samples. Nine of the charcoal dates were run on "microfloral" samples consisting of the charcoal light fraction collected from features (Samples #4, #5, and #12) and midden matrix flotation samples (Samples #2, #3, #8, #9, #11, #13).

A single soil organic matter (SOM) sample from Col-247 was submitted for radiocarbon dating analysis (Sample #16). Soils and sediments can be dated if they contain biogenic carbon in the form of organic matter or humates. The differential decomposition, humification, and translocation of biogenic carbon in a given deposit determine the type and amount of SOM available for dating. The accuracy of soil dates depends on the researcher's ability to select samples that will minimize potential contaminants (Scharpenseel 1979) and to properly interpret the context of the sample (Matthews 1985). The ^{14}C age of a soil or sediment reflects the apparent mean residence time (AMRT) of the total organic content of the analyzed material. Since soil formation is time-transgressive, AMRT dates are usually younger than the true age of the soil. Understood in this way, the ^{14}C age of a soil does not mark a single time or event, but reflects the influence of multiple processes that affect the soil carbon system over time.

With regard to the shell bead dates, concurrent with this study the senior author was part of a consortium of Central California archaeologists who played a role in a grant from Lawrence Livermore National Laboratory, Center for Accelerator Mass Spectrometry (CAMS) to conduct Accelerator Mass Spectrometry (AMS) dating analysis on samples of shell beads from Central California archaeological contexts. The project was headed by Randall Groza, MA graduate student at San Francisco State University, and Dr. Randall Milliken, Staff Archaeologist at Far Western Anthropological research, Inc., of Davis. The study sought to check and refine the bead dating sequence reported by Bennyhoff and Hughes (1987) by producing new radiocarbon determinations for samples of *Olivella*

Sample Code	Lab Code	Site	Locus	Stratum	Material	Flot #	Depth (cm)	Context	Method	14C Age	CAL BP
HWY 45 #01	BETA 142082	Ca-Col-247	n/a	Stratum 3 Top	Feature Charcoal	n/a	110-130	Burial 11 Pit Matrix	X	3850+80	4385
HWY 45 #02	BETA 150817	Ca-Col-158	D	Midden Matrix	Midden Charcoal	53	110-120	Buried Midden	X	1280+60	1180
HWY 45 #03	BETA 150818	Ca-Col-158	D	Midden Matrix	Midden Charcoal	54	110-120	Buried Midden	X	1100+80	970
HWY 45 #04	BETA 150819	Ca-Col-245/H	n/a	Lower Midden	Feature Charcoal	2	110-120	Buried Midden; Burned Surface	X	860+70	740
HWY 45 #05	BETA 150820	Ca-Col-245/H	n/a	Lower Midden	Feature Charcoal	28	120-150	Buried Midden; Pit Lining	X	980+80	910
HWY 45 #06	BETA 150821	Ca-Col-158	A	Midden Matrix	Feature Charcoal	n/a	030-040	Housefloor	A	880+40	760
HWY 45 #07	BETA 150822	Ca-Col-158	B	Midden Matrix	Feature Charcoal	n/a	070-085	Housefloor	A	1180+40	1060
HWY 45 #08	BETA 150823	Ca-Col-247	n/a	Stratum 3 bottom	Midden Charcoal	4	160-180	Matrix	A	3250+40	3460
HWY 45 #09	BETA 150824	Ca-Col-247	n/a	Stratum 3 middle	Midden Charcoal	38	130-140	Matrix	A	3390+40	3580
HWY 45 #10	not assigned	Ca-Col-247	n/a	Stratum 2 bottom	Midden Charcoal	7	080-090	Matrix	n/a	no date	no date
HWY 45 #11	BETA 150826	Ca-Col-247	n/a	Stratum 2 bottom	Midden Charcoal	20	090-100	Matrix	A	3030+40	3220
HWY 45 #12	BETA 150827	Ca-Col-247	n/a	Stratum 1 top	Feature Charcoal	47	010-020	Hearth Feature	A	1670+40	1550
HWY 45 #13	BETA 150828	Ca-Col-247	n/a	Stratum 2 top	Midden Charcoal	17	040-050	Matrix	A	2650+40	2760
HWY 45 #14	BETA 151594	Ca-Col-247	n/a	Buried Soil	SOM	n/a	200-240	Matrix	B	5230+60	5970
HWY 45 #15	CAMS 80290	Ca-Col-247	n/a	Stratum 1 top	Olivella G2a bead	n/a	010-030	Burial 6 Association	A	2745+30	2159
HWY 45 #16	CAMS 82181	Ca-Col-247	n/a	Stratum 2 middle	Olivella L2 bead	n/a	060-070	Matrix	A	3585+35	3222

Table 28: Radiocarbon samples and dates obtained for the project.
Flot # = flotation sample number; Method = A - accelerator mass spectrometry date, B - bulk low carbon date, X - extended count; CAL BP = average intercept date in years before present after applying delta ^{13}C correction and ^{14}C calibration using CALIB v4.3 (Stuiver and Reimer 1993).

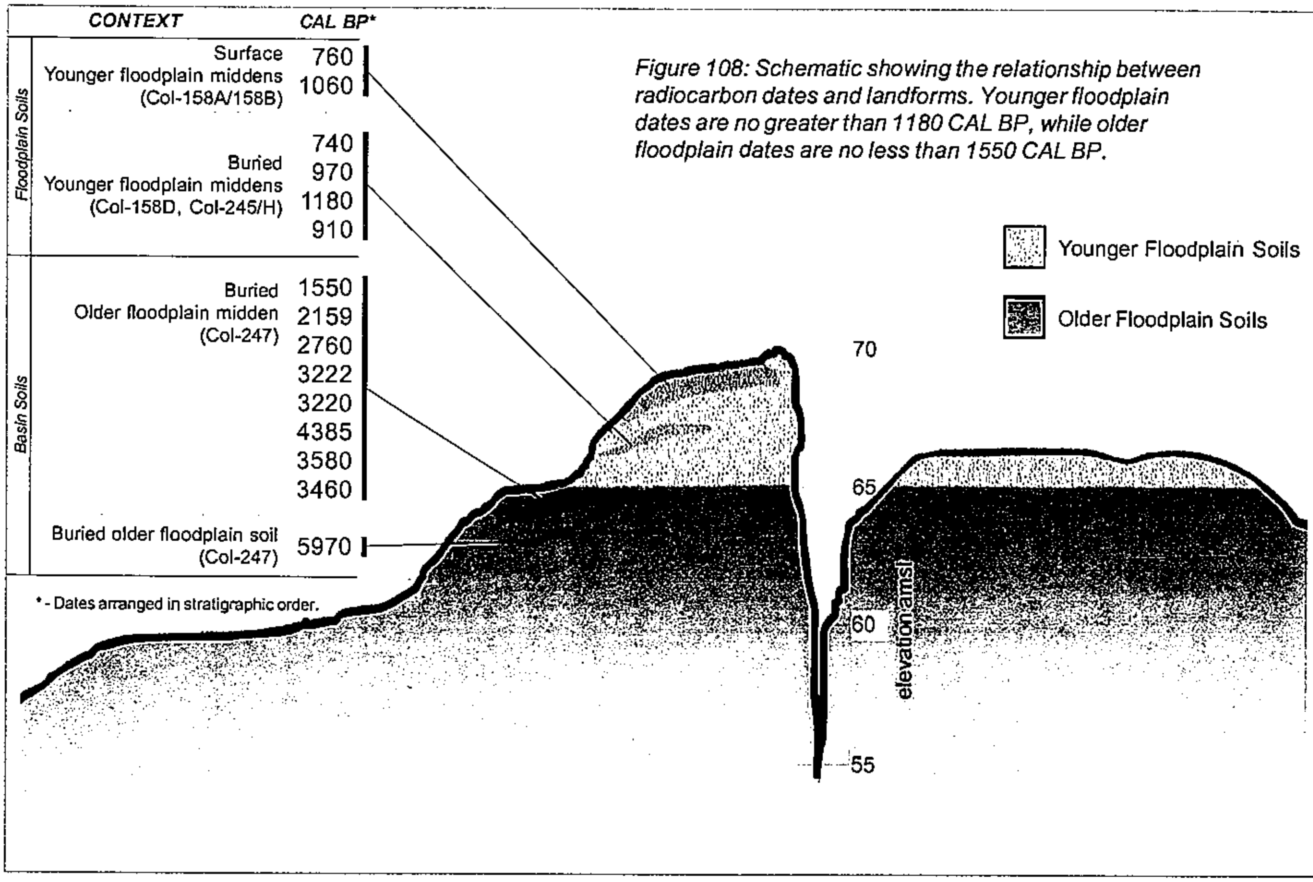


Figure 108: Schematic showing the relationship between radiocarbon dates and landforms. Younger floodplain dates are no greater than 1180 CAL BP, while older floodplain dates are no less than 1550 CAL BP.

biplicata bead types thought to span the scope of known prehistoric occupation in the region. Two beads from Col-247 were submitted for the study, one G2a from Burial 6 and one L2 midden find (Samples #14 and #16). We use the results reported in Groza's important thesis, which contains details on the marine shell delta ^{13}C correction factor preferred by CAMS (Groza 2002). Like the present study, Groza used the Stuiver and Reimer (1993) ^{14}C calibration program CALIB v4.3.

Calibration

^{14}C forms in the upper atmosphere through the action of cosmic ray neutrons on ^{14}N. ^{14}C oxidizes (becomes $^{14}CO_2$), enters the atmosphere, and disperses rapidly. ^{14}C is metabolized by plants through photosynthesis, and moves to animals through the food web. Living plants and animals metabolize carbon throughout their life span, and at death carbon uptake ceases and radioactive decay begins. Secular variation in the atmospheric carbon pool is related to cosmic ray variation. Calibrations have been developed based on the study of systematic differences between organic materials of known age and their ^{14}C results (Geyh and Schleicher 1990). Early calibrations varied per lab, but these have been replaced by larger samples and establishment of standard curves. Stuiver and Reimer have converted their calibration into a computer program, used here to convert the project's dates (Stuiver and Reimer 1993). Table 27 lists all project radiocarbon dates and their calibrated radiocarbon age before present (CAL BP), representing the average calibration curve intercept in years before present after applying delta ^{13}C correction and ^{14}C calibration using CALIB v4.3 (Stuiver and Reimer 1993).

Correlation with Geoarchaeological Findings

Figure 106 provides a schematic showing the relationship between radiocarbon dates and landforms in the project area. Consistent with our geoarchaeological model, younger floodplain archaeological radiocarbon dates are no greater than 1180 CAL BP, while older floodplain dates are no less than 1550 CAL BP. The figure also shows the dates arranged in relative stratigraphic order by depth below surface. Notably, floodplain dates are not orderly, which, consistent with our model, suggests active erosion and deposition shifting the vertical order of surfaces. Older floodplain dates are orderly with depth, which, indicates a stable landform with persistent and gradual soil development. It is also notable that the younger floodplain deposits account for 1.8 m of deposition in just 400 years, while the older floodplain deposits acquired 1.5 m of deposits in 4,400 years. This finding also speaks to rapid alluviation on the younger floodplains and slow pedogenesis on the older floodplains.

Our findings suggest that the bulk of the modern floodplain unit was emplaced sometime between 1180-1550 CAL BP, perhaps associated with a significant depositional event. This issue is discussed again in a concluding chapter.

OBSIDIAN SOURCING AND HYDRATION

Methodology and Methods

A total of 179 specimens was submitted for hydration rim analysis, and 159 of these were also subjected to geochemical source determination studies. Twenty specimens thought to be basalt were also submitted for geochemical source determination only, and these results are discussed in a later section. Obsidian and basalt studies methods and results are listed in Appendix C.

In order to solve problems in archaeological chronology, ten obsidian studies sampling domains were identified (Table 29). No obsidian samples were recovered from Col-158C and Col-158D, the former lacking integrity and the latter lacking obsidian. Obsidian samples were submitted for all three strata at Col-247 as well as components at Col-158A, 158B, 245/H, and 246/H. The lion's share of samples were dedicated to Col-247 (n=109, 60.9%), where the largest number and diversity of obsidian artifacts were found and the greatest chronological and stratigraphic complexity of archaeological deposits was encountered.

OH Results

Table 30 lists the distribution of obsidian samples by component and geochemical source material. Implications for trade and interaction spheres are discussed in a later chapter. For present purposes, we are interested in generating an independent body of obsidian hydration evidence for the relative age of archaeological components. In order to maximize the utility of our results and minimize source-specific hydration rate variation we should look only to those source materials with a comprehensive distribution. A glance at Table 30 indicates that only the central North Coast Ranges sources at Borax Lake and Napa Valley are found in all chronological contexts. All other source materials are more limited in distribution, either exclusive to the Archaic components at Col-247 (Tuscan, Mt. Konocti, Unknown 1, Bodie Hills) or the Emergent components at Col-158, 245/H, and 246/H (GF/LIW/RS).

The predominance of Borax Lake (BL) and Napa Valley (NV) source materials mirrors the situation found over much of the central and southern North Coast Ranges, where several researchers have attempted to calculate calendric rates for both sources (e.g., Clark 1961; Meighan and Haynes 1970; Ericson 1977; Findlow *et al.* 1978; Kaufman 1980; White 1984). Origer (1987) redefined the problem by attempting to calculate

Table 29: Obsidian studies samples.

Sample A - (n=62) Col-247 stratigraphic samples, flakes, nodule shatter, and biface fragments. Stratum 1 (n=21), Stratum 2 (n = 31), Stratum 3 (n=10). OH and XRF. Lab Code BO-01-46-01 thru -42 and BO-00-28-01 thru -20.

Sample B - (n=48) Col-246/H, midden fill, flakes and nodule shatter only. OH and XRF. Lab Code BO-01-46-43 thru -80.

Sample C - (n=15) Col-245/H, buried midden, flakes only. OH and XRF. Lab Code BO-01-46-81 thru -95.

Sample D - (n=3) Col-158A, large flake preforms only. OH and XRF. Lab Code BO-01-46-96 thru -98.

Sample E - (n=12) Col-158B, shallow and deep, flakes only. OH and XRF. Lab Code 01-46-99 thru -110.

Sample F - (n=20) Basalt bifaces and points. Col-158 (n=3) and Col-247 (n=17). XRF only. Lab Code BO-01-46-111 thru -130.

Sample G - (n=10) Stylistically diagnostic Col-247 dart points only. OH and XRF. Lab Code BO-01-46-131 thru -140.

Sample H - (n=18) Stylistically diagnostic late arrowpoints only. Col-158A, 158B, 245/H, 246/H. OH and XRF. Lab Code BO-01-46-141 thru -158 and BO-01-179.

Sample I - (n=10) Exposure 1, Stratum 3, flakes only. Visual source to Borax Lake only. OH only. Lab Code BO-01-46-159 thru -168.

Sample J - (n=10) Exposure 2, Stratum 1, flakes only. Visual source to Borax Lake only. OH only. Lab Code BO-01-46-169 thru -178.

Component	Borax Lake n	%	Tuscan (Cow Cr.) n	%	Napa Valley n	%	Mt. Konocti n	%	GF/LIW/RS n	%	Unknown 1 n	%	Bodie Hills n	%	Total OH + XRF n	XRF Only n	%
Col-246/H	16	34.8%	0	0.00%	30	65.2%	0	0.00%	0	0.0%	0	0.00%	0	0.0%	46	0	0.00%
Col-158A	4	100.0%	0	0.00%	0	0.0%	0	0.00%	0	0.0%	0	0.00%	0	0.0%	4	0	0.00%
Col-245/H	18	85.7%	0	0.00%	2	9.5%	0	0.00%	1	4.8%	0	0.00%	0	0.0%	21	0	0.00%
Col-158B	13	81.3%	1	6.25%	1	6.3%	0	0.00%	1	6.3%	0	0.00%	0	0.0%	16	0	0.00%
Col-247 S1	9	37.5%	4	16.67%	6	25.0%	2	8.33%	0	0.0%	3	12.50%	0	0.0%	24	10	41.67%
Col-247 S2	17	47.2%	4	11.11%	9	25.0%	5	13.89%	0	0.0%	0	0.00%	1	2.8%	36	0	0.00%
Col-247 S3	2	16.7%	4	33.33%	6	50.0%	0	0.00%	0	0.0%	0	0.00%	0	0.0%	12	10	83.33%
Total	79	49.7%	13	8.18%	54	34.0%	7	4.40%	2	1.3%	3	1.89%	1	0.6%	159	20	12.58%

Table 30: Distribution of obsidian samples by component and geochemical source. GF/LIW/RS - Grasshopper Flat/Lost Iron Wells/Red Switchback source area defined by Hughes (1986).

intersource constants and calibrate all hydration to the NV rate, the current standard in the southern North Coast Ranges. White provides new empirical pairs for the BL:NV intersource rate constant and a revised BL obsidian hydration calendric rate curve based exclusively on OH/^{14}C empirical pairs. White's BL:NV intersource constant produced a log coefficient of 0.87, indicating that the NV rate slows over time in proportion to BL, with NV representing approximately 95.0 percent of BL hydration ≤4.0 microns BL, but slowing to 68.0 percent by 10.0 microns BL (White et al. 2002:425-427).

White's Borax Lake calendric rate is based on 18 BL OH/CAL ^{14}C pairs from feature and geomorphological co-associations representing the average CAL BP dates and average rim values from specific single component proveniences determined to have stratigraphic integrity (White et al. 2002:Figure 189). The curve has intuitive appeal, and while based on no pairs with CAL BP dates older than about 7700 BP, the curve predicts that fluted points from the Borax Lake site are 13,500 years old, consistent with the preponderance of western North American evidence which places the calibrated age of Clovis sites in the 11,000-13,500 year range (Fiedel 1999).

Table 31 summarizes the BL and NV obsidian hydration data for seven project components. Samples are poor for both sources, but show a steady if irregular trend toward thinner rims over time. For both, the thickest average rim value is associated with the oldest component (Col-247 Stratum 3) and the thinnest with the youngest (Col-246/H). The hydration results were especially orderly for the Archaic Col-247 components but less so for the late components.

Like Origer's and White's North Coast Ranges results, NV rims averaged less than BL rims. However, unlike White's Clear Lake basin samples, the NV rims were less than 75.0 percent of BL rims for even the younger pairs.

With respect to a Colusa area OH results, the BL and NV ^{14}C pairs reported here will ultimately contribute to construction of a curve. Plotted against White's Clear Lake basin BL curve, the Colusa results would make for a steeper curve arguing for a slower local hydration rate. However, the few pairs available and lack of pairs in the +4,000 year range would make any curve we might construct at this time premature.

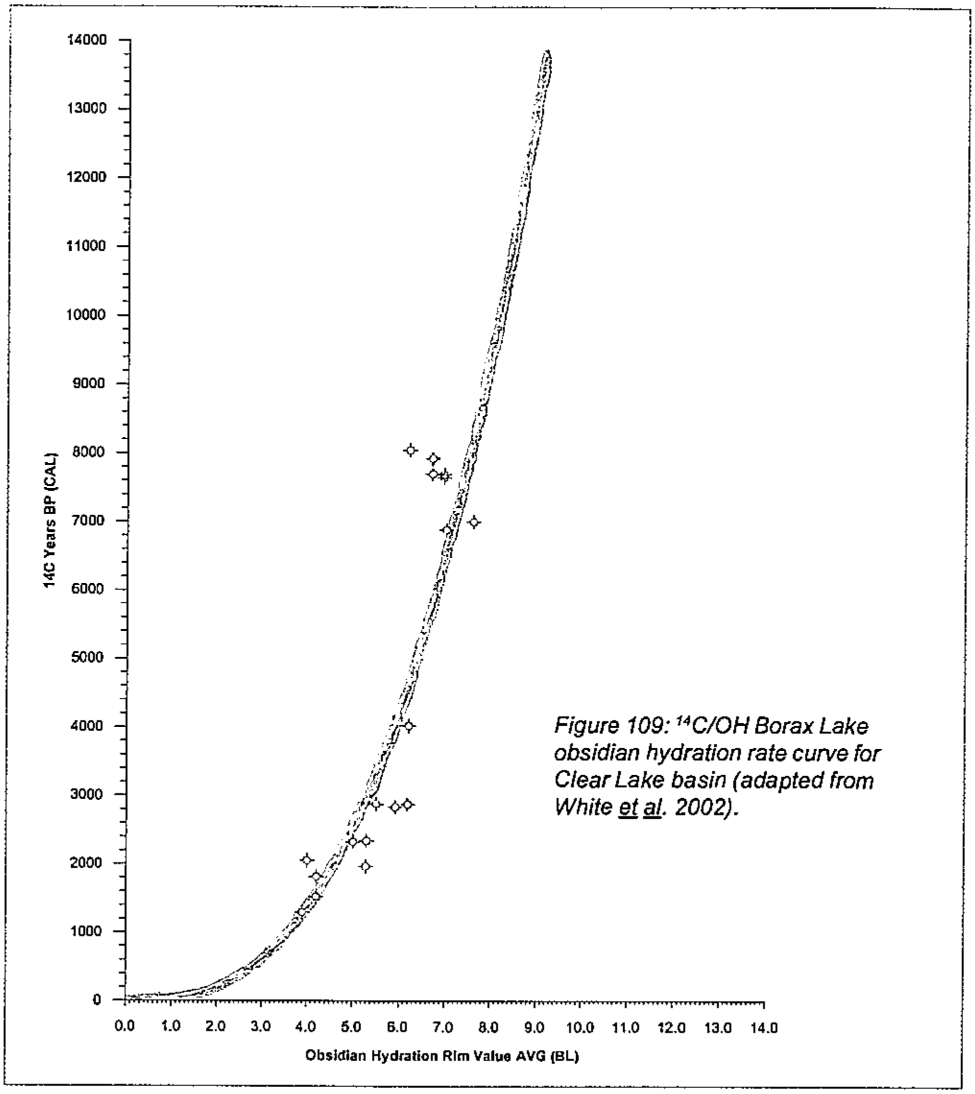


Figure 109: [14]C/OH Borax Lake obsidian hydration rate curve for Clear Lake basin (adapted from White et al. 2002).

Table 31: Borax Lake and Napa Valley obsidian hydration pairs, actual CAL BP age per component, and estimated age based on White's Borax Lake obsidian hydration rate. 1 - age estimate based on White's Borax Lake obsidian rate curve (Figure 109); 2 - average CAL BP y intercept for dates in stratigraphic association with the obsidian.

	Borax Lake			Napa Valley				
Component	**n**	**AVG**	**SD**	**n**	**AVG**	**SD**	**OH Age Estimate[1]**	**Actual CAL BP[2]**
Col-246/H	15	2.9	1.4	29	1.7	0.4	556	350
Col-158A	4	3.4	0.6	-	-	-	886	760
Col-245/H	18	3.3	1.4	2	2.8	0.3	797	825
Col-158B	13	3.0	1.1	1	1.5	0.0	611	1060
Col-247 S1	8	4.0	1.3	4	2.0	1.0	1363	1854
Col-247 S2	15	4.3	1.8	8	3.4	1.4	1668	3067
Col-247 S3	2	5.3	1.0	5	4.0	0.9	2990	3808
Total:	75			49				

PROJECT CULTURE HISTORY

Methods

Previous sections offered details on soils, dating, and cultural stratigraphy for each locus. Each artifact, feature, and burial found during the project was assigned to a specific component (see **Artifacts, Features, and Burials and Human Remains**). This chapter began with a synthesis of chronometric evidence which fixed the links between geomorphic structure and archaeological chronology. The following completes the archaeological exercise by synthesizing dating and assemblages for each component and grouping them into cultural historical phases.

A total of seven components was identified (Col-246/H, Col-158A, Col-245/H, Col-158B, Col-247 S1, Col-247 S2, and Col-247 S3). Tables 32 and 33 show the distribution of artifacts per component. A few artifact types are widespread, representing basic functional types found in most or all chronological contexts (Table 33). Most types, however, associate with either the Archaic components or the Emergent components, with little overlap. A few types are exclusive to one component (Table 32).

While all seven components have a relatively high degree of integrity, trace evidence of additional components was identified at Col-158B and Col-246/H. Col-158B yielded a preponderance of Phase 1B markers, but also produced five apparent Archaic artifacts, a large contracting-stemmed point fragment, another dart point fragment, and two metasedimentary core tools (Table 32). Col-246/H produced nine Lower Emergent artifacts, including eight M series *Olivella* sequin beads and a small Gunther barbed point. Further sampling at these loci is likely to find full assemblages and stratigraphic contexts.

The components can be grouped into *Phases*, consisting of "a set of traits characteristic of a brief interval of time within a single district" (White *et al.* 2002:48). In other words, components from separate sites yielded similar dates and closely similar assemblages, indicating contemporaniety and cultural similarity. Four components are lumped into a single phase: Col-158A, Col-158B, Col-158C, Col-158D, and Col-245/H. The remaining components are each representative of discrete phases. Phase names are derived from nearby Patwin village names (see **Cultural Context**).

Phases

Cha'dehe Phase (3460-4385 CAL BP)

The Cha'dehe Phase was represented by Col-247 Stratum 3, which yielded ^{14}C dates averaging 3807 CAL BP (3460-4385 CAL BP). The assemblage consisted of a mix of widespread Middle Archaic technology and distinctive regional functional and stylistic types, the latter including the Mendocino concave-based point form, an antler splitting wedge, an abalone square bead or applique, and non-perforated plummets (Figure 114). Obsidian associated with this phase was dominated by Napa Valley (50.0%) and Cow Creek (33.3%) source materials (Table 30). A single excavated burial was associated with this component, Burial 11, buried on its left side in a loose, semi-extended posture (see **Burials and Human Remains**). The burial mode and artifact assemblage is consistent with early burial patterns in the southern North Coast Ranges dating between 3500-7700 BP (White ed. 2002:461-463).

Si'dehe 1 Phase (2750-3222 CAL BP)

Col-247 Stratum 2 yielded ^{14}C dates averaging 3205 CAL BP (2750-3222 CAL BP). The assemblage consisted of a number of discrete functional and stylistic types including small blade contracting-stemmed points, wedge-shaped hand stones, thin milling slabs, large, disk-shaped *Haliotis cracherodii* pendants, an *Olivella biplicata* L2 thick rectangle bead, and ocher pebbles (Figure 113). Several traits were found associated this and the subsequent phase, including metasedimentary core tools, perforated plummets, *Macoma nasuta* disk beads, bone and antler daggers, clay acorn cases, and ceramic egg-shapes. Obsidian associated with this phase was dominated by Borax Lake (47.2%), with additional materials from Napa Valley (25.0%), Mt. Konocti (13.9%), Cow Creek (11.1%), and Bodie Hills (2.8%) (Table 30). Seven excavated burials were found associated with this component, including two reinterred, one extended supine, one flexed, one bundled infant, and two indeterminate. Like the obsidian source pattern indicates, the burial modes and artifacts are a mixture of Central California Windmiller traits and Clear Lake basin early Houx traits, found in adjoining districts during this time period (see **Archaeological Context**).

Si'dehe 2 Phase
(1550-2750 CAL BP)

A house floor found in the 0-30 cm levels of Exposure 2 at Col-247 yielded a ^{14}C date of 1550 CAL BP. Burial 6, found in Exposure 2 adjacent to the house floor at 10-40 cm in depth, had associated a series of G series *Olivella* saucer and ring beads, two *Haliotis* disk beads, and two *Haliotis* eccentric ornaments. One of the G series beads yielded a ^{14}C date of 2159 CAL BP. The beads and dates combined indicate that the shallow levels of Exposure 2 were somewhat later than the shallow levels of Exposure 1, which lacked the G series beads and produced a preponderance of older marker types. Radiocarbon assays suggest that Stratum 1 in Exposure 1 dated between 2200-2750 BP. The distinction between these two contexts is useful in subsequent chapters dealing with clear differences in subsistence remains. However, for present purposes we lack clear demonstration in overall artifact assemblages so the two exposures are lumped into a single phase with ^{14}C dates averaging 2215 CAL BP (1550-2750 CAL BP).

The assemblage consisted of a number of distinctive functional and stylistic types including large contracting-stemmed points, a wooden mortar pestle, *Haliotis* disk beads, small *Haliotis* eccentric pendants, *Olivella biplicata* G series saucer and ring beads, an *Olivella biplicata* C series bead, and flat hair pins (Figure 112). Traits shared with the previous phase are listed above. Obsidian associated with this phase was dominated by Borax Lake (37.5%), with additional materials from Napa Valley (25.0%), Cow Creek (16.7%), Mt. Konocti (8.3%), and an undetermined source (12.5%) (Table 30). Four excavated burials were found associated with this component, including one extended supine, one flexed, and two bundled infants. Like the previous phase, the burial modes and artifacts are a mixture of Central California Windmiller traits and Clear Lake basin Houx traits.

Wi'ter-ry Phase
(740-1180 CAL BP)

Col-158B and Col-158D, yielded ^{14}C dates averaging 1070 CAL BP (1180-970 CAL BP). Col-158A, and Col-245/H yielded ^{14}C dates averaging 803 CAL BP (910-740 CAL BP). There is reason to believe that further sampling at these loci would bear out the chronological difference suggested by the difference in radiocarbon dates. Col-158B/D produced a preponderance of wide-necked Gunther barbed and Rattlesnake corner-notched points known to be early Phase 1 markers in adjoining districts (Jaffke 1997; White *et al.* 2002:459), while Col-158A/Col-245/H produced a preponderance of narrow-necked Gunther barbed points known to occur later in time (see **Archaeological Context**). However, we currently lack clear demonstration. So, while it is likely that Col-158B/D represent Phase 1B occupation and Col-158A/Col-245/H represent Phase 2A occupation, all four components are here lumped in the Wi'ter-ry Phase.

The assemblage consisted of a number of distinctive artifact types including Gunther barbed and Rattlesnake corner-notched points, *Olivella biplicata* F or F/M series beads, bipointed gorge hooks, and a J-shaped bone fishhook (Figure 111). Traits associated with this and the subsequent phase included *Olivella biplicata* M series sequin beads, triangular arrow point preforms, and arrow point fragments. Obsidian associated with this phase was overwhelmingly dominated by Borax Lake (81.3%), with trace materials from Napa Valley (6.3%), Tuscan (6.3%), and GF/LIW/RS (6.3%) (Table 30). One excavated burial was found associated with this phase, interred in a tight flexed position. The phasing and assemblages are closely comparable to assemblages described for the southern Sacramento Valley by Tremaine and Fredrickson (1986) and Rosenthal (1996), and are better represented locally by the Col-1/2/3 excavations described in an earlier chapter (see **Archaeological Context**).

Coru Phase
(<400 BP)

The Col-246/H produced no archaeological contexts with sufficient integrity to warrant radiocarbon dating studies. The current effort sampled a redeposit, hindering a number of lines of evidence and inquiry. However, the investigation concluded that the deposit had integrity of origin in the sense that we are confident it originated from the ethnographic Patwin settlement of Coru visited by Arguello and Ordaz in 1821 (see **Site Reports**).

Distinctive artifacts included Rattlesnake side-notched points of Napa Valley obsidian, clamshell disk beads, decorated ceramics, and glass trade beads (Figure 110). Obsidian associated with this phase was dominated by Napa Valley (65.2%), with Borax Lake (34.8%) and no other source materials (Table 30).

Phase	Component:	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-245/H	Col-158A	Col-246/H	
	CAL BP:	3807 BP	3205 BP	2215 BP	1103 BP	815 BP	800 BP	< 400 BP	Total
Cha'dehe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Si'dehe 1	Martis side-notched	-	1	-	-	-	-	-	1
	Contracting-stemmed, small blade	1	3	1	-	-	-	-	[illegible]
	Wedge-shaped handstones	2	5	-	-	-	-	-	[illegible]
	Disk-Shaped handstones	-	[illegible]	1	-	-	-	-	[illegible]
	Handstone Fragments	1	3	1	-	-	-	-	[illegible]
	Millingslab fragment	-	2	-	-	-	-	-	2
	Domed scraper	-	1	-	-	-	-	-	1
	[illegible]	1	6	2	-	-	-	-	[illegible]
	Large Haliotis Pendant	-	3	-	-	-	-	-	[illegible]
	Olivella L2	-	1	-	-	-	-	-	1
	[illegible]	-	1	-	-	-	-	-	1
	[illegible]	-	1	-	-	-	-	-	1
	[illegible]	-	2	-	-	-	-	-	[illegible]
Si'dehe 2	Contracting-stemmed, large blade	2*	-	4	1	-	-	-	7
	Core tools	-	12	8	2	-	-	-	7
	Edge modified flakes	-	1	4	-	-	-	-	5
	Perforated plummets	1*	2	2	-	-	-	-	5
	Macoma Disk	-	2	3	-	-	-	-	5
	Haliotis Disk	-	-	2	-	-	-	-	2
	Small Haliotis Pendant	-	-	2	-	-	-	-	2
	Olivella C3	-	-	1	-	-	-	-	1
	Olivella G2/G3	-	-	42	-	-	-	-	42
	Bone daggers	1*	3	5	-	-	-	-	9
	Flat bone pins*	2*	-	4	-	-	-	-	6
	Slate pendant fragment	-	1	1	-	-	-	-	2
	Acorn cases	-	5	4	-	-	-	-	9
	Egg-shapes	2*	35	96	-	-	-	-	133
	Daubers	-	-	3	1	-	-	-	4
Archaic Mix	Leaf-shaped	1	2	2	-	-	-	-	5
	Willits corner-notched	1	2	2	-	-	-	-	5
	Dart point fragments	3	14	20	1	-	-	-	38
	Pebble sinkers	1	-	1	-	-	-	-	2
	Slingstones (sample)	4	26	17	-	-	-	-	47
Wi'ter-ry	Gunther barbed wide neck	-	-	-	2	1	-	-	3
	Rattlesnake corner-notched	-	-	-	2	1	1	-	4
	Gunther barbed narrow neck	-	-	-	2	3	-	1	6
	Bipoint gorge hooks	-	-	-	2	-	-	-	2
	J-shaped hook	-	-	-	1	-	-	-	1
	Olivella F2/F3	-	-	-	1	1	-	-	2
	Olivela M1	-	-	-	2	2	-	8	12
Coru	Rattlesnake side-notched	-	-	-	-	-	-	5	5
	Small obsidian core	-	-	-	-	-	-	1	1
	Soapstone bowl	-	-	-	1	-	-	-	1
	Clamshell Disk Beads	-	-	-	-	-	-	9	9
Emergent Mix	Arrowpoint fragments	-	-	-	6	4	3	3	16
	Arrowpoint preforms	-	-	-	4	8	6	2	20

*Table 32: Distribution of artifact types per component, grouped by phase. Artifact types assigned to phase if the modal distribution falls within the component. Archaic Mix = types found in all Archaic Period components; Emergent Mix = types found in all Emergent Period components; * = probably intrusive burial associations.*

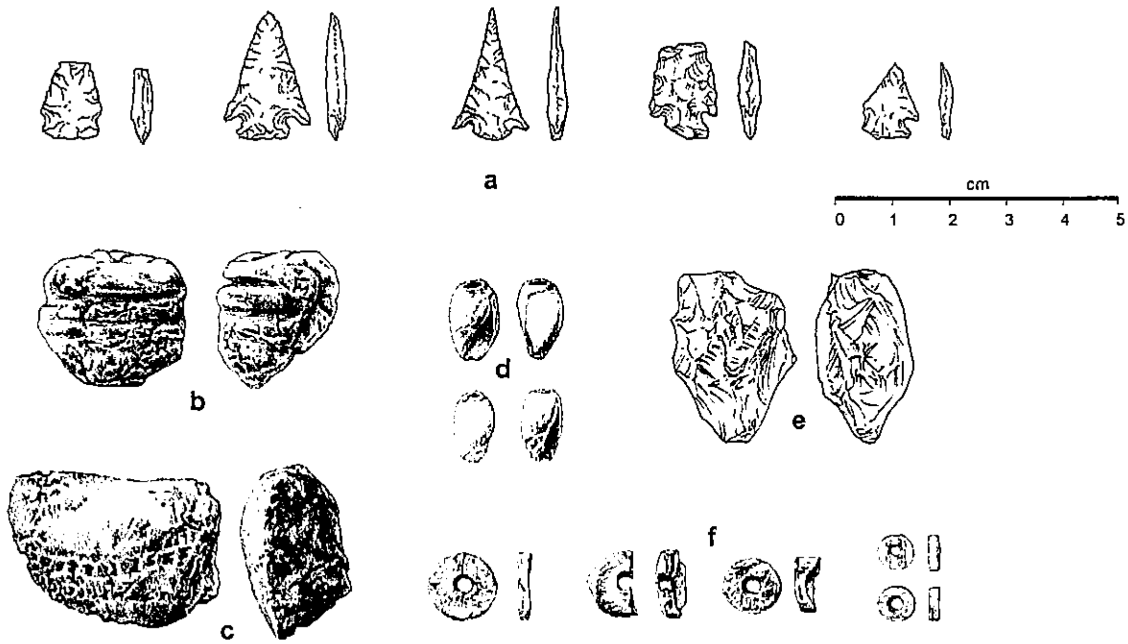


Figure 110: Colusa Region, Coru Phase (Augustine Pattern, Phase 2B/2C) assemblage. Artifacts recovered from Col-246/H, the ethnographic Patwin village of Coru. a - Rattlesnake side-notched points of Napa Valley obsidian, b - decorated clay ball, c - rim fragment, decorated pottery, d - Olivella A series, e - small obsidian core, f - clamshell disk beads.

Table 33: Distribution of artifact types found in both Archaic and Emergent contexts.

Component:	Col-247 Stratum 3	Col-247 Stratum 2	Col-247 Stratum 1	Col-158 B/C/D	Col-245/H	Col-158A	Col-246/H	
CALBP:	3807 BP	3205 BP	2215 BP	1103 BP	815 BP	800 BP	< 400 BP	Total
Pestles	1	-	3	-	2	-	-	6
Metasedimentary core	2	2	3	2	-	1	-	10
Hammer stones	1	6	1	-	1	-	-	9
Bone awls	-	2	2	5	4	5	2	20
Worked bone tubes	1	-	1	-	-	1	1	4
Cylindrical bone pins	-	1	2	-	-	2	-	5
Olivella A1	-	2	1	-	1	-	2	6
Clay beads	4	7	13	-	-	1	1	26
Clay balls	11	45	76	2	1	-	7	142
Clay Tapers	20	18	46	3	1	-	-	88
Clay loaves	-	8	16	-	-	3	1	28
Clay Figurines	-	6	7	-	-	-	1	14
Clay Pottery	-	-	2	2	-	-	2	6
Shaped clay fragments	347	1802	2910	18	1	10	43	5131

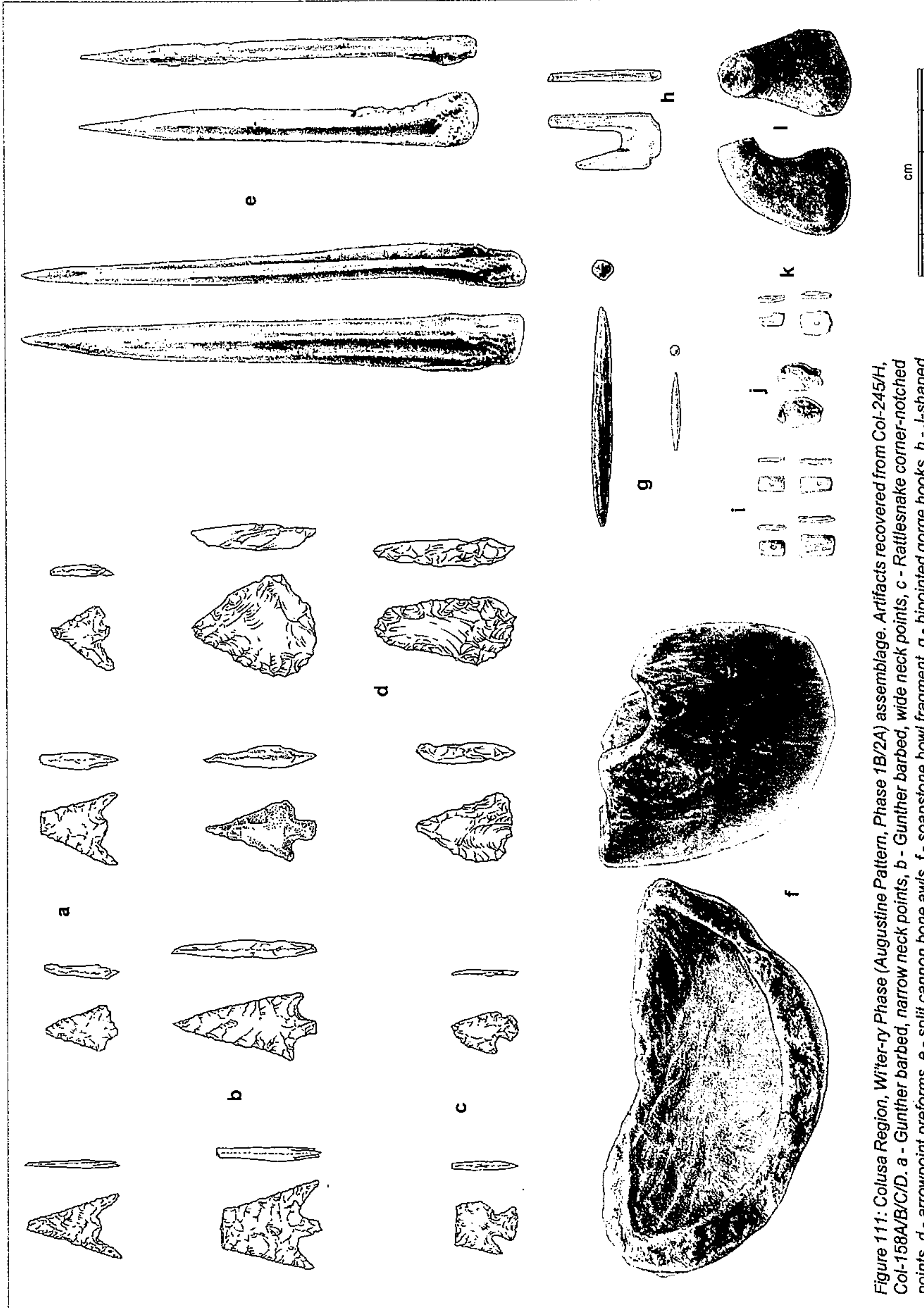


Figure 111: Colusa Region, Witer-ry Phase (Augustine Pattern, Phase 1B/2A) assemblage. Artifacts recovered from Col-245/H, Col-158A/B/C/D. a - Gunther barbed, narrow neck points, b - Gunther barbed, wide neck points, c - Rattlesnake corner-notched points, d - arrowpoint preforms, e - split cannon bone awls, f - soapstone bowl fragment, g - bipointed gorge hooks, h - J-shaped fihhook, i - Olivella M series shingle beads, j - Olivella A series beads, k - Olivella F series saddle beads, l - ceramic paint applicator.

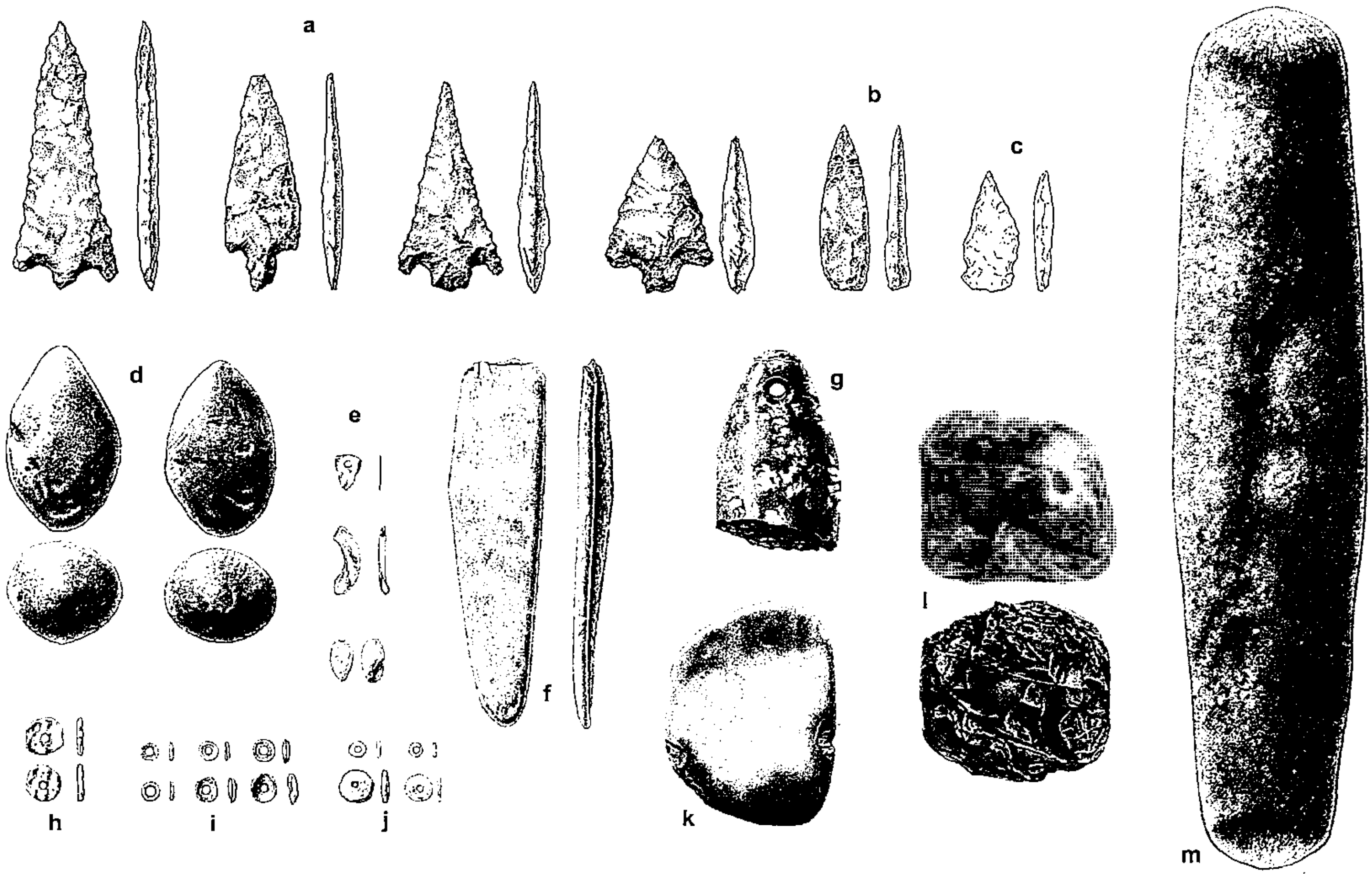


Figure 112: Colusa Region, Si'dehe 2 Phase (Upper Archaic Period) assemblage. Artifacts recovered from Col-247, Stratum 1. a - contracting-stemmed, large blade points, b - leaf-shaped point, c - Mendocino corner-notched point, d - ceramic egg-shapes, e - Haliotis rufescens eccentric ornaments, f - elk antler dagger, g - perforated plummet, h - Haliotis rufescens disk beads, i - Olivella G series saucer and ring beads, j - Macoma nasuta disk beads, k - notched pebble net weight, l - metasedimentary core tool, m - wooden mortar pestle.

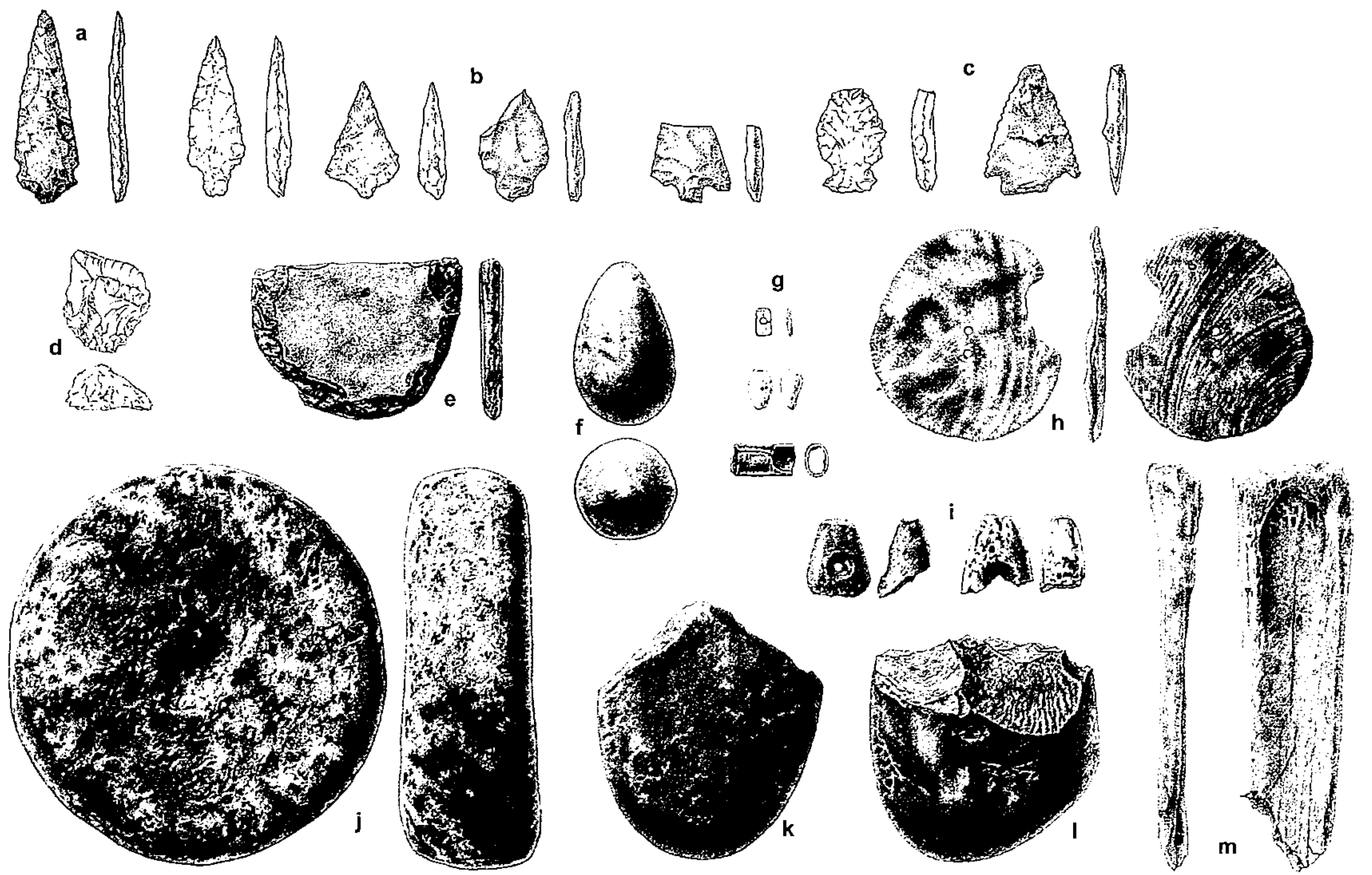


Figure 113: Colusa Region, Si'dehe 1 Phase (Late Middle Archaic Period) assemblage. Artifacts recovered from Col-247, Stratum 2. a - Willits side-notched point, b - contracting-stemmed, small blade points, c - Mendocino and Martis corner-notched points, d - domed scraper, e - pebble hammer, f - ceramic egg-shape, g - Olivella L2, Olivella A series, birdbone tube bead, h - Haliotis cracherodii disk ornament, i - perforated plummets, j - disk-shaped handstone, k - wedge-shaped handstone, l - metasedimentary core tool, m - elk cannon bone dagger.

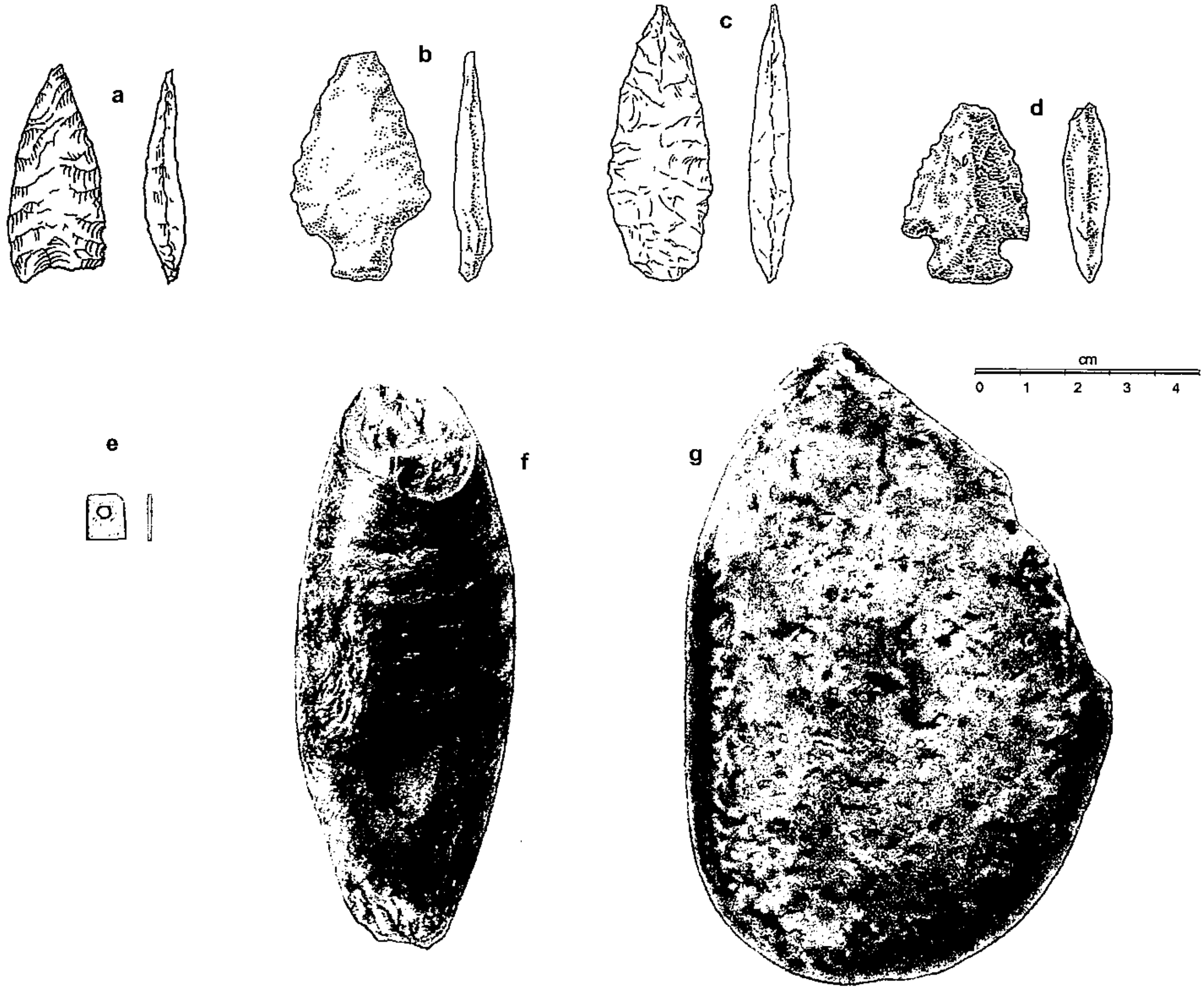


Figure 114: Colusa Region, Cha'dehe Phase (Middle Middle Archaic Period) assemblage. Artifacts recovered from Col-247, Stratum 3. a - Mendocino concave-based, shallow base point, b - contracting-stemmed, small blade point, c - leaf-shaped point, d - Mendocino corner-notched point, e - Haliotis square bead or applique, f - non-perforated plummet, g - wedge-shaped handstone.

SUBSISTENCE AND SETTLEMENT

INTRODUCTION

The following examines evidence for subsistence and settlement adaptation practiced during each phase of occupation. Analysis of subsistence economy is based on direct and indirect evidence, including plant food remains and their processing counterparts in ground stone tools, and animal remains and hunting technologies. Analysis of settlement adaptation is based on plant and animal seasonality indicators as well as artifact and feature diversity indicative of the duration and intensity of occupation.

PLANT USE

Flotation Analysis

Sample Selection and Methods

A total of 53 flotation samples was collected, and 23 of these were analyzed. Raw data on the distribution of large and small seeds per sample appears in **Appendix G**. The 23 flotation samples are summarized in Table 34, including weight in grams of large seeds and frequency of the combined small seeds per liter of soil. Species specific data for large seeds appears in Table 34 and for small seed in Table 35. Flotation samples were collected from each chronological component, including representative cultural features and samples collected from midden profiles exhibiting clear evidence of stratigraphic integrity.

Flotation was performed in a large washtub to which water and soil were added and mixed (see Wohlgemuth 1989). Plant materials were skimmed off the top and then decanted through 40/inch mesh from the dense, non-floating heavy fraction. The tub was refilled and the process repeated twice before heavy fraction was washed through 1/8" and window meshes (18x16 mesh per inch=approximately 1.0 mm). Light fraction was allowed to dry overnight in shade, while heavy fraction was sun-dried.

Prior to examination all light fraction was size sorted in graduated 2.0 mm, 1.0 mm, and 0.7 mm mesh screens. Material larger than 2.0 mm was examined with the naked eye and checked with a 10X binocular microscope. The 1.0 mm and 0.7 mm grades were sorted at 10X, while nutshell was identified at 30X. All samples were sorted for small and large seeds to the 0.7 mm grade. Material smaller than 0.7 mm was not examined.

All plant foliage, disseminules (seed and fruit), and underground parts such as bulbs were sorted out and removed from bulk light fraction. Heavy fraction was also checked for charcoal and seed residue, and these materials were incorporated into the totals. Seeds, nutshell and charcoal materials were weighed to the nearest 0.1 mg. Wood charcoal weight was recorded by 2.0 mm grades. Identified constituents were stored in gelatin capsules or plastic bags with an identification tag denoting provenience and seed type. Sorting and identification of plant materials was done by Eric Wohlgemuth, Staff Archaeologist, Far Western Anthropological Research Group, Inc.

Sampling Biases

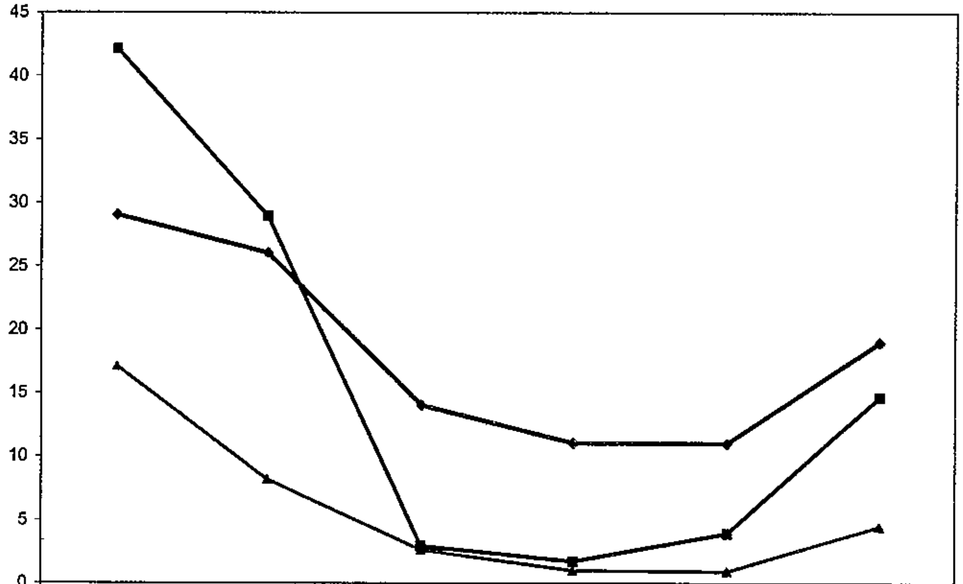
There is some sample size variability, but each sample is assumed to be representative of its specific context, whether feature or midden matrix. For the purpose of analysis the samples are grouped by phase, thus producing patterns that can be considered more robust and reliable.

There is a clear relationship between the number of seeds identified and taxonomic diversity per sample (Figure 115), further demonstrated by a log correlation of 0.92 for the relationship between n species and n seeds (Figure 116). This may mean one of two things: (1) during phases when small seeds were used more intensively (before 3400 CAL BP, after 1500 CAL BP) more species were harvested, or (2) larger sample sizes afforded by the better preservation found in deeply buried and recent deposits insured a better record of species diversity. Current samples do not allow us to reach a firm conclusion between these alternatives. However, it is inevitable that soil conditions determine the rate of recovery of floral macrofossil collections. Thus, the new findings here clearly show the value of identifying and sampling buried deposits representing old land surfaces.

Table 34: Distribution of large seeds by weight (grams) and comparison to small seeds by frequency (f) per flotation sample.

Sample #	Phase	Site (Ca-Col-)	Unit	Depth	Context	Volume (liters)	Manzanita (grams)	Gray Pine (grams)	Thin Pine (grams)	Bay Laurel (grams)	Buckeye (grams)	Clarkia (grams)	Acorn (grams)	Cucumber (grams)	Hazel (grams)	Wild Grape (grams)	Total LG (grams)	ID SM Seeds (f/liter)	NonID SM Seeds (f/liter)	Total SM Seeds (f/liter)
1	740-910	245H	Buried	Midden	Feature 1 : ash lens	3.5	1.50	0.00	0.00	0.00	0.00	0.11	12.10	2.60	0.31	0.00	16.62	45.73	11.40	57.13
2	740-910	245H	Buried	Midden	Midden profile sample	16.0	6.20	0.00	0.00	0.00	0.00	0.25	25.90	0.85	0.00	23.00	56.20	64.03	23.90	87.93
3	740-910	245H	Buried	Midden	Burnt top of midden	16.8	0.00	0.00	0.00	0.36	0.00	0.12	35.70	3.40	0.00	25.90	65.48	76.68	35.10	111.78
28	740-910	245H	Buried	Midden	Feature 2: pit in west wall	16.5	1.10	0.00	0.00	0.00	0.00	0.00	27.90	1.90	0.71	0.78	32.39	43.04	11.70	54.74
33	740-910	245H	Buried	Midden	Submidden profile sample	12.5	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.00	0.00	0.06	0.24	0.24	0.48
34	740-910	245H	Buried	Midden	Midden profile sample	8.0	1.60	0.00	0.00	0.00	0.00	0.00	51.50	0.78	0.16	1.60	55.64	16.19	16.20	32.39
57	740-910	158A	Trench	34	Pit feature	10.0	0.00	0.00	0.00	0.00	0.00	0.00	52.60	2.80	0.00	1.60	57.00	48.5	20.50	69.00
10	970-1160	158D	Buried	Midden	Midden profile sample	17.0	0.00	0.00	0.00	0.00	0.04	0.04	1.50	0.29	0.00	0.07	1.94	1.79	1.00	2.79
11	970-1160	158D	Buried	Midden	Midden profile sample	18.0	0.06	0.00	0.00	0.00	0.00	0.01	0.59	0.00	0.42	0.02	1.10	3.03	0.61	3.64
25	970-1160	158B	UNIT 2	70-100	Midden profile sample	12.3	0.00	0.00	0.00	0.00	0.00	0.00	21.90	2.20	1.07	0.00	25.17	38.98	8.31	47.29
30	970-1160	158B	UNIT 1	70-90	Midden profile sample	13.0	0.00	0.00	0.00	0.00	0.00	0.06	9.70	2.80	0.00	0.58	13.14	37.92	16.70	54.62
31	970-1160	158B	UNIT 1	100-110	Midden profile sample	17.0	0.27	0.00	0.00	0.00	0.00	0.04	9.90	1.50	1.04	0.34	13.09	16.46	3.54	20.00
53	970-1160	158D	Buried	Midden	Midden profile sample	10.6	0.00	0.38	0.00	0.00	0.00	0.47	24.40	1.70	1.38	0.19	28.50	48.81	12.10	60.91
54	970-1160	158D	Buried	Midden	Midden profile sample	10.2	4.70	0.00	0.00	0.00	0.00	2.40	19.00	2.20	0.00	9.00	37.30	55.05	14.30	69.35
47	1550-2159	247	A14	010-020	Feature 12	15.0	0.00	0.09	0.00	0.00	0.00	0.00	61.30	1.90	0.00	0.21	63.50	2.40	4.87	7.27
49	1550-2159	247	B17/18	000-010	Feature 8A: house foor	8.8	0.14	0.00	0.00	0.00	0.09	0.00	11.40	3.30	0.00	0.53	15.46	5.26	1.63	6.89
52	1550-2159	247	B17/18	000-010	Feature 8B: house foor	17.6	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.45	0.10	0.06	1.91	0.97	1.16	2.13
6	2200-2750	247	B1	010-020	Midden profile sample	15.3	0.00	0.00	0.01	0.00	0.00	0.00	0.28	0.12	0.00	0.00	0.41	0.67	0.26	0.93
14	2200-2750	247	B1	030-040	Midden profile sample	14.0	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.26	0.00	0.03	0.71	0.42	0.14	0.56
17	2200-2750	247	A1	040-050	Midden profile sample	13.5	0.00	0.00	0.00	0.00	0.07	0.00	1.70	0.61	0.00	0.00	2.38	0.95	1.27	2.22
24	2200-2750	247			Feature 3	2.0	0.00	0.00	0.00	0.00	0.00	0.00	4.90	4.20	0.00	0.00	9.10	4.50	2.00	6.50
7	2750-3222	247	B3	080-090	Feature 7	6.5	0.00	0.00	0.00	0.00	0.00	0.00	2.50	1.30	0.00	0.00	3.80	1.38	0.31	1.69
20	2750-3222	247	A1	090-100	Midden profile sample	10.5	0.00	0.00	0.00	0.00	0.00	0.00	7.20	1.60	0.00	0.50	9.30	3.44	0.38	3.82
22	2750-3222	247	A2	050-070	Feature 11	12.0	0.00	0.00	0.17	0.00	0.00	0.33	10.00	2.40	0.14	0.27	13.31	6.77	1.87	8.64
4	3460-4385	247	A3	160-180	Midden profile sample	14.1	0.00	0.00	0.00	0.00	0.00	0.00	17.20	3.10	2.81	2.10	25.21	8.05	4.15	12.20
35	3460-4385	247	A1	140-150	Midden profile sample	12.5	0.00	0.00	0.00	0.35	0.00	0.00	22.50	3.40	0.00	0.00	28.25	12.60	4.96	17.56
37	3460-4385	247	B3	100-110	Feature 14	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.77	0.00	0.00	1.72	3.80	1.00	4.80
38	3460-4385	247	A1	130-140	Midden profile sample	15.5	0.00	0.00	0.00	0.00	0.13	0.00	15.70	0.75	1.23	0.10	17.81	14.55	5.99	20.54
44	3460-4385	247	A1	150-160	Midden profile sample	14.0	0.00	0.00	0.00	0.29	0.00	0.39	31.50	0.26	1.30	0.79	34.53	32.31	3.74	36.05
46	3460-4385	247	A3	140-150	Midden profile sample	23.0	0.00	0.00	0.00	0.00	0.00	0.00	26.90	4.50	0.94	1.80	34.14	16.46	6.47	22.93

Figure 115: Relationship between n taxa identified, n identified seeds per liter, and n unidentified seeds per liter, averaged per phase.



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
n Species Identified	29	26	14	11	11	19
Total Identified Seeds Per Liter	42.06	28.86	2.88	1.64	3.86	14.63
Total Unidentified Seeds Per Liter	17.01	8.08	2.55	0.92	0.85	4.39

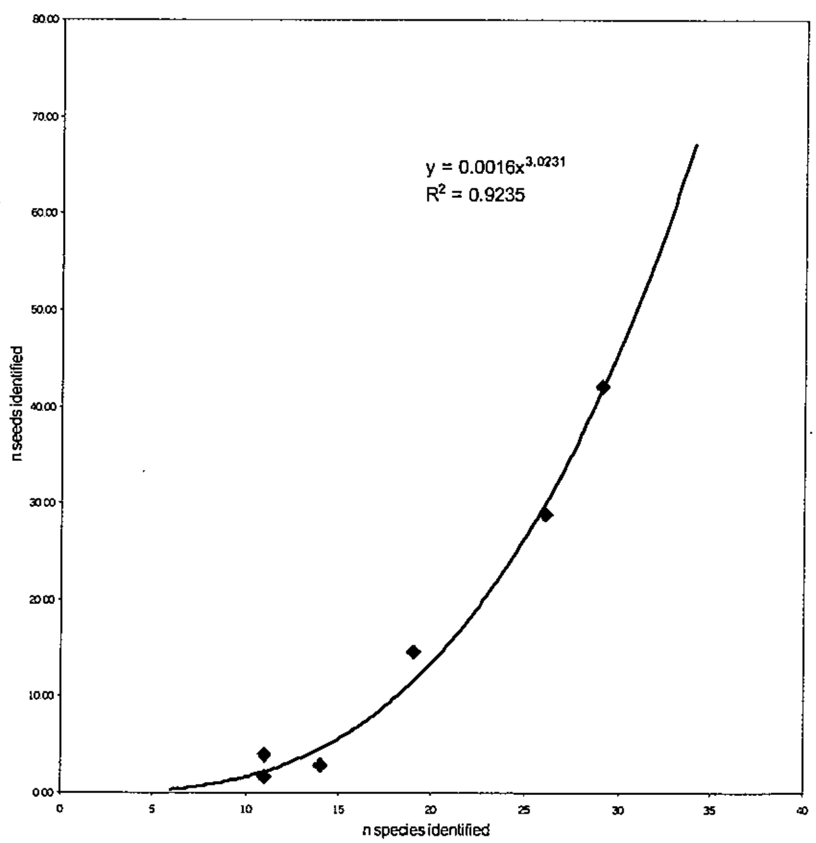
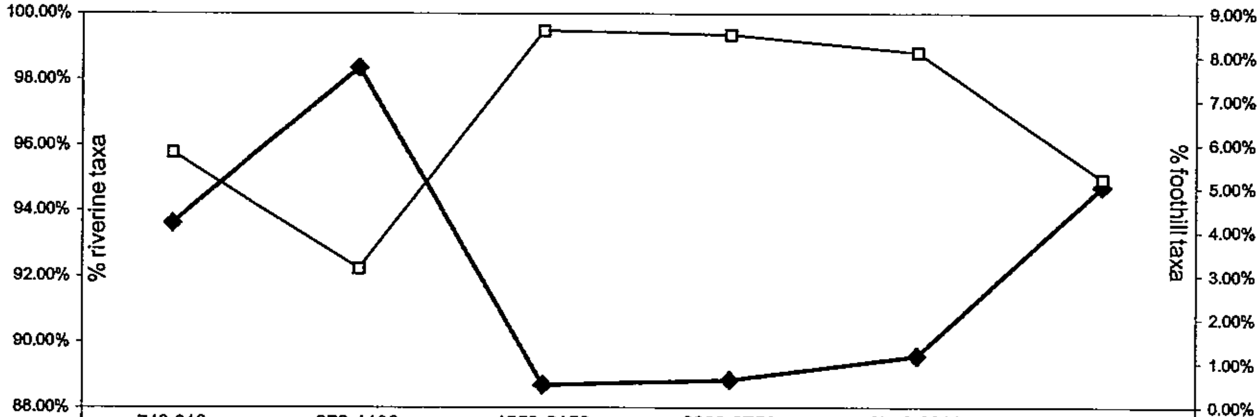


Figure 116: Correlation between number of seeds identified and number of taxa identified, averaged per phase.



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Foothill	4.21%	7.77%	0.52%	0.63%	1.17%	5.04%
Riverine	95.79%	92.23%	99.48%	99.37%	98.83%	94.96%

Figure 117: Riverine and foothill large seed taxa over time, samples combined per phase.

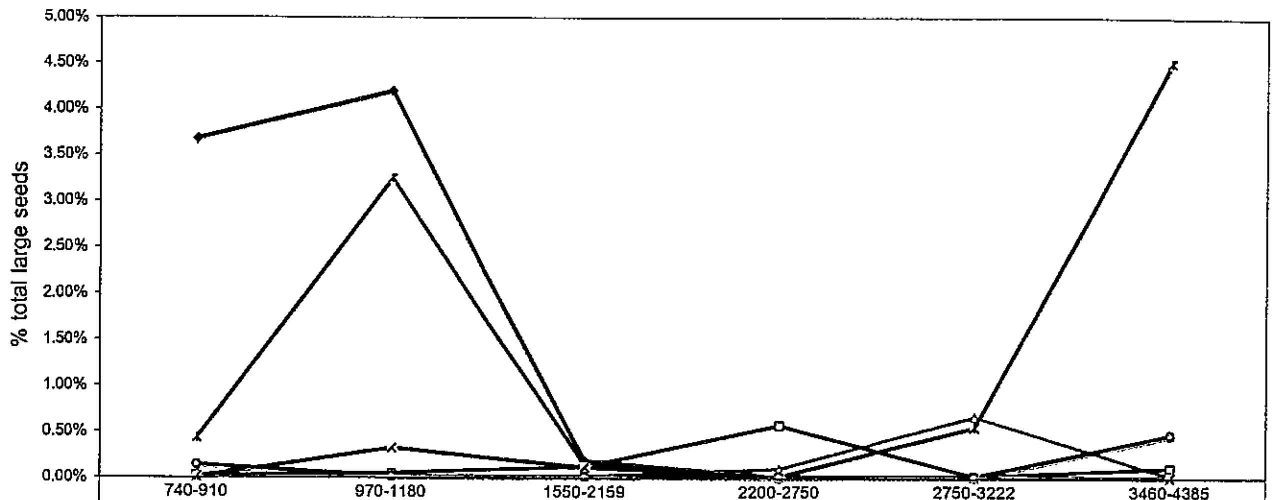
An additional bias may have been introduced in the mix of feature and nonfeature samples. Features are likely to have been created by a single event or a related series of events, and their contents can often be linked to specific food related behaviors. In contrast, middens may be seen as cumulative zones of deposition collecting plant remains from an aggregate of activities and events. The contrast between feature versus cumulative contexts is illustrated by flotation samples #47 and #52, which were sections of a single Archaic house floor (Col-247, Feature 8, see Features). These two samples produced a distinctive small seed assemblage, with bedstraw (*Galium* sp.) representing 38.7 percent and 17.5 percent, respectively, of all identified small seeds. In all other project flotation samples bedstraw was absent or less than 1.0 percent of all identified small seeds. Thus, Feature 8 flotation results were substantially different, probably resulting from the prehistoric use of bedstraw for domestic floor mats or bedding. Because the Feature 8 samples dominate the 1550-2159 CAL BP phase, this and other patterns associated with the phase might be problematic. For other phases, feature and midden samples are more balanced.

Use of Large Seeds

Taxonomic Diversity. Large seeds found during the flotation study were characterized by low taxonomic diversity and dominance by a single taxon, the acorn. Ten large seed taxa were recovered, including: acorn (*Quercus* sp. or *Lithocarpus* sp.), manzanita (*Arctostaphylos* sp.), grey pine (*Pinus sabiniana*), thin-shelled pine nut (aka "thin pine," probably *Pinus ponderosa* or *P. lambertiana*), California bay laurel (*Umbellaria californica*), buckeye (*Aesculus californica*), farewell to spring (*Clarkia* sp.), wild cucumber (*Marah* sp.), hazelnut (*Corylus cornuta californica*), and wild grape (*Vitus californica*). Four taxa were represented by nutshell only (manzanita, grey pine, thin pine, and bay laurel), and three by distinctive large seeds (farewell to spring, wild cucumber, and wild grape). Acorns were represented by nut meats, nut hulls, and attachment caps. However, due to the irregular and infrequent appearance in the record of hulls and caps only the acorn nut meats were tallied for tables and charts reported here.

The large seed taxonomic list has remarkably few taxa typical of local habitats. Only acorns, farewell to spring, wild cucumber, and wild grape are characteristic of the historically known riparian forest, grassland, and salt flat habitats in the vicinity of the river. In contrast, manzanita, pine, bay laurel, buckeye, and hazelnut were typical of the foothill reach west of the project area or the protected canyons on the slopes of the Sutter Buttes south of the project area. Two possible explanations may be considered: (1) conditions existed at some point during the Holocene which allowed typical foothill tree and shrub species to grow near the river in the project area, or (2) the recovery of these species from river edge sites is the result of trade or travel relationships between the people of the river and the foothill zone.

What was the relative role of foothill and riverine large seed species and how did this



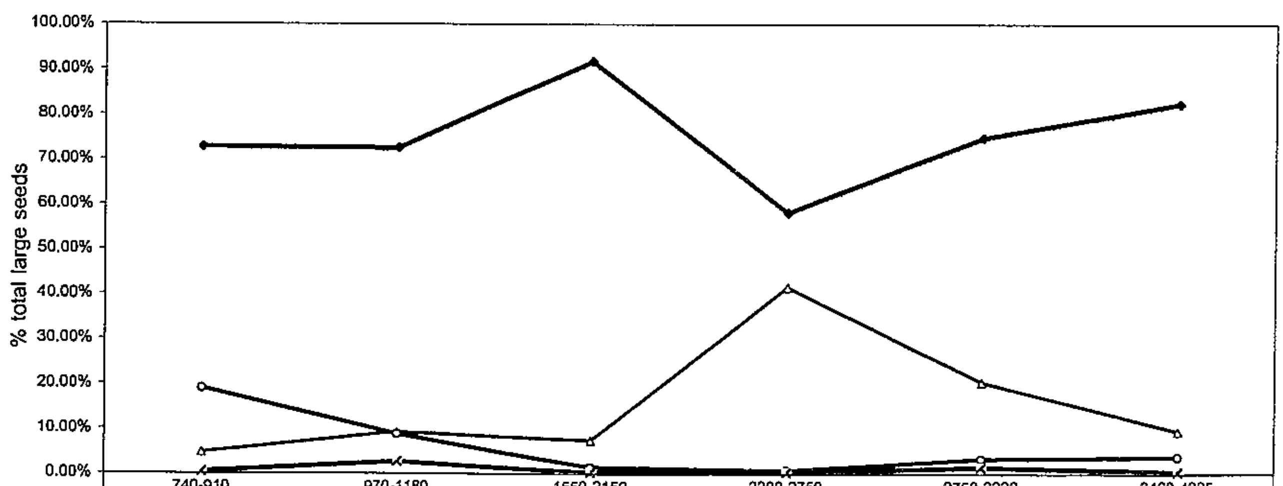
	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Manzanita	3.67%	4.18%	0.17%	0.00%	0.00%	0.00%
Hazelnut	0.42%	3.24%	0.12%	0.00%	0.53%	4.49%
Thin Pine	0.00%	0.00%	0.00%	0.08%	0.64%	0.00%
Buckeye	0.00%	0.03%	0.11%	0.56%	0.00%	0.09%
Gray Pine	0.00%	0.32%	0.11%	0.00%	0.00%	0.00%
Bay Laurel	0.13%	0.00%	0.00%	0.00%	0.00%	0.46%

Figure 118: Foothill large seed taxa over time, samples combined per phase.

relationship change over time? Figure 117 shows that foothill taxa were never more than 8.0 percent, and riverine taxa were never less than 92.0 percent of large seeds from any phase. In other words, while a diverse range of foothill taxa entered the diet, they formed a relatively minor contribution to the diet. Overall, where our record begins during the Middle Archaic, foothill taxa represented 5.0 percent of total large seeds, declining steadily through the Upper Archaic to a low of 0.5 percent in the terminal Archaic, only to spike again after the beginning of the Emergent at 1180 CAL BP (Figure 117).

The use of specific foothill species is also interesting. Before 2750 CAL BP, hazelnut was the dominant foothill taxon and gray pine and manzanita were absent. In fact, use of the two pine taxa flip-flopped over time, with thin pine strictly predating 2200 CAL BP and gray pine strictly postdating 2159 CAL BP. Manzanita also appears with gray pine after 2159 CAL BP, and accounts for

Figure 119: Riverine large seed taxa over time, samples combined per phase.



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Acorn	72.60%	72.35%	91.50%	57.94%	74.59%	82.11%
Cucumber	4.35%	8.89%	6.99%	41.19%	20.07%	9.14%
Wild Grape	18.66%	8.48%	0.99%	0.24%	2.92%	3.43%
Clarkia	0.17%	2.51%	0.00%	0.00%	1.25%	0.28%

most of the late foothill "spike" after 1180 CAL BP (Figure 118).

Temporal distribution of riverine species shows a similar shift between Archaic and Emergent conditions (Figure 119). The acorn was used intensively throughout, and was the dominant large seed taxon in all phases. In the Middle Archaic, where our record begins, acorns were already 75.0 to 82.0 percent of all large seeds. Acorn use declined to just 57.9 percent of large seeds between 2200-2750 CAL BP as wild cucumber production rose to 41.2 percent of all large seeds. However, after 2159 CAL BP, acorn use rose to its historical high of 91.5 percent of all large seeds. After 1180 CAL BP, the acorn dropped again to around 72.0 percent of all large seeds, and a variety of taxa accounted for the remaining 28.0 percent, primarily wild grape, wild cucumber, manzanita, and hazelnut (Figures 118 and 119).

Use of Small Seeds

Taxonomic Diversity. In contrast to the large seeds, small seeds were characterized by many taxa and no dominant taxon. The 35 small seed taxa included five nonnative (historical) species, 25 native taxa identified to the genus level, and five native taxa identified to the family level.

The five nonnative species included star thistle (*Centaurea* sp.), wheat (*Triticum* sp.), cheeseweed (*Malva* sp.), plantain (*Plantago* sp.), and filaree (*Erodium* sp.). Nonnative species were generally minor intrusive elements representing no more than 5.0 percent of identifiable seeds and confined to a few near-surface midden samples. The only sample containing a significant proportion of nonnative intrusives was Sample #34, a midden profile sample from Col-245/H (Table 34), which produced 33.0 percent plantain and filaree of all identifiable seeds. Nonnative intrusives are not included in the tables and graphics, below.

Twenty-five native taxa were identified to genus, including red maids (*Calandrinia* sp.), miners lettuce (*Claytonia* sp.), fiddleneck (*Amsinckia* sp.), three-awn grass (*Aristida* sp.), saltbush (*Atriplex* sp.), brome grass (*Bromus* sp.), goosefoot (*Chenopodium* sp.), peppergrass (*Lepidium* sp.), bedstraw (*Galium* sp.), wild barley (*Hordeum* sp.), phacelia (*Phacelia* sp.), buttercup (*Ranunculus* sp.), dock or knotweed (*Rumex* sp. or *Polygonum* sp.), sage (*Salvia* sp.), fescue grass (*Vulpia* sp. or *Festuca* sp.), blow-wives (*Achyrachaena mollis*), maygrass (*Phalaris* sp.), elderberry (*Sambucus* sp.), tarweed (*Hemizonia* sp. and *Madia* sp.), tule (*Scirpus* sp.), nightshade (*Solanum* sp.), berry (*Rubus* sp.), and hareleaf (*Lagophylla* sp.) (Table 35).

Five taxa were identified to the family level only, including seeds from the sunflower family (Asteraceae), bean family (Fabaceae), sedge family (Cyperaceae), rose family (Rosaceae), and grass family (Poaceae). Grass leaf and stem fragments were also identified and tabulated (Table 35).

Sources of Variation. The taxonomic diversity, taxonomic makeup, and rate of recovery (density per liter) of small seeds shifted from phase to phase. Aside from the distinctive Feature 8 recovery described above, there are several significant changes that appear to be systematic across the span of the sequence. Three sources of variation were examined: (1) variation over time in settlement patterns resulting in the introduction of different seasonal markers (see Settlement, below), (2) variation in foraging radius or trade patterns resulting in introduction of non-local seeds, and (3) differences over time in soil composition and chemistry resulting in changes in species composition and growth characteristics.

Small seed taxa are grouped by ripening season in Table 35. Temporal variation and seasonality implications is discussed below. With respect to foraging radius and trade considerations, small seed taxa lack the clear habitat distinctions seen with large seeds. For example, while several species are common in foothill regions, especially sage, goosefoot, elderberry, and three-awn grass, these same species can also be found near the river on stable, well drained floodplain landforms such as elevated natural levees. On the other hand, the small seed taxa do reflect important soil:vegetation relationships that can be found in local basin and floodplain landforms.

The small seed assemblage's significant level of taxonomic diversity and the lack of a dominant species suggests there were few "target species" and instead a "target volume" satisfied by a range of available local grass, herb, or berry options. While these options changed seasonally, small seed taxonomic makeup should also reflect long-term ecological shifts in the composition of local riparian forest and prairie habitats.

Our geomorphic studies described above established that ecological patterns along the river were primarily conditioned by cycles of floodplain

Table 35: Distribution of small seeds, average percent per taxon, combined samples per phase, arranged by season of occurrence.

Percent = Taxon/Total ID + NonID small seeds per phase

		Phase	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
		n Species	29	26	14	11	11	19
			AVG	AVG	AVG	AVG	AVG	AVG
Spring Harvest	*Calandrinia sp.*	Red maids	3.57%	2.38%	0.70%	8.17%	7.37%	5.03%
	Claytonia sp.	Miners lettuce	5.63%	1.15%	0.00%	0.00%	1.62%	0.00%
Late Spring Harvest	*Amsinckia sp.*	Fiddleneck	1.19%	2.19%	0.97%	6.01%	0.00%	0.44%
	cf. Aristida sp.	Three-awn grass	0.24%	0.05%	0.00%	0.00%	0.00%	0.00%
	Atriplex sp.	Saltbush	4.47%	1.78%	0.00%	0.00%	4.88%	1.21%
	Bromus sp.	Brome grass	1.99%	1.91%	0.00%	2.78%	0.00%	3.45%
	Chenopodium sp.	Goosefoot	35.51%	28.42%	15.84%	42.13%	36.96%	34.70%
	Clarkia sp.	Farewell to spring	1.06%	1.72%	0.00%	4.17%	6.70%	2.52%
	Lepidium sp.	Peppergrass	0.59%	0.00%	0.00%	0.00%	0.00%	0.44%
	Galium sp.	Bedstraw	0.17%	0.05%	18.76%	0.00%	0.00%	0.00%
	Hordeum sp.	Wild barley	9.29%	6.91%	17.68%	7.40%	2.46%	7.80%
	Phacelia sp.	none	2.06%	0.78%	2.06%	2.61%	0.00%	0.00%
	Ranunculus sp.	Buttercup	0.07%	0.40%	0.00%	0.00%	0.00%	0.00%
	Rumex/Polygonum sp.	Dock or Knotweed	1.54%	0.80%	0.97%	2.61%	0.00%	0.55%
	Salvia sp.	Sage	0.00%	0.00%	0.00%	0.00%	0.00%	0.54%
	Vulpia/Festuca sp.	Fescue grass	1.74%	1.22%	1.81%	0.00%	0.97%	1.16%
	Achyrachaena mollis	Blow-wives	0.00%	0.11%	0.00%	0.00%	0.00%	0.00%
Summer Harvest	*Phalaris sp.*	Maygrass	13.64%	22.48%	9.50%	22.29%	23.58%	25.12%
	Sambucus sp.	Elderberry	0.45%	1.82%	0.00%	0.00%	0.00%	2.03%
	Hemizonia sp.	Tarweed	0.56%	0.00%	0.00%	0.00%	0.00%	0.00%
	Madia sp.	Tarweed	0.00%	0.21%	0.00%	0.00%	0.00%	0.00%
	Scirpus sp.	Tule	1.11%	0.00%	0.00%	0.00%	0.00%	0.00%
	Solanum sp.	Nightshade	0.32%	4.89%	0.00%	0.00%	0.00%	0.00%
	Rubus sp.	Berry	0.07%	0.05%	0.00%	0.00%	0.00%	0.00%
	cf. Lagophylla sp.	Hareleaf	0.96%	0.00%	0.00%	0.00%	0.00%	1.17%
ID to Family Level	*Asteraceae*	Sunflower	2.32%	2.30%	6.51%	0.00%	3.62%	0.58%
	Fabaceae	Bean	9.67%	16.07%	20.64%	1.84%	11.84%	13.09%
	Cyperaceae	Sedge	0.29%	0.00%	0.00%	0.00%	0.00%	0.00%
	Rosaceae	Rose	0.17%	0.05%	0.70%	0.00%	0.00%	0.00%
	Poaceae	grass seeds	1.32%	2.28%	3.87%	0.00%	0.00%	0.19%
	Poaceae	grass fragments	30.25%*	18.62%*	21.75%*	43.00%*	50.65%*	30.25%*
		Total identified to genus	37.77	22.89	2.04	1.62	3.33	12.56
		Total identified to family	4.29	5.97	0.84	0.02	0.53	2.07
		Total Identified Seeds Per Liter	42.06	28.86	2.88	1.64	3.86	14.63
		Unidentified seeds	2.21	0.58	0.32	0.02	0.12	0.44
		Unidentifiable seed fragments	14.79	7.50	2.23	0.90	0.73	3.95
		Total Unidentified Seeds Per Liter	17.01	8.08	2.55	0.92	0.85	4.39
		Total ID + NonID	59.06	36.94	5.43	2.55	4.72	19.01
		Total ID+NonID+Grass Frags	156.58	63.37	9.10	3.70	5.50	28.20

* - Percent of Total ID + NonID + Grass Frags.

	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Saltbush	4.47%	1.78%	0.00%	0.00%	4.88%	1.21%
Miners lettuce	5.63%	1.15%	0.00%	0.00%	1.62%	0.00%
Elderberry	0.45%	1.82%	0.00%	0.00%	0.00%	2.03%
Hareleaf	0.96%	0.00%	0.00%	0.00%	0.00%	1.17%
Peppergrass	0.59%	0.00%	0.00%	0.00%	0.00%	0.44%
Sage	0.00%	0.00%	0.00%	0.00%	0.00%	0.54%

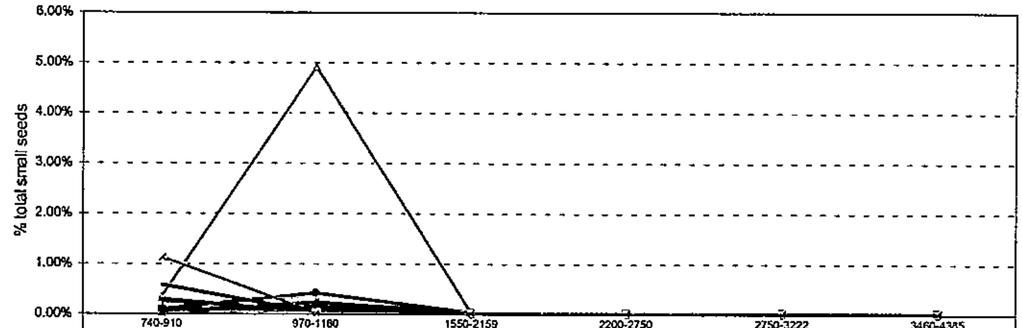
Figure 120: Small seed species common early and late.

development, altering between accretion and weathering. Thus, small seed analysis should look for distinctions between taxa typical of different stages of floodplain development, and correlate these to our geomorphic sequence. For example, six taxa associated with clayey or alkaline soils (saltbush, miners lettuce, hareleaf, elderberry, sage, and peppergrass) have a distinctive pattern of temporal distribution: they are common early and late in the sequence (Figure 120). Following this line of reasoning, it is likely that the end of the mid-Holocene (2750-4385 CAL BP) saw floodplain landforms stabilize, resulting in the formation of increasingly clayey and alkaline soils and plants adapted to these growth conditions. The prevalence of elderberry, goosefoot, and sage during this period indicates that well-drained landforms such as natural levees were also present. It is likely that the decline in use of these species during the middle of the sequence was produced by intensive floodplain development which our geomorphic study dated between 1180-2750 CAL BP (see Chronology).

In turn, flooding between 1180-2750 CAL BP introduced a new package of sediments which not only reduced alkalinity on the floodplain but promoted the growth of species adapted to the changed growth conditions. After 2750 CAL BP several new taxa appear and other taxa persist from earlier phases but were used more intensively. These included bean, wild barley, maygrass, brome, bedstraw, sunflower, fescue, fiddleneck, facelia, red maids, and dock, representing a combination of prairie and riparian taxa associated with disturbance or young, silty or sandy soils (Figure 121, B).

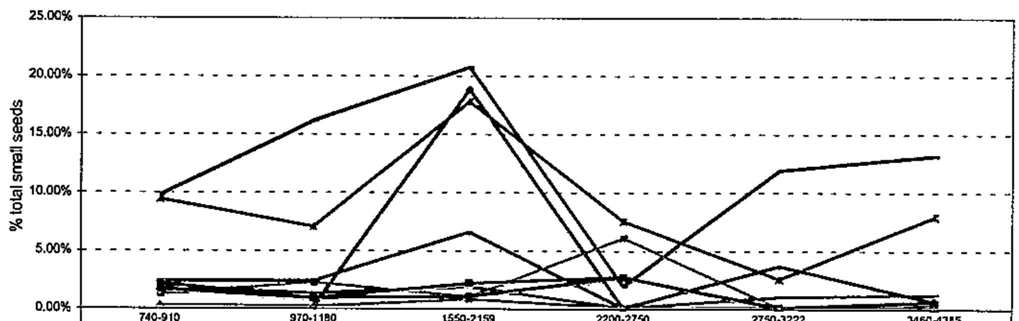
The final phases of occupation, 740-1180 CAL BP, saw a return of saltbush, hareleaf, peppergrass, and goosefoot (Figure 120), and the introduction tarweed and blow-wives (Figure 121, A), all species that indicate renewed stabilization and the development of more clayey or alkaline soils on the floodplain.

Six taxa representing "riparian associates" including four riparian shrubs (nightshade, wild rose, elderberry, berry) and two aquatic plants (tule and sedge) were a small percentage of all small seeds. However, their cumulative pattern is interesting. Elderberry was in the diet by 4385 CAL BP, wild rose was added after 2159 CAL BP, berry after 1180 CAL BP, and tule and sedge after 910 CAL BP (Figures 120 and 121). In short, the diversity of riparian species exploited increased over time. However, it should be noted that all of these species were absent from the record between 2200-2750 CAL BP, and overall they followed the pattern of early/late temporal distribution identified for alkaline associates. Assuming that the exploitation of riparian taxa was conditioned by their local encounter rate, then our findings probably indicate that a productive and diverse riparian vegetation developed during periods also marked by floodplain stability.



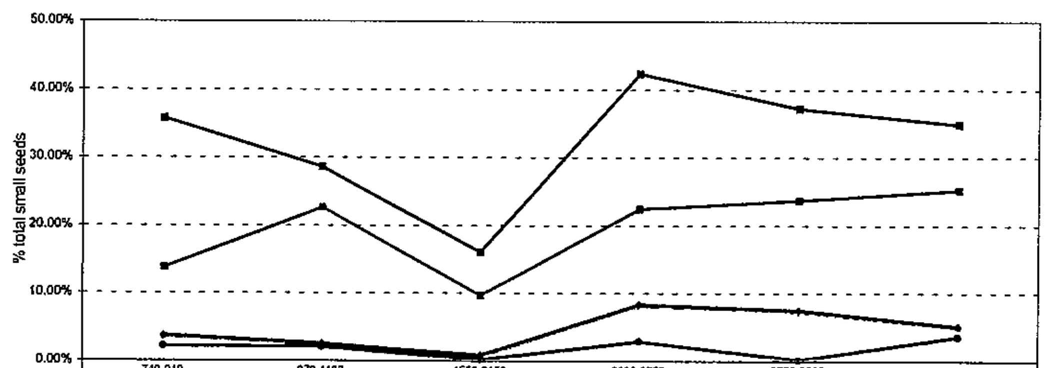
	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Nightshade	0.32%	4.89%	0.00%	0.00%	0.00%	0.00%
Buttercup	0.07%	0.40%	0.00%	0.00%	0.00%	0.00%
Blow-wives	0.00%	0.11%	0.00%	0.00%	0.00%	0.00%
Berry	0.07%	0.05%	0.00%	0.00%	0.00%	0.00%
Tarweed	0.00%	0.21%	0.00%	0.00%	0.00%	0.00%
Three-awn grass	0.24%	0.05%	0.00%	0.00%	0.00%	0.00%
Tule	1.11%	0.00%	0.00%	0.00%	0.00%	0.00%
Tarweed	0.56%	0.00%	0.00%	0.00%	0.00%	0.00%
Sedge	0.29%	0.00%	0.00%	0.00%	0.00%	0.00%

A.
Small Seeds
Dominant Late
740-1180 CAL BP



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Bean	9.67%	16.07%	20.64%	1.84%	11.84%	13.09%
Bedstraw	0.17%	0.05%	18.76%	0.00%	0.00%	0.00%
Wild barley	9.29%	6.91%	17.88%	7.40%	2.46%	7.80%
Sunflower	2.32%	2.30%	6.51%	0.00%	3.62%	0.58%
Fescue grass	1.74%	1.22%	1.61%	0.00%	0.97%	1.16%
Fiddleneck	1.19%	2.19%	0.97%	6.01%	0.00%	0.44%
Phacelia sp.	2.06%	0.78%	2.06%	2.61%	0.00%	0.00%
Dock or Knotweed	1.54%	0.80%	0.97%	2.61%	0.00%	0.55%
Rose	0.17%	0.05%	0.70%	0.00%	0.00%	0.00%

B.
Small Seeds
Dominant Middle
1550-2750 CAL BP



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Goosefoot	35.51%	28.42%	15.84%	42.13%	36.96%	34.70%
Maygrass	13.64%	22.48%	9.50%	22.29%	23.58%	25.12%
Red maids	3.57%	2.38%	0.70%	8.17%	7.37%	5.03%
Brome grass	1.99%	1.91%	0.00%	2.78%	0.00%	3.45%

C.
Small Seeds
Dominant Early
2750-4385 CAL BP

Figure 121: Distribution of small seed species by period of dominance. Percent (y) = proportion species of all small seeds, averaged per phase.

ANIMAL USE

Methods

Vertebrate taxonomic identifications were made at the Zooarchaeology Laboratory, California State University, Chico. Taxonomic identification of mammal remains was completed by Marc Greenberg, bird remains by John Jangala, and fish remains by Tim Carpenter, Department of Anthropology, California State University, Chico.

Sample Biases and Sample Size

A total of 56,842 bones were evaluated and tabulated during the investigation. The faunal analysis consulted two distinct sample sources, excavation recovery and flotation heavy fraction.

Excavation Sample. All faunal remains recovered during the excavations at Col-158, Col-245/H, Col-246/H, and Col-247 were examined. These constituents were cleaned and separated into basic taxa (mammal, bird, fish, indeterminate) and all worked bone and human remains were identified and separated out for respective analyses. A total of 47,750 items of nonhuman, nonworked bone was tabulated from the 34.5 m^3 excavated and screened soil. Formal zooarchaeological analysis began with the identification of representative samples from each component. These samples consisted of unit/level proveniences determined by stratigraphic analysis to possess chronological integrity. A total of 13.4 m^3 was identified, divided into 1.0-4.7 m3 per phase (Table 36).

Each piece of bone was identified to the most specific taxonomic level possible. In the following tables and descriptions the term "identifiable" refers to ordinal and more specific levels (i.e., Carnivora order, Canidae family, *Canis* genus, and *Canis latrans* species), while "unidentifiable" refers to assignments at the class level only (fish, birds, mammals). Further divisions of Mammalia were based on size differences (i.e., small, medium, and large mammal). Each specimen was identified (where possible) to anatomical element, condition, size, side, age/fusion, and percentage of completeness. Other modifications noted included the type/degree of weathering, rodent gnawing, carnivore chewing, and degree of burning or heat modification. Excavation samples focused on 1/4" screen recovery, and nearly all identified elements belonged to mammal or bird taxa. No reptile or amphibian taxa were recognized, and the 1/4" screen recovery produced few fish bones. The latter were not analyzed in favor of the more reliable and systematic data from flotation heavy fraction analysis. Summary tabulation of the zooarchaeological identifications appears in Table 37, including both raw data and results converted to number per m^3, per component.

Phase	Date (CAL BP)	Site	Unit	Level	m3
Coru	740-910	Col-158A	A1	020-070	1.3
		Col-245/H	Buried	Midden	3.4
				Total m3:	4.7
Wi'ter-ry	970-1180	Col-158B	B1	000-140	2.1
		Col-158D	D	163-183	0.4
				Total m3:	2.5
Si'dehe 2A	1550-2159	Col-247	A14	010-040	0.3
			A15	010-040	0.3
			A16	010-040	0.3
			A17	010-040	0.3
			A18	010-040	0.3
				Total m3:	1.5
Si'dehe 2B	2200-2750	Col-247	B2	020-040	0.2
			B3	020-040	0.2
			B4	020-040	0.2
			B5	020-040	0.2
			B6	020-040	0.2
				Total m3:	1.0
Si'dehe 1	2750-3222	Col-247	B1	060-090	0.3
			B2	060-090	0.3
			B3	060-090	0.3
			B4	060-090	0.3
			B5	060-090	0.3
			B6	060-090	0.3
			A3	050-090	0.3
			A4	060-090	0.3
			A5	060-090	0.3
				Total m3:	2.7
Cha'dehe	3460-4385	Col-247	A2	100-150	0.5
			A3	100-150	0.5
				Total m3:	1.0

Table 36: Excavation recovery component proveniences.

Flotation Heavy Fraction Sample. Heavy fraction from 16 flotation samples was sorted and examined for fish remains. A total of 9,092 items of fish bone was tabulated from 212.3 liters (0.21 m^3) of soil. The heavy fraction was first sorted into three screen

Table 37: Distribution of non-fish taxa, total n per component sample, average n/m3, and percent of total or component, arranged by class.

Colusa Phases/Dates/Sites	Total			740-910	158 A/246		970-1180	158 B/158D		1550-2150	247 S1A
TAXON	n	%	n	n/m3	%	n	n/m3	%	n	n/m3	%
Lepus califomious	2	22.22%	0	0.00	0.00%	2	0.80	50.00%	0	0.00	0.00%
Sylvilagus sp.	7	77.78%	1	0.21	100.00%	2	0.80	50.00%	1	0.67	100.00%
Total Small	9		1	0.21	11.11%	4	1.60	44.44%	1	0.67	11.11%
Anatidae	43	28.67%	13	2.77	24.07%	3	1.20	27.27%	7	4.67	70.00%
Anseriformes	89	59.33%	31	6.60	57.41%	7	2.80	63.64%	3	2.00	30.00%
Passeriformes	5	3.33%	4	0.85	7.41%	1	0.40	9.09%	0	0.00	0.00%
Accipitriformes/Falconiformes	2	1.33%	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Corvidae	3	2.00%	2	0.43	3.70%	0	0.00	0.00%	0	0.00	0.00%
Tyto	1	7.14%	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Palocrocorax	1	6.67%	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Callipepla	3	2.00%	2	0.43	3.70%	0	0.00	0.00%	0	0.00	0.00%
Colaptes	1	0.67%	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Grebe/Heron	2	1.33%	2	0.43	3.70%	0	0.00	0.00%	0	0.00	0.00%
Waterfowl				9.36			4.00			6.67	
non-Waterfowl				2.13			0.40			0.00	
Total Bird	160		64	11.49	36.00%	11	4.40	7.33%	10	6.67	6.67%
Procyon spp.	14	48.28%	4	0.85	66.67%	4	1.60	80.00%	1	0.67	100.00%
Canis spp.	15	51.72%	2	0.43	33.33%	1	0.40	20.00%	0	0.00	0.00%
Total Carnivores	29		6	1.28	20.69%	5	2.00	17.24%	1	0.67	3.45%
Odocoileus	33	31.73%	9	1.91	23.08%	8	3.20	61.54%	7	4.67	58.33%
Antilocapra	9	8.65%	5	1.06	12.82%	0	0.00	0.00%	0	0.00	0.00%
Cervus	5	4.81%	3	0.64	7.69%	0	0.00	0.00%	0	0.00	0.00%
Artiodactyl	57	54.81%	22	4.68	56.41%	5	2.00	38.46%	5	3.33	41.67%
Total Cervids	104		39	8.30	37.50%	13	5.20	12.50%	12	8.00	11.54%
Total Small	9	3.08%	1	0.21	1.00%	4	1.60	12.12%	1	0.67	4.17%
Total Bird	150	51.37%	64	11.49	64.00%	11	4.40	33.33%	10	6.67	41.67%
Total Carnivores	29	9.93%	6	1.28	6.00%	5	2.00	15.15%	1	0.67	4.17%
Total Cervids	104	35.62%	39	8.30	39.00%	13	5.20	39.39%	12	8.00	50.00%
Identifiable subtotal	292		100	21.28		33	13.20		24	16.00	
UnID Bone (n per m3)	2764.4	90.51%		344.6	94.18%		485.6	97.35%		450.9	96.57%
All Bone (n per m3)	3076.4			365.9			498.8			466.9	
All Shell (g per m3)	13317.4			332.7			2101.9			3090.4	
Sample Size (m3)		13.4	4.7			2.5			1.5		

Colusa Phases/Dates/Sites		2200-2750	247 S1B		2760-3222	247 S2		3460-4385	247 S3
TAXON	n	n/m3	%	n	n/m3	%	n	n/m3	%
Lepus califomious	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Sylvilagus sp.	0	0.00	0.00%	2	0.74	100.00%	1	1.00	100.00%
Total Small	0	0.00	0.00%	2	0.74	22.22%	1	1.00	11.11%
Anatidae	1	1.00	14.29%	11	4.07	25.58%	8	8.00	32.00%
Anseriformes	6	6.00	85.71%	28	10.37	65.12%	14	14.00	56.00%
Passeriformes	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Accipitriformes/Falconiformes	0	0.00	0.00%	1	0.37	2.33%	1	1.00	4.00%
Corvidae	0	0.00	0.00%	1	0.37	2.33%	0	0.00	0.00%
Tyto	0	0.00	0.00%	0	0.00	0.00%	1	1.00	4.00%
Palocrocorax	0	0.00	0.00%	0	0.00	0.00%	1	1.00	4.00%
Callipepla	0	0.00	0.00%	1	0.37	2.33%	0	0.00	0.00%
Colaptes	0	0.00	0.00%	1	0.37	2.33%	0	0.00	0.00%
Grebe/Heron	0	0.00	0.00%	0	0.00	0.00%	0	0.00	0.00%
Waterfowl		7.00			14.44			22.00	
non-Waterfowl		0.00			1.48			3.00	
Total Bird	7	7.00	4.67%	43	15.93	28.67%	25	25.00	16.67%
Procyon spp.	2	2.00	66.67%	1	0.37	9.09%	2	2.00	66.67%
Canis spp.	1	1.00	33.33%	10	3.70	90.91%	1	1.00	33.33%
Total Carnivores	3	3.00	10.34%	11	4.07	37.93%	3	3.00	10.34%
Odocoileus	2	2.00	25.00%	7	2.59	28.00%	0	0.00	0.00%
Antilocapra	1	1.00	12.50%	3	1.11	12.00%	0	0.00	0.00%
Cervus	0	0.00	0.00%	2	0.74	8.00%	0	0.00	0.00%
Artiodactyl	5	5.00	62.50%	13	4.81	52.00%	7	7.00	100.00%
Total Cervids	8	8.00	7.69%	25	9.26	24.04%	7	7.00	6.73%
Total Small	0	0.00	0.00%	2	0.74	2.47%	1	1.00	2.78%
Total Bird	7	7.00	38.89%	43	15.93	53.09%	25	25.00	69.44%
Total Carnivores	3	3.00	16.67%	11	4.07	13.58%	3	3.00	8.33%
Total Cervids	8	8.00	44.44%	25	9.26	30.86%	7	7.00	19.44%
Identifiable subtotal	18	18.00		81	30.00		36	36.00	
UnID Bone (n per m3)		333.6	94.88%		873.3	96.68%		296.5	89.17%
All Bone (n per m3)		351.6			903.3			332.5	
All Shell (g per m3)		1819.9			3812.2			2160.3	
Sample Size (m3)	1.0			2.7			1.0		

sizes, 1/4-inch, 1/8-inch, and 1/16-inch, then the samples were sorted using a hand lens or microscope as needed. Fish bone fragments not identifiable to order, family, genus, or species were not analyzed or tabulated. Instead, identifications and tabulations were restricted to elements that could be identified to one of these taxonomic levels. Generally, elements that occur one per fish such as the first, second, penultimate, and ultimate vertebrae, as well as cranial elements such as the basioccipital, basipterygium, or pharyngeal teeth, provided family to species level identifications. Intermediate vertebrae, ribs, and some otoliths and other elements could be defined to the order or family level.

Tabulations were made per sample, screen size, and taxon. Flotation samples were measured for volume size (in liters) prior to sorting, permitting us to convert the fish data to numbers per m^3 (1.0 liter=0.001 m^3). Flotation samples were assigned to components using the chronostratigraphic findings described in the previous chapter (see Chronology), using the same assignments made for the plant macrofossil samples above. Table 38 lists the flotation sample provenience, phase assignments, and volume. Table 39 lists fish data converted to number per m^3 (n/m^3) and summarized per phase. No data was available for the 1550-2159 CAL BP phase, associated with the 0-40 cm levels in Col-247, Exposure 2 (Units A14 through A18).

Recovery Rate

Both the excavation and flotation samples were of reasonable size and characterized by excellent recovery rates. All of the samples possessed earmarks of good preservation, including a high frequency of large fragments, a low frequency of calcined (burned) bone, and an array of well preserved thin walled and low density bone such as fish vertebrae. The best preservation was encountered in the buried middens at Col-245/H and Col-247. The poorest bone preservation was associated with surface middens at Col-158, indicating that leaching and weathering may have played a more important role in the recovery of fish, shellfish, and low-density bones from components 158A and 158B.

Fish Remains

Taxonomic Assignments

A total of 9,092 fish bones was identified, which converts to an estimated 186,405.9 items

CAL BP	Flot #	Site	Unit; Level	Volume (lt)
740-910	2	245/H	Lower Mddn	16.0
	5	245/H	Lower Midden	16.7
	28	245/H	Lower Midden	16.5
	57	158A	Tr 34; House floor	10.0
970-1180	31	158B	Unit B1; 60-90	17.0
	25	158B	Unit B2; 90-120	12.3
	54	158D	Buried Midden	10.2
2200-2750	14	247	Unit B1; 30-40	14.0
	17	247	Unit A1; 40-50	13.5
2750-3222	7	247	Unit B3; 80-90	6.5
	20	247	Unit A1; 90-100	10.5
3460-4385	23	247	Unit A1; 120-130	13.0
	38	247	Unit A1; 130-140	15.5
	35	247	Unit A1; 140-150	12.5
	44	247	Unit A1; 150-160	14.0
	4	247	Unit A3; 160-180	14.1

Table 38: Flotation samples used for the fish study. Sample provenience, phase assignment, and volume.

projected to 1.0 m^3 per phase (Table 39). A total of 83.1 percent of identifiable fish bones consisted of intermediate vertebrae and ribs identifiable to class-level only, all attributable to the Class Actinopterygii (ray finned fishes). This class includes orders Acipenseriformes, Cypriniformes, Salmoniformes, Gasterosteiformes, and Perciformes, accounting for known specific taxa. Therefore, it is tempting to assume that class Actinopterygii is composed of about the same proportion of species identified among the more specific elements. However, some species have a higher proportion of specific hard tissues and might be overrepresented, and vice-versa. Generally, we expect small cyprinids to be slightly under-represented and acipensers to be slightly overrepresented.

The remaining 16.9 percent of identifiable specimens was attributable to a specific Order, Suborder, Family, Genus, or Species. The most specific among these were pharyngeal bones and vertebrae assigned to the Order Cypriniformes, a taxon which includes seven Cyprinids (*Ptychocheilus grandis*, *Mylopharodon conocephalus*, *Lavinia exilicauda*, *Pogonichthys macrolepidotus*, *Orthodon microlepidotus*, *Gila crassicauda*, and *Hesperoleucus symmetricus*) and one Catostomid (*Catostomus occidentalis*). Like the cumulative pattern of these species, bones assigned to the taxon Cypriniformes

Table 39: Distribution of fish bones by species and phase, converted to n/m³.

Recovery	Common Name	Scientific Name	n averaged per phase (CAL BP)						n per m³, averaged per phase (CAL BP)					
	Common Name	Scientific Name	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
1/4" Recovery	Minnows/sucker	Cyprinidae/Cypriniformes	1	0	-	0	0	1	16.89	0	-	0	0	14.47
	Sacramento pike minnow	Ptychocheilus grandis	0	0	-	0	0	0	0	0	-	0	0	0
	Hardhead	Mylopharodon conocephalus	0	0	-	0	0	0	0	0	-	0	0	0
	Hitch	Lavinia exilicauda	0	0	-	0	0	0	0	0	-	0	0	0
	Splittail	Pogonichthys macrolepidotus	0	0	-	0	0	0	0	0	-	0	0	0
	Sacramento blackfish	Orthodon microlepidotus	0	0	-	0	0	0	0	0	-	0	0	0
	Sacramento sucker	Catostomidae	1	0	-	0	1	0	16.89	0	-	0	58.82	0
	Perch, Tule or Sacramento	Perciformes	0	0	-	0	0	0	0	0	-	0	0	0
	Sacramento perch	Archoplites interruptus	2	1	-	0	0	1	33.78	25.31	-	0	0	14.47
	Tule perch	Hysterocarpus traski	0	0	-	0	0	0	0	0	-	0	0	0
	Ray-finned fish	Actinopterygii	15	2	-	0	1	9	253.35	50.82	-	0	58.82	130.23
	Threespine stickleback	Gasterosteus aculeatus	0	0	-	0	0	0	0	0	-	0	0	0
	California roach	Hesperoleucus symmetricus	0	0	-	0	0	0	0	0	-	0	0	0
	Thicktail chub	Gila crassicauda	0	0	-	0	0	0	0	0	-	0	0	0
	Green or white sturgeon	Acipenser	3	3	-	6	1	1	50.67	75.93	-	218.16	58.82	14.47
	Steelhead/Salmon	Salmonidae	4	0	-	0	0	0	67.58	0	-	0	0	0
	Chinook salmon	Oncorhynchus tshawytscha	2	0	-	0	0	0	33.78	0	-	0	0	0
		Total Fish	28	6	-	6	3	12	472.92	151.86	-	218.16	176.46	173.64
	Common Name	Scientific Name												
1/8" Recovery	Minnows/sucker	Cyprinidae/Cypriniformes	22	2	-	3	1	1	371.58	50.62	-	109.08	58.82	14.47
	Sacramento pike minnow	Ptychocheilus grandis	0	0	-	1	0	0	0	0	-	36.36	0	0
	Hardhead	Mylopharodon conocephalus	0	0	-	0	0	1	0	0	-	0	0	14.47
	Hitch	Lavinia exilicauda	2	2	-	0	0	0	33.78	50.62	-	0	0	0
	Splittail	Pogonichthys macrolepidotus	0	1	-	0	0	0	0	25.31	-	0	0	0
	Sacramento blackfish	Orthodon microlepidotus	5	4	-	0	0	0	84.45	101.24	-	0	0	0
	Sacramento sucker	Catostomidae	0	0	-	2	0	0	0	0	-	72.72	0	0
	Perch, Tule or Sacramento	Perciformes	6	3	-	0	0	3	101.34	75.93	-	0	0	43.41
	Sacramento perch	Archoplites interruptus	39	2	-	1	0	3	658.71	50.62	-	36.36	0	43.41
	Tule perch	Hysterocarpus traski	0	0	-	0	0	2	0	0	-	0	0	28.94
	Ray-finned fish	Actinopterygii	280	89	-	12	23	75	4729.2	2252.59	-	436.32	1352.86	1085.25
	Threespine stickleback	Gasterosteus aculeatus	0	0	-	0	0	0	0	0	-	0	0	0
	California roach	Hesperoleucus symmetricus	0	0	-	0	0	0	0	0	-	0	0	0
	Thicktail chub	Gila crassicauda	5	0	-	0	0	1	84.45	0	-	0	0	14.47
	Green or white sturgeon	Acipenser	11	14	-	2	1	8	185.79	354.34	-	72.72	58.82	115.76
	Steelhead/Salmon	Salmonidae	32	11	-	3	1	8	540.46	278.41	-	109.08	58.82	115.76
	Chinook salmon	Oncorhynchus tshawytscha	1	1	-	0	0	0	16.89	25.31	-	0	0	0
		Total Fish	403	129	-	24	26	102	6806.67	3264.99	-	872.64	1529.32	1475.94
	Common Name	Scientific Name												
1/16" Recovery	Minnows/sucker	Cyprinidae/Cypriniformes	168	27	-	11	7	19	2837.5	683.37	-	399.96	411.74	274.93
	Sacramento pike minnow	Ptychocheilus grandis	4	0	-	0	0	1	67.5	0	-	0	0	14.47
	Hardhead	Mylopharodon conocephalus	3	1	-	1	2	0	50.7	25.31	-	36.36	117.64	0
	Hitch	Lavinia exilicauda	14	3	-	0	0	1	236.4	75.93	-	0	0	14.47
	Splittail	Pogonichthys macrolepidotus	6	0	-	0	0	0	101.3	0	-	0	0	0
	Sacramento blackfish	Orthodon microlepidotus	20	5	-	1	0	3	337.8	126.55	-	36.36	0	43.41
	Sacramento sucker	Catostomidae	8	1	-	2	1	5	135.1	25.31	-	72.72	58.82	72.35
	Perch, Tule or Sacramento	Perciformes	115	18	-	22	20	69	1942.3	455.58	-	799.92	1176.4	998.43
	Sacramento perch	Archoplites interruptus	76	14	-	2	5	20	1283.8	354.34	-	72.72	294.1	289.4
	Tule perch	Hysterocarpus traski	18	2	-	1	1	6	304.0	50.82	-	36.36	58.82	86.82
	Ray-finned fish	Actinopterygii	4403	942	-	332	300	1090	74366.7	23842.02	-	12071.52	17646	15772.3
	Threespine stickleback	Gasterosteus aculeatus	56	2	-	0	0	0	945.8	50.62	-	0	0	0
	California roach	Hesperoleucus symmetricus	2	0	-	0	0	0	33.8	0	-	0	0	0
	Thicktail chub	Gila crassicauda	17	1	-	0	0	0	287.1	25.31	-	0	0	0
	Green or white sturgeon	Acipenser	48	42	-	26	11	37	810.7	1063.02	-	945.36	647.02	535.39
	Steelhead/Salmon	Salmonidae	223	70	-	10	3	30	3766.5	1771.7	-	363.6	176.46	434.1
	Chinook salmon	Oncorhynchus tshawytscha	3	2	-	0	0	0	50.7	50.62	-	0	0	0
		Total Fish	5184	1130	-	408	350	1281	87557.7	28600.3	-	14834.88	20587	18536.07

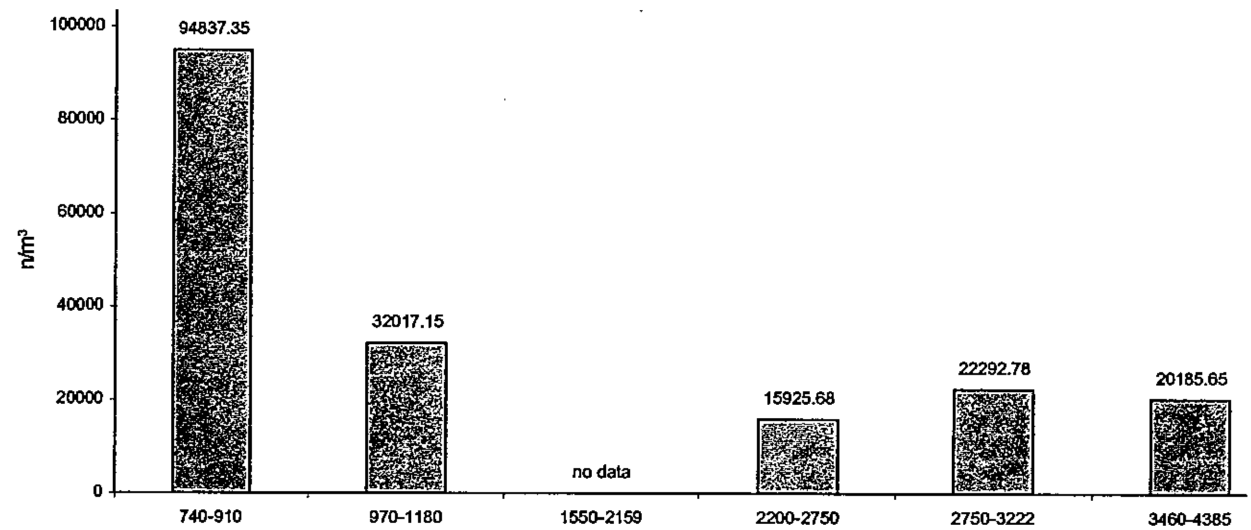


Figure 122: Distribution of fish bone per phase, average per phase (n/m³).

appeared throughout the sequence, peaking in the latest phase, post-910 CAL BP (Figure 122).

More and Smaller Fish

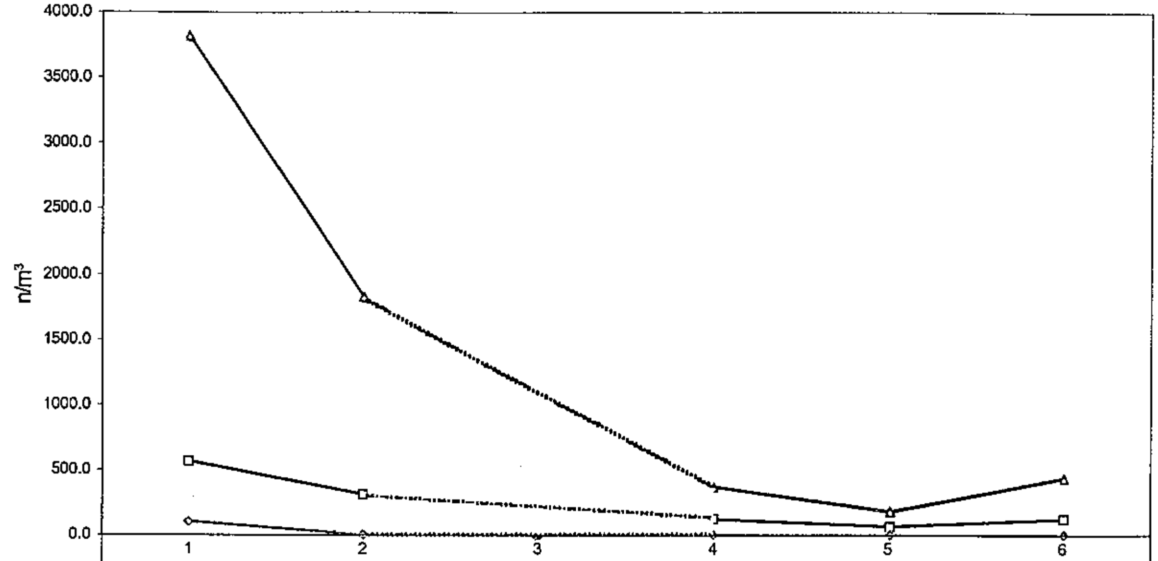
Figure 122 shows the overall sample distribution by phase. Between 2200-4385 CAL BP the density of fish bone per m^3 stayed about the same (15,926-22,293 n/m^3), then doubled after 1180 CAL BP (32,017 n/m^3), and tripled again after 910 CAL BP (to 94,837 n/m^3). This distinctive spike in density was repeated in two sites and six of seven flotation samples. The exception was a sample #5, collected from a burn layer found on the surface of the buried midden at Col-245/H, which may have been impacted by the burning.

Intensification of Salmonids. A glance at Table 39 will make it clear that the late spike was primarily associated with the smallest fish bones. While the density of larger fish bones (1/4-inch recovery) changed very little across time until it doubled after 940 CAL BP, the frequency of intermediate and small bones (1/8 and 1/16-inch recovery) doubled after 1180 CAL BP and doubled again after 910 CAL BP (Table 39). We would tend to assume that this change is species-specific, in other words, that it reflects an increase in the harvest of small taxa. However, the data are not clear on this important point.

No specific morphometric or age-determination analyses were conducted for this study. Thus, we lack direct evidence for intra-taxon age/size variation. However, some evidence indicates that the post-1180 CAL BP spike was in fact an increase in the rate of harvest of all smaller-bodied fish, including smaller-bodied examples of certain large taxa. For example, the frequency of large-bodied salmonid bones increased logarithmically after 1180 CAL BP in all three screen sizes, especially pronounced in the smaller screen sizes (Figure 123). Thus, in the case of salmonids, the post-1180 CAL BP spike was most likely composed of an overall increase in take coupled with a much higher proportion of smaller fish. Interestingly, other large-bodied fish taxa, including the sturgeon (*Acipenser* sp.), Sacramento sucker (*Catostomus occidentalis*), hardhead (*Mylopharadon conocephalus*), and the Sacramento pike-minnow (*Ptychocheilus grandis*), were characterized by little or no change late in the sequence (see below).

Intensification of Small Taxa. All eight of the small taxa were marked by little change 970-4385 CAL BP, but a late spike in frequency post-910 CAL BP (Figure 124). Three of these taxa actually appear in the record for the first time after 1180 CAL BP, including the very small bodied threespine stickleback (*Gasterosteus aculeatus*), California roach (*Hesperoleucus symmetricus*) and thicktail chub (*Gila crassicauda*) (Table 39; Figure 124).

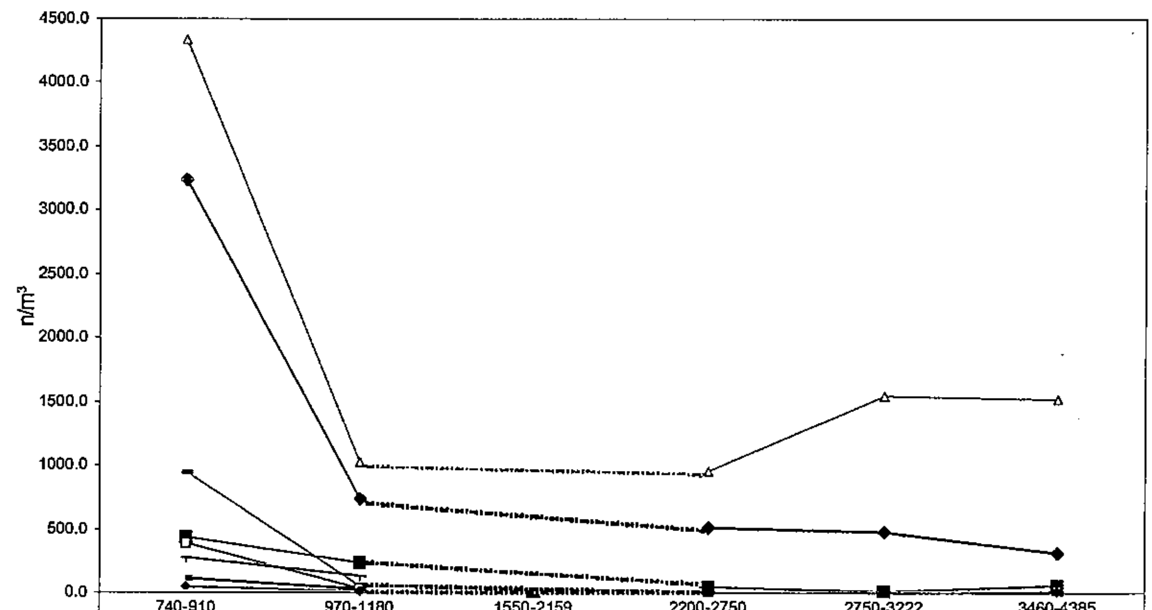
Four of the small taxa, including Order Cyprinidae, and three cyprinid species, the California roach, Sacramento splittail (*Pogonichthys macrolepidotus*), and hitch (*Lavinia exilicauda*) are particularly vulnerable to capture during massive spring stream spawning runs. The California roach is a small minnow, averaging 10.0 cm in length, typically found in tributary streams varying from low to high turbidity. Spawning occurs primarily between March and June, at which time the fish



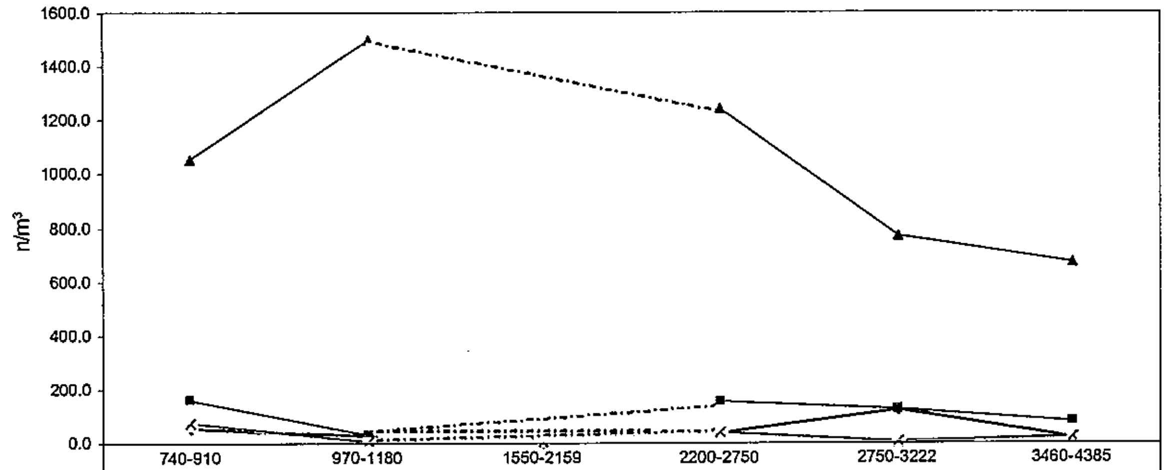
	1	2	3	4	5	6
1/16"	3817.1	1822.3	0.0	363.6	176.5	434.1
1/8"	557.4	303.7	0.0	109.1	58.8	115.8
1/4"	101.3	0.0	0.0	0.0	0.0	0.0

Figure 123: Distribution of salmonid taxa (Salmonid+Onchorynchus) per screen size, average per phase (n/m3).

Figure 124: Distribution of small-bodied taxa (Percids and Cyprinids), all screens combined, average per phase (n/m³).



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Perciformes	4323.8	1012.4	0.0	945.4	1529.3	1504.9
Cyprinidae/Cypriniformes	3226.0	734.0	0.0	509.0	470.6	303.9
Orthodon microlepidotus	422.3	227.8	0.0	36.4	0.0	43.4
Gasterosteus aculeatus	945.8	50.6	0.0	0.0	0.0	0.0
Gila crassicauda	371.6	25.3	0.0	0.0	0.0	14.5
Lavinia exilicauda	270.2	126.6	0.0	0.0	0.0	14.5
Pogonichthys macrolepidotus	101.3	25.3	0.0	0.0	0.0	0.0
Hesperoleucus symmetricus	33.8	0.0	0.0	0.0	0.0	0.0



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Green or white sturgeon	1047.2	1493.3	0.0	1236.2	764.7	665.6
Sacramento sucker	152.0	25.3	0.0	145.4	117.6	72.4
Hardhead	50.7	25.3	0.0	36.4	117.6	14.5
Sacramento pike minnow	67.6	0.0	0.0	36.4	0.0	14.5

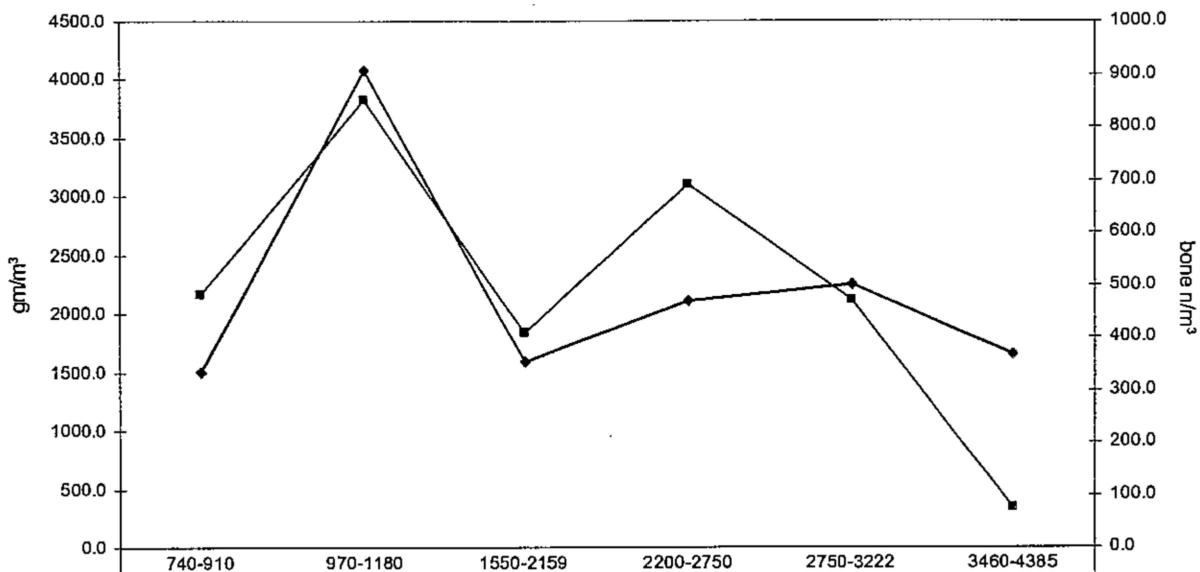
Figure 125: Distribution of four taxa characterized by a persistent pattern of use over time, average per phase (n/m³).

move from pools into shallow flowing water with a pebbly substrate (Moyle 1976). The Sacramento splittail was an omnivorous minnow averaging 45.0 cm in length. Splittail were usually found in fast moving streams. Spawning occurred between April and July in small streams with gravel substrates. The hitch averaged 35.0 cm in length, and favored lakes, sloughs, and ponds most of the year. Spawning runs in mid-spring were marked by large schools of fish migrating into small streams or the shoals of lake and ponds (Moyle 1976).

The remaining four small taxa are typical slow water fishes, and were probably most vulnerable to predation when they accumulated in near-shore shallows of sloughs, ponds, and slow-moving streams for spring and summer spawning activity. These include the Sacramento blackfish (*Orthodon microlepidotus*), threespine stickleback, thicktail chub (*Gila crassicauda*), and Order Perciformes. The Sacramento blackfish averaged around 55.0 cm in length, and favored warm, shallow water sloughs and oxbows. Spawning occurred between April and July in shallow water with aquatic vegetation. The threespine stickleback was a tiny but common fish averaging 8.0 cm in length. The stickleback was usually associated with weedy polls and backwaters dominated by emergent plants. The thicktail chub, now extinct, averaged around 25.0 cm in length. Little is known of these minnows, but they were probably common in backwaters, marshes, and lakes (Miller 1963). Order Perciformes is represented locally by two species, Sacramento perch (*Archoplites interruptus*) and tule perch (*Hysterocarpus traski*). The Sacramento perch averaged around 33.0 cm in length, and favored aquatic vegetation and overhangs in sloughs and sluggish water. Spawning usually occurred between March and August in shallow water with submerged debris. The tule perch averaged around 15 cm in length, and occupied a wide range of habits from stagnant backwaters to fast moving sections of the river. Unique to the tule perch, spawning occurred in shallow water between July through September, and the young were born in May to June of the following year (Moyle 1976).

Large-Bodied Taxa Characterized by a Persistent Pattern of Use

Four taxa, including sturgeon, Sacramento sucker, hardhead, and the Sacramento pikeminnow, have a distinctive temporal distribution pattern. They appear early in the sequence and have little change in frequency throughout (Figure 125). With the possible exception of the sturgeon, all four of these taxa might be found in the river throughout the year in deep channels and holes with eddies and backwater. All four, however, would be most vulnerable to predation during spring spawning runs. In fact, the sturgeon (probably the white sturgeon *Acipenser transmontanus*), is the largest fresh water fish of California with specimens reaching sizes greater than 4.0 m long and 590.0 kg (1,300 lbs) in weight. While some resident fish are likely, most sturgeon and the largest individuals in this part of the river



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
All Shell (g per m3)	2160.3	3812.2	1819.9	3090.4	2101.9	332.7
All Bone (n per m3)	332.5	903.3	351.5	466.9	498.8	365.9

Figure 126: Density of bone (n/m³) and Gonidea shell (wgt/m³) over time, average per phase.

were anadromous, spending most of their life cycle in the estuaries of the San Francisco Bay. In late winter they migrated up the Sacramento River to spawning areas occupied between mid-March to early June. The Sacramento sucker occupied a wide array of aquatic habits from cold, rapid streams and rivers to slow sluggish backwater sloughs. The sucker was a relatively large Cyprinid, averaging around 50.0 cm in length. In the spring and early summer suckers spawned in gravel riffles of feeder streams. The hardhead was another large minnow often exceeding 60.0 cm in length. Hardhead often occupied undisturbed sections of larger streams at low to middle elevation of the Central Valley. They were often observed in clear quiet warm streams with large boulder, or sandy bottom substrates. Spawning occurred in spring between April and May in gravel riffles of feeder streams. The Sacramento pike minnow is the largest resident native fish of the middle Sacramento River, with specimens averaging 120.0 cm in length. The pike minnow is most abundant in streams that are clear, with deep, well shaded pools and a gravel or rocky substrate. Spawning usually occurs between April and May in gravel riffles of feeder streams (Moyle 1976).

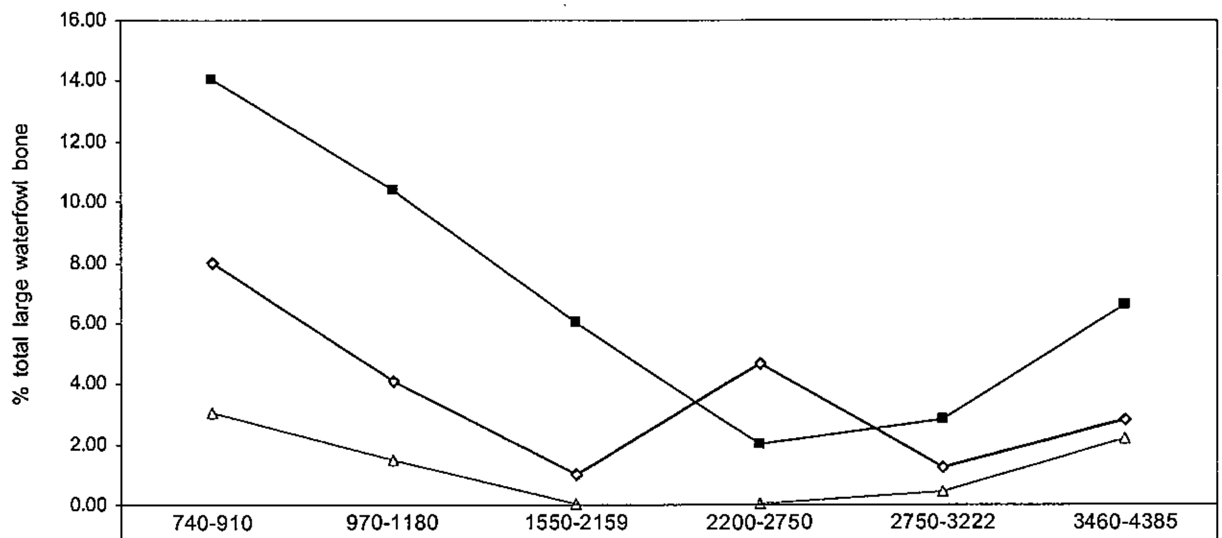
Shellfish

Freshwater bivalve shells were found in each of the sampled components. All classifiable specimens were attributable to Unionidae, and fragments large enough to be identified to species are all attributable to western ridge mussel (*Gonidea angulata*). The western ridge mussel may grow up to 120.0 mm long, 40.0 mm wide, and 65.0 mm thick. The shell is roughly trapezoidal in shape, may reach a thickness of around 5.0 mm along a distinctive midline ridge (McMahon 1991; Pennak 1989). The rate of mussel shell deposition ranged between 1819.5 to 3812.2 gm per m³, except in the earliest phase when the samples used here tracked a much lower rate. In fact, the rate of mussel deposition generally covaried with bone including a peak between 970-1180 CAL BP (Figure 126). In fact, minimal mussel use indicated for the earliest phase is belied by Feature 10, a high density mussel shell feature found at a depth of 100-150 cm at Col-247 (dating 3460-4385 CAL BP). This feature was not included in the current tabulation, but if it was the average weight per m³ would be considerably higher and the mussel curve more similar to the bone curve.

Bird and Mammal Remains

Bone Fragments

The component proveniences listed in Table 36 produced a total of 18,739 items of mammal and bird bone, including 292 elements (1.5%) identifiable to family, genus, or species (1/4" screen only). The number of individual bones is relatively high, but the number of identifiable



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Anseriformes	14.00	10.37	6.00	2.00	2.80	6.60
Anatidae	8.00	4.07	1.00	4.67	1.20	2.77
non-Waterfowl	3.00	1.48	0.00	0.00	0.40	2.13

Figure 127: Distribution of bird taxa over time, average per phase (n/m³).

elements quite low, reflecting evidence for reduction of large bones by pounding and burning.

The intensity of bone deposition stayed remarkably regular through time, ranging between 332.5-498.8 items per m^3, except between 970-1180 CAL BP, when the rate tripled (Figure 126).

Intrusive Elements

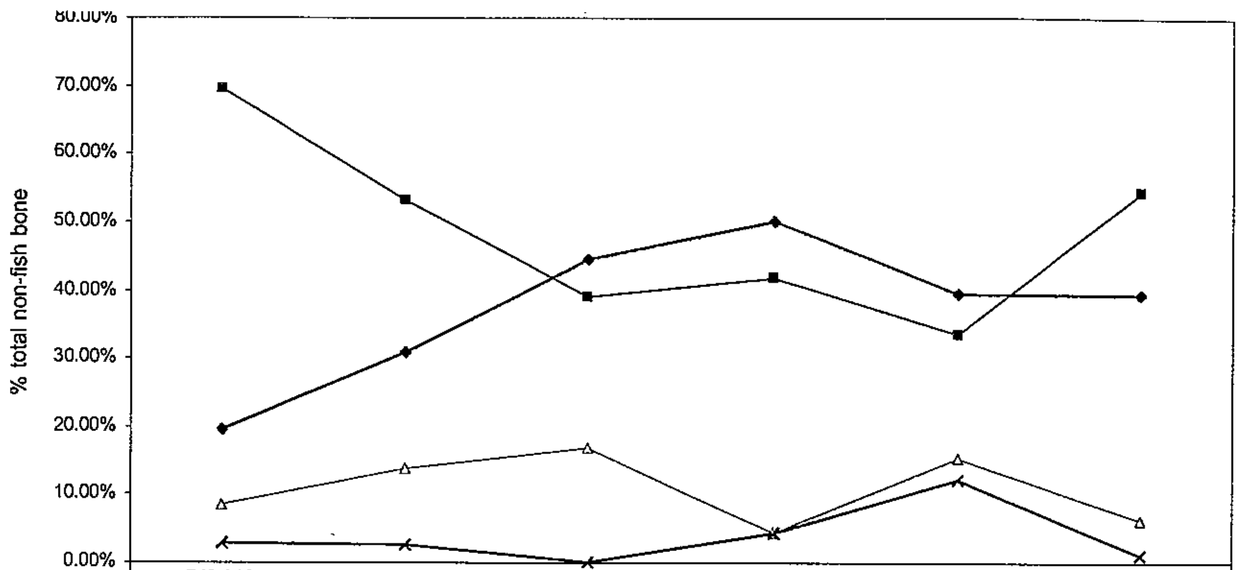
In order to focus on economically significant animals, intrusive elements from ground dwelling rodents were eliminated from the sample, including *Spermophilus beecheyi*, *Thomomys bottae*, *Scapanus latimanus*, and *Dipodomys* sp. In addition, six *Mephistes* sp. elements identified in the 20-40 cm levels at in Unit B1, Col-158B, were determined to be intrusive bones from a single animal, probably a modern road kill.

Bird Remains

A total of 150 bird bones was identified, which projects to an overall average of 70.6 items per 1.0 m^3 (Table 37). In all, 17 taxa were identified, with some specimens identified strictly to the ordinal level, assigned to Order Anseriformes, Order Passeriformes, Family Anatidae, and Family Accipetridae, and other specimens identified to the species level, including Ross's goose (*Anser rossi*), snow goose (*Anser caerulescens*), Canada goose (*Branta canadensis*), greater white fronted goose (*Anser albifrons*), American crow (*Corvus brachyrhynchos*), California quail (*Callipepla californica*), scrub jay (*Aphelocoma coerulescens*), northern redshafted flicker (*Colaptes auratus*), barn owl (*Tyto alba*), cormorant (*Phalacrocorax* sp.), great blue heron (*Ardea herodias*), pied-billed grebe (*Podilymbus podiceps*), and eagle (*Aquila* sp. or *Haliaeetus* sp.). These taxa were grouped into three aggregate taxa for the purposes of analysis: Anseriformes, Anatids, and Non-Waterfowl.

The taxon Anseriformes is the aggregate total of specimens attributable to Order Anseriformes as well as specimens identifiable to species, including specimens attributable to Ross's goose, snow goose, Canada goose, and greater white fronted goose. The taxon Anatidae is assumed to be a similar aggregate of the species that make up this large and diverse Family, but no genus and species distinctions could be made for the bones recovered by our study. On the other hand, it was noted that all Anatidae bones were in the pintail-mallard size range, which would appear to exclude larger anatids such as swans (*Cygnus* sp.) and smaller ducks such as teal (*Anas crecca* or *Anas cyanoptera*) from the current study sample.

Eight bones were attributable to Order Passeriformes, including three bones belonging to the American crow, three bones attributable to California quail, two identified as scrub jay, one attributed to northern redshafted flicker, one to barn owl, one to cormorant, one to great blue heron, one to pied-billed grebe, and two to Family



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Total Bird	69.44%	53.09%	38.89%	41.67%	33.33%	54.00%
Total Cervids	19.44%	30.86%	44.44%	50.00%	39.39%	39.00%
Total Carnivores	8.33%	13.58%	16.67%	4.17%	15.15%	6.00%
Total Small	2.78%	2.47%	0.00%	4.17%	12.12%	1.00%

Figure 128: Proportion of four general classes of animals over time, average per phase (n/m³).

Accipetridae, one most likely from an eagle and the other from a mid-sized accipter or buteo. Three bones assigned to Passeriformes were not attributable to a specific genus or species but were clearly from small perching birds, most likely Family Emberizidae (sparrows).

Because of the diversity of bird taxa identified, it was difficult to see clear evidence of change in harvest patterns. Therefore, the birds were lumped into three general groups, Anseriformes, Anatidae, and "non-waterfowl" (Figure 127). Combined, the waterfowl taxa account for 88.0 percent of all bird bone, dominating every phase. Non-waterfowl bird bone accounted for just 10.0-13.6 percent of bird bones in all phases but the latest, reaching 22.7 percent of bird bone after 910 CAL BP.

Geese dominated in all phases but 2200-2750 CAL BP, when there was a peak harvest of ducks (Figure 127). The increase in the harvest of non-waterfowl after 910 CAL BP co-occurs with an overall diversification of species taken. For example, crow, blue jay, grebe, heron, and quail all appear primarily or exclusively in the latest phase, post 910 CAL BP. On the other hand, bones from birds that may have been taken for feather displays or other ceremonial applications, including the hawk, eagle, barn owl, flicker, and cormorant, were all found associated strictly with the Middle Archaic phases dating 2750-4385 CAL BP. Thus, in the earliest phases subsistence harvest may have been restricted to waterfowl but in the later phases expanded to non-waterfowl. Harvest of birds of prey may be an Archaic trait in the project area.

Mammal Remains

A total of 142 mammal bones was identified, projects to an overall average of 63.9 items per 1.0 m³ (Table 37). Eight taxa were recognized. Five were identified to the species level, including mule deer (*Odicoilus hemionus*), pronghorn (*Antilocapra americana*), tule elk (*Cervus elaphus nannodes*), black-tailed jackrabbit (*Lepus californicus*), and raccoon (*Procyon lotor*). Two taxa were identified to the Genus level, including dog/coyote (*Canis* sp.), and rabbit (*Sylvilagus* sp.). In general, the canids appear to be dog-sized animals and are most likely domesticates. One taxa was identified to the family level, Artiodactyls (cervids and antilocaprids). The artiodactyls all appear to be mid-sized animals and are most likely deer. Thus, for present purposes antilocaprids have been lumped with cervids.

Lagomorphs, grouped in the tables and charts as "Small Game," represented a minor portion of the diet throughout the sequence, although overall they appear to have been a larger part of the early diets than the late (Figure 128). Carnivores, including raccoons and canids, had a similarly small role in the Colusa diet except that carnivores were taken at about the same rate as lagomorphs in the early phases but four to five times the rate in later phases. It is also worth noting that carnivores pre-1550 CAL BP were dominated by canids (66.7%), and post-1550 CAL BP by raccoons (72.7%).

Cervids represent 73.2 percent of all mammal remains, dominating each phase. Deer are numerically dominant throughout, both elk and pronghorn appear early and late in the sequence, and no minor species-specific patterns could be discerned. However, overall cervid harvest peaked in the Upper Archaic, 1550-2750 CAL BP and declined in proportion to bird harvest during the Emergent, post-1180 CAL BP (Figure 125).

SETTLEMENT

Three data sets are consulted for the analysis of seasonality of use of the Hwy 45 archaeological sites: (1) technological and structural diversity, (2) seasonality of plant and animal foods, and (4) dental increment analysis.

Measures of Structural and Technological Diversity

Feature Diversity

A total of 18 prehistoric features was observed in the field. Twelve of these features were exposed during controlled hand excavation, and determinations were made as to stratigraphic association, site context, artifact content, function, and (in seven cases) plant macrofossil associations. An additional six features were noted during trenching at Col-158, but were not excavated or more than partially exposed, and their identification remains tentative (see **Features**). Feature and burial distribution is summarized in Table 40).

Excavated house floors, consisting of composites of compacted white ash indicating intensive and persistent domestic use of long temporal duration were limited to Col-247, including four examples associated with Stratum 2 (2750-3222 CAL BP), and four associated with Stratum 1 (1550-2750 CAL BP).

It is likely that the absence of house floors at Col-158, Col-245/H, and Col-247 Stratum 3 is a product of sampling error. These three sites/components were explored using only limited horizontal exposures often necessary to locate and reveal feature complexity. In fact, trenching at Col-158 identified three possible house floors, one in Locus 158D and two in Locus 158A.

One small hearth or baking pit was found associated with Col-247 Stratum 3 (2750-3222 CAL BP) and two additional examples were exposed at Col-245/H (815 CAL BP). A shellfish baking pit was exposed at Col-247 Stratum 3 (3460-4385 CAL BP) and two more possible examples were identified at Col-158 D (1030-1175 CAL BP).

Burial Diversity

"Burial" were defined as an aggregate of bone from one or more skeletons contained in a single-event grave, the aggregate consisting of complete or trace evidence of unspecified portions of the skeleton(s). All other bones were considered "isolated elements" including individual, fragmentary and complete bones. A total of 15 burials representing 16 individuals was observed during the excavation program, and 12 burials representing 13 individuals were fully excavated and recovered (Burial 9 consisted of two neonates). In addition, 193 isolated human skeletal elements and bone fragments was recovered. The Highway 45 burials represented a broad time span, associated with deposits dating between 740-4385 CAL BP. Col-247 produced 11 of the excavated burials (91.6%) and 192 of the isolated human bone fragments (99.5%). A single burial was found

Table 40: Density of features and burials.

1 - n burials + features per m3.
2 - m3 excavated for every feature or burial encountered.

site	m3	n features	n burials	n total	bur/fea per m3 [1]	m3 per bur/fea [2]
Col-247	15.3	9	13	22	1.44	0.70
Col-158	9.4	2	0	2	0.21	4.70
Col-245	5.2	2	1	3	0.58	1.73

at Col-245/H, and a single isolated human bone fragment was found at Col-158B (see **Burials and Human Remains**).

Of the 13 excavated individuals, six were neonates to infants between 35 weeks to 48 months in age. Sex determination was not possible for this group of individuals. The seven adults ranged in age between 18-45 years. One of the seven was a redeposit consisting of limb elements, and no sex determination could be made. Of the remaining six individuals, three were determined to have been females and three were males. The overall health of the population was relatively good, and no indication of infections or disease was identified. However, all three adult males had suffered traumatic injuries, some healed and others perimortem. Col-247 Burial 1 had the most profound traumas, including an apparent severe perimortem injury to the skull produced by a spear or similar weapon. Two males (Burials 1 and 4) had healed and unhealed depressed fractures, and severe dental pathologies were identified for two of the adult males.

Of the seven adults, two consisted of redeposited bones, lacking specific position. Of the remaining five adults, two were dorsally extended, one was semiextended, one was flexed, and one tight flexed. Neonates and infants were technically "tight-flexed," but in fact appeared to have been bundled and placed in the grave in a sitting position or on one side. "Burial orientation," determined based on the compass bearing of the long axis of the body, was impossible to determine for two subadult and three adult burials. Of the seven burials with measurable orientation a definite pattern was evident, with three buried in an easterly orientation (N62°E to N97°E), and four in a southerly orientation (N161°E to N205°E). Just three of the burials had formal artifact associations, including two neonate or infant burials and one adult, all from Col-247. The neonate and infant burial associations included *Olivella* and *Haliotis* shell beads and *Haliotis* ornaments. The adult had clay objects (ceramic "eggs," and baked clay clumps) and animal remains (possible food offerings or animal charms). Burial 8, an isolated cranium, appeared to have been carefully arranged or "positioned" upright, facing nearly due north, and set up on a platform of rocks and baked clay peds. Ephemeral pit outlines were detected for most of the burials, although three showed clear signs of baked and charcoal-stained pit lining indicative of preinterment grave pit burning (Table 24).

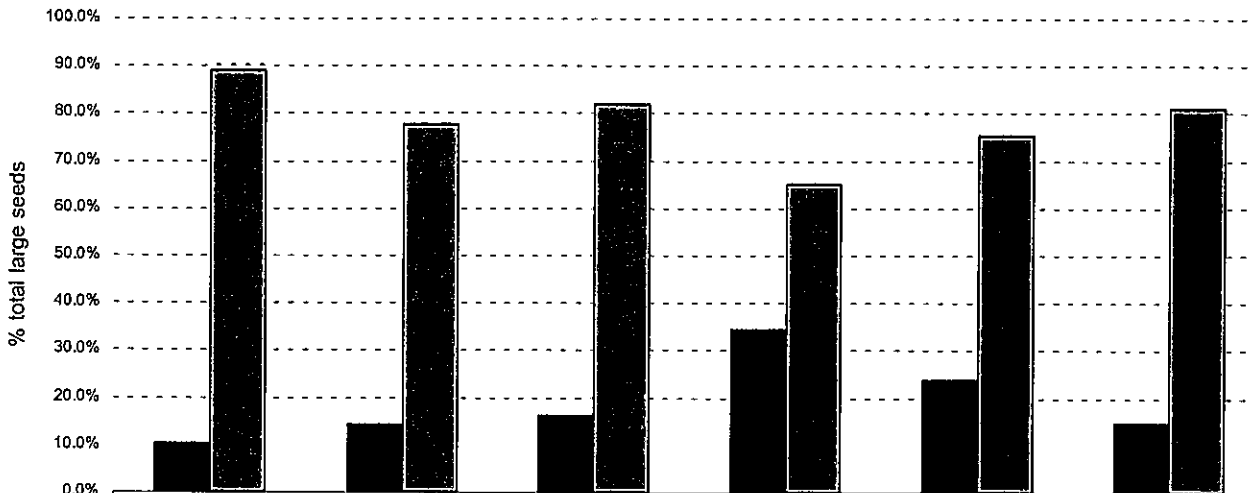
Artifact Diversity

Artifact density and diversity changed significantly over time, and the overall pattern was clear, distinct, and consistent with the feature results: the density of artifacts per m^3 decreased systematically over time, with the highest rate of recovery (26.7 artifacts per m^3) in the oldest component, and the lowest rate (3.6 artifacts per m^3) in the most recent component (Table 41). The density of artifacts decreased incrementally yet progressively from the Stratum 1 through Stratum 3 at Col-247, then dropped by one-half at 1180 CAL BP and by a third again at 910 CAL BP. Speaking to the overall reliability and significance of these results, several related shifts followed the same progressive pattern. For example, the ratio of ground stone (milling equipment and cobble and pebble artifacts) to chipped stone (projectile points, flake tools, core and core tools) decreased systematically over time from a high of nearly 1:1

Table 41: Density and diversity of artifacts per phase.

1 - m3 excavated per phase.
2 - total n artifacts per m3.

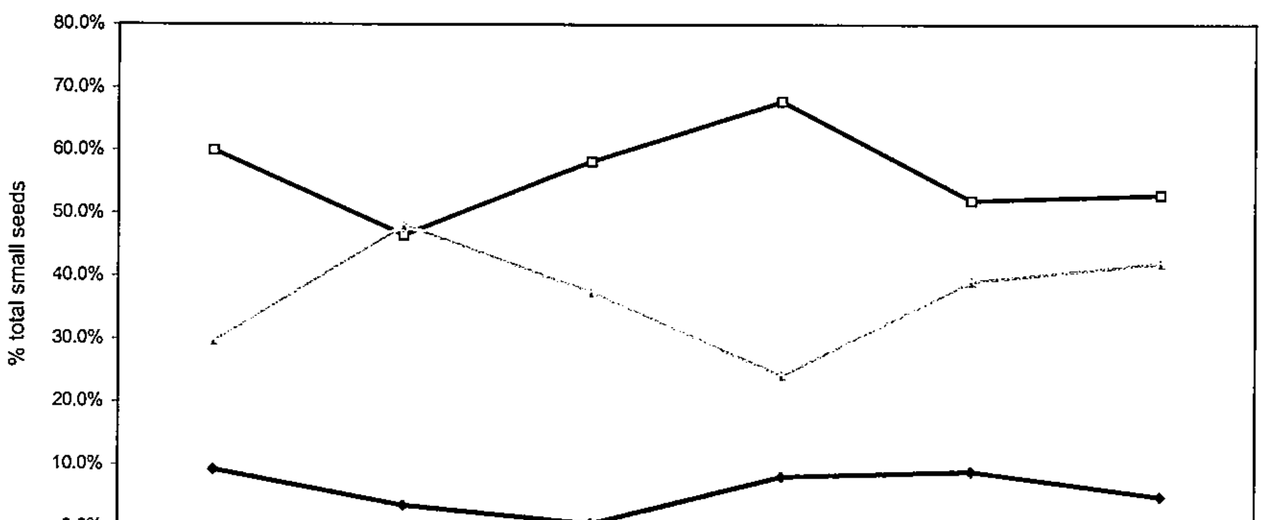
Date (CAL BP)	740-910	970-1180	1550-2750	2750-3222	3460-4385
Projectile Points	10	35	29	22	9
Core and Flake Tools	1	4	17	21	3
Milling Tools	0	2	5	16	4
Stone Ornaments	0	1	3	6	4
Pebble Tools	0	1	1	6	2
Worked Bone/Antler	8	12	14	8	5
Shell Beads and Ornaments	0	7	51	6	1
Shaped Ceramics	0	3	26	47	12
Total n Artifacts	19	65	146	132	40
m3 [1]	5.2	6.6	8.3	6.0	1.5
n/m3 [2]	3.65	9.8	17.59	22.00	26.67
Ratio=Groundstone:Chipped Stone	0.00	0.10	0.20	0.65	0.83



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
■ Summer Markers	10.4%	14.3%	16.3%	34.4%	24.0%	14.9%
□ Fall Markers	88.9%	77.6%	81.9%	65.0%	75.2%	81.0%

Figure 129: Proportion of summer and fall season large seed indicators over time, average per phase.

Figure 130: Proportion of early spring, spring, and summer season small seed indicators over time, average per phase.



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
Late Spring	59.9%	46.3%	58.1%	67.7%	52.0%	52.8%
Summer	29.6%	47.9%	37.3%	24.1%	39.0%	42.0%
Early Spring	9.2%	3.5%	0.7%	8.2%	9.0%	5.0%

in the oldest phase, 3460-4385 CAL BP to a low of less than 1:10 after 1180 CAL BP (Table 41).

Seasonality Indicators

Plant and Animal Harvest Schedules

Because they ripened and were harvested in specific seasons, burned plant remains can be considered potential indicators of seasonal gathering activity. However, because they may have been stored before use and disposal they may not be reliable indicators of seasonal consumption. For present purposes, we will assume that the seeds were harvested and consumed in the same season, and therefore indicate the seasons of occupation of the sites. Turning to the large seed macrofossils, acorn, gray pine, and bay nuts all ripen in the fall, while manzanita, farewell to spring, and wild cucumber ripen in the summer. For small seed macrofossils, Table 35 lists species by ripening season. Figures 129 and 130 chart the relative proportion of these species grouped by season of occurrence.

With respect to large seed taxa, the highest proportion of fall season indicators was found early and late in the sequence, while summer season indicators rose steadily to a peak proportion 2200-2750 CAL BP (Figure 129). With regard to small seed taxa, seeds harvested in the early spring were a relatively small proportion of the overall harvest throughout, but were virtually absent 970-1180 CAL BP (Figure 130). The rates of harvest of spring and summer season indicators were closely similar, however, spring harvest dominated 1550-2750 CAL BP and 740-910 CAL BP.

Zooarchaeological data were also consulted for potential seasonality indicators. Generally, taxonomic representation was regarded as problematic evidence. Salmonids were nonresident anadromous fish, but might be taken in the fall or spring. Other classes of fish were probably generally local residents, and harvest might occur in any season. However, as a general case fish were probably taken during spring spawning runs, and may be taken as general confirmation of spring occupancy. Like the small seed spring indictors, they occurred in all phases.

Dental Increment Analysis

Background. As mammal teeth grow they produce annuli comparable to tree rings. These structures are located in the cementum deposits on the roots of mammalian teeth and under microscopic examination appear as alternating dark and light bands. Research with comparative samples of known-age and known date-of-death individuals has demonstrated a consistent relationship between annual seasons and the formation of distinct increment types (Pike-Tay 1991, 1995; Lieberman 1993; Lieberman *et al.* 1990; O'Brien 1994). In general, northern latitudes taxa exhibit formation of an arrested growth increment (winter) followed by a increased growth increment (summer), each pair representing one year in an animal's life. Because cementum is deposited on teeth throughout an individual's lifetime, increments provide an annual record of the animal's life history. The total number of increment pairs indicates the animal's age, and the terminal increment indicates the season of death. Although causal factors underlying the relationship between increment formation and season are still debated (Lieberman 1993; Pike-Tay 1991, 1995; Burke and Castanet 1995) the correspondence between season of death and outer increment type is consistent in analyzed comparative populations (Pike-Tay 1991, 1995; O'Brien 1994; Lubinski and O'Brien 2001; Burke and Castanet 1995).

Dental increment studies have been used to infer prehistoric site seasonality, prey selection, and hunting methods of large prey taxa such as pronghorn antelope (Basgall and O'Brien 1985; Lubinski and O'Brien 2001), cervids (Pike-Tay 1991, 1995; Pike-Tay *et al.* 1999; Leigh 1998), equids (Burke 1993; Burke and Castanet 1995; O'Brien 1994, in press) and several species of African game (O'Brien 1994, 1996; see also Gordon 1988; Miracle and O'Brien 1998).

Methods. The Hwy 45 zooarchaeological collection was inventoried and only 12 specimens were found suitable for dental increment analysis. For each specimen, the entire tooth or root segment was embedded in Epo-Tech® epoxy to maintain structural integrity of the sample during sectioning and then bisected using a rock saw with a diamond blade. The cut face was polished with silicon carbide grit on a glass plate and then mounted face down, on a glass slide. The specimen was then sectioned parallel to the slide surface, leaving a thin section of the tooth. Each thin section was polished with silicon carbide grit and frequently checked under the microscope for the presence of incremental structures. Polishing continued until enamel, dentine and cementum structures could be identified. Sections were examined at a

Table 42: Results of dental increment analysis.

I - Incisor
PM - Premolar
M - Molar
C - Canine

Site	Cat #	Unit	Level	Tooth	Taxon	Outer Increment	Width Increment
Col-247	327-92-06	A1	10-20	I	Cervid	Indeterminate	-
Col-247	327-127-11b	A16	10-20	PM	Cervid	Translucent	0.25
Col-247	327-134-15	A18	10-20	PM/M	Canid	Opaque	1.00
Col-247	327-121-16a	A14	20-30	Unknown	Castor	Translucent	<0.25
Col-247	327-102-18	B5	40-50	PM	Odocoileus	Translucent	0.25
Col-247	327-42-10	A5	40-50	PM/M	Taxidea	Translucent	1.00
Col-247	327-94-09a	B4	50-60	C	Canid	Indeterminate	-
Col-247	327-141-07	A1	80-90	M3	Cervus	Translucent	0.50
Col-247	327-97-14	A4	80-90	M3	Odocoileus	Translucent	0.25
Col-247	327-117-08	B6	90-100	C	Canid	Opaque	indet
Col-245/H	326-05-20	Lower Midden	-	C	Procyon	Translucent	0.25
Col-245/H	326-01-40	Mixed Deposit	-	C	Canid	Translucent	1.00

magnification of 125X using a transmitted, polarized light source. With this method, winter (non-growth) increments appear opaque (dark) and summer (growth) increments appear translucent (light). A digital imaging system was used to capture images for further analysis. The clarity of each section was also subjectively rated from 1 (Excellent; clear increments) to 4 (Poor; increments difficult to identify). All areas of cementum apposition were examined for increments although the focus was on those areas just at and below (apical to) the cementum-dentine-enamel junction (root cervix). Both the outer increment and the total number of opaque increments were identified in all areas where views of the cementum were relatively clear. The width of the outer increment was subjectively compared to previously deposited increments of the same type to gauge the degree of growth. For translucent increments, estimates were made in quarter fractions (25% growth, 50% growth, etc.). Opaque increments tended to be thin, and estimates were based on whether they were greater or less than 50% the width of previously deposited opaque increments.

Results. Results of the dental increment analysis appear in Table 42. Of the 12 analyzed specimens, 10 produced readable increments. Although the sample is small, the increment data do suggest patterning. Cervid teeth consistently exhibit outer translucent increments that are 25-50% of full growth. Following increment growth patterns for *Odocoileus* determined by Leigh (1998) and those for elk determined by Pike-Tay (1990) this degree of growth suggests spring and summer kills. In contrast, Canids exhibited outer opaque increments indicative of winter kills. One *Procyon* exhibited an outer translucent increment approximately 25% of full growth, suggesting a late winter, early spring death. Thus, cervids were killed in the late spring and summer, while carnivores were killed in the winter. This distinction in season of death is interesting, and there are three alternative explanations:

(1) small carnivores may have been harvested during the winter because they tend to be synanthropic, and their ease of availability would stand in contrast to a winter landscape where mammal, fish, seed, and nut prey densities were at their lowest seasonal ebb;

(2) because small carnivores were synanthropic, their presence in the archaeological deposit might monitor mortality in an unmanaged, unharvested population of secondary consumers, and;

(3) the presence of small carnivores in the sites may reflect carnivore activity during seasons when humans were not occupying these locations.

SUMMARY AND IMPLICATIONS FOR FUTURE RESEARCH

This section summarizes project findings in four key areas of research: (1) geoarchaeology, (2) chronology and culture history, (3) settlement-subsistence, and (4) theoretical implications.

GEOARCHAEOLOGY

Geomorphology and Archaeological Visibility

Two questions were posed at the beginning of this study:

> (1) Can we learn enough about Quaternary landscape formation along the Sacramento River to begin to predict the location and depositional context of subsurface archaeological deposits, particularly the early to mid-Holocene sites that, until now, have been missing from the record?
>
> (2) If we become more skilled at identifying and investigating the limited geomorphic contexts where these older sites might be found, will our results offer a new understanding of the rate and sequence of habitat colonization in the Sacramento Valley?

The study of buried archaeological deposits is useful for supplementing portions of the archaeological record that are otherwise unknown or under-represented. As such, they often provide unique research opportunities for understanding the timing and extent of human occupation within a limited area or an entire region. The research value of buried sites is related to the process of burial itself, which often preserves the systemic context of archaeological materials that would otherwise be disturbed or destroyed by ongoing processes at or near the surface (e.g. collecting, erosion, fire, weathering, etc.). Buried sites can also contain considerable information about the nature and timing of past events and environmental conditions that contributed to their burial (Waters 1992).

It has long been known that geological processes have buried archaeological sites in the Central Valley (Heizer 1949:39-40; Lillard, Heizer, and Fenenga 1939; Moratto 1984:214). For example, Schenck and Dawson note:

> So far as physical environment is concerned, man could thus have lived here from his most antiquity. But any record which he might have left would have been buried by the recent alluvium and would be difficult of access except in extraordinary circumstances or by chance. Moreover, the present wash of the alluvial fans and silting over of the valley floor would tend to obliterate quickly human remains of even a few thousand or perhaps a few hundred years ago. Accordingly the archaeologist who approaches the region has little justification for expecting to secure very ancient data [Schenck and Dawson 1929:294].

Even with this long-standing recognition, many modern researchers assume that the prevalence of Late Holocene archaeological sites in the valley indicates that there was a significant increase in human population around 2,500 years ago (e.g. Beaton 1991:950-951; Bouey 1987:66; Broughton 1994; Schulz 1981:184). Unfortunately, few California studies have attempted to integrate geomorphic and archaeological findings, and none in the Sacramento Valley, so ours was the first locally to evaluate the potential effects of landscape change on the nature and completeness of the archaeological record.

Previous research along the middle Sacramento River had found only trace evidence of human occupation dating older than 2800 BP, and a single date of 4947 CAL BP from But-233 (Llano Seco) had been reported absent a description of the archaeological context (Bayham and Johnson 1990). Indeed, our study documents nothing older than a buried component at Col-247 dating to 5970 CAL BP, and intensive occupation postdating 4400 CAL BP. Nevertheless, occupation in the nearby foothills and Clear Lake basin dates back at least 13500 CAL BP (White *et al.* 2002). Should we assume that the spatial and temporal distribution of archaeological sites along the river is *prima facie* evidence for prehistoric population? Clearly, the answer is no. Local floodplain deposits consist of a layer cake of buried land surfaces, and many of these old surfaces bear evidence of human occupation. Our study shows that mid to late Holocene sites are infrequent in this part of the valley because the landscapes they were associated with were removed by mid to late Holocene erosion or deeply buried by late Holocene floodplain alluvium. These findings are important because they suggest that landscape evolution has determined the preservation and visibility of the archaeological record.

Our project found a distinction between late Holocene and mid Holocene floodplain soils (see **Chronology**) that may prove to be a fundamental feature of regional landscape, and may enhance future archaeological work in the region by improving our ability to predict and locate older archaeological phenomena. This work will clearly change our understanding of regional colonization and demography. How much and in what direction remains to be seen.

It should also be noted that great advantage was conveyed to our study by the accidents and successes of discovery. The project's success in identifying and effectively sampling early and late archaeological manifestations owes to the integral role of geomorphic studies.

Geomorphology and Human Ecology

Archaeologists are also properly concerned with the identification, general distribution, and species composition of habitat types. This information will help us understand factors which affected the subsistence objectives and practices of prehistoric peoples. What kinds of resources were available and where might they have been found? How did prey species distribution, density, and diversity change over time?

In the course of this project, a new and rewarding link was made between the geomorphological evidence for patterns of floodplain development and the plant macrofossil evidence for the human ecological response. We found evidence that the small seed taxonomic makeup for each component reflects the composition of local riparian forest and prairie habitats existing at the time of occupation. Geomorphic studies established that ecological patterns along the river were primarily conditioned by patterns of floodplain development, alternating between silty, sandy sediments supplied during phases of floodplain development, to clayey or alkaline soils developed as a result of floodplain stability and pedogenesis. We found a correlation between the dates established for this geomorphic cycle and variation in the harvest of species endemic to young sediments versus those endemic to clayey or alkaline soils (see **Subsistence and Settlement**). The specifics of this correlation are due further study, and may be profitably applied to non-cultural deposits containing charred plant macrofossils.

CHRONOLOGY AND CULTURE HISTORY

The Colusa region lacked a well-documented and reliable culture chronology, and at the outset this was our most important archaeological research objective. The Hwy 45 sites form a long time series, and our investigation contributed to the development of local chronology via the robust identification, definition, and dating of artifact assemblages. The sites provided the additional advantage of producing horizontal and vertical stratigraphic structure sufficient to yield single component occupations, enabling us to approach the task of producing a chronology using component-based systematics. Geoarchaeological study provided a master framework for these observations.

The project established a chronology that spans the last 4,400 years, with relatively robust Archaic assemblages and sparse Emergent assemblages. While it is tempting to think of this as a relatively complete chronology, and it is customary to lump small pieces of time into larger lumps, for purposes of future chronology-building, it is important to note the existence of evidentiary gaps. Discrete occupation phases dated between 740-910 CAL BP, 970-1180 CAL BP, 1550-2159 CAL BP, 2200-2750 CAL BP, 2750-3222 CAL BP, and 3460-4385 CAL BP.

With respect to the late end of the sequence, the missing phases are important. All of the Emergent Period archaeology is a mix of Phase 1B/C and Phase 2A/D elements. Thus, our current record lacks material dating from the early and late ends of the Emergent Period sequence. We lack components dating between 970 CAL BP to contact (roughly 120 BP), equivalent to Augustine Pattern, Phase 2B/C. We also lack components dating to 1180-1550 CAL BP, the very important transition between the Archaic and Emergent, equivalent to Phase 1A. Our review of regional prehistory indicates that Phase 2C and 2D components were found at Col-1 and Col-2, while Phase 1A components were found at Col-1 and Col-3 (see **Archaeological Context**). In addition to Col-1 and Col-2, nearby archaeological sites But-296 and Yol-13 also appear to be attributable to Phase 1A. Unfortunately, each of these were substantial excavations which produced large and diverse artifact assemblages, but none of them have been analyzed and written-up. Because our evidence indicates that culture and economic change between 1180-1550 CAL BP was of great magnitude and consequence, the absence of reliable data from this period is a problem that should be solved.

With regard to the Archaic components, our data are very poor for the terminal Archaic 1550-2220 CAL BP, consisting of a single house floor and related artifacts, burials, and plant and animal remains. The high degree of contextual specificity of these data make them problematic. Additional sampling of deposits dating to the terminal Archaic should provide a better understanding of conditions that ensued just prior to the momentous changes in culture and economy that took place at the beginning of the Emergent Period.

Our samples are especially robust for the Archaic phases dating between 2200-4385 CAL BP, and to an extent our study is biased toward the terminal Middle Archaic. The deeply buried component dating 5970 CAL BP at Col-247 was beneath the water table and beyond the scope of the present study, but Middle to Lower Archaic deposits must be found and sampled if we are to solve fundamental questions of colonization, economy, and demography in the early Sacramento Valley.

SIGNIFICANCE OF THE CERAMIC ASSEMBLAGE

A New Ceramic Chronology

The Hwy 45 ceramics are the first large collection found north of the Sacramento Delta, and the first in the Sacramento Valley region to supply clear evidence of manufacture, use, and an integral role for simple ceramics in day-to-day activities. The Colusa ceramics are very important for a couple of reasons. First, they reveal much about past technology, plant use, and behavior. Second, they instruct us about the importance of careful field methods and labor intensive field work methods.

The science of archaeology is about 100 years old in California, and through the years a number of archaeologists have reported the discovery of early ceramics. In the monograph *Archaeology of the Northern San Joaquin Valley* Schenck and Dawson identified seven types of ceramic artifacts including balls, beads, pipes, effigies, rings, potsherds, and earplugs and labrets (Schenk and Dawson 1929). In 1937, R.F. Heizer described *Baked Clay Objects of the Lower Sacramento Valley, California* (Heizer 1937), including balls, pipes, and effigies found in the Sacramento/San Joaquin Delta region. He claimed that ceramics were made only during the last few hundred years before contact, and that the technology was borrowed from the Southwest by way of Southern California. However, in several subsequent publications Heizer and others modified these conclusions, reporting the discovery of ceramic objects thought to be 1,000 to 4,000 years old and made of local clay (Lillard, Heizer, and Fenenga 1939; Heizer 1949). A series of articles have also been published on ceramic figurines from Central California (Heizer and Beardsley 1943; Heizer and Pendergast 1955; Pendergast 1957; Davis 1959; Elsasser 1963; King 1967; Fenenga 1977; Sutton 1979).

The best summary of Central California ceramics appears in an excellent 1982 Masters thesis out of Sacramento State University by C.M. Kielusiak entitled *Variability and Distribution of Baked Clay Artifacts From the Lower Sacramento-Northern San Joaquin Valleys of California*. Kielusiak reexamined the previously published material and incorporated new finds and new radiocarbon dating evidence to produce a comprehensive overview of the region's prehistoric ceramic tradition. She recognized a number of distinct types, including a few ovoids and large balls in sites dating 4,300-2,500 years old, a range of forms most notably grooved "pecan-shaped" net sinkers in sites dating 2,500-400 years ago, and a wide variety of ceramics, many decorated, in sites dating less than 400 years. Only one site, Sac-6, produced a substantial manufacturing assemblage. Kielusiak noted ceramics from two sites north of Sacramento, one in Yolo County and one in Sutter County (Keilusiak 1982).

This leads us to our ceramic finds at Col-247, which dates to the earliest part of Kielusiak's sequence. The site produced 5,483 pieces of worked clay, about three-quarters manufacturing debris and one-quarter finished pieces. All finished pieces were made from fine grained clays, with carefully shaped and smoothed exteriors and fired to a dark brown to light grey. The clay was derived from local clayey silt, and the uniform, fine grained paste used for many finished pieces suggests it was probably first ground in a mortar. Objects were shaped by squeezing, rolling, and pinching in the hands, then they were baked in open fires.

The earliest phase at Col-247, dating 3460-4385 CAL BP, produced only tapers, balls, and beads. The next phase, 2750-3222 CAL BP, produced these plus eggs, figurines, and loaves. The Upper Archaic phases, 1550-2750 CAL BP, produced all forms, including pottery and applicators. The frequency of production debris increased from the oldest to youngest deposits.

The Col-247 finds stand in contrast to the Delta finds reported by Heizer and others. The Delta finds were predominantly late prehistoric, and only a few objects were reported from sites more than 400 years old. Our finds indicate that the industry originated by at least 4,400 years ago and was well-developed by 3,200 years ago. Tying the evidence together, we can propose a preliminary chronology of ceramic development. Col-247 shows that ceramic production began around 1625-2435 BC with manufacture of beads, tapers, and balls. Between 1250-800 BC egg-shapes, loaves, and textile-impressed pellets were also made. After 800 BC figurines and pottery vessels were added to the assemblage and egg-shapes and loaves dropped out. After AD 300 "pecan-shaped" net sinkers were added to the assemblage and elaborate punctate and chevron decoration first appeared, primarily on figurines. After AD 1500 ear spools and a variety of counters and die were made, many with punctate and chevron decorations. Small pottery vessels were made throughout the sequence but were never produced intensively. However, pottery was also decorated after AD 1500.

The Colusa finds show that a ceramic industry developed in the Valley nearly as early as any in North America. In fact, nascent ceramic industries at this time depth in the Southwest, Southeast, and Central Mexico all had forms and functions similar to the Col-247 finds, including pinch pots, balls, and figurines baked in open fires. Future research will have a host of questions to address: Why did the pottery industry intensify in the Southwest but not here? Did basketry better serve the functions of vessels in California? Did the absence of maize-beans-squash farming in California play a role?

Labor Intensive Field Methods and Baked Clay Recovery

During the excavations, soil was dry-screened and all screen residues were bucketed by provenience. The buckets were transported to an outdoor lab, where they were water-screened. The residues were dried, but calcium carbonate ($CaCo^3$) made it hard to identify pebbles, all of which looked like they had been dipped in oatmeal mush and dried in the sun. To solve this problem we bought several cases of hydrochloric acid (HCL) and thinned it to a 6.0 % solution. After first pulling out bones and shells which would be damaged by the reaction we poured the pebbles and solution into buckets, immersing the pebbles. The acid burned off the caliche and the contents fizzed like an antacid tablet. As the first buckets dried we realized the prevalence of intentionally shaped and fired clay objects, ceramics, to be exact.

Looking over this history of publication about Central California ceramics, one thing is striking: even though the frequency of archaeological field studies has increased tenfold over the last 30 years, nearly all publications and certainly the most robust records of prehistoric ceramics are found exclusively in older publications. This suggests that archaeological practitioners have lost the thread of evidence of a ceramic industry, and many now enter the field lacking knowledge of the existence of early ceramics in the region. Thus, they also lack an expectation for ceramics and probably the ability to identify the material once it is encountered, albeit serendipitously. Consequently, recent reports and publications offer spare reference to the material, and there is little or no public knowledge of early California ceramics.

Before we can address the research questions, it is essential to recognize the significance of this material and the importance of making new ceramic finds. Beyond the considerable knowledge we may gain of the industry itself, the fingerprints of past craftspeople are a jaw-dropping personification of the archaeological record, and the basket impressions left in clay may be the only record we'll ever have of textiles of this age in this region. Professional archaeologists must take care to implement careful field and lab methods designed to identify, recover, date, and preserve new ceramic assemblages. For example, the early Delta finds described above were mostly found in the old days when archaeologists did not screen and no acid bath was applied, so only limited material was identified. The field and lab methods applied during our investigation allowed us to retrieve a rich manufacturing assemblage and a wide variety of finished pieces. It remains to be seen if similar, robust manufacturing assemblages will be found in adjoining regions and with this kind of time depth.

SUBSISTENCE-SETTLEMENT

Intensity of Occupation

All six phases produced at least some evidence of features, artifact assemblage diversity, and subsistence diversity indicating intensive use. However, there was clear (if counter-intuitive) evidence of a decrease in the intensity of technological investment coupled with an increase in food processing investment over time.

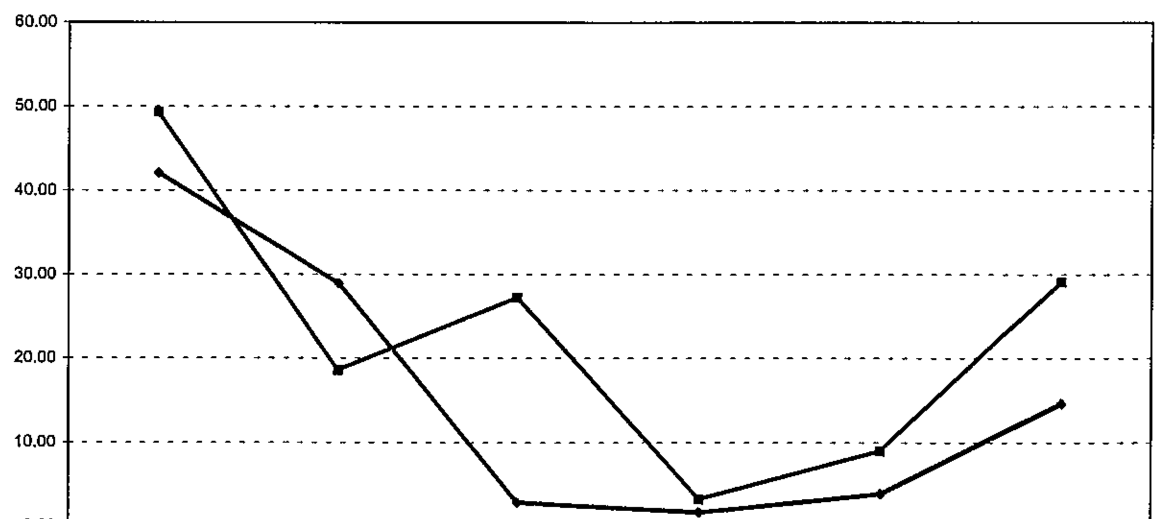
There was an obvious and steady decrease over time in technological and structural measures of occupation intensity. Artifacts per m^3 decreased from a high of 26.7 artifacts per m^3 at 3460-4385 CAL BP to a low of 3.6 artifacts per m^3 at 740-910 CAL BP (Table 41). Occupation features were primarily associated with Archaic components at Col-247, a distribution mirrored by burial density. The Col-247 Archaic deposits produced 1.44 features/burials per m^3, a rate more than three times higher than encountered at Col-245/H and six times higher than Col-158 (Table 40).

In contrast, the intensity of deposition of food refuse had early and late pulses, but generally increased over time (Figures 126, 131). This finding agrees with a basic tenet of intensification theory, that more energy was extracted from the same estate over time. On the other hand, a basic corollary appears to be violated. On face value, the inverse relationship between technological and food refuse indicates that higher rates of extraction did not require increased investment in the technology used for extraction and processing. On the other hand, technology made of textiles and wood—absent from our archaeological record due to its poor preservation—may have played a growing role over time.

Seasonality

In general, our study of seasonality indicators confirmed that during each phase sites were used during most or all seasons. However, specific seasonality indicators provided what, at first blush, were confusing results. For example, large seed taxa demonstrated a peak in summer harvest 1550-2750 CAL BP (Figure 129), and small seed data for this same time period indicate a prevalence of spring season taxa at the expense of summer ripening seeds (Figure 130). However, if we step back from the specifics and look at the overall pattern of results, then it becomes clear that the seasonality data were more informative about harvest practices and scheduling than seasonality per se.

Figure 131: Intensity of seed deposition, (n small seeds, gm large seeds per liter), average per phase.



	740-910	970-1180	1550-2159	2200-2750	2750-3222	3460-4385
n Small Seeds/Liter	42.06	28.86	2.86	1.64	3.86	14.63
gm Large Seeds/Liter	49.21	18.51	27.10	3.17	8.91	29.02

Middle Archaic Period

3460-4385 CAL BP. Small seeds (primarily goosefoot and maygrass, with some elderberry, bean, and wild barley) were harvested at about the same rate in spring and summer. Saltbush, hareleaf, and peppergrass typical of alkaline soils were also taken during this period. Cyprinids, perch, and sturgeon were probably harvested during spring and summer spawning runs. Cervids (mostly deer) were taken primarily in the summer. In the fall, little use was made of salmonid fisheries. Acorn dominated large seed use, and hazelnut was acquired from foothill sources. Animal harvest focused on waterfowl (primarily geese).

2750-3222 CAL BP. Small seed harvest was little changed from the previous phase, however, harvest of the alkaline associate saltbush peaked during this phase. Fish harvest was unchanged from the previous phase, with a focus on spring and summer spawning cyprinids, perciformes, and acipensers and little attention to salmonids. Large seeds (primarily acorns) were harvested almost exclusively in the fall. Thin shelled pine nuts were also acquired during this phase, indicating a link to foothill and mountain habitats. Animal harvest concentrated on deer and waterfowl.

Upper Archaic Period

1550-2750 CAL BP. The rate of small seed harvest diminished during this phase (Figure 131), and species associated with clayey or alkaline soils also disappeared from the record (Figure 120). Spring small seeds harvest focused on bean, bedstraw, and barley, while summer harvest focused on large seeds (wild cucumber and wild grape) and some small seeds (primarily maygrass, and beans). Overall, the rate of large seed harvest reached its Archaic peak during this phase (Figure 131), marked by the combined summer and fall indicators. Fish and mammal harvest were little changed from earlier phases. However, the prevalence of summer season seed and nut indicators during the Upper Archaic may comport well with the peak in duck harvest dating 2200-2750 CAL BP (Figure 127), in that these were mallard-sized ducks which may have been local residents harvested during the molting and nesting seasons. Cervids (mostly deer) were also taken primarily in the summer. Thin shelled pine nuts were acquired during this phase, indicating a continued link to foothill and mountain habitats.

Emergent Period

970-1180 CAL BP. The rate of small and large seed production increased sharply from the preceding phase (Figure 131), as did the rate of bone and shell refuse production (Figure 126). The range of seed taxa was closely similar to the Middle Archaic pattern, with small seeds dominating the spring and summer (primarily maygrass, goosefoot, bean, sunflower, wild barley, fiddleneck, and red maids), and large seeds dominating in the fall. Alkaline soil indicators also reappeared in the record, including saltbush, hareleaf, nightshade, tarweed, and blow-wives (Figures 120 and 121, A). Acorn was the dominant fall species, however, it should be noted that foothill species also peaked during this phase, featuring summer and fall indicators such as manzanita, hazelnut, and thick-shelled pine nuts. Significant changes were also seen in animal harvest, with an overall increase in use of riparian resources. The harvest of all fishes increased to double the Archaic rate (Figure 122), including many new species (Figure 124) and smaller examples of all species. For the first time, salmonids were a significant part of the local diet (Figure 123). It is likely that fishing expanded to multi-season harvest with the introduction of seine, dip net, and weir technologies. Harvest of the western ridge mussel peaked in this phase (Figure 126), and harvest of waterfowl intensified as cervid harvest tailed off (Figure 128).

740-910 CAL BP. Trends originating in the preceding phase culminated in this phase. The rate of small and large seed production peaked (Figure 131), while the rate of animal residue production tailed off (Figure 126). The diversity of small and large seed taxa was also at its highest as alkaline and clayey soil indicators (saltbush, hareleaf, peppergrass) peaked (Figure 120), and riparian associates (tule and sedge) appeared in the record for the first time (Figure 121, A). Large seeds were dominated by fall acorn production. On the other hand, intensification of riparian animal food resources increased, with a sharp increase in the rate and diversity of fish harvest, and an increase in the harvest of waterfowl and riparian forest birds. It is likely that the increased exploitation of riparian species was at the expense of labor available for the harvest of prairie species, explaining the diminution of the harvest of cervids, small game, and summer ripening large and small seeds.

EXPLANATION OF CULTURE CHANGE

A number of research questions were posed at the beginning of this report (see **Research Design**). Because this project is part of an ongoing study likely to develop a more robust archaeological record after additional seasons of field and lab work, some of these questions will best be addressed at a later date. However, the project was successful in developing a new perspective on Sacramento Valley archaeology, so we can build a working understanding and identify areas for further research.

Do the Hwy 45 findings provide evidence of prehistoric human impacts to prey populations of the Sacramento Valley region?

The long time series has allowed us to shed new light on changes in prehistoric hunting patterns in the region. Existing models argue that, owing to increased population and consequent depletion of higher-ranked game, California's late prehistoric diets should be dominated by high cost animal resources like hares, raccoons, and squirrels, requiring significant handling time or other forms of organizational and technological investment. In turn, earlier diets should be characterized by higher proportions of large-bodied game such as elk, deer, and pronghorn. Our findings contradict this prediction in the sense that, where we pick up the story at 4385 CAL BP, the diet was already focused on waterfowl, small game, acorn, and small fish harvest. However, cervid harvest peaked in the Upper Archaic and diminished in the Emergent Period. The harvest of small and large seeds, small fish, salmonids, and waterfowl all intensified sharply and logarithmically after 1180 CAL BP, providing convincing evidence of an overall shift to greater species diversification and harvest of smaller and smaller food sources, earmarks of decreased foraging efficiency.

Do the Hwy 45 Archaic findings provide evidence that handstones and millingslabs were used to process acorns? Does the shift to the mortar and pestle correlate with a shift in intensity of acorn use?

Col-247 produced unusually well preserved and robust early plant macrofossil assemblages. The site's occupation layers were buried around 1,500 years ago, slowing or arresting pedogenesis and weathering which would otherwise have acted to diminish plant macrofossil remains. As a result, the Colusa early assemblages are larger and more diverse than those previously available for the Archaic valley floor, producing a number of surprises that run counter to the presumed history of plant use in the Sacramento Valley.

Existing models argue that acorn intensification took place relatively late in time and came about as the result of threshold, or metastable demographic conditions (e.g., Basgall 1987). The Hwy 45 results contradict this model in two ways. First, acorn use was relatively stable throughout the sequence. It was the dominant large seed throughout. Second, the basic acorn-deer-fish subsistence economy (per Baumhoff 1963) was fully in place where we pick up the story, at 4385 CAL BP. As argued for Archaic Clear Lake basin (White *et al.* 2002), early use of acorns suggests the food was higher ranked than currently credited.

Further, like Clear Lake, the pre-2200 CAL BP ground stone assemblages from Colusa were dominated by the handstone and millingslab, indicating that these tools were in fact used to process acorns.

However, the rate of small and large seed production increaed significantly after 1180 CAL BP (Figure 131), indicating the onset of intensified vegetal food production coincident to other cultural and economic changes, including exclusive use of the mortar and pestle.

Will the Hwy 45 results indicate a general difference between slow-water and fast-water fishes, or will they indicate significant inter-species variability in patterns of harvest and intensification? Will the Hwy 45 results show late fish exploitation or evidence for early and persistent use of fish?

Broughton (1988; 1994b) argues that fisheries were intensified during the late prehistoric period in the Sacramento Valley, added to the diet late in the sequence because they were among the lowest ranked game available, ranking far below other animal foods. Our findings provide considerable support for this model, but we have added a variety of observations on ecological associations and harvest conditions.

Moyle (1976) classifies the Sacramento-San Joaquin lowland fisheries into *main channel* versus *slow-water* species. Project area faunas included both habitats, with slow-water taxa dominant in sloughs and overflow marshes and main channel fishes dominant in the river. Broughton (1988, 1994) fixed on this difference in habitats for his Sacramento Valley intensification studies. However, these distinctions may not be the most important factors determining variation in fish harvest. In fact, nearly all main channel and slow-water species were pelagic and difficult to capture through most seasons but very vulnerable to capture during spawning runs when they entered shallows and tributary streams. Some of these fish spawned in the spring, some in the summer, and some in the fall.

The project found evidence for early use of fish, but a clear record of a late intensification of the smallest classes of fish. While Broughton's model urges us to think about this in terms of specific species, the Hwy 45 data show that the small bones were not necessarily from small-bodied fish species. Instead, the post-1180 CAL BP fish spike was an increase in the rate of harvest of all small fishes of all species. Several tiny species first appear in the record after 1180 CAL BP. The change is probably the result of the introduction of harvesting methods capable of capturing smaller fish, such as seine nets, dip nets, and weirs.

Four small taxa, the blackfish, threespine stickleback, thicktailed chub, and percids, were associated with sloughs and oxbow lakes along the river. Intensification of these species after 1180 CAL BP probably reflects the introduction of dip and drag net methods described for the ethnographic Patwin.

The presence of a late salmon intensification suggests that conditions ensued early in the sequence that prevented harvest, and these conditions changed or technology was developed which enabled local inhabitants to overcome and harvest this resource. The condition was probably the tendency for salmon to pass through the middle Sacramento in deep water channels during high water conditions on their way to upstream spawning grounds. The fish may have been relatively inaccessible except via extraordinary technology (Broughton 1994). It is likely that the post-1180 BP salmonid intensification tracks the introduction of salmon weirs such as those encountered by Wilkes during his expedition to Salmon Falls in 1841 (Figure 10).

Four large taxa, the sturgeon, Sacramento sucker, hardhead, and Sacramento pike-minnow, changed little in density and relative proportion over time. Evidence for a persistent pattern of use would argue that the fish were taken using practices and at a level of intensity that changed very little. The common thread among these four species is moderate to large body size and vulnerability as they entered shallow water during spawning runs, suggesting that these taxa may have been springtime targets for capture using hands, gigs, or thrusting spears.

In a related vein, Gobalet (1989) warns that, unless archaeological sampling methods are employed sufficient to recover fine-scaled materials, fish diversity and abundance will be under-represented. The Hwy 45 findings clearly support this assertion, and show the urgent need for microconstituent recovery for well preserved, well dated prehistoric archaeological contexts.

Will the Hwy 45 results confirm the existence of a distinctive pattern of increased foraging efficiency after 1100 CAL BP?

The project garnered evidence for coincident change in diet, tool kits, mobility, social organization, and regional interaction, and the ecological context of the adaptations. Thus, project findings permit us to look for triggering conditions in the dynamics of local population-resource relationships. Taken as a whole, project evidence indicates that existing models of economic intensification are generally accurate, but many specifics—such as the pattern of use of acorns or individual fish species, and more general causal factors such as demographic change—need to be reconsidered. Economic intensification in Northern California was probably not a culmination of demographic thresholds exclusive to the late prehistoric so much as a series of regionally variable, technologically-mediated transformations that evolved through Paleoindian, Archaic, and Emergent metastates.

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Appendix A: Catalogs

SITE	ACC	LOT	CAT	SUB	UNIT	LEVEL	ASSOC	ART #	U SIZE	SCN	LOCUS	MAT	CATEG	DESC1	DESC2	DESC3	COND	N	WGT	REMARKS
Col-246/H	325	1	1		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.8	Base (but stem is broken)
Col-246/H	325	1	2		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.7	Base and Midsection (one ear broken)
Col-246/H	325	1	3		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.9	
Col-246/H	325	1	4		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	PREFORM		COMP	1	1.6	
Col-246/H	325	1	5		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.8	
Col-246/H	325	1	6		NA	STRAT 3A			NA	1/8		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.3	Distal (tip)
Col-246/H	325	1	7		NA	STRAT 3A			NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			71	19.0	
Col-246/H	325	1	8		NA	STRAT 3A			NA	1/8		METSED	UNMOD	CHIPPED STONE	FLAKES		COMP	14	89.7	
Col-246/H	325	1	9		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	CLAMSHELL	DISK	COMP	2	0.6	
Col-246/H	325	1	10		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	CLAMSHELL	DISK	COMP	1	0.1	
Col-246/H	325	1	11		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	5	0.4	5 SEQUINS
Col-246/H	325	1	12		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	OLIVELLA	SPIRE-GROUND	COMP	1	0.4	
Col-246/H	325	1	13		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	CLAMSHELL	DISK	COMP	2	0.7	ONE COMPLETE, ONE FRAGMENT
Col-246/H	325	1	14		NA	STRAT 3A			NA	1/8		SHELL	MODIF	BEAD	CLAMSHELL	DISK	FRAG	1	0.1	
Col-246/H	325	1	15		NA	STRAT 3A			NA	1/8		BONE	MODIF	BEAD	TUBE	INCISED	FRAG	1	0.1	
Col-246/H	325	1	16		NA	STRAT 3A			NA	1/8		BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1	0.3	
Col-246/H	325	1	17		NA	STRAT 3A			NA	1/8		BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1	0.4	
Col-246/H	325	1	18		NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	15.7	POTTERY REMNANT, DECORATED
Col-246/H	325	1	19		NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	8.6	
Col-246/H	325	1	20		NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	19.2	
Col-246/H	325	1	21		NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	11.6	
Col-246/H	325	1	22	H	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	11.1	
Col-246/H	325	1	22	A	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				28	184.4	
Col-246/H	325	1	22	B	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	4.2	
Col-246/H	325	1	22	C	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	8.3	
Col-246/H	325	1	22	D	NA	STRAT 3A.			NA	1/8		CLAY	MODIF	WORKED CLAY				1	13.7	
Col-246/H	325	1	22	E	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	10.7	
Col-246/H	325	1	22	F	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				2	4.5	
Col-246/H	325	1	22	G	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	8.1	
Col-246/H	325	1	22	I	NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY				1	2.8	
Col-246/H	325	1	23		NA	STRAT 3A			NA	1/8		CLAY	MODIF	WORKED CLAY		LUMP	FRAG	856	1167.9	
Col-246/H	325	1	24		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	COIN		COMP	1	2.4	SILVER 1653 DIME
Col-246/H	325	1	25		NA	STRAT 3A			NA	1/8		CERAM	MANUF	PERSONAL EFFEC	MARBLE	CERAMIC	COMP	1	6.2	ORNATE
Col-246/H	325	1	26		NA	STRAT 3A			NA	1/8		CERAM	MANUF	PERSONAL EFFEC	MARBLE	CERAMIC	COMP	1	7.1	
Col-246/H	325	1	27		NA	STRAT 3A			NA	1/8		METAL	MANUF	EQUIPMENT			COMP	1	8.2	BALL BEARING
Col-246/H	325	1	28		NA	STRAT 3A			NA	1/8		SHELL	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	1.4	
Col-246/H	325	1	29		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	1.1	
Col-246/H	325	1	30		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	BUTTON	RUSTED	COMP	1	2.9	
Col-246/H	325	1	31		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	BUTTON	RUSTED	COMP	1	2.2	
Col-246/H	325	1	32		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	BUTTON	RUSTED	COMP	1	1.0	
Col-246/H	325	1	33		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFEC	CARTRIGE	CORRODED	FRAG	1	3.5	
Col-246/H	325	1	34		NA	STRAT 3A			NA	1/8		OTHER	MANUF	PERSONAL EFFEC	COMB		FRAG	1	0.4	TORTISE SHELL COMB
Col-246/H	325	1	35		NA	STRAT 3A			NA	1/8		METAL	MANUF	PERSONAL EFFECT			FRAG	1	0.7	MECHANICAL PART
Col-246/H	325	1	36		NA	STRAT 3A			NA	1/8		CERAM	MANUF	ARCHITECTURAL	TERRA COTTA	UNGLAZED	FRAG	1	20.9	
Col-246/H	325	1	37		NA	STRAT 3A			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	EARTHENWARE	FRAG	4	16.7	Crock Fragments
Col-246/H	325	1	38		NA	STRAT 3A			NA	1/8		CERAM	MANUF	FOOD AND DRINK	PLATE	PORCELAIN	FRAG	6	6.4	
Col-246/H	325	1	39		NA	STRAT 3A			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	STONEWARE	FRAG	32	117.4	White
Col-246/H	325	1	40		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	82	97.0	
Col-246/H	325	1	41		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	28	31.1	
Col-246/H	325	1	42		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	7	52.9	
Col-246/H	325	1	43		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	5	5.0	ALSO CONTAINS 2 PUCE (COLOR)
Col-246/H	325	1	44		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	103	61.2	
Col-246/H	325	1	45		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	22	8.2	
Col-246/H	325	1	46		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	MILK GLASS	FRAG	2	0.6	one is clear glass with patina
Col-246/H	325	1	47		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	0.3	
Col-246/H	325	1	48		NA	STRAT 3A			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	BLACK GLASS-DAI	FRAG	53	121.4	
Col-246/H	325	1	49		NA	STRAT 3A			NA	1/8		BRICK	MANUF	ARCHITECTURAL	BRICK		FRAG	56	132.3	
Col-246/H	325	1	50	C	NA	STRAT 3A			NA	1/8		METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	111	763.8	
Col-246/H	325	1	50	A	NA	STRAT 3A			NA	1/8		METAL	MANUF	MISC		RUSTED	FRAG	20	4580.0	ASSORTED PIECES, Unidentifiable
Col-246/H	325	1	50	B	NA	STRAT 3A			NA	1/8		METAL	MANUF	MISC		RUSTED	FRAG	277	266.4	ASSORTED PIECES
Col-246/H	325	1	51		NA	STRAT 3A			NA	1/8		FLORAL	MANUF	ARCHITECTURAL	MISC		FRAG	295	36.1	
Col-246/H	325	1	52		NA	STRAT 3A			NA	1/8		BONE	UNMOD	FAUNAL			FRAG	2573	653.1	MISCELLANEOUS REMAINS
Col-246/H	325	1	53		NA	STRAT 3A			NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		579.1	
Col-246/H	325	1	54		NA	STRAT 3A			NA	1/8		FLORAL	UNMOD	CHARCOAL			FRAG	361	31.9	
Col-246/H	325	1	55		NA	STRAT 3A			NA	1/8		FLORAL	UNMOD	SEEDS/NUTS			FRAG	31	6.4	MISCELLANEOUS, one walnut
Col-246/H	325	2	1		NA	STRAT 3B			NA	1/8		BRICK	MANUF	ARCHITECTURAL	BRICK		FRAG	2	20.4	
Col-246/H	325	2	2		NA	STRAT 3B			NA	1/4		FLORAL	MANUF	ARCHITECTURAL	LUMBER		FRAG	23	0.5	REDWOOD SPLINTERS ASSOCIATED WI
Col-246/H	325	2	3		NA	STRAT 3B			NA	1/8		BONE	UNMOD	FAUNAL			FRAG	24	11.6	
Col-246/H	325	2	4		NA	STRAT 3B			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG	4	2.8	
Col-246/H	325	3	1		NA	ST			NA	1/4		SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	1	0.1	
Col-246/H	325	3	2		NA	ST			NA	1/4		GLASS	MANUF	PERSONAL EFFEC	BEAD		COMP	1	0.5	CYLINDRICAL, WHITE
Col-246/H	325	3	3		NA	ST			NA	1/4		CERAM	MANUF	PERSONAL EFFEC	MARBLE		COMP	1	4.9	

Col-246/H	325	3	4	NA	ST			NA	1/4	METAL	MANUF	PERSONAL EFFEC	COIN	CORRODED	COMP	1	2.3	DIME
Col-246/H	325	3	5	NA	ST			NA	1/4	GLASS	MANUF	PERSONAL EFFEC	BEAD	BURNED	COMP	1	0.1	
Col-246/H	325	3	6	NA	ST			NA	1/4	CLAY	MODIF	WORKED CLAY				2	33.1	
Col-246/H	325	3	7	NA	ST			NA	1/4	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	COMP	7	64.5	
Col-246/H	325	3	8	NA	ST			NA	1/4	BONE	UNMOD	FAUNAL			FRAG	22	36.9	
Col-246/H	325	3	9	NA	ST			NA	1/4	SHELL	UNMOD	BIVALVE			FRAG		3.6	
Col-246/H	325	4	1	NA	MIXED			NA	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.2	
Col-246/H	325	4	2	NA	MIXED			NA	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	0.9	
Col-246/H	325	4	3	NA	MIXED			NA	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	0.8	
Col-246/H	325	4	4	NA	MIXED			NA	1/4	OBSID	MODIF	CHIPPED STONE	PREFORM	BIFACIAL	FRAG	1	1.2	
Col-246/H	325	4	5	NA	MIXED			NA	1/4	OBSID	MODIF	CHIPPED STONE	FLAKE TOOL	MULTIFACIAL	COMP	1	11.0	
Col-246/H	325	4	6	NA	MIXED			NA	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			151	25.3	
Col-246/H	325	4	7	NA	MIXED			NA	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.9	
Col-246/H	325	4	8	NA	MIXED			NA	1/4	SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	1	1.0	
Col-246/H	325	4	9	NA	MIXED			NA	1/4	SHELL	MODIF	BEAD	OLIVELLA	SPIRE-LOPPED	COMP	1	0.3	
Col-246/H	325	4	10	NA	MIXED			NA	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col-246/H	325	4	11	NA	MIXED			NA	1/4	CLAY	MODIF	WORKED CLAY				13	86.9	WITH IMPRESSIONS
Col-246/H	325	4	12	NA	MIXED			NA	1/4	CLAY	MODIF	WORKED CLAY				160	234.1	
Col-246/H	325	4	13	NA	MIXED			NA	1/4	METAL	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	2.8	?BUTTON
Col-246/H	325	4	14	NA	MIXED			NA	1/4	GLASS	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	0.1	TINY, WHITE, THREE HOLES
Col-246/H	325	4	15	NA	MIXED			NA	1/4	METAL	MANUF	PERSONAL EFFEC	PIN		COMP	2	0.2	Straight Pin
Col-246/H	325	4	16	NA	MIXED			NA	1/4	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	23	96.5	GLAZED, WHITE, PROBABLY DINNERWA
Col-246/H	325	4	17	NA	MIXED			NA	1/4	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	4	1.9	GLAZED, BLUE ON WHITE
Col-246/H	325	4	18	NA	MIXED			NA	1/4	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	1	4.1	GLAZED, WHITE, PROBABLY DINNERWA
Col-246/H	325	4	19	NA	MIXED			NA	1/4	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	1	4.0	GLAZED, TAN
Col-246/H	325	4	20	NA	MIXED			NA	1/4	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	7	22.8	
Col-246/H	325	4	21	NA	MIXED			NA	1/4	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	4	38.0	
Col-246/H	325	4	22	NA	MIXED			NA	1/4	GLASS	MANUF	FOOD AND DRINK		AQUA	FRAG	20	8.9	
Col-246/H	325	4	23	NA	MIXED			NA	1/4	GLASS	MANUF	FOOD AND DRINK		GREEN-OLIVE	FRAG	30	20.0	
Col-246/H	325	4	24	NA	MIXED			NA	1/4	METAL	MANUF	MISC		RUSTED	FRAG	18	33.4	MISCELLANEOUS METAL PARTS
Col-246/H	325	4	25	NA	MIXED			NA	1/4	METAL	MANUF	ARCHITECTURAL	BOLTS AND NAI	RUSTED	COMP	30	250.8	
Col-246/H	325	4	26	NA	MIXED			NA	1/4	BONE	UNMOD	FAUNAL			FRAG	1176	761.6	
Col-246/H	325	4	27	NA	MIXED			NA	1/4	FLORAL	UNMOD	CHARCOAL			FRAG		7.5	
Col-246/H	325	4	28	NA	MIXED			NA	1/4	SHELL	UNMOD	BIVALVE			FRAG		588.6	IN THREE BAGS
Col-246/H	325	5	1	NA	STRAT 2A			NA	1/8	METAL	MANUF	PERSONAL EFFEC	COIN	CORRODED	COMP	1	6.3	SILVER QUARTER
Col-246/H	325	5	2	NA	STRAT 2A			NA	1/8	SHELL	MODIF	BEAD	CLAMSHELL	DISK	COMP	1	0.1	
Col-246/H	325	5	3	NA	STRAT 2A			NA	1/8	GLASS	MANUF	PERSONAL EFFEC	BEAD		COMP	2	0.1	
Col-246/H	325	5	4	NA	STRAT 2A			NA	1/8	SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	1	0.1	
Col-246/H	325	5	5	NA	STRAT 2A			NA	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			22	1.0	
Col-246/H	325	5	6	NA	STRAT 2A			NA	1/8	CLAY	MODIF	WORKED CLAY				2	10.9	WITH IMPRESSIONS
Col-246/H	325	5	7	NA	STRAT 2A			NA	1/8	CLAY	MODIF	WORKED CLAY				2762	193.6	
Col-246/H	325	5	8	NA	STRAT 2A			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	59	57.6	
Col-246/H	325	5	9	NA	STRAT 2A			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	18	35.0	
Col-246/H	325	5	10	NA	STRAT 2A			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	2	5.5	
Col-246/H	325	5	11	NA	STRAT 2A			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	63	61.1	
Col-246/H	325	5	12	NA	STRAT 2A			NA	1/8	CERAM	MANUF	FOOD AND DRINK	PLATE	EARTHENWARE	FRAG	4	6.2	
Col-246/H	325	5	13	NA	STRAT 2A			NA	1/8	METAL	MANUF	MISC			FRAG	171	159.1	
Col-246/H	325	5	14	NA	STRAT 2A			NA	1/8	FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	60	10.6	
Col-246/H	325	5	15	NA	STRAT 2A			NA	1/8	FLORAL	MANUF	ARCHITECTURAL	CHARCOAL		FRAG		56.8	
Col-246/H	325	5	16	NA	STRAT 2A			NA	1/8	SHELL	UNMOD	BIVALVE			FRAG		78.5	
Col-246/H	325	5	17	NA	STRAT 2A			NA	1/8	BONE	UNMOD	FAUNAL			FRAG	311	143.2	
Col-246/H	325	5	18	NA	STRAT 2A			NA	1/8	FLORAL	UNMOD	SEEDS/NUTS			COMP	14	2.6	
Col-246/H	325	6	1	NA	STRAT 2B			NA	1/8	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.5	Base only
Col-246/H	325	6	2	NA	STRAT 2B			NA	1/8	SHELL	MODIF	BEAD	CLAMSHELL	DISK	COMP	1	0.2	
Col-246/H	325	6	3	NA	STRAT 2B			NA	1/8	CLAY	MODIF	WORKED CLAY				2	2.2	
Col-246/H	325	6	4	NA	STRAT 2B			NA	1/8	METAL	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	0.1	
Col-246/H	325	6	5	NA	STRAT 2B			NA	1/8	CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	STONEWARE	FRAG	2	5.6	
Col-246/H	325	6	6	NA	STRAT 2B			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	BLACK GLASS-DAI	FRAG	1	42.2	
Col-246/H	325	6	7	NA	STRAT 2B			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	6	5.9	
Col-246/H	325	6	8	NA	STRAT 2B			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIGHT	FRAG	17	17.9	
Col-246/H	325	6	9	NA	STRAT 2B			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	12	18.3	
Col-246/H	325	6	10	NA	STRAT 2B			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	2	15.7	
Col-246/H	325	6	11	NA	STRAT 2B			NA	1/8	METAL	MANUF	MISC		CORRODED	FRAG	4	14.6	
Col-246/H	325	6	12	NA	STRAT 2B			NA	1/8	BONE	UNMOD	FAUNAL			FRAG	175	373.3	
Col-246/H	325	6	13	NA	STRAT 2B			NA	1/8	SHELL	UNMOD	BIVALVE			FRAG		72.6	
Col-246/H	325	6	14	NA	STRAT 2B			NA	1/8	FLORAL	UNMOD	CHARCOAL			FRAG	2	0.5	plant stem
Col-246/H	325	6	15	NA	STRAT 2B			NA	1/8	FLORAL	MANUF	ARCHITECTURAL	MISC		FRAG	6	0.1	
Col-246/H	325	7	1	NA	S2			NA	1/8	CLAY	MODIF	WORKED CLAY				1	5.4	
Col-246/H	325	7	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-246/H	325	7	3	NA	S2			NA	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.0	
Col-246/H	325	7	4	NA	S2			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	3.5	
Col-246/H	325	7	5	NA	S2			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	0.3	
Col-246/H	325	7	6	NA	S2			NA	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	10	20.2	

Col-246/H	325	7	7	NA	S2			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIGHT	FRAG	19	24.3	
Col-246/H	325	7	8	NA	S2			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	1.5	
Col-246/H	325	7	9	NA	S2			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	BLACK GLASS-DA	FRAG	6	21.4	
Col-246/H	325	7	10	NA	S2			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	EARTHENWARE	FRAG	1	2.8	
Col-246/H	325	7	11	NA	S2			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	CERAMIC	FRAG	5	3.1	
Col-246/H	325	7	12	NA	S2			NA	1/8		BRICK	MANUF	ARCHITECTURAL	BRICK		FRAG	10	3.9	
Col-246/H	325	7	13	NA	S2			NA	1/8		METAL	MANUF	MISC		RUSTED	FRAG	31	87.6	
Col-246/H	325	7	14	NA	S2			NA	1/8		METAL	MANUF	MISC		RUSTED	FRAG	12	58.2	Rusty Fasteners
Col-246/H	325	7	15	NA	S2			NA	1/8		BONE	UNMOD	FAUNAL			FRAG	138	194.5	
Col-246/H	325	7	16	NA	S2			NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		73.0	
Col-246/H	325	8	1	NA	MIXED			NA	1/8		SAMPL	UNMOD	SAMPLES	SOIL				577.6	Midden Soil, SW Corner of trench
Col-246/H	325	9	1	NA	MIXED			NA	1/8		SAMPL	UNMOD	SAMPLES	SOIL				352.8	Clay beneath midden, SW corner of trench
Col-245	326	1	1	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.6	Biface Tip
Col-245	326	1	2	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	PREFORM	BIFACIAL	FRAG	1	0.8	Point
Col-245	326	1	3	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.5	
Col-245	326	1	4	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	1.1	
Col-245	326	1	5	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	EMF	UNIFACIAL	COMP	1	2.7	
Col-245	326	1	6	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	CORE/CORE TO	UNIFACIAL	COMP	1	3.5	
Col-245	326	1	7	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	
Col-245	326	1	8	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	
Col-245	326	1	9	NA	MIXED			NA	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			32	19.3	
Col-245	326	1	10	NA	MIXED			NA	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES		COMP	3	7.3	
Col-245	326	1	11	NA	MIXED			NA	1/4		CLAY	MODIF	WORKED CLAY			FRAG	15	117.6	
Col-245	326	1	12	NA	MIXED			NA	1/4		CLAY	MODIF	WORKED CLAY				115	1279.0	
Col-245	326	1	13	NA	MIXED			NA	1/4		SHELL	MANUF	PERSONAL EFFEC	BUTTON		COMP	1	0.6	
Col-245	326	1	14	NA	MIXED			NA	1/4		PLAST	MANUF	PERSONAL EFFECT			COMP	1	0.4	Plastic Parriot (toy)
Col-245	326	1	15	NA	MIXED			NA	1/4		METAL	MANUF	PERSONAL EFFEC	PIN		COMP	1	0.1	Straight Pin
Col-245	326	1	16	NA	MIXED			NA	1/4		PLAST	MANUF	MISC			FRAG	3	1.7	Possible plastic scraps
Col-245	326	1	17	NA	MIXED			NA	1/4		LEATH	MANUF	PERSONAL EFFECT			FRAG	3	7.7	leather scraps
Col-245	326	1	18	NA	MIXED			NA	1/4		CERAM	MANUF	FOOD AND DRINK	BOTTLE	STONEWARE	FRAG	5	19.8	
Col-245	326	1	19	NA	MIXED			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	PORCELAIN	FRAG	1	3.7	
Col-245	326	1	20	NA	MIXED			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	STONEWARE	FRAG	3	6.3	
Col-245	326	1	21	NA	MIXED			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	STONEWARE	FRAG	1	0.9	
Col-245	326	1	22	NA	MIXED			NA	1/4		CERAM	MANUF	ARCHITECTURAL	TILE		FRAG	19	65.1	
Col-245	326	1	23	NA	MIXED			NA	1/4		CERAM	MANUF	FOOD AND DRINK	BOTTLE	STONEWARE	FRAG	1	3.8	
Col-245	326	1	24	NA	MIXED			NA	1/4		CERAM	MANUF	ARCHITECTURAL	TERRA COTTA	UNGLAZED	FRAG	1	7.0	
Col-245	326	1	25	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	55	112.7	
Col-245	326	1	26	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIGHT	FRAG	5	8.8	
Col-245	326	1	27	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	11	53.3	
Col-245	326	1	28	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	4	3.8	
Col-245	326	1	29	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	3.3	
Col-245	326	1	30	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	11	11.2	
Col-245	326	1	31	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	1	0.8	
Col-245	326	1	32	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	RECEPTICAL	MILK GLASS	FRAG	1	4.3	
Col-245	326	1	33	NA	MIXED			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-DARK OLI	FRAG	4	3.7	
Col-245	326	1	34	NA	MIXED			NA	1/4		METAL	MANUF	ARCHITECTURAL	LIGHT BULB BASE		FRAG	1	6.8	
Col-245	326	1	35	NA	MIXED			NA	1/4		METAL	MANUF	ARCHITECTURAL	LIGHT BULB BASE		FRAG	1	1.4	
Col-245	326	1	36	NA	MIXED			NA	1/4		PLAST	MANUF	MISC			FRAG	2	7.9	Plastic
Col-245	326	1	37	NA	MIXED			NA	1/4		METAL	MANUF	ARCHITECTURAL	SCREEN OR GR	RUSTED	FRAG	8	15.4	
Col-245	326	1	38	NA	MIXED			NA	1/4		METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	88	260.3	
Col-245	326	1	39	NA	MIXED			NA	1/4		BRICK	MANUF	ARCHITECTURAL	BRICK		FRAG	29	69.5	
Col-245	326	1	40	NA	MIXED			NA	1/4		BONE	UNMOD	FAUNAL			FRAG	494	392.6	
Col-245	326	1	41	NA	MIXED			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		93.8	two bags
Col-245	326	1	42	NA	MIXED			NA	1/4		FLORAL	MANUF	ARCHITECTURAL	MISC		FRAG	5	1.0	
Col-245	326	1	43	NA	MIXED			NA	1/4		FLORAL	UNMOD	CHARCOAL			FRAG	2	1.0	
Col-245	326	1	44	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.5	
Col-245	326	1	45	NA	MIXED			NA	1/4		OBSID	MODIF	CHIPPED STONE	PREFORM		COMP	1	1.5	
Col-245	326	2	1	NA	STRAT 2			NA	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	5.9	
Col-245	326	2	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	2	3	NA	STRAT 2			NA	1/4		CLAY	MODIF	WORKED CLAY				31	61.7	
Col-245	326	2	4	NA	STRAT 2			NA	1/4		METAL	MANUF	PERSONAL EFFEC	COIN	CORRODED	COMP	1	4.7	Indian Head Nickle
Col-245	326	2	5	NA	STRAT 2			NA	1/4		LEATH	MANUF	LEATHER			FRAG	3	2.5	Probably leather
Col-245	326	2	6	NA	STRAT 2			NA	1/4		PLAST	MANUF	PERSONAL EFFECT			FRAG	1	10.7	Part of a paint brush
Col-245	326	2	7	NA	STRAT 2			NA	1/4		PLAST	MANUF	PERSONAL EFFECT			FRAG	1	1.3	A fragment from a music record
Col-245	326	2	8	NA	STRAT 2			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	STONEWARE	FRAG	2	10.2	
Col-245	326	2	9	NA	STRAT 2			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	PORCELAIN	FRAG	1	0.6	
Col-245	326	2	10	NA	STRAT 2			NA	1/4		CERAM	MANUF	ARCHITECTURAL	TILE		FRAG	25	79.4	
Col-245	326	2	11	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	36	97.6	
Col-245	326	2	12	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIME	FRAG	1	3.3	
Col-245	326	2	13	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	7	9.4	
Col-245	326	2	14	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	1	1.8	sick glass
Col-245	326	2	15	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	4	4.0	
Col-245	326	2	16	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE		FRAG	1	4.5	Red colored glass (puce)

Col-245	326	2	17	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	MILK GLASS	FRAG	1	2.8	
Col-245	326	2	18	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	RECEPTICAL		FRAG	2	2.0	carnival or pressed glass, yellow colored
Col-245	326	2	19	NA	STRAT 2			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	3	9.4	
Col-245	326	2	20	NA	STRAT 2			NA	1/4		METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	16	10.5	
Col-245	326	2	21	NA	STRAT 2			NA	1/4		METAL	MANUF	MISC		CORRODED	FRAG	1	6.8	Hoop
Col-245	326	2	22	NA	STRAT 2			NA	1/4		METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	51	167.4	
Col-245	326	2	23	NA	STRAT 2			NA	1/4		BRICK	MANUF	ARCHITECTURAL	BRICK		FRAG	9	23.9	
Col-245	326	2	24	NA	STRAT 2			NA	1/4		CNCRT	MANUF	ARCHITECTURAL	PAINTED		FRAG	10	239.2	
Col-245	326	2	25	NA	STRAT 2			NA	1/4		BONE	UNMOD	FAUNAL			FRAG	47	34.0	
Col-245	326	2	26	NA	STRAT 2			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		5.6	
Col-245	326	2	27	NA	STRAT 2			NA	1/4		FLORAL	UNMOD	CHARCOAL			FRAG	5	0.8	
Col-245	326	2	28	NA	STRAT 2			NA	1/4		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	2	3.6	
Col-245	326	3	1	NA	STRAT 3			NA	1/4		OBSID	MODIF	CHIPPED STONE	PREFORM	BIFACIAL	FRAG	1	1.9	
Col-245	326	3	2	NA	STRAT 3			NA	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			40	4.8	
Col-245	326	3	3	NA	STRAT 3			NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			62	2.0	
Col-245	326	3	4	NA	STRAT 3			NA	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			4	2.0	
Col-245	326	3	5	NA	UMDD			NA	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES		COMP	6	22.1	
Col-245	326	3	6	NA	STRAT 3			NA	1/4		BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1	0.2	
Col-245	326	3	7	NA	STRAT 3			NA	1/4		SHELL	MODIF	BEAD	CLAMSHELL	DISK	FRAG	1	0.3	
Col-245	326	3	8	NA	STRAT 3			NA	1/4		CLAY	MODIF	WORKED CLAY				7	43.9	
Col-245	326	3	9	NA	STRAT 3			NA	1/4		CLAY	MODIF	WORKED CLAY				1304	979.9	
Col-245	326	3	10	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	11.1	Screw top bottle
Col-245	326	3	11	NA	STRAT 3			NA	1/4		CERAM	MANUF	ARCHITECTURAL	TILE		FRAG	4	11.0	
Col-245	326	3	12	NA	STRAT 3			NA	1/4		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL	PORCELAIN	FRAG	2	3.0	
Col-245	326	3	13	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIME	FRAG	2	4.1	
Col-245	326	3	14	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-OLIVE	FRAG	2	1.4	
Col-245	326	3	15	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK		CLEAR	FRAG	1	0.7	glass tube
Col-245	326	3	16	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	26	61.4	
Col-245	326	3	17	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	3	18	NA	STRAT 3			NA	1/4		PLAST	MANUF	MISC			FRAG	1	0.2	PLSTIC SCRAP
Col-245	326	3	19	NA	STRAT 3			NA	1/4		PLAST	MANUF	MISC			FRAG	1	0.1	Yellow plastic fragment
Col-245	326	3	20	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	4	46.7	contains fragments of a Coke bottle
Col-245	326	3	21	NA	STRAT 3			NA	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	10.2	
Col-245	326	3	22	NA	STRAT 3			NA	1/4		METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	14	43.5	
Col-245	326	3	23	NA	STRAT 3			NA	1/4		BONE	UNMOD	FAUNAL			FRAG	5278	581.2	
Col-245	326	3	24	NA	STRAT 3			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		428.2	
Col-245	326	3	25	NA	STRAT 3			NA	1/4		FLORAL	UNMOD	CHARCOAL			FRAG		1.1	
Col-245	326	3	26	NA	STRAT 3			NA	1/4		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	16	2.4	
Col-245	326	3	27	NA	STRAT 3			NA	1/8		FLORAL	UNMOD	SEEDS/NUTS			FRAG	1	0.0	
Col-245	326	3	28	NA	STRAT 3			NA	1/8		FLORAL	UNMOD	CHARCOAL	ASH		FRAG	2	2.3	ash
Col-245	326	3	29	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	3	30	NA	STRAT 3			N/A	1/8		CLAY	MODIF	WORKED CLAY			COMP	4	2.2	
Col-245	326	3	31	NA	STRAT 3			N/A	1/8		CLAY	MODIF	WORKED CLAY				1084	356.8	
Col-245	326	3	32	NA	STRAT 3			N/A	1/8		BONE	UNMOD	FAUNAL			FRAG	11	0.7	
Col-245	326	3	33	NA	STRAT 3			NA	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	2.8	
Col-245	326	4	1	NA	STRAT 4			NA	1/8		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	5.2	
Col-245	326	4	2	NA	STRAT 4			NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			49	3.6	
Col-245	326	4	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	4	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	4	5	NA	STRAT 4			NA	1/8		CLAY	MODIF	WORKED CLAY				1	26.4	
Col-245	326	4	6	NA	STRAT 4			NA	1/4		CLAY	MODIF	WORKED CLAY				1	22.9	
Col-245	326	4	7	NA	STRAT 4			NA	1/4		CLAY	MODIF	WORKED CLAY				3	2.6	
Col-245	326	4	8	NA	STRAT 4			NA	1/4		CLAY	MODIF	WORKED CLAY				1083	1039.2	
Col-245	326	4	9	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	4	10	NA	STRAT 4			NA	1/4		GLASS	MANUF	FOOD AND DRINK		red	FRAG	1	0.9	
Col-245	326	4	11	NA	STRAT 4			NA	1/4		GLASS	MANUF	FOOD AND DRINK		AQUA	FRAG	2	1.4	
Col-245	326	4	12	NA	STRAT 4			NA	1/8		GLASS	MANUF	FOOD AND DRINK		CLEAR	FRAG	2	0.6	
Col-245	326	4	13	NA	STRAT 4			NA	1/8		GLASS	MANUF	ARCHITECTURAL	MISC		FRAG	3	3.4	
Col-245	326	4	14	NA	STRAT 4			NA	1/4		BONE	UNMOD	FAUNAL			FRAG	225	69.7	
Col-245	326	4	15	NA	STRAT 4			NA	1/8		BONE	UNMOD	FAUNAL			FRAG	725	24.1	
Col-245	326	4	15	NA	STRAT 4			NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		14.6	
Col-245	326	4	16	NA	STRAT 4			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		131.6	
Col-245	326	4	17	NA	STRAT 4			NA	1/4		FLORAL	UNMOD	CHARCOAL			FRAG	14	1.1	
Col-245	326	5	1	NA	STRAT 5			NA	1/8		BONE	UNMOD	HUMAN BONE			FRAG	1	0.1	
Col-245	326	5	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	5	3	NA	STRAT 5			NA	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.3	
Col-245	326	5	4	NA	STRAT 5			NA	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.2	
Col-245	326	5	5	NA	STRAT 5			NA	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.5	
Col-245	326	5	6	NA	STRAT 5			NA	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	0.6	
Col-245	326	5	7	NA	STRAT 5			NA	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	6.3	
Col-245	326	5	8	NA	STRAT 5			NA	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			51	26.4	
Col-245	326	5	9	NA	STRAT 5			NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			207	6.1	
Col-245	326	5	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT

Col-245	326	5	11		NA	LMDD			NA	1/8		METSED	UNMOD	CHIPPED STONE	FLAKES		COMP	6	1.1	
Col-245	326	5	12	A	NA	STRAT 5			NA	1/8		BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1		POLISHED/MODIFIED
Col-245	326	5	12	C	NA	STRAT 5			NA	1/8		BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1		POLISHED/MODIFIED
Col-245	326	5	12	D	NA	STRAT 5			NA	1/8		BONE	MODIF	PIN	ROUND	MID	FRAG	1		POLISHED/MODIFIED
Col-245	326	5	12	E	NA	STRAT 5			NA	1/8		BONE	MODIF	PIN	ROUND	TIP	FRAG	1		POLISHED/MODIFIED
Col-245	326	5	12	B	NA	STRAT 5			NA	1/8		BONE	MODIF	BEAD	TUBE		COMP	1		POLISHED/MODIFIED
Col-245	326	5	13		NA	STRAT 5	NA		NA	1/8		BONE	MODIF	AWL	CANNON	SPLIT	COMP	1	4.9	
Col-245	326	5	14		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	OECAT	DECAT
Col-245	326	5	15		NA	STRAT 5			NA	1/8		CLAY	MODIF	WORKED CLAY				1	0.1	TUBE
Col-245	326	5	16		NA	STRAT 5			NA	1/8		CLAY	MODIF	WORKED CLAY				9563	8529.7	17 BAGS – SOME 1/8 SCREENED, SOME
Col-245	326	5	17		NA	STRAT 5			NA	1/8		CLAY	MODIF	WORKED CLAY				18	99.0	WITH IMPRESSIONS OR FORMED
Col-245	326	5	18		NA	STRAT 5			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL		FRAG	1	1.1	
Col-245	326	5	19		NA	STRAT 5			NA	1/8		CERAM	MANUF	FOOD AND DRINK	RECEPTICAL		FRAG	2	3.0	TILE
Col-245	326	5	20		NA	STRAT 5			NA	1/8		METSED	UNMOD	MISC			FRAG	1	1.8	?SLATE
Col-245	326	5	21		NA	STRAT 5			NA	1/8		GLASS	MANUF	ARCHITECTURAL	WINDOW GLASS		FRAG	3	1.2	
Col-245	326	5	22		NA	STRAT 5			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	1	0.9	
Col-245	326	5	23		NA	STRAT 5			NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-DARK OLI	FRAG	1	1.0	
Col-245	326	5	24		NA	STRAT 5			NA	1/8		METAL	MANUF	ARCHITECTURAL	NAIL		FRAG	1	3.2	
Col-245	326	5	25		NA	STRAT 5			NA	1/8		METAL	MANUF	PERSONAL EFFECT			COMP	1	0.1	SHELL SHOT
Col-245	326	5	26		NA	STRAT 5			NA	1/8		BONE	UNMOD	FAUNAL			FRAG	3775	6634.0	
Col-245	326	5	27		NA	STRAT 5			NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		208.9	
Col-245	326	5	28		NA	STRAT 5			NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		868.3	
Col-245	326	5	29		NA	STRAT 5			NA	1/4		SHELL	UNMOD	GASTROPOD			COMP	1	0.1	
Col-245	326	5	30		NA	STRAT 5			NA	1/4		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	2	0.8	
Col-245	326	5	31		NA	STRAT 5			NA	1/4		FLORAL	UNMOD	CHARCOAL			FRAG	8	1.1	
Col-245	326	7	1		NA	STRAT 5	FEAT #2		NA	1/4		CLAY	MODIF	WORKED CLAY				9	12.5	
Col-245	326	7	2		NA	STRAT 5	FEAT #2		NA	1/4		BONE	UNMOD	FAUNAL			FRAG	6	1.6	
Col-245	326	7	3		NA	STRAT 5	FEAT #2		NA	1/4		SHELL	UNMOD	BIVALVE			FRAG		2.2	
Col-245	326	8	1		NA	EXPOS	Burial 1		NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			10	0.8	
Col-245	326	8	2		NA	EXPOS	Burial 1		NA	1/8		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.6	
Col-245	326	8	3		NA	EXPOS	Burial 1		NA	1/8		GLASS	MANUF	FOOD AND DRINK	BOTTLE		FRAG	1	0.1	
Col-245	326	8	4		NA	EXPOS	Burial 1		NA	1/6		CLAY	MODIF	WORKED CLAY				494	113.6	
Col-245	326	8	5		NA	EXPOS	Burial 1		NA	1/6		BONE	UNMOD	FAUNAL			FRAG	101	10.6	
Col-245	326	8	6		NA	EXPOS	Burial 1		NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		10.9	
Col-245	326	8	7		NA	EXPOS	Burial 1		NA	1/8		BONE	UNMOD	HUMAN BONE						RESERVED
Col-245	326	8	8		NA	MATRIX	Burial 1		NA	1/8		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	2.4	
Col-245	326	8	9		NA	MATRIX	Burial 1		NA	1/8		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.5	
Col-245	326	8	10		NA	MATRIX	Burial 1		NA	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.2	
Col-245	326	8	11		NA	MATRIX	Burial 1		NA	1/8		BONE	UNMOD	FAUNAL			FRAG	131	8.3	
Col-245	326	8	12		NA	MATRIX	Burial 1		NA	1/8		SHELL	UNMOD	BIVALVE			FRAG		23.6	
Col-245	326	8	13		NA	MATRIX	Burial 1		NA	1/8		SAMPL	UNMOD	SAMPLES	SOIL				46.0	
Col-245	326	9	1		FG	SURFACE	NA	HB2	NA	NA		BONE	UNMOD	HUMAN BONE			FRAG	1	4.3	
Col-245	326	9	2		FG	SURFACE	NA	HB16	NA	NA		BONE	UNMOD	HUMAN BONE			FRAG	1	1.4	
Col-245	326	9	3		FG	SURFACE	NA	HB78	NA	NA		BONE	UNMOD	HUMAN BONE			FRAG	1	9.8	
Col-245	326	10	1		FG	SURFACE	NA	A1	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col-245	326	10	2		FG	SURFACE	NA	A2	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.7	
Col-245	326	10	3		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	4		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	5		FG	SURFACE	NA	A8	NA	NA		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	
Col-245	326	10	6		FG	SURFACE	NA	A9	NA	NA		METAL	MANUF	ARCHITECTURAL	NAIL		COMP	1	7.6	
Col-245	326	10	7		FG	SURFACE	NA	A10	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.5	
Col-245	326	10	8		DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	9		DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	10		DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	11		FG	SURFACE	NA	A14	NA	NA		GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	0.1	
Col-245	326	10	12		FG	SURFACE	NA	A15	NA	NA		GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	0.2	
Col-245	326	10	13		FG	SURFACE	NA	A16	NA	NA		CLAY	MODIF	WORKED CLAY				1	6.8	
Col-245	326	10	14		FG	SURFACE	NA	A17	NA	NA		CNCRT	MANUF	ARCHITECTURAL	MISC		FRAG	1	16.2	
Col-245	326	10	15		FG	SURFACE	NA	A18	NA	NA		CLAY	MODIF	WORKED CLAY				1	1.9	
Col-245	326	10	16		DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	17		DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	18		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	19		FG	SURFACE	NA	A22	NA	NA		CHERT	UNMOD	CHIPPED STONE	FLAKES		COMP	1	1.8	
Col-245	326	10	20		FG	SURFACE	NA	A23	NA	NA		METAL	MANUF	ARCHITECTURAL	NAIL		COMP	1	1.9	
Col-245	326	10	21		FG	SURFACE	NA	A24	NA	NA		CLAY	MODIF	WORKED CLAY				1	3.2	
Col-245	326	10	22		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	23		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	24		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-245	326	10	25		FG	SURFACE	NA	A1	NA	NA		CLAY	MODIF	WORKED CLAY				1	9.3	
Col-245	326	10	26		FG	SURFACE	NA	A2	NA	NA		CLAY	MODIF	WORKED CLAY				2	3.7	
Col-245	326	10	27		FG	SURFACE	NA	A3	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	2.3	
Col-245	326	10	28		FG	SURFACE	NA	A4	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	1.0	
Col-245	326	10	29		FG	SURFACE	NA	A5	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	

Col-245	326	10	30	FG	SURFACE	NA	A6	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.5	
Col-245	326	10	31	FG	SURFACE	NA	A6	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.5	
Col-245	328	10	32	FG	SURFACE	NA	A7	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.8	
Col-245	328	10	33	FG	SURFACE	NA	A8	NA	NA		CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	1	0.4	
Col-245	326	10	34	FG	SURFACE	NA	A9	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	35	FG	SURFACE	NA	A10	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	36	FG	SURFACE	NA	A11	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.1	
Col-245	326	10	37	FG	SURFACE	NA	A12	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	38	FG	SURFACE	NA	A13	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.0	
Col-245	326	10	39	FG	SURFACE	NA	A14	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	40	FG	SURFACE	NA	A15	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.5	
Col-245	326	10	41	FG	SURFACE	NA	A16	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.9	
Col-245	326	10	42	FG	SURFACE	NA	A17	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	43	FG	SURFACE	NA	A18	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	44	FG	SURFACE	NA	A19	NA	NA		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.7	
Col-245	328	10	45	FG	SURFACE	NA	A21	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	12	1.2	
Col-245	326	10	46	FG	SURFACE	NA	A22	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	328	10	47	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	OECAT	DECA'	DECAT	DECAT
Col-245	326	10	48	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	10	49	FG	SURFACE	NA	A26	NA	NA		CNCRT	MANUF	ARCHITECTURAL	MISC		FRAG		12.2	
Col-245	326	10	50	FG	SURFACE	NA	A27	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	1.8	
Col-245	326	10	51	FG	SURFACE	NA	A28	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.9	
Col-245	326	10	52	FG	SURFACE	NA	A30	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.3	
Col-245	326	10	53	FG	SURFACE	NA	A31	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	54	FG	SURFACE	NA	A32	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	7	1.1	
Col-245	326	10	55	FG	SURFACE	NA	A34	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.6	
Col-245	326	10	56	FG	SURFACE	NA	A35	NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.5	
Col-245	326	10	57	FG	SURFACE	NA	A37	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.2	
Col-245	326	10	58	FG	SURFACE	NA	A38	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	1.3	
Col-245	326	10	59	FG	SURFACE	NA	A39	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	10.1	
Col-245	326	10	60	FG	SURFACE	NA	A40	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	4	0.2	
Col-245	326	10	61	FG	SURFACE	NA	A41	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	4	0.6	
Col-245	326	10	62	FG	SURFACE	NA	A41	NA	NA		CLAY	MODIF	WORKED CLAY				1	78.6	
Col-245	326	10	63	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	10	64	FG	SURFACE	NA	A43	NA	NA		CLAY	MODIF	WORKED CLAY				1	16.1	
Col-245	328	10	65	FG	SURFACE	NA	A44	NA	NA		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	9.1	EMBOSSED WITH DIAMOND PATTERN
Col-245	326	10	66	FG	SURFACE	NA	A45	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.3	
Col-245	326	10	67	FG	SURFACE	NA	A46	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.4	
Col-245	326	10	68	FG	SURFACE	NA	A47	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	7	0.4	
Col-245	326	10	69	FG	SURFACE	NA	A49	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	70	FG	SURFACE	NA	A49	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	1.3	
Col-245	326	10	71	FG	SURFACE	NA	A50	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.3	
Col-245	326	10	72	FG	SURFACE	NA	A51	NA	NA		SAMPL	UNMOD	SAMPLES	SOIL		COMP		41.8	
Col-245	326	10	73	FG	SURFACE	NA	A52	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.9	
Col-245	326	10	74	FG	SURFACE	NA	A53	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		2.4	
Col-245	326	10	75	FG	SURFACE	NA	A54	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	1.7	
Col-245	328	10	76	FG	SURFACE	NA	A55	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.0	
Col-245	326	10	77	FG	SURFACE	NA	A55	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	78	FG	SURFACE	NA	A56	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	79	FG	SURFACE	NA	A56	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	80	FG	SURFACE	NA	A56	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	6	1.4	
Col-245	326	10	81	FG	SURFACE	NA	A57	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	4	0.3	
Col-245	326	10	82	FG	SURFACE	NA	A57	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.2	
Col-245	326	10	83	FG	SURFACE	NA	A58	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.7	
Col-245	326	10	84	FG	SURFACE	NA	A59	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.3	
Col-245	326	10	85	FG	SURFACE	NA	A59	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.5	
Col-245	326	10	86	FG	SURFACE	NA	A60	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	1.1	
Col-245	326	10	87	FG	SURFACE	NA	A80	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	7	0.3	
Col-245	326	10	88	FG	SURFACE	NA	A61	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.1	
Col-245	326	10	89	FG	SURFACE	NA	A62	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.3	
Col-245	326	10	90	FG	SURFACE	NA	A63	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.5	
Col-245	326	10	91	FG	SURFACE	NA	A63	NA	NA		CLAY	MODIF	WORKED CLAY				1	9.8	
Col-245	326	10	92	FG	SURFACE	NA	A64	NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.0	
Col-245	326	10	93	FG	SURFACE	NA	A64	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.5	
Col-245	326	10	94	FG	SURFACE	NA	A64	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.2	
Col-245	326	10	95	FG	SURFACE	NA	A65	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	96	FG	SURFACE	NA	A66	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	97	FG	SURFACE	NA	A66	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	3.2	
Col-245	326	10	98	FG	SURFACE	NA	A67	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	99	FG	SURFACE	NA	A67	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.3	
Col-245	326	10	100	FG	SURFACE	NA	A68	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	1.1	
Col-245	326	10	101	FG	SURFACE	NA	A68	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	5	0.6	
Col-245	326	10	102	FG	SURFACE	NA	A69	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.0	

Col-245	326	10	103	FG	SURFACE	NA	A69	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	104	FG	SURFACE	NA	A30	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.2	
Col-245	326	10	105	FG	SURFACE	NA	A31	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	106	FG	SURFACE	NA	A32	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.6	
Col-245	326	10	107	FG	SURFACE	NA	A33	NA	NA		CLAY	MODIF	WORKED CLAY				1	89.6	
Col-245	326	10	108	FG	SURFACE	NA	A34	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.9	
Col-245	326	10	109	FG	SURFACE	NA	A35	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	110	FG	SURFACE	NA	A36	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	0.8	
Col-245	326	10	111	FG	SURFACE	NA	A37	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	1.0	
Col-245	326	10	112	FG	SURFACE	NA	A38	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.7	
Col-245	326	10	113	FG	SURFACE	NA	A39	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.5	
Col-245	326	10	114	FG	SURFACE	NA	A40	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	115	FG	SURFACE	NA	A41	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	
Col-245	326	10	116	FG	SURFACE	NA	A42	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.0	
Col-245	326	10	117	FG	SURFACE	NA	A43	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.2	
Col-245	326	10	118	FG	SURFACE	NA	A44	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	1.6	
Col-245	326	10	119	FG	SURFACE	NA	A45	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.5	
Col-245	326	10	120	FG	SURFACE	NA	A46	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	121	FG	SURFACE	NA	A47	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	122	FG	SURFACE	NA	A48	NA	NA		CLAY	MODIF	WORKED CLAY				7	15.4	
Col-245	326	10	123	FG	SURFACE	NA	A85	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col-245	326	10	124	FG	SURFACE	NA	A49	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	1.4	
Col-245	326	10	125	FG	SURFACE	NA	A50	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	5	0.4	
Col-245	326	10	126	FG	SURFACE	NA	A51	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3	0.1	
Col-245	326	10	127	FG	SURFACE	NA	A52	NA	NA		SHELL	UNMOD	BIVALVE			FRAG		3.4	
Col-245	326	10	128	FG	SURFACE	NA	A53	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	129	FG	SURFACE	NA	A54	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	130	FG	SURFACE	NA	A84	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	7	0.7	
Col-245	326	10	131	FG	SURFACE	NA	A86	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.4	
Col-245	326	10	132	FG	SURFACE	NA	A87	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.6	
Col-245	326	10	133	FG	SURFACE	NA	A88	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.2	
Col-245	326	10	134	FG	SURFACE	NA	A90	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1	0.6	
Col-245	326	10	135	FG	SURFACE	NA	HB6	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2	6.4	
Col-245	326	10	136	FG	SURFACE	NA	HB7	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	137	FG	SURFACE	NA	HB9	NA	NA		BONE	UNMOD	FAUNAL			FRAG	10	0.3	
Col-245	326	10	138	FG	SURFACE	NA	HB10	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	139	FG	SURFACE	NA	HB11	NA	NA		BONE	UNMOD	FAUNAL			FRAG	3	0.4	
Col-245	326	10	140	FG	SURFACE	NA	HB13	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.3	
Col-245	326	10	141	FG	SURFACE	NA	HB14	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.9	
Col-245	326	10	142	FG	SURFACE	NA	HB14	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2	0.2	
Col-245	326	10	143	FG	SURFACE	NA	HB16	NA	NA		BONE	UNMOD	FAUNAL			FRAG	3	0.8	
Col-245	326	10	144	FG	SURFACE	NA	HB19	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col-245	326	10	145	FG	SURFACE	NA	HB21	NA	NA		BONE	UNMOD	FAUNAL			FRAG	3	0.1	
Col-245	326	10	146	FG	SURFACE	NA	HB22	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	147	FG	SURFACE	NA	HB23	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2	0.4	
Col-245	326	10	148	FG	SURFACE	NA	HB25	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.3	
Col-245	326	10	149	FG	SURFACE	NA	HB26	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.4	
Col-245	326	10	150	FG	SURFACE	NA	HB27	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.7	
Col-245	326	10	151	FG	SURFACE	NA	HB29	NA	NA		CLAY	MODIF	WORKED CLAY				1	12.3	
Col-245	326	10	152	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	153	FG	SURFACE	NA	HB30	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	154	FG	SURFACE	NA	HB34	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.0	
Col-245	326	10	155	FG	SURFACE	NA	HB43	NA	NA		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	1	2.9	
Col-245	326	10	156	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-245	326	10	157	FG	SURFACE	NA	HB46A	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2	4.0	
Col-245	326	10	158	FG	SURFACE	NA	HB46C	NA	NA		SAMPL	UNMOD	SAMPLES	SOIL		FRAG	13	15.6	
Col-245	326	10	159	FG	SURFACE	NA	HB47	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.3	
Col-245	326	10	160	FG	SURFACE	NA	HB48	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col-245	326	10	161	FG	SURFACE	NA	HB50	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	162	FG	SURFACE	NA	HB55	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	163	FG	SURFACE	NA	HB58	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.0	
Col-245	326	10	164	FG	SURFACE	NA	HB59	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.4	
Col-245	326	10	165	FG	SURFACE	NA	HB60	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.4	
Col-245	326	10	166	FG	SURFACE	NA	HB61	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	20.5	
Col-245	326	10	167	FG	SURFACE	NA	HB71	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.5	
Col-245	326	10	168	FG	SURFACE	NA	HB73	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.4	
Col-245	326	10	169	FG	SURFACE	NA	HB74	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	3.8	
Col-245	326	10	170	FG	SURFACE	NA	HB83	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.0	
Col-245	326	10	171	FG	SURFACE	NA	HB84	NA	NA		BONE	UNMOD	FAUNAL			FRAG	9	3.2	
Col-245	326	10	172	FG	SURFACE	NA	HB86	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	6.2	
Col-245	326	10	173	FG	SURFACE	NA	HB87	NA	NA		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	1	0.4	
Col-245	326	10	174	FG	SURFACE	NA	HB90	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-245	326	10	175	FG	SURFACE	NA	HB92	NA	NA		BONE	UNMOD	FAUNAL			FRAG	3	1.7	

Col-245	326	10	176		FG	SURFACE	NA	HB94	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		0.2	
Col-245	326	10	177		FG	SURFACE	NA	HB95	NA	NA		BONE	UNMOO	FAUNAL			FRAG	1		3.7	
Col-245	326	10	178		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	OECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	179		FG	SURFACE	NA	HB97	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		0.2	
Col-245	326	10	180		FG	SURFACE	NA	HB104	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		0.1	
Col-245	326	10	181		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT		DECAT
Col-245	326	10	182		FG	SURFACE	NA	HB122	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2		0.2	
Col-245	326	10	183		FG	SURFACE	NA	HB124	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		10.2	
Col-245	326	10	184		FG	SURFACE	NA	HB128	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		2.8	
Col-245	326	10	185		FG	SURFACE	NA	HB133	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			2.6	
Col-245	326	10	186		FG	SURFACE	NA	HB133	NA	NA		FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	4		0.8	
Col-245	326	10	187		FG	SURFACE	NA	HB134	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		0.1	
Col-245	326	10	188		FG	SURFACE	NA	HB140	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		7.8	
Col-245	328	10	188		FG	SURFACE	NA	HB138	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		0.4	
Col-245	326	10	189		FG	SURFACE	NA	HB141	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		1.1	
Col-245	326	10	190		FG	SURFACE	NA	HB145	NA	NA		BONE	UNMOD	FAUNAL			FRAG	2		5.6	
Col-245	328	10	191		FG	SURFACE	NA	HB147	NA	NA		BONE	UNMOD	FAUNAL			FRAG	1		1.1	
Col-245	326	10	192		FG	SURFACE	NA	A70	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2		0.5	
Col-245	326	10	193		FG	SURFACE	NA	A70	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.4	
Col-245	326	10	194		FG	SURFACE	NA	A71	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.2	
Col-245	326	10	195		FG	SURFACE	NA	A71	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.3	
Col-245	326	10	196		FG	SURFACE	NA	A72	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3		1.6	
Col-245	326	10	197		FG	SURFACE	NA	A72	NA	NA		CLAY	MODIF	WORKED CLAY				1		4.1	
Col-245	326	10	198		FG	SURFACE	NA	A73	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.4	
Col-245	328	10	199		FG	SURFACE	NA	A73	NA	NA		SAMPL	UNMOD	SAMPLES	SOIL		COMP	1		18.1	
Col-245	326	10	200		FG	SURFACE	NA	A74	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			1.5	
Col-245	326	10	201		FG	SURFACE	NA	A74	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			0.6	
Col-245	328	10	202		FG	SURFACE	NA	A75	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			1.8	
Col-245	326	10	203		FG	SURFACE	NA	A75	NA	NA		CLAY	MODIF	WORKED CLAY				1		2.3	
Col-245	326	10	204		FG	SURFACE	NA	A75	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			2.2	
Col-245	326	10	205		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	206		FG	SURFACE	NA	A76	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	4		0.8	
Col-245	326	10	207		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	208		FG	SURFACE	NA	A77	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	3		1.3	
Col-245	328	10	209		FG	SURFACE	NA	A78	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			1.0	
Col-245	328	10	210		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	328	10	211		FG	SURFACE	NA	A79	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.6	
Col-245	326	10	212		FG	SURFACE	NA	A79	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.8	
Col-245	326	10	213		FG	SURFACE	NA	A80	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2		2.6	
Col-245	326	10	214		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT		DECAT
Col-245	326	10	215		FG	SURFACE	NA	A81	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2		0.3	
Col-245	326	10	216		FG	SURFACE	NA	A81	NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			1		0.7	
Col-245	326	10	217		FG	SURFACE	NA	A82	NA	NA		CLAY	MODIF	WORKED CLAY				2		29.7	
Col-245	326	10	218		FG	SURFACE	NA	A82	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.4	
Col-245	326	10	219		FG	SURFACE	NA	A82	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	1		0.4	
Col-245	326	10	220		FG	SURFACE	NA	A83	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			0.3	
Col-245	328	10	221		FG	SURFACE	NA	A84	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2		0.5	
Col-245	326	10	222		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	223		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	224		FG	SURFACE	NA	A87	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	15		3.5	
Col-245	326	10	225		FG	SURFACE	NA	A88	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			1.5	
Col-245	326	10	226		FG	SURFACE	NA	A89	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			6.7	
Col-245	326	10	227		FG	SURFACE	NA	A90	NA	NA		SHELL	UNMDD	BIVALVE			FRAG	1		2.2	
Col-245	326	10	228		FG	SURFACE	NA	A91	NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2		0.2	
Col-245	326	10	229	B	FG	SURFACE	NA	A93	NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			1		0.3	
Col-245	326	10	229		FG	SURFACE	NA	A93	NA	NA		SHELL	UNMOD	BIVALVE			FRAG			0.2	
Col-245	326	10	230		FG	SURFACE	NA	A123	NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			1		0.2	
Col-245	326	10	231		FG	SURFACE	NA	A128	NA	NA		CHERT	UNMOD	CHIPPED STONE	FLAKES			1		1.2	
Col-245	326	10	232		FG	SURFACE	NA	A129	NA	NA		CHERT	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1		1.8	WHITE GUNTHER BARB MISSING DISTAL
Col-245	326	10	233		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	234		FG	SURFACE	NA		NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES			2		0.7	
Col-245	326	10	235		FG	SURFACE	NA		NA	NA		OBSID	UNMDD	CHIPPED STONE	FLAKES			2		0.5	
Col-245	326	10	236		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT		DECAT
Col-245	326	10	237		FG	SURFACE	NA		NA	NA		OBSID	UNMOD	CHIPPED STONE	FLAKES	BURNED	COMP	1		0.8	
Col-245	326	10	238		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				8		53.5	
Col-245	326	10	239		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				1		4.4	
Col-245	326	10	240		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				14		83.7	
Col-245	328	10	241		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				4		6.4	
Col-245	326	10	242		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				15		129.9	
Col-245	326	10	243		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT		DECAT	DECAT
Col-245	326	10	244		FG	SURFACE	NA		NA	NA		CLAY	MODIF	WORKED CLAY				3		34.3	
Col-245	326	10	245		FG	SURFACE	NA		NA	NA		METAL	MANUF	PERSONAL EFFEC	COIN		COMP	1		4.8	1958 NICKEL
Col-245	326	10	246		FG	SURFACE	NA		NA	NA		GLASS	MANUF	PERSONAL EFFEC	MARBLE		COMP	1		5.5	MARBLE

Col-245	326	10	247	FG	SURFACE	NA		NA	NA		GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	23	91.3	
Col-245	326	10	248	FG	SURFACE	NA		NA	NA		BONE	UNMOD	FAUNAL			FRAG	6	4.5	
Col-245	326	10	249	FG	SURFACE	NA		NA	NA		BONE	UNMOD	FAUNAL			FRAG	1	1.5	
Col-245	326	10	250	FG	SURFACE	NA		NA	NA		BONE	UNMOD	FAUNAL			FRAG	12	6.6	
Col-245	326	10	251	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		0.6	
Col-245	326	10	252	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG	2	0.4	
Col-245	326	10	253	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG	8	2.3	
Col-245	326	10	254	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		60.3	
Col-245	326	10	255	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-245	326	10	256	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		23.8	
Col-245	326	10	257	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		19.2	
Col-245	326	10	258	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		40.9	
Col-245	326	10	259	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		17.5	
Col-245	326	10	260	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		45.7	
Col-245	326	10	261	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		38.6	
Col-245	326	10	262	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		10.4	
Col-245	326	10	263	FG	SURFACE	NA		NA	NA		SHELL	UNMOD	BIVALVE			FRAG		26.6	
Col -247	327	0	0	NA	EXPOSURE ;	NA		NA			BONE	UNMOD	FAUNAL			FRAG	1	0.9	
Col -247	327	0	0	NA	EXPOSURE ;	NA		NA			CLAY	MODIF	WORKED CLAY				1	10.7	
Col -247	327	0	0	NA	SURFACE	NA		NA			CLAY	MODIF	WORKED CLAY						
Col -247	327	0	0	NA	SURFACE	NA		NA			OBSID	UNMOD	CHIPPED STONE	FLAKES			2	3.6	
Col -247	327	0	0	NA	SURFACE	NA		NA			OBSID	UNMOD	CHIPPED STONE	FLAKES			1	6.5	
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		BONE	UNMOD	FAUNAL			FRAG	6	2.3	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		BONE	UNMOD	FAUNAL			FRAG	23	7.9	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CHERT	UNMOD	CHIPPED STONE	FLAKES			6	1.8	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	2.2	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	42.0	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	1.1	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	1.1	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	3.4	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	2.5	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	0.3	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	0.3	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	0.1	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	1.7	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	6.6	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY					41.6	Unknown provenience, only "A" unit. Bulk in
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				3	8.3	Unknown provenience, only "A" unit. Clay "e
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				1	0.6	Unknown provenience, may be from units A
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		METSED	UNMOD	GROUND STONE	COBBLE		COMP	2	59.0	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		METSED	UNMOD	CHIPPED STONE	FLAKES			21	141.7	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		METSED	UNMOD	CHIPPED STONE	FLAKES			20	86.6	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	2.7	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.2	Unknown provenience, only "A" unit.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		OBSID	UNMOD	CHIPPED STONE	FLAKES			11	11.5	Unknown provenience.
Col -247	327	0	0	UNK	UNK	UNK		UNK	UNK		SHELL	UNMOD	BIVALVE			FRAG		90.8	Unknown provenience.
Col -247	327	0	0	B2	UNK			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			3	1.2	Unknown level, in box with 0-40cm
Col -247	327	0	0	B2	UNK			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			Unknown level
Col -247	327	1	1	A1	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.7	
Col -247	327	1	2	A1	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			12	25.6	
Col -247	327	1	3	A1	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				9	62.4	Baked clay
Col -247	327	1	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	1	5	A1	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	48	21.9	
Col -247	327	1	6	A1	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		170.0	
Col -247	327	2	1	A1	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	1.0	
Col -247	327	2	2	A1	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			28	4.6	
Col -247	327	2	3	A1	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			13	10.1	
Col -247	327	2	4	A1	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				9	20.9	Baked clay, shaped and impressed
Col -247	327	2	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	2	6	A1	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	75	48.1	
Col -247	327	2	7	A1	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	3	1	A1	020-040		ART #1	1X1M	1/4		BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	7.9	8N 12W-37 BD.
Col -247	327	3	2	A1	030-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			12	4.4	Did not give A1 30-40 sep. Lot# than 20-40.
Col -247	327	3	3	A1	030-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			11	7.2	
Col -247	327	3	4	A1	020-040			1X1M	1/4		ANTLER	UNMOD	FAUNAL	ANTLER		FRAG	1	0.5	
Col -247	327	3	5	A1	030-040			1X1M	1/4		BONE	MODIF	PIN	FLAT	MRG	FRAG	1	1.8	Striated
Col -247	327	3	6	A1	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				17	65.1	Impressed and shaped baked clay.
Col -247	327	3	7	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	3	8	A1	030-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	50	25.5	
Col -247	327	3	9	A1	030-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	4	0	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	5	1	A2	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			12	4.3	
Col -247	327	5	2	A2	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			15	46.7	

Col -247	327	5	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	5	4	A2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	1.8	Baked clay formed/rolled into cylindrical obj
Col -247	327	5	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	5	6	A2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Baked clay formed and impressed objects
Col -247	327	5	7	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	5	8	A2	010-020			1X1M	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	1.1	May not be historic.
Col -247	327	5	9	A2	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	75	64.0	
Col -247	327	5	10	A2	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	6	1	A2	020-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			15	10.0	
Col -247	327	6	2	A2	020-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			15	53.2	
Col -247	327	6	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	6	4	A2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	13.2	Baked clay impression
Col -247	327	6	5	A2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	15.5	Pottery fragment.
Col -247	327	6	6	A2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.1	Baked clay
Col -247	327	6	7	A2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	Impression does not resemble other textile i
Col -247	327	6	8	A2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Baked clay
Col -247	327	6	9	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	6	10	A2	020-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	126	68.1	
Col -247	327	6	11	A2	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	7	1	A2	040-060			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	5.3	
Col -247	327	7	2	A2	040-060			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			3	7.3	
Col -247	327	7	3	A2	040-060			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			9	13.8	
Col -247	327	7	4	A2	040-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	7.6	Baked clay shaped like a mushroom
Col -247	327	7	5	A2	040-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Baked clay
Col -247	327	7	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	7	7	A2	040-060			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	135	91.5	
Col -247	327	7	8	A2	040-060			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	7	9	A2	040-060			1X1M	1/4		METSED	MODIF	GROUND STONE	MILLINGSTONE		FRAG	1		
Col -247	327	8	1	A2	050-070			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			2	19.6	
Col -247	327	8	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	8	3	A2	050-070			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	20	10.8	May be missing some material from A2 50-7
Col -247	327	8	4	A2	050-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			May be missing some material from A2 50-7
Col -247	327	9	1	A2	070-090			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	6.1	
Col -247	327	9	2	A2	070-090			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.3	
Col -247	327	9	3	A2	070-090			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			2	5.8	
Col -247	327	9	4	A2	070-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	20.8	Baked clay
Col -247	327	9	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	9	6	A2	070-090			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	37	27.8	
Col -247	327	9	7	A2	070-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	10	1	A2	090-100			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	4.8	May be missing material from A2 90-100
Col -247	327	10	2	A2	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	7	1.0	May be missing material from A2 90-100
Col -247	327	10	3	A2	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			May be missing material from A2 90-100
Col -247	327	11	1	A2	100-110			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			3	11.6	
Col -247	327	11	2	A2	100-110			1X1M	1/4		METSED	MODIF	CHIPPED STONE	EMF	Flake tool	COMP	1	31.8	
Col -247	327	11	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	11	4	A2	100-110			1X1M	1/4		BONE	MODIF	PIN	FLAT	MID	FRAG	1	1.5	May not be an awl
Col -247	327	11	5	A2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	11	6	A2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	11	7	A2	100-110			1X1M	1/4		CLAY	UNMOD	FIRED					669.9	
Col -247	327	11	8	A2	100-110			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	140	49.0	
Col -247	327	11	9	A2	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	11	10	A2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.3	
Col -247	327	12	1	A2	110-120			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col -247	327	12	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	12	3	A2	110-120			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			5	55.3	
Col -247	327	12	4	A2	110-120			1X1M	1/4		METSED	MODIF	GROUND STONE	SINKER	SHAPED	FRAG	1	7.7	Stone plummet
Col -247	327	12	5	A2	110-120			1X1M	1/4		SHELL	MODIF	BEAD	HALIOTIS	SQUARE	COMP	1	0.1	
Col -247	327	12	6	A2	110-120			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	12	7	A2	110-120			1X1M	1/4		CLAY	UNMOD	FIRED					768.9	
Col -247	327	12	8	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	12	9	A2	110-120			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	72	42.6	
Col -247	327	12	10	A2	110-120			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	12	11	A2	110-120			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.3	
Col -247	327	13	1	A2	120-130			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.6	
Col -247	327	13	2	A2	120-130			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	13	3	A2	120-130			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			4	26.0	
Col -247	327	13	4	A2	120-130			1X1M	1/4		METSED	MODIF	GROUND STONE	SHAPED MANO	PITTED	FRAG	1	192.8	
Col -247	327	13	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	13	6	A2	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	13	7	A2	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.3	Clay "egg"
Col -247	327	13	8	A2	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	10.1	
Col -247	327	13	9	A2	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	13	10	A2	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk shaped and impressed clay

Col -247	327	13	11	A2	120-130			1X1M	1/4	CLAY	UNMOD	FIRED					421.4	
Col -247	327	13	12	A2	120-130			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	62	39.0	
Col -247	327	13	13	A2	120-130			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	1.3	Possible Turtle shell
Col -247	327	13	14	A2	120-130			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	14	1	A2	130-140			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.3	
Col -247	327	14	2	A2	130-140			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	14	3	A2	130-140			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	2.9	
Col -247	327	14	4	A2	130-140			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			2	1.2	
Col -247	327	14	5	A2	130-140			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	5.4	
Col -247	327	14	6	A2	130-140			1X1M	1/4	BONE	MODIF	PIN	FLAT	MRG	FRAG	1	0.3	Possibly modified
Col -247	327	14	7	A2	130-140			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk Impressed/shaped clay
Col -247	327	14	8	A2	130-140			1X1M	1/4	CLAY	UNMOD	FIRED					425.3	
Col -247	327	14	9	A2	130-140			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	65	41.6	
Col -247	327	14	10	A2	130-140			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	14	11	A2	130-140			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.1	
Col -247	327	15	1	A2	140-150			1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	5.3	
Col -247	327	15	2	A2	140-150			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	15	3	A2	140-150			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	15	4	A2	140-150			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk Impressed/shaped clay
Col -247	327	15	5	A2	140-150			1X1M	1/4	CLAY	UNMOD	FIRED					268.5	
Col -247	327	15	6	A2	140-150			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	55	16.0	
Col -247	327	15	7	A2	140-150			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	16	1	A3	000-010			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	4.9	
Col -247	327	16	2	A3	000-010			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	7.7	
Col -247	327	16	3	A3	000-010			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			6	77.1	
Col -247	327	16	4	A3	000-010			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.7	
Col -247	327	16	5	A3	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	0.8	
Col -247	327	16	6	A3	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk shaped/ impressed clay
Col -247	327	16	7	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	16	8	A3	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	21	7.2	
Col -247	327	16	9	A3	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	17	1	A3	010-020			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			19	13.5	
Col -247	327	17	2	A3	010-020			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			27	88.6	
Col -247	327	17	3	A3	010-020			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	10.4	
Col -247	327	17	4	A3	010-020			1X1M	1/4	METSED	MODIF	CHIPPED STONE	EMF	Flake tool		1	18.5	Possible flake tool
Col -247	327	17	5	A3	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	11.8	clay "egg" pieces
Col -247	327	17	6	A3	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.4	
Col -247	327	17	7	A3	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	possible rim fragment
Col -247	327	17	8	A3	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.5	
Col -247	327	17	9	A3	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	17	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	17	11	A3	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	71	42.5	
Col -247	327	17	12	A3	010-020			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	18	1	A3	020-040			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.0	
Col -247	327	18	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	18	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	18	4	A3	020-040			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	2.7	
Col -247	327	18	5	A3	020-040			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	1.0	
Col -247	327	18	6	A3	020-040			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			43	155.1	
Col -247	327	18	7	A3	020-040			1X1M	1/4	SHELL	MODIF	ORNAMENT	GONIDEA	DRILLED	FRAG	1	0.5	
Col -247	327	18	8	A3	020-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk shaped and Impressed clay
Col -247	327	18	9	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	18	10	A3	020-040			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	139	77.4	
Col -247	327	18	11	A3	020-040			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	18	12	A3	020-040			1X1M	1/4	FLORAL	UNMOD	SEEDS/NUTS		FIRE-AFFECTED		1	0.1	
Col -247	327	19	1	A3	040-060			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			14	4.2	
Col -247	327	19	2	A3	040-060			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			2	0.6	
Col -247	327	19	3	A3	040-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	Possible clay figure
Col -247	327	19	4	A3	040-060			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	158	88.9	
Col -247	327	19	5	A3	040-060			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	19	6	A3	040-060			1X1M	1/4	FLORAL	UNMOD	CHARCOAL						
Col -247	327	20	1	A3	050-070			1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	4.0	
Col -247	327	20	2	A3	050-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	23.2	
Col -247	327	20	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	20	4	A3	050-070			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	10	11.5	
Col -247	327	20	5	A3	050-070			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	21	1	A3	070-090			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.5	
Col -247	327	21	2	A3	070-090			1X1M	1/4	METSED	UNMOO	CHIPPED STONE	FLAKES			8	54.7	
Col -247	327	21	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	21	4	A3	070-090			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	25	19.5	
Col -247	327	21	5	A3	070-090			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	22	1	A3	090-100			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	22	2	A3	090-100			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			2	134.1	

Col -247	327	22	3	A3	090-100			1X1M	1/4		METSED	MODIF	GROUND STONE	SINKER	PERFORATED	FRAG	1	60.5	Nearly complete plummet
Col -247	327	22	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	22	5	A3	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	22	17.2	
Col -247	327	22	6	A3	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	23	1	A3	100-110			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	6.4	corner-notched
Col -247	327	23	2	A3	100-110			1X1M	1/4		METSED	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.6	
Col -247	327	23	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	23	4	A3	100-110			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.2	
Col -247	327	23	5	A3	100-110			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.6	
Col -247	327	23	6	A3	100-110			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			31	102.4	
Col -247	327	23	7	A3	100-110			1X1M	1/4		METSED	MODIF	GROUND STONE	MANO	POLISHED	FRAG	1	102.5	possible mano fragment
Col -247	327	23	8	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	7.5	cylindrical figurine frag. embedded in a clay
Col -247	327	23	9	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	4.8	possible figurine fragments
Col -247	327	23	10	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	5.3	possible figurine fragments
Col -247	327	23	11	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.1	possible figurine fragment
Col -247	327	23	12	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	23	13	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	23	14	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.0	Shaped and Impressed
Col -247	327	23	15	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.9	Shaped and Impressed
Col -247	327	23	16	A3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				28	48.9	Bulk impressed and shaped clay
Col -247	327	23	17	A3	100-110			1X1M	1/4		CLAY	UNMOD	FIRED					540.7	
Col -247	327	23	18	A3	100-110			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	73	37.0	
Col -247	327	23	19	A3	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			Bulk
Col -247	327	24	1	A3	110-120			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.1	
Col -247	327	24	2	A3	110-120			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			12	16.1	
Col -247	327	24	3	A3	110-120			1X1M	1/4		BONE	MODIF	BEAD	TUBE	INDET	FRAG	1	1.0	Carved Bird bone tube
Col -247	327	24	4	A3	110-120			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	24	5	A3	110-120			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	24	6	A3	110-120			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk impressed and shaped clay
Col -247	327	24	7	A3	110-120			1X1M	1/4		CLAY	UNMOD	FIRED					293.3	
Col -247	327	24	8	A3	110-120			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	46	31.2	
Col -247	327	24	9	A3	110-120			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	25	1	A3	120-130			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	4.5	
Col -247	327	25	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	25	3	A3	120-130			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	58.2	Possible core
Col -247	327	25	4	A3	120-130			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			9	9.3	
Col -247	327	25	5	A3	120-130			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	2.0	
Col -247	327	25	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	25	7	A3	120-130			1X1M	1/4		METSED	MODIF	GROUND STONE	SINKER		FRAG	1	4.9	Plummet
Col -247	327	25	8	A3	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	25	9	A3	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY		IMPRESSED		1	0.8	Whole remaining from burned out organic
Col -247	327	25	10	A3	120-130			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk impressed and shaped clay
Col -247	327	25	11	A3	120-130			1X1M	1/4		CLAY	UNMOD	FIRED					273.3	
Col -247	327	25	12	A3	120-130			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	82	35.3	
Col -247	327	25	13	A3	120-130			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	26	1	A3	130-140			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	26	2	A3	130-140			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			6	17.3	
Col -247	327	26	3	A3	130-140			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.6	
Col -247	327	26	4	A3	130-140			1X1M	1/4		METSED	MODIF	GROUND STONE	SINKER		FRAG	1	0.6	Possible plummet
Col -247	327	26	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	26	6	A3	130-140			1X1M	1/4		ANTLER	MODIF	WEDGE	INDET	TIP	FRAG	1	0.8	
Col -247	327	26	7	A3	130-140			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	26	8	A3	130-140			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk impressed and shaped clay
Col -247	327	26	9	A3	130-140			1X1M	1/4		CLAY	UNMOD	FIRED					281.5	
Col -247	327	26	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	26	11	A3	130-140			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	15	49.5	
Col -247	327	26	12	A3	130-140			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	27	1	A3	140-150			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			9	1.1	
Col -247	327	27	2	A3	140-150			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			6	5.4	
Col -247	327	27	3	A3	140-150			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.3	
Col -247	327	27	4	A3	140-150			1X1M	1/4		BONE	MODIF	DAGGER	INDET			1	1.1	Possibly modified
Col -247	327	27	5	A3	140-150			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	27	6	A3	140-150			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk impressed and shaped clay
Col -247	327	27	7	A3	140-150			1X1M	1/4		CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	27	8	A3	140-150			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	170	33.0	
Col -247	327	27	9	A3	140-150			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	27	10	A3	140-150			1X1M	1/4		METAVOL	MODIF	PEBBLE	HAMMER			1	195.5	
Col -247	327	28	1	A4	000-010			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	EMF			1	0.1	
Col -247	327	28	2	A4	000-010			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	EMF			1	8.1	
Col -247	327	28	3	A4	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			15	8.1	
Col -247	327	28	4	A4	000-010			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col -247	327	28	5	A4	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			9	69.0	
Col -247	327	28	6	A4	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	8.2	

Col -247	327	28	7	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	7.6	
Col -247	327	28	8	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	2.8	
Col -247	327	28	9	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	0.5	
Col -247	327	28	10	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	1.5	
Col -247	327	28	11	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	0.9	
Col -247	327	28	12	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	0.9	
Col -247	327	28	13	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1	0.9	
Col -247	327	28	14	A4	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY							Bulk Impressed aud shaped clay
Col -247	327	28	15	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	28	16	A4	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	50	42.2		
Col -247	327	28	17	A4	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	30	1	A4	020-040			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	17.6	OH BO-00-28 #18	
Col -247	327	30	2	A4	020-040			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			24	18.2		
Col -247	327	30	3	A4	020-040			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.8		
Col -247	327	30	4	A4	020-040			1X1M	1/4	BONE	MODIF	DAGGER	INDET	STRIATED	FRAG	1	5.0		
Col -247	327	30	5	A4	020-040		ART #4	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	35.4	130w/345s/33bs	
Col -247	327	30	6	A4	020-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	8.9	Clay "Egg"	
Col -247	327	30	7	A4	020-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk Impressed and shaped clay	
Col -247	327	30	8	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	30	9	A4	020-040			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	140	69.3		
Col -247	327	31	1	A4	040-050			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	0.8		
Col -247	327	31	2	A4	040-050			1X1M	1/4	METSED	MODIF	GROUND STONE	SINKER	PERFORATED		1	5.2	Slate plummet	
Col -247	327	31	3	A4	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5	1.5in long cylindrical piece.	
Col -247	327	31	4	A4	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.8		
Col -247	327	31	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	31	6	A4	040-050			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	0.7	Tooth	
Col -247	327	31	7	A4	040-050			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	34	1	A4	070-090			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			6	83.4		
Col -247	327	34	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	34	3	A4	070-090			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	51	16.4		
Col -247	327	34	4	A4	070-090			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247.	327	35	1	A4	090-100			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			1	1.6		
Col -247	327	35	2	A4	090-100			1X1M	1/4	METSED	MODIF	GROUND STONE	CORE/CORE TOOL		COMP	1	277.9		
Col -247	327	35	3	A4	090-100			1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	239.4		
Col -247	327	35	4	A4	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.9		
Col -247	327	35	5	A4	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8		
Col -247	327	35	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	OECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	35	7	A4	090-100			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	17	5.0		
Col -247	327	35	8	A4	090-100			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	36	1	A4-5	050-070			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			10	14.7		
Col -247	327	36	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	
Col -247	327	36	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	
Col -247	327	36	4	A4-5	050-070			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3		
Col -247	327	36	5	A4-5	050-070			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			11	28.7		
Col -247	327	36	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	36	7	A4-5	050-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	27.2		
Col -247	327	36	8	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	36	9	A4-5	050-070			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	49	65.0		
Col -247	327	36	10	A4-5	050-070			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	37	1	A4-5	070-090			1X1M	1/4	BONE	UNMOD	FAUNAL				1	4.7	S125 / 73bd	
Col -247	327	37	2	A4-5	070-090			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	41	28.6		
Col -247	327	37	3	A4-5	070-090			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	38	1	A5	000-010			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			1	1.0		
Col -247	327	38	2	A5	000-010			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	2.8		
Col -247	327	38	3	A5	000-010			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.6		
Col -247	327	38	4	A5	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.3	Clay "egg" fragment	
Col -247	327	38	5	A5	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5		
Col -247	327	38	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	38	7	A5	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				13		Bulk	
Col -247	327	38	8	A5	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk	
Col -247	327	38	9	A5	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	23	12.3		
Col -247	327	38	10	A5	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG				
Col -247	327	39	1	A5	010-020			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.9		
Col -247	327	39	2	A5	010-020			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			1	2.6		
Col -247	327	39	3	A5	010-020			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	8.7		
Col -247	327	39	4	A5	010-020			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			6	7.6		
Col -247	327	39	5	A5	010-020			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			32	16.7		
Col -247	327	39	6	A5	010-020			1X1M	1/4	BONE	MODIF	AWL	CANNON	SULCUS		1	0.1		
Col -247	327	39	7	A5	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	4.9	Clay "egg" pieces	
Col -247	327	39	8	A5	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	1.5		
Col -247	327	39	9	A5	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk Impressed and shaped clay	
Col -247	327	39	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	D
Col -247	327	39	11	A5	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	91	53.4		

Col -247	327	39	12	A5	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	40	1	A5	020-030			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	EMF			11	3.1	
Col -247	327	40	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	40	3	A5	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			43	76.5	
Col -247	327	40	4	A5	020-030			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			4	1.2	
Col -247	327	40	5	A5	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	12.2	May be burlap basket imprint
Col -247	327	40	6	A5	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.8	Clay "egg" frag
Col -247	327	40	7	A5	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.9	
Col -247	327	40	8	A5	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.8	Possible clay figurine
Col -247	327	40	9	A5	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	40	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk impressed and shaped clay O
Col -247	327	40	11	A5	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	115	63.9	
Col -247	327	40	12	A5	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	40	13	A5	020-030			1X1M	1/4		UNK	UNMOD	UNKOWN				1		May be bone or rock?
Col -247	327	40	14	A5	020-030			1X1M	1/4		FLORAL	UNMOD	PETRIFIED WOOD				1		
Col -247	327	41	1	A5	020-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col -247	327	42	1	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	42	2	A5	040-050			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.7	
Col -247	327	42	3	A5	040-050			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			4	1.3	
Col -247	327	42	4	A5	040-050			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			58	75.7	
Col -247	327	42	5	A5	040-050			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	70.3	
Col -247	327	42	6	A5	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.7	Clay "egg" frag
Col -247	327	42	7	A5	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	0.9	Cylindrical pieces
Col -247	327	42	8	A5	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	42	9	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk impressed and shaped clay D
Col -247	327	42	10	A5	040-050			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	126	59.7	
Col -247	327	42	11	A5	040-050			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	47	1	A5	090-100			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.4	
Col -247	327	47	2	A5	090-100			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			13	31.8	
Col -247	327	47	3	A5	090-100			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	
Col -247	327	47	4	A5	090-100		ART #1	1X1M	1/4		METSED	MODIF	GROUND STONE	MILLING STONE		COMP	1	1207.2	Artifact #1
Col -247	327	47	5	A5	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	47	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk impressed and shaped clay D
Col -247	327	47	7	A5	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	62	31.5	
Col -247	327	47	8	A5	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		459.6	
Col -247	327	48	1	A6	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.3	
Col -247	327	48	2	A6	000-010			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.7	
Col -247	327	48	3	A6	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			18	22.0	
Col -247	327	48	4	A6	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	48	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk shaped and impressed clay D
Col -247	327	48	6	A6	000-010			1X1M	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE		FRAG	2	1.3	Two pieces, clear and brown
Col -247	327	48	7	A6	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	35	25.6	
Col -247	327	48	8	A6	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	49	1	A6	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.2	
Col -247	327	49	2	A6	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			8	4.2	
Col -247	327	49	3	A6	010-020			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	1.7	
Col -247	327	49	4	A6	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			7	23.0	
Col -247	327	49	5	A6	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				3	10.5	Clay "egg" frags
Col -247	327	49	6	A6	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	10.2	
Col -247	327	49	7	A6	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	49	8	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk shaped and impressed clay DECAT
Col -247	327	49	9	A6	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	68	32.8	
Col -247	327	49	10	A6	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	50	1	A6	020-030			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.2	
Col -247	327	50	2	A6	020-030			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	EMF			7	4.4	
Col -247	327	50	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	50	4	A6	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			33	115.7	
Col -247	327	50	5	A6	020-030			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	
Col -247	327	50	6	A6	020-030			1X1M	1/4		SHELL	MODIF	ORNAMENT	GONIDEA	DRILLED	FRAG	1	0.4	Whole in shell may be natural
Col -247	327	50	7	A6	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				5	29.7	Clay "egg" fragments
Col -247	327	50	8	A6	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	50	9	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk shaped and impressed clay D
Col -247	327	50	10	A6	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	102	43.1	
Col -247	327	50	11	A6	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	50	12	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	50	13	A6	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	11.9	
Col -247	327	51	1	A6	020-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	51	2	A6	020-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			8	46.6	
Col -247	327	51	3	A6	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	34.8	
Col -247	327	51	4	A6	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	51	5	A6	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY						
Col -247	327	51	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	Bulk shaped and impressed clay D
Col -247	327	51	7	A6	020-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	23	8.0	

Col -247	327	51	8	A6	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	54	1	B1	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			8	4.2	
Col -247	327	54	2	B1	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			14	94.6	
Col -247	327	54	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	54	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	54	5	B1	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				9	38.9	
Col -247	327	54	6	B1	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					333.2	
Col -247	327	54	7	B1	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	13	14.2	
Col -247	327	54	8	B1	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		35.7	
Col -247	327	55	1	B1	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			3	1.0	These tags were labeled "Level 2", not 10-2
Col -247	327	55	2	B1	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			33	66.9	These tags were labeled "Level 2", not 10-2
Col -247	327	55	3	B1	010-020			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	3.4	These tags were labeled "Level 2", not 10-2
Col -247	327	55	4	B1	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				45	129.2	These tags were labeled "Level 2", not 10-2
Col -247	327	55	5	B1	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					615.4	These tags were labeled "Level 2", not 10-2
Col -247	327	55	6	B1	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	35	24.8	These tags were labeled "Level 2", not 10-2
Col -247	327	55	7	B1	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	These tags were labeled "Level 2", not 10-2
Col -247	327	56	1	B1	020-030			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			13	7.4	
Col -247	327	56	2	B1	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			17	96.2	
Col -247	327	56	3	B1	020-030			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			6	2.1	
Col -247	327	56	4	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	9.0	possible "egg" fragments
Col -247	327	56	5	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	56	6	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.3	possible figurine fragment
Col -247	327	56	7	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	possible leaf impression
Col -247	327	56	8	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					373.2	
Col -247	327	56	9	B1	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1082.5	2 bags
Col -247	327	56	10	B1	020-030			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	92.2	
Col -247	327	56	11	B1	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	112	45.9	
Col -247	327	56	12	B1	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		289.9	
Col -247	327	57	1	B1	030-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	4.1	OH BO-00-26 #1
Col -247	327	57	2	B1	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	10.2	
Col -247	327	57	3	B1	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					39.2	
Col -247	327	57	4	B1	030-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	5	16.5	
Col -247	327	57	5	B1	030-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		35.1	
Col -247	327	58	1	B1	040-050			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	2.3	
Col -247	327	58	2	B1	040-050			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			65	186.2	
Col -247	327	58	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	58	4	B1	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	Clay "egg"
Col -247	327	58	5	B1	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					319.0	Bulk impressed and shaped clay
Col -247	327	58	6	B1	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					678.3	Bulk
Col -247	327	58	7	B1	040-050			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	75	60.0	
Col -247	327	58	8	B1	040-050			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		238.7	
Col -247	327	59	1	B1	050-060			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	3.9	
Col -247	327	59	2	B1	050-060			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	1.1	
Col -247	327	59	3	B1	050-060			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			7	37.3	
Col -247	327	59	4	B1	050-060			1X1M	1/4		METSED	MODIF	GROUND STONE	COBBLE		FRAG	1	42.8	Possible groundstone
Col -247	327	59	5	B1	050-060			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	53.5	
Col -247	327	59	6	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.4	Red, possible ochre?
Col -247	327	59	7	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	59	8	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.4	Clay "egg"
Col -247	327	59	9	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	59	10	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	59	11	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	59	12	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					176.6	Bulk impressed and shaped clay
Col -247	327	59	13	B1	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1019.8	Bulk; two bags
Col -247	327	59	14	B1	050-060			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	160	74.8	
Col -247	327	59	15	B1	050-060			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		332.3	
Col -247	327	60	1	B1	060-070			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	2.1	
Col -247	327	60	2	B1	060-070			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			47	137.7	
Col -247	327	60	3	B1	060-070			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			6	3.4	
Col -247	327	60	4	B1	060-070			1X1M	1/4		METSED	MODIF	GROUND STONE	MANO		FRAG	1	46.6	May be ground
Col -247	327	60	5	B1	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	fragment is perforated length-wise
Col -247	327	60	6	B1	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.9	
Col -247	327	60	7	B1	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	60	8	B1	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				42	84.8	
Col -247	327	60	9	B1	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY					757.5	
Col -247	327	60	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	60	11	B1	060-070			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	86	37.9	
Col -247	327	60	12	B1	060-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		362.6	
Col -247	327	60	13	B1	060-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	abalone shell fragment
Col -247	327	61	1	B1	070-080			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.1	
Col -247	327	61	2	B1	070-080			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	2.5	
Col -247	327	61	3	B1	070-080			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			7	7.2	
Col -247	327	61	4	B1	070-080			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	1	45.9	POSSIBLE SLINGSTONE

Col -247	327	61	5	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	61	6	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	7.1	grass impressions
Col -247	327	61	7	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	7.2	
Col -247	327	61	8	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.6	object is roughly spherical or oblong
Col -247	327	61	9	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				35	81.7	Bulk shaped and impressed and clay
Col -247	327	61	10	B1	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY					540.8	
Col -247	327	61	11	B1	070-080			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	100	43.4	
Col -247	327	61	12	B1	070-080			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	5	2.6	ebalone shell?
Col -247	327	61	13	B1	070-080			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		342.9	
Col -247	327	61	14	B1	070-080			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	FLAKE TOOL		FRAG	1	0.1	BO-00-28-01
Col -247	327	62	1	B1	080-090			1X1M	1/4		CHERT	MODIF	CHIPPED STONE	BIFACE		FRAG	1	3.3	
Col -247	327	62	2	B1	080-090			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.1	
Col -247	327	62	3	B1	080-090			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			6	4.7	
Col -247	327	62	4	B1	080-090			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			23	78.0	
Col -247	327	62	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	62	6	B1	080-090			1X1M	1/4		BONE	UNMOD	FAUNAL		BURNED	FRAG	1	0.7	
Col -247	327	62	7	B1	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	62	8	B1	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.5	Clay "egg" fragment
Col -247	327	62	9	B1	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	62	10	B1	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					56.9	Bulk shaped and impressed and clay
Col -247	327	62	11	B1	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					930.5	Bulk
Col -247	327	82	12	B1	080-090			1X1M	1/4		QTZT	UNMOD	CRYSTAL				1	0.4	Quartz crystal
Col -247	327	62	13	B1	080-090			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	91	48.1	
Col -247	327	62	14	B1	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		1.1	Possible ebalone
Col -247	327	62	15	B1	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	2	0.8	Species?not mussel?
Col -247	327	62	16	B1	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		346.1	
Col -247	327	63	1	B1	090-100			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			3	6.4	
Col -247	327	63	2	B1	090-100			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			8	25.1	
Col -247	327	63	3	B1	090-100			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			5	21.3	
Col -247	327	63	4	B1	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	63	5	B1	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	63	6	B1	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	63	7	B1	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY					58.1	Bulk shaped and impressed clay
Col -247	327	63	8	B1	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY					462.1	Bulk
Col -247	327	63	9	B1	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	97	50.0	
Col -247	327	63	10	B1	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		344.5	
Col -247	327	63	11	B1	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	2	0.5	Species? Not mussel?
Col -247	327	63	12	B1	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		0.5	Abalone?
Col -247	327	63	13	B1	090-100			1X1M	1/4		METSED	MODIF	GROUND STONE	MANO			1		
Col -247	327	63	14	B1	090-100			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL			1	62.0	
Col -247	327	64	1	B1	100-110			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	3.2	
Col -247	327	64	2	B1	100-110			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	4.3	
Col -247	327	64	3	B1	100-110			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.3	
Col -247	327	64	4	B1	100-110			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			21	76.2	
Col -247	327	64	5	B1	100-110			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	1.5	
Col -247	327	64	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	64	7	B1	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.2	
Col -247	327	64	8	B1	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	64	9	B1	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	64	10	B1	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				19	32.4	Bulk impressed and shaped clay
Col -247	327	64	11	B1	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1050.1	Bulk
Col -247	327	64	12	B1	100-110			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	122	38.8	
Col -247	327	64	13	B1	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		412.8	
Col -247	327	64	14	B1	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	1	0.1	Snail shell
Col -247	327	64	15	B1	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		4.1	Abalone?
Col -247	327	65	1	B2	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			11	5.0	
Col -247	327	65	2	B2	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			2	36.1	
Col -247	327	65	3	B2	000-010			1X1M	1/4		METSED	MODIF	GROUND STONE	CORE/CORE TOOL		COMP	1	263.7	
Col -247	327	65	4	B2	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL				2	2.0	
Col -247	327	65	5	B2	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.8	Pottery Sherd
Col -247	327	65	6	B2	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	2.4	Clay "egg" fragments
Col -247	327	65	7	B2	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				20	48.8	Bulk impressod and shaped clay
Col -247	327	65	8	B2	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					554.3	Bulk
Col -247	327	65	9	B2	000-010			1X1M	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	0.8	
Col -247	327	65	10	B2	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	66	100.6	
Col -247	327	65	11	B2	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		119.0	
Col -247	327	65	12	B2	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	19.9	
Col -247	327	65	13	B2	000-010			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL			1	119.0	
Col -247	327	66	1	B2	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7		
Col -247	327	66	2	B2	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			23	52.4	
Col -247	327	66	3	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	66	4	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	66	5	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	

Col -247	327	66	6	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	66	7	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	66	8	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	19.4	
Col -247	327	66	9	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	66	10	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.8	
Col -247	327	66	11	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	3.0	
Col -247	327	66	12	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				54	141.2	Bulk impressed and shaped clay
Col -247	327	66	13	B2	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1005.1	Bulk
Col -247	327	66	14	B2	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL				87	81.3	Also labeled "Level 2".
Col -247	327	66	15	B2	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		1.3	Abalone? Also labeled "Level 2".
Col -247	327	66	16	B2	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		148.7	
Col -247	327	66	17	B2	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE	END	FRAG	1		
Col -247	327	67	1	B2	020-030			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			16	6.7	
Col -247	327	67	2	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	67	3	B2	020-030			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	1	29.0	POSSIBLE SLINGSTONE
Col -247	327	67	4	B2	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.4	Clay "egg" fragment
Col -247	327	67	5	B2	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				65	148.6	Bulk shaped and impressed clay
Col -247	327	67	6	B2	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1188.1	Bulk
Col -247	327	67	7	B2	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	46	30.8	
Col -247	327	67	8	B2	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		301.7	
Col -247	327	67	9	B2	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		2.3	Abalone?
Col -247	327	68	1	B2	020-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	4.7	
Col -247	327	68	2	B2	020-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			5	19.2	
Col -247	327	68	3	B2	020-040			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	2.0	
Col -247	327	68	4	B2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				17	24.8	Bulk impressed and shaped clay
Col -247	327	68	5	B2	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					434.7	
Col -247	327	68	6	B2	020-040			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	6	161.6	POSSIBLE SLINGSTONE
Col -247	327	68	7	B2	020-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	116	58.7	
Col -247	327	68	8	B2	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		6.8	Need to identify species?
Col -247	327	68	9	B2	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		3.6	Abalone?
Col -247	327	68	10	B2	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		82.3	
Col -247	327	69	1	B2	040-050			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	4.1	
Col -247	327	69	2	B2	040-050			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			16	71.9	
Col -247	327	69	3	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	31.0	Clay "egg"
Col -247	327	69	4	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	69	5	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	69	6	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.1	
Col -247	327	69	7	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.6	
Col -247	327	69	8	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	69	9	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	69	10	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.2	
Col -247	327	69	11	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					120.3	Bulk impressed and baked clay
Col -247	327	69	12	B2	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1078.8	Bulk; two bags
Col -247	327	69	13	B2	040-050			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	74	53.3	
Col -247	327	69	14	B2	040-050			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		5.0	
Col -247	327	69	15	B2	040-050			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		310.1	
Col -247	327	70	1	B2	050-060			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	3.7	
Col -247	327	70	2	B2	050-060			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			13	8.1	
Col -247	327	70	3	B2	050-060			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.7	
Col -247	327	70	4	B2	050-060			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			33	69.8	
Col -247	327	70	5	B2	050-060			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			1	58.0	
Col -247	327	70	6	B2	050-060			1X1M	1/4		METSED	MODIF	PEBBLE	HAMMER			1	199.1	
Col -247	327	70	7	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	70	8	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.8	
Col -247	327	70	9	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	Textile pattern is unusual or irregular
Col -247	327	70	10	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	
Col -247	327	70	11	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.1	
Col -247	327	70	12	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					85.6	Bulk impressed and shaped clay
Col -247	327	70	13	B2	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1291.3	Bulk
Col -247	327	70	14	B2	050-060			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		413.2	
Col -247	327	70	15	B2	050-060			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	FLAKE TOOL		COMP	1	1.3	OH SAMPLE B0-00-28 #6
Col -247	327	71	1	B2	060-070			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	71	2	B2	060-070			1X1M	1/4		METSED	MODIF	CHIPPED STONE	EMF			1	122.5	SPALL
Col -247	327	71	2	B2	060-070			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			33	92.8	
Col -247	327	71	3	B2	060-070			1X1M	1/4		METSED	MODIF	GROUND STONE	COBBLE MILLING STONE		COMP	1	126.7	Possible groundstone
Col -247	327	71	4	B2	060-070			1X1M	1/4		BONE	MODIF	PIN	ROUND	MID	FRAG	1	0.6	
Col -247	327	71	5	B2	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	71	6	B2	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY					68.5	Bulk impressed and shaped clay
Col -247	327	71	7	B2	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY					743.8	Bulk
Col -247	327	71	8	B2	060-070			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	64	35.1	
Col -247	327	71	9	B2	060-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		1.3	
Col -247	327	71	10	B2	060-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		17.1	
Col -247	327	72	1	B2	070-080			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	0.9	

Col -247	327	72	2	B2	070-080			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	1.0	
Col -247	327	72	3	B2	070-080			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			17	72.5	
Col -247	327	72	4	B2	070-080			1X1M	1/4		METSED	MODIF	GROUND STONE	MANO		FRAG	1	35.2	Unknown material-appears to be grounston
Col -247	327	72	5	B2	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.5	
Col -247	327	72	6	B2	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.7	Pottery sherd
Col -247	327	72	7	B2	070-080			1X1M	1/4		CLAY	MDDIF	WORKED CLAY				1	0.8	
Col -247	327	72	8	B2	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY					46.2	Bulk impressed and shaped clay
Col -247	327	72	9	B2	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY					815.0	Bulk
Col -247	327	72	10	B2	070-080			1X1M	1/4		FLORAL	UNMOD	CHARCOAL	ASH		FRAG		16.2	
Col -247	327	72	11	B2	070-080			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	67	31.2	
Col -247	327	72	12	B2	070-080			1X1M	1/4		SHELL	MODIF	BEAD	OLIVELLA	SPIRE-LOPPED	FRAG	1	0.3	
Col -247	327	72	13	B2	070-080			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		431.2	
Col -247	327	73	1	B2	080-090			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.4	
Col -247	327	73	2	B2	080-090			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			10	39.7	
Col -247	327	73	3	B2	080-090			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	3	153.5	POSSIBLE SLINGSTONE
Col -247	327	73	4	B2	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					60.0	Bulk impressed and shaped clay
Col -247	327	73	5	B2	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1438.0	Bulk; two bags
Col -247	327	73	6	B2	080-090			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	21	6.0	
Col -247	327	73	7	B2	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		44.0	
Col -247	327	74	1	B2	090-100			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	5.1	
Col -247	327	74	2	B2	090-100			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	21.0	
Col -247	327	74	3	B2	090-100			1X1M	1/4		METSED	MODIF	CHIPPED STONE	EMF	Flake tool		1	40.8	Possible core
Col -247	327	74	4	B2	090-100			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			11	25.7	
Col -247	327	74	5	B2	090-100			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	216.0	
Col -247	327	74	6	B2	090-100			1X1M	1/4		METSED	MODIF	GROUND STONE	MANO		FRAG	1	124.7	May not be cultural
Col -247	327	74	7	B2	090-100			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	3	111.0	POSSIBLE SLINGSTONE
Col -247	327	74	8	B2	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	47	20.1	
Col -247	327	74	9	B2	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL				1	0.2	Cut marks
Col -247	327	74	10	B2	090-100			1X1M	1/4		SHELL	UNMOO	BIVALVE			FRAG		167.2	
Col -247	327	75	1	B1-2	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY					80.6	Bulk impressed and shaped clay from 90-1C
Col -247	327	76	1	B2	100-110			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	5.9	
Col -247	327	76	2	B2	100-110			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	78	3	B2	100-110			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			14	51.2	
Col -247	327	78	4	B2	100-110			1X1M	1/4		METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	2	102.9	POSSIBLE SLINGSTONE
Col -247	327	78	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	76	6	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.9	
Col -247	327	76	7	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	
Col -247	327	76	8	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	76	9	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	76	10	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY					61.3	Bulk impressed and shaped clay
Col -247	327	78	11	B2	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY					531.2	Bulk
Col -247	327	76	12	B2	100-110			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	98	87.7	
Col -247	327	76	13	B2	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		242.6	
Col -247	327	77	1	B3	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	3.2	
Col -247	327	77	2	B3	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			3	22.5	
Col -247	327	77	3	B3	000-010			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	
Col -247	327	77	4	B3	000-010			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	64.9	
Col -247	327	77	5	B3	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.5	
Col -247	327	77	6	B3	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	77	7	B3	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				22	36.5	Bulk impressed and shaped clay
Col -247	327	77	8	B3	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					470.1	Bulk
Col -247	327	77	9	B3	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	42	51.7	
Col -247	327	77	10	B3	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		90.3	
Col -247	327	78	1	B3	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	EMF			1	1.7	
Col -247	327	78	2	B3	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			16	8.2	
Col -247	327	78	3	B3	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			19	45.6	
Col -247	327	78	4	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				5	11.8	Clay "egg" fragments
Col -247	327	78	5	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	13.3	Possible fingerprint
Col -247	327	78	6	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					114.2	Bulk impressed and shaped clay
Col -247	327	78	7	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					879.0	Bulk; two bags
Col -247	327	78	8	B3	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	72	47.6	
Col -247	327	78	9	B3	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		136.1	
Col -247	327	78	10	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.2	
Col -247	327	78	11	B3	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	1.1	
Col -247	327	79	1	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col -247	327	79	2	B3	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			3	38.1	
Col -247	327	79	3	B3	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					83.4	
Col -247	327	79	4	B3	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	1	6.0	
Col -247	327	79	5	B3	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		0.5	
Col -247	327	80	1	B3	020-030			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			9	2.2	
Col -247	327	80	2	B3	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			16	14.0	
Col -247	327	80	3	B3	020-030			1X1M	1/4		METSED	MODIF	GROUND STONE	COBBLE	SHAPED	COMP	1	30.8	
Col -247	327	80	4	B3	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	29.0	Pinch pot fragment

Col -247	327	80	5	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.3	
Col -247	327	80	6	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.8	
Col -247	327	80	7	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.3	
Col -247	327	80	8	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	15.5	Clay "egg" fragments
Col -247	327	80	9	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY					349.4	Bulk impressed and shaped clay
Col -247	327	80	10	B3	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY					1177.7	Bulk; two bags
Col -247	327	80	11	B3	020-030	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	94	48.0	
Col -247	327	80	12	B3	020-030	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		285.5	
Col -247	327	81	1	B3	020-040	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	0.5	
Col -247	327	81	2	B3	020-040	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			37	34.4	
Col -247	327	81	3	B3	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.5	
Col -247	327	81	4	B3	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.9	
Col -247	327	81	5	B3	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	Clay "egg" fragments
Col -247	327	81	6	B3	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY					148.8	Bulk impressed and shaped clay
Col -247	327	81	7	B3	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY					490.9	Bulk, unmodified
Col -247	327	81	8	B3	020-040	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	34	16.5	
Col -247	327	81	9	B3	020-040	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		160.6	
Col -247	327	82	1	B3	040-050	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.8	
Col -247	327	82	2	B3	040-050	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			12	39.2	
Col -247	327	82	3	B3	040-050	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	13.6	
Col -247	327	82	4	B3	040-050	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	82	5	B3	040-050	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	82	6	B3	040-050	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	82	7	B3	040-050	1X1M	1/4	CLAY	MODIF	WORKED CLAY					93.9	Bulk impressed and shaped clay
Col -247	327	82	8	B3	040-050	1X1M	1/4	CLAY	MODIF	WORKED CLAY					675.8	Bulk
Col -247	327	82	9	B3	040-050	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	59	32.9	
Col -247	327	82	10	B3	040-050	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		267.6	
Col -247	327	83	1	B3	050-060	1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	3.3	
Col -247	327	83	2	B3	050-060	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.0	
Col -247	327	83	3	B3	050-060	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			3	7.2	
Col -247	327	83	4	B3	050-060	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	5.9	
Col -247	327	83	5	B3	050-060	1X1M	1/4	METSED	MODIF	GROUND STONE	COBBLE	SHAPED	FRAG	1	30.9	May not be cultural
Col -247	327	83	6	B3	050-060	1X1M	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	COMP	1	0.2	
Col -247	327	83	7	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	11.8	
Col -247	327	83	8	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	83	9	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	83	10	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	2.0	
Col -247	327	83	11	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	4.9	Clay "egg" fragments
Col -247	327	83	12	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.2	
Col -247	327	83	13	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	Seed impression
Col -247	327	83	14	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.8	
Col -247	327	83	15	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	83	16	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	83	17	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	83	18	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY					173.1	Bulk impressed and shaped clay
Col -247	327	83	19	B3	050-060	1X1M	1/4	CLAY	MODIF	WORKED CLAY					1123.5	Bulk
Col -247	327	83	20	B3	050-060	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	109	60.7	
Col -247	327	83	21	B3	050-060	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		86.5	
Col -247	327	83	22	B3	050-060	1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL			1	152.6	
Col -247	327	83	23	B3	050-060	1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL			1	71.8	
Col -247	327	84	1	B3	060-070	1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	5.4	
Col -247	327	84	2	B3	060-070	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	3.0	
Col -247	327	84	3	B3	060-070	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.5	
Col -247	327	84	4	B3	060-070	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			3	9.4	
Col -247	327	84	5	B3	060-070	1X1M	1/4	METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	1	35.9	POSSIBLE SLINGSTONE
Col -247	327	84	6	B3	060-070	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	0.8	
Col -247	327	84	7	B3	060-070	1X1M	1/4	SHELL	MODIF	BEAD	OLIVELLA	SPIRE-LOPPED	COMP	1	0.5	
Col -247	327	84	8	B3	060-070	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	84	9	B3	060-070	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	7.8	
Col -247	327	84	10	B3	060-070	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5	
Col -247	327	84	11	B3	060-070	1X1M	1/4	CLAY	MODIF	WORKED CLAY					116.2	Bulk impressed and shaped clay
Col -247	327	84	12	B3	060-070	1X1M	1/4	CLAY	MODIF	WORKED CLAY					784.3	Bulk
Col -247	327	84	13	B3	060-070	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	84	53.2	
Col -247	327	84	14	B3	060-070	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		167.8	
Col -247	327	85	1	B3	070-080	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			24	58.0	
Col -247	327	85	2	B3	070-080	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	9.0	
Col -247	327	85	3	B3	070-080	1X1M	1/4	BONE	MODIF	DAGGER	INDET			1	3.0	
Col -247	327	85	4	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	85	5	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	7.0	
Col -247	327	85	6	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	8.5	Clay "egg" fragments
Col -247	327	85	7	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.1	
Col -247	327	85	8	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5	
Col -247	327	85	9	B3	070-080	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	

Col -247	327	85	10	B3	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY					122.9	Bulk impressed and shaped clay
Col -247	327	85	11	B3	070-080			1X1M	1/4		CLAY	MODIF	WORKED CLAY					772.4	Bulk
Col -247	327	85	12	B3	070-080			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	70	41.4	
Col -247	327	85	13	B3	070-080			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	85	14	B3	070-080			1X1M	1/4		BONE	UNMOD	FAUNAL		PETRIFIED	FRAG	1	7.7	
Col -247	327	85	15	B3	070-080			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	648.4	
Col -247	327	85	16	B3	070-080			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	89.7	
Col -247	327	86	1	B3	080-090			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.8	
Col -247	327	86	2	B3	080-090			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			7	4.9	
Col -247	327	86	3	B3	080-090			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			57	84.2	
Col -247	327	86	4	B3	080-090			1X1M	1/4		QTZT	UNMOD	CRYSTAL				1	0.7	Quartz crystal
Col -247	327	86	5	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	45.6	
Col -247	327	86	6	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	28.9	
Col -247	327	86	7	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.8	
Col -247	327	86	8	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	31.3	
Col -247	327	86	9	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.1	
Col -247	327	86	10	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	
Col -247	327	86	11	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	86	12	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.7	
Col -247	327	86	13	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					144.2	Bulk impressed and shaped clay
Col -247	327	86	14	B3	080-090			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1214.4	Bulk
Col -247	327	86	15	B3	080-090			1X1M	1/4		FLORAL	UNMOD	CHARCOAL	ASH			3	6.3	Volcanic ash or rock?
Col -247	327	86	16	B3	080-090			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	230	110.1	
Col -247	327	86	17	B3	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		730.0	
Col -247	327	86	18	B3	080-090			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG	1	0.3	Possible abalone?
Col -247	327	87	1	B3	090-100			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.6	
Col -247	327	87	2	B3	090-100			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.7	
Col -247	327	87	3	B3	090-100			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			21	32.0	
Col -247	327	87	4	B3	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	4.1	"egg" fragments
Col -247	327	87	5	B3	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY					60.6	Bulk impressed and shaped clay
Col -247	327	87	6	B3	090-100			1X1M	1/4		CLAY	MODIF	WORKED CLAY					302.1	Bulk
Col -247	327	87	7	B3	090-100			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	46	25.0	
Col -247	327	87	8	B3	090-100			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		159.2	
Col -247	327	88	1	B3	100-110			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	3.8	
Col -247	327	88	2	B3	100-110			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	2.8	
Col -247	327	88	3	B3	100-110			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			4	3.1	
Col -247	327	88	4	B3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	13.1	
Col -247	327	88	5	B3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.8	
Col -247	327	88	6	B3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.6	bone fragment within clay nodule
Col -247	327	88	7	B3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY					110.9	Bulk impressed and shaped clay
Col -247	327	88	8	B3	100-110			1X1M	1/4		CLAY	MODIF	WORKED CLAY					603.4	Bulk
Col -247	327	88	9	B3	100-110			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	103	41.8	
Col -247	327	88	10	B3	100-110			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		260.0	
Col -247	327	88	11	B3	100-110			1X1M	1/4		METSED	MODIF	CHIPPED STONE	CORE TOOL			1	146.9	
Col -247	327	89	1	B4	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			13	6.1	
Col -247	327	89	2	B4	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			16	23.6	
Col -247	327	89	3	B4	000-010			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			4	7.6	
Col -247	327	89	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	.DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	89	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	89	6	B4	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.2	
Col -247	327	89	7	B4	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	89	8	B4	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					27.0	Bulk impressed and shaped clay
Col -247	327	89	9	B4	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					461.0	
Col -247	327	89	10	B4	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	57	25.3	
Col -247	327	89	11	B4	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		104.6	
Col -247	327	90	1	B4	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			9	6.3	
Col -247	327	90	2	B4	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			58	91.8	
Col -247	327	90	3	B4	010-020			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	17.3	
Col -247	327	90	4	B4	010-020			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	FLAKE TODL			1	2.1	
Col -247	327	90	5	B4	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL		ULNA	FRAG	1	0.8	
Col -247	327	90	6	B4	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	1	3.2	
Col -247	327	90	7	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.8	pinch pottery w/ thumbprints
Col -247	327	90	8	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	35.3	
Col -247	327	90	9	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.9	basketry impression
Col -247	327	90	10	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	10.3	
Col -247	327	90	11	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	2.7	
Col -247	327	90	12	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.1	
Col -247	327	90	13	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	seed/vegetal impressions?
Col -247	327	90	14	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.5	
Col -247	327	90	15	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	
Col -247	327	90	16	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.2	grass impressions
Col -247	327	90	17	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				2	7.1	"egg" fragments
Col -247	327	90	18	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					53.1	Bulk impressed and shaped clay

Col -247	327	90	19	B4	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					815.0	Bulk
Col -247	327	90	20	B4	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	59	38.5	
Col -247	327	90	21	B4	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		79.5	
Col -247	327	91	1	B4	020-030			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.4	
Col -247	327	91	2	B4	020-030			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			7	2.5	
Col -247	327	91	3	B4	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			13	29.7	
Col -247	327	91	4	B4	020-030			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	91	5	B4	020-030		ART #5	1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	1	7.9	Depth 27cm, 18E / 127N
Col -247	327	91	6	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	D
Col -247	327	91	7	B4	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	53	29.1	
Col -247	327	91	8	B4	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		128.3	
Col -247	327	92	1	B4	020-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.0	
Col -247	327	92	2	B4	020-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			17	38.7	
Col -247	327	92	3	B4	020-040			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.7	
Col -247	327	92	4	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.2	
Col -247	327	92	5	B4	020-040		ART #7	1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	69.4	
Col -247	327	92	6	B4	020-040		ART #6	1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	53.9	
Col -247	327	92	7	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				3	114.7	Large formed clay pieces
Col -247	327	92	8	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	14.3	Clay "egg"
Col -247	327	92	9	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				4	17.6	Clay "egg" fragments
Col -247	327	92	10	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.9	
Col -247	327	92	11	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					55.1	Bulk impressed and shaped clay
Col -247	327	92	12	B4	020-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1015.8	Bulk
Col -247	327	92	13	B4	020-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	121	67.2	
Col -247	327	92	14	B4	020-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		205.0	
Col -247	327	92	15	B4	020-040			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	PROJ POINT	SPALL	FRAG	1	2.1	OH BO-00-28 #7
Col -247	327	93	1	B4	040-050			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.1	
Col -247	327	93	2	B4	040-050			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.7	
Col -247	327	93	3	B4	040-050			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			10	11.4	
Col -247	327	93	4	B4	040-050			1X1M	1/4		BONE	MODIF	PIN	FLAT	MRG	FRAG	1	0.1	
Col -247	327	93	5	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	93	6	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.8	Round shape.
Col -247	327	93	7	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.6	Round shape.
Col -247	327	93	8	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	17.2	
Col -247	327	93	9	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.0	
Col -247	327	93	10	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.6	
Col -247	327	93	11	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	93	12	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY				3	5.0	Clay "egg" fragments
Col -247	327	93	13	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					130.6	Bulk impressed and shaped clay.
Col -247	327	93	14	B4	040-050			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1127.1	Bulk, two bags
Col -247	327	93	15	B4	040-050			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	63	37.7	
Col -247	327	93	16	B4	040-050			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		321.3	
Col -247	327	93	17	B4	040-050			1X1M	1/4		METSED	MODIF	CHIPPED STONE	EMF			1	32.5	
Col -247	327	94	1	B4	050-060			1X1M	1/4		OBSID	MODIF	CHIPPED STONE	BIFACE			1	1.2	
Col -247	327	94	2	B4	050-060			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			8	3.3	
Col -247	327	94	3	B4	050-060			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			22	69.2	
Col -247	327	94	4	B4	050-060			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	1.5	
Col -247	327	94	5	B4	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.7	Cylindrical
Col -247	327	94	6	B4	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.0	Clay "egg" fragment.
Col -247	327	94	7	B4	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					159.3	Bulk impressed and shaped clay.
Col -247	327	94	8	B4	050-060			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1482.5	Bulk; two bags
Col -247	327	94	9	B4	050-060			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	135	88.0	Includes one canine tooth
Col -247	327	94	10	B4	050-060			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		459.2	
Col -247	327	95	1	B4	060-070			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			2	1.3	
Col -247	327	95	2	B4	060-070			1X1M	1/4		BSALT	MODIF	CHIPPED STONE	FLAKE TOOL			1	1.3	Possible drill
Col -247	327	95	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	
Col -247	327	95	4	B4	060-070			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.5	
Col -247	327	95	5	B4	060-070			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			28	64.9	
Col -247	327	95	6	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.8	
Col -247	327	95	7	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	8.0	
Col -247	327	95	8	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.6	
Col -247	327	95	9	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.6	
Col -247	327	95	10	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.4	
Col -247	327	95	11	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY					77.3	Bulk impressed and shaped clay
Col -247	327	95	12	B4	060-070			1X1M	1/4		CLAY	MODIF	WORKED CLAY					1442.3	Bulk; gallon bag.
Col -247	327	95	13	B4	060-070			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	47	24.1	
Col -247	327	95	14	B4	060-070			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		391.0	
Col -247	327	95	15	B4	060-070			1X1M	1/4		METVOL	MODIF	PEBBLE	HAMMER			1	113.0	
Col -247	327	95	16	B4	060-070			1X1M	1/4		CHERT	MODIF	CHIPPED STONE	CORE TOOL			1	132.0	
Col -247	327	96	1	B4	070-080			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			4	2.1	
Col -247	327	96	2	B4	070-080			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			3	29.1	
Col -247	327	96	3	B4	070-080			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			2	3.8	
Col -247	327	96	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT

Col -247	327	96	5	B4	070-080		1X1M	1/4	METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	1	29.1	POSSIBLE SLINGSTONE
Col -247	327	96	6	B4	070-080		1X1M	1/4	BONE	UNMOD	FAUNAL				1	3.3	
Col -247	327	96	7	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.8	
Col -247	327	96	8	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	96	9	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.3	
Col -247	327	96	10	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	96	11	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.1	
Col -247	327	96	12	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	96	13	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.7	
Col -247	327	96	14	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.4	
Col -247	327	96	15	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	96	16	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	37.5	
Col -247	327	96	17	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.5	
Col -247	327	96	18	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY					141.0	Bulk impressed and shaped clay
Col -247	327	96	19	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY					937.6	Bulk
Col -247	327	96	20	B4	070-080		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	92	27.2	
Col -247	327	96	21	B4	070-080		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		466.7	
Col -247	327	96	22	B4	070-080		1X1M	1/4	CLAY	MODIF	WORKED CLAY					1.4	
Col -247	327	97	1	B4	080-090		1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.3	
Col -247	327	97	2	B4	080-090		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.8	
Col -247	327	97	3	B4	080-090		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			7	62.9	
Col -247	327	97	4	B4	080-090	ART #1	1X1M	1/4	METSED	MODIF	GROUND STONE	PLUMMET	SHAPED	FRAG	1	157.0	
Col -247	327	97	5	B4	080-090		1X1M	1/4	BONE	MODIF	PENDANT	DRILLED	INDET	FRAG	1	1.0	
Col -247	327	97	6	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	97	7	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	14.8	
Col -247	327	97	8	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	14.0	
Col -247	327	97	9	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	97	10	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	12.6	
Col -247	327	97	11	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	97	12	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY					380.4	Bulk impressed and shaped clay
Col -247	327	97	13	B4	080-090		1X1M	1/4	CLAY	MODIF	WORKED CLAY					1677.8	Bulk
Col -247	327	97	14	B4	080-090		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	144	55.3	
Col -247	327	97	15	B4	080-090		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		834.0	
Col -247	327	98	0	B4	090-100		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		563.4	
Col -247	327	98	1	B4	090-100	ART #1	1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	2.1	
Col -247	327	98	2	B4	090-100		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	3.4	
Col -247	327	98	3	B4	090-100		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			90	115.8	
Col -247	327	98	4	B4	090-100		1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	6.7	Possible clay "egg" fragments
Col -247	327	98	5	B4	090-100		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	Possible figurine
Col -247	327	98	6	B4	090-100		1X1M	1/4	CLAY	MODIF	WORKED CLAY				14	80.1	Bulk impressed and shaped clay
Col -247	327	98	7	B4	090-100		1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	98	8	B4	090-100		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	146	82.0	
Col -247	327	99	1	B5	000-010		1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col -247	327	99	2	B5	000-010		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	3.8	
Col -247	327	99	3	B5	000-010		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			12	91.8	
Col -247	327	99	4	B5	000-010		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	99	5	B5	000-010		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	99	6	B5	000-010		1X1M	1/4	CLAY	MODIF	WORKED CLAY					101.4	Bulk impressed and shaped clay.
Col -247	327	99	7	B5	000-010		1X1M	1/4	CLAY	MODIF	WORKED CLAY					914.8	Bulk
Col -247	327	99	8	B5	000-010		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	39	21.3	
Col -247	327	99	9	B5	000-010		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		104.6	
Col -247	327	100	1	B5	UNK		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.8	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	2	B5	UNK		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			2	19.9	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	3	B5	UNK		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.7	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	4	B5	UNK		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	5	B5	UNK		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.1	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	6	B5	UNK		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	58.3	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	7	B5	UNK		1X1M	1/4	CLAY	MODIF	WORKED CLAY					144.8	Labeled "Level 2", probably 10-20cm. Bulk I
Col -247	327	100	8	B5	UNK		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	4	1.7	Labeled "Level 2", probably 10-20cm.
Col -247	327	100	9	B5	UNK		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		119.7	Labeled "Level 2", probably 10-20cm.
Col -247	327	101	1	B5	020-040		1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			1	1.2	
Col -247	327	101	2	B5	020-040		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	2.8	
Col -247	327	101	3	B5	020-040		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			17	10.6	
Col -247	327	101	4	B5	020-040		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	Clay "egg" fragment.
Col -247	327	101	5	B5	020-040		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	101	6	B5	020-040		1X1M	1/4	CLAY	MODIF	WORKED CLAY					58.1	Bulk impressed and shaped clay.
Col -247	327	101	7	B5	020-040		1X1M	1/4	CLAY	MODIF	WORKED CLAY					788.5	Bulk
Col -247	327	101	8	B5	020-040		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	79	55.0	
Col -247	327	101	9	B5	020-040		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		280.1	
Col -247	327	101	10	B5	020-040		1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	5.0	OH: BO-00-20, SPEC #10
Col -247	327	102	1	B5	040-050	ART #1	1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	8.1	
Col -247	327	102	2	B5	040-050		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	5.4	
Col -247	327	102	3	B5	040-050		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			13	63.4	

Col -247	327	102	4	B5	040-050			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	2.1	
Col -247	327	102	5	B5	040-050			1X1M	1/4	METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	2	69.3	POSSIBLE SLINGSTONE
Col -247	327	102	6	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	102	7	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	20.5	Clay "egg" half.
Col -247	327	102	8	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	102	9	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	9.7	
Col -247	327	102	10	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	102	11	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	Coiled basket impression.
Col -247	327	102	12	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	8.3	
Col -247	327	102	13	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	9.0	Clay "egg" fragments.
Col -247	327	102	14	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	4.1	Formed and shaped clay
Col -247	327	102	15	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY					129.2	Bulk impressed and shaped clay.
Col -247	327	102	16	B5	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1439.3	Bulk
Col -247	327	102	17	B5	040-050			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	5.4	Cut marks
Col -247	327	102	18	B5	040-050			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	132	62.2	
Col -247	327	102	19	B5	040-050			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		407.0	
Col -247	327	102	20	B5	040-050			1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL		FRAG	1	34.4	
Col -247	327	103	1	B5	050-060			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			10	2.1	
Col -247	327	103	2	B5	050-060			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			5	5.0	
Col -247	327	103	3	B5	050-060			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			32	81.8	
Col -247	327	103	4	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	19.8	
Col -247	327	103	5	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				4	14.3	Clay "egg" fragments
Col -247	327	103	6	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.2	Shaped with fingerprint
Col -247	327	103	7	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	103	8	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.8	
Col -247	327	103	9	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	103	10	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY					196.8	Bulk impressed and shaped clay.
Col -247	327	103	11	B5	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1054.1	Bulk; two bags.
Col -247	327	103	12	B5	050-060			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	74	38.6	
Col -247	327	103	13	B5	050-060			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		293.1	
Col -247	327	103	14	B5	050-060			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO		FRAG	1		
Col -247	327	104	1	B5	060-070			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.0	
Col -247	327	104	2	B5	060-070			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.7	
Col -247	327	104	3	B5	060-070			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			9	24.6	
Col -247	327	104	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	104	5	B5	060-070			1X1M	1/4	METSED	UNMOD	GROUND STONE	COBBLE	SLINGSTONE	COMP	2	62.8	POSSIBLE SLINGSTONE
Col -247	327	104	6	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	Shaped and impressed
Col -247	327	104	7	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	104	8	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.2	Drilled or carved hole in center of clay fragm
Col -247	327	104	9	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	19.7	Clay "egg", but more round in shape.
Col -247	327	104	10	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	29.8	
Col -247	327	104	11	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	104	12	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY					141.8	Bulk impressed and shaped clay
Col -247	327	104	13	B5	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1320.2	
Col -247	327	104	14	B5	060-070			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	134	49.5	
Col -247	327	104	15	B5	060-070			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG	1	1.1	Abalone?
Col -247	327	104	16	B5	060-070			1X1M	1/4	METSED	MODIF	GROUND STONE	HAMMER		FRAG	1		
Col -247	327	104	16	B5	060-070			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		471.8	
Col -247	327	104	17	B5	060-070			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	2.4	OH: BO-00-28, SPEC #13
Col -247	327	104	18	B5	060-070			1X1M	1/4	METSED	MODIF	GROUND STONE	HAMMER		FRAG	1		
Col -247	327	105	1	B5	070-080			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.3	
Col -247	327	105	2	B5	070-080			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			24	17.7	
Col -247	327	105	3	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	105	4	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	105	5	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	105	6	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.5	
Col -247	327	105	7	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5	
Col -247	327	105	8	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.4	Possible pottery sherd.
Col -247	327	105	9	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY					113.7	Bulk impressed and shaped clay.
Col -247	327	105	10	B5	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY					631.7	Bulk
Col -247	327	105	11	B5	070-080			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	56	23.1	
Col -247	327	105	12	B5	070-080			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		352.2	
Col -247	327	105	13	B5	070-080			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO			1		
Col -247	327	106	1	B5	080-090			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			10	5.3	
Col -247	327	106	2	B5	080-090			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			143	169.3	
Col -247	327	106	3	B5	080-090			1X1M	1/4	METSED	MODIF	GROUND STONE		PECKED	FRAG	1	108.5	
Col -247	327	106	4	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	106	5	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	Formed ball
Col -247	327	106	6	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.1	
Col -247	327	106	7	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	106	8	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	106	9	B5	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY					139.3	Bulk impressed and shaped clay.
Col -247	327	106	10	B5	080-090			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1		

Col -247	327	106	11	B5	080-090	1X1M	1/4	CLAY	MODIF	WORKED CLAY					776.0	Bulk
Col -247	327	106	12	B5	080-090	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	125	73.1	
Col -247	327	106	13	B5	080-090	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		512.2	
Col -247	327	106	14	B5	080-090	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.7	
Col -247	327	107	1	B5	090-100	1X1M	1/4	METSED	MODIF	GROUND STONE	CORE/CORE TOOL		COMP	1	244.3	
Col -247	327	107	2	B5	090-100	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.7	
Col -247	327	107	3	B5	090-100	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			10	10.1	
Col -247	327	107	4	B5	090-100	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			68	71.2	
Col -247	327	107	5	B5	090-100	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	1.3	
Col -247	327	107	6	B5	090-100	1X1M	1/4	BONE	MODIF	STRIGIL	RIB	INDET	FRAG	1	1.0	
Col -247	327	107	7	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	1.6	Seed impression
Col -247	327	107	8	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	6.8	
Col -247	327	107	9	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.0	
Col -247	327	107	10	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	107	11	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY					188.9	Bulk impressed shaped clay.
Col -247	327	107	12	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY					938.0	Bulk
Col -247	327	107	13	B5	090-100	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	220	98.4	
Col -247	327	107	14	B5	090-100	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		447.2	
Col -247	327	107	15	B5	090-100	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	108	1	B6	000-010	1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	10.7	Almost complete
Col -247	327	108	2	B6	000-010	1X1M	1/4	OBSID	MODIF	CHIPPED STONE	EMF			1	0.6	
Col -247	327	108	3	B6	000-010	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	0.9	
Col -247	327	108	4	B6	000-010	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			11	31.0	
Col -247	327	108	5	B6	000-010	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.2	
Col -247	327	108	6	B6	000-010	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	108	7	B6	000-010	1X1M	1/4	CLAY	MODIF	WORKED CLAY					20.6	Bulk impressed and shaped clay.
Col -247	327	108	8	B6	000-010	1X1M	1/4	CLAY	MODIF	WORKED CLAY					460.5	Bulk
Col -247	327	108	9	B6	000-010	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	51	26.3	
Col -247	327	108	10	B6	000-010	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		52.3	
Col -247	327	108	11	B6	000-010	1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL			1	61.8	
Col -247	327	109	1	B6	010-020	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	5.9	
Col -247	327	109	2	B6	010-020	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	2.0	
Col -247	327	109	3	B6	010-020	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			100	194.2	
Col -247	327	109	4	B6	010-020	1X1M	1/4	BONE	MODIF	DAGGER	INDET		FRAG	1	1.0	
Col -247	327	109	5	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.4	Possible figurine fragment.
Col -247	327	109	6	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.9	
Col -247	327	109	7	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	109	8	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	109	9	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.5	
Col -247	327	109	10	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	109	11	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY					59.2	Bulk impressed and shaped clay
Col -247	327	109	12	B6	010-020	1X1M	1/4	CLAY	MODIF	WORKED CLAY					767.1	Bulk
Col -247	327	109	13	B6	010-020	1X1M	1/4	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	0.3	May not be historic.
Col -247	327	109	14	B6	010-020	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	64	39.3	
Col -247	327	109	15	B6	010-020	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		128.2	
Col -247	327	109	16	B6	010-020	1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL		FRAG	1	44.4	
Col -247	327	110	1	B6	020-030	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	0.8	
Col -247	327	110	2	B6	020-030	1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	2.4	
Col -247	327	110	3	B6	020-030	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			27	21.5	
Col -247	327	110	4	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.5	
Col -247	327	110	5	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.9	
Col -247	327	110	6	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	110	7	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	
Col -247	327	110	8	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY					67.2	Bulk impressed and shaped clay.
Col -247	327	110	9	B6	020-030	1X1M	1/4	CLAY	MODIF	WORKED CLAY					547.2	Bulk
Col -247	327	110	10	B6	020-030	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	1	1.5	Cut mark?
Col -247	327	110	11	B6	020-030	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	30	19.2	
Col -247	327	110	12	B6	020-030	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		152.7	
Col -247	327	110	13	B6	020-030	1X1M	1/4	FLORAL	UNMOD	CHARCOAL				1	3.9	May be a root.
Col -247	327	110	14	B6	020-030	1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE TOOL			1	56.7	
Col -247	327	111	1	B6	020-040	1X1M	1/4	BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	11.5	Houx Point
Col -247	327	111	2	B6	020-040	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	3.4	
Col -247	327	111	3	B6	020-040	1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			38	52.5	
Col -247	327	111	4	B6	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	34.5	Clay "egg".
Col -247	327	111	5	B6	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	8.1	
Col -247	327	111	6	B6	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	111	7	B6	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY					93.5	
Col -247	327	111	8	B6	020-040	1X1M	1/4	CLAY	MODIF	WORKED CLAY					463.4	
Col -247	327	111	9	B6	020-040	1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	30	11.5	
Col -247	327	111	10	B6	020-040	1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		121.6	
Col -247	327	112	1	B6	040-050	1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	4.3	
Col -247	327	112	2	B6	040-050	1X1M	1/4	METSED	MODIF	CHIPPED STONE	BIFACE		FRAG	1	6.1	
Col -247	327	112	3	B6	040-050	1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.8	

Col -247	327	112	4	B6	040-050			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			4	2.6	
Col -247	327	112	5	B6	040-050			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			47	214.5	
Col -247	327	112	6	B6	040-050			1X1M	1/4	BONE	MODIF	DAGGER	INDET	GROOVED	FRAG	1	1.8	
Col -247	327	112	7	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	112	8	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	
Col -247	327	112	9	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				5	20.3	
Col -247	327	112	10	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	112	11	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY					105.4	
Col -247	327	112	12	B6	040-050			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1134.0	
Col -247	327	112	13	B6	040-050			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	52	40.1	
Col -247	327	112	14	B6	040-050			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		251.3	
Col -247	327	112	15	B6	040-050			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	4.7	OH: BO-00-28, SPEC #15
Col -247	327	112	16	B6	040-050			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	0.4	
Col -247	327	113	1	B6	050-060			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	4.4	
Col -247	327	113	2	B6	050-060			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	1.9	
Col -247	327	113	3	B6	050-060			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			25	45.8	
Col -247	327	113	4	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.9	
Col -247	327	113	5	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	5.9	
Col -247	327	113	6	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.2	
Col -247	327	113	7	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	9.2	
Col -247	327	113	8	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY				4	23.7	
Col -247	327	113	9	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY					96.7	
Col -247	327	113	10	B6	050-060			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1005.8	
Col -247	327	113	11	B6	050-060			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	102	47.4	
Col -247	327	113	12	B6	050-060			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		261.0	
Col -247	327	113	13	B6	050-060			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	4.5	OH: BO-00-28, SPEC #16
Col -247	327	114	1	B6	060-070			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	1.6	
Col -247	327	114	2	B6	060-070			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			12	26.7	
Col -247	327	114	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	114	4	B6	060-070			1X1M	1/4	QTZT	UNMOD	CRYSTAL				1	0.9	
Col -247	327	114	5	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.7	
Col -247	327	114	6	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.8	
Col -247	327	114	7	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	
Col -247	327	114	8	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	116.4	
Col -247	327	114	9	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	114	10	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY					31.5	
Col -247	327	114	11	B6	060-070			1X1M	1/4	CLAY	MODIF	WORKED CLAY					549.6	
Col -247	327	114	12	B6	060-070			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	147	71.4	
Col -247	327	114	13	B6	060-070			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		404.7	
Col -247	327	115	1	B6	070-080			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	3.4	
Col -247	327	115	2	B6	070-080			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	2.9	
Col -247	327	115	3	B6	070-080			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			11	28.4	Basalt
Col -247	327	115	4	B6	070-080			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	3.7	
Col -247	327	115	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col -247	327	115	6	B6	070-080			1X1M	1/4	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	264.5	
Col -247	327	115	7	B6	070-080			1X1M	1/4	METSED	MODIF	GROUND STONE	CORE/CORE TOI	PECKED	COMP	1	168.3	
Col -247	327	115	8	B6	070-080		ART #1	1X1M	1/4	ANTLER	MODIF	DAGGER	INDET		FRAG	1	11.4	
Col -247	327	115	9	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.4	
Col -247	327	115	10	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	115	11	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	115	12	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.2	
Col -247	327	115	13	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	
Col -247	327	115	14	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	115	15	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	115	16	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	115	17	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	115	18	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	7.9	
Col -247	327	115	19	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	115	20	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	115	21	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.3	
Col -247	327	115	22	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	
Col -247	327	115	23	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	
Col -247	327	115	24	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY					205.9	Bulk impressed and shaped clay.
Col -247	327	115	25	B6	070-080			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1007.3	Bulk.
Col -247	327	115	26	B6	070-080			1X1M	1/4	SLATE	MODIF	GROUND STONE	TABULAR	POLISHED		1	0.4	Possible polished slate?
Col -247	327	115	27	B6	070-080			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	110	39.4	
Col -247	327	115	28	B6	070-080			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		604.4	
Col -247	327	116	1	B6	080-090			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.9	
Col -247	327	116	2	B6	080-090			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			44	95.3	
Col -247	327	116	3	B6	080-090			1X1M	1/4	LIMSTN	MODIF	GROUND STONE	PLUMMET	SHAPED	FRAG	1	161.7	Spinner plummet?
Col -247	327	116	4	B6	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	4.4	Clay "egg" fragments
Col -247	327	116	5	B6	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY					26.6	Bulk impressed and shaped clay.
Col -247	327	116	6	B6	080-090			1X1M	1/4	CLAY	MODIF	WORKED CLAY					596.6	Bulk.

Col -247	327	116	7	B6	080-090			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	70	35.6	
Col -247	327	116	8	B6	080-090			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		337.5	
Col -247	327	117	1	B6	090-100			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	3.9	Almost complete
Col -247	327	117	2	B6	090-100			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.2	
Col -247	327	117	3	B6	090-100			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			11	42.5	
Col -247	327	117	4	B6	090-100			1X1M	1/4	METSED	MODIF	GROUND STONE	PLUMMET	SHAPED	FRAG	1	1.7	Plummet
Col -247	327	117	5	B6	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.6	Clay "mini-egg".
Col -247	327	117	6	B6	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY					38.6	Bulk impressed and shaped clay.
Col -247	327	117	7	B6	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY					539.4	Bulk.
Col -247	327	117	8	B6	090-100			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	74	38.9	
Col -247	327	117	9	B6	090-100			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		335.0	
Col -247	327	117	10	B6	090-100			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	117	11	B6	090-100			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO		FRAG	1		
Col -247	327	117	12	B6	090-100			1X1M	1/4	METSED	MODIF	GROUND STONE	PESTLE		FRAG	1	24.7	
Col -247	327	118	1	B6	100-110			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	2.4	
Col -247	327	118	2	B6	100-110			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.0	
Col -247	327	118	3	B6	100-110			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			25	53.8	
Col -247	327	118	4	B6	100-110			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO	GROUND	FRAG	1	27.5	Possible groundstone.
Col -247	327	118	5	B6	100-110			1X1M	1/4	METSED	MODIF	GROUND STONE	PLUMMET	SHAPED	FRAG	1	4.6	Plummet shaped sandstone with red clay cc
Col -247	327	118	6	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	6.3	
Col -247	327	118	7	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.8	
Col -247	327	118	8	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.5	
Col -247	327	118	9	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.5	
Col -247	327	118	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	118	11	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.7	
Col -247	327	118	12	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.9	
Col -247	327	118	13	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY					59.0	Bulk impressed and shaped clay.
Col -247	327	118	14	B6	100-110			1X1M	1/4	CLAY	MODIF	WORKED CLAY					703.3	Bulk.
Col -247	327	118	15	B6	100-110			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	67	34.1	
Col -247	327	118	16	B6	100-110			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		396.0	
Col -247	327	119	1	A14	000-010			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			16	6.9	Unit A14 has been combined with any bags
Col -247	327	119	2	A14	000-010			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	Unit A14 has been combined with any bags
Col -247	327	119	3	A14	000-010			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			64	95.1	Unit A14 has been combined with any bags
Col -247	327	119	4	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	42.1	Both fragments are from the same piece. Ur
Col -247	327	119	5	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	13.9	Unit A14 has been combined with any bags
Col -247	327	119	6	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	3.6	Unit A14 has been combined with any bags
Col -247	327	119	7	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	10.0	Unit A14 has been combined with any bags
Col -247	327	119	8	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	7.1	Unit A14 has been combined with any bags
Col -247	327	119	9	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.5	Unit A14 has been combined with any bags
Col -247	327	119	10	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.0	Unit A14 has been combined with any bags
Col -247	327	119	11	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	Unit A14 has been combined with any bags
Col -247	327	119	12	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	3.4	Clay "egg" frags. Unit A14 has been combin
Col -247	327	119	13	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				8	116.2	Large formed pieces. Unit A14 has been co
Col -247	327	119	14	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	Unit A14 has been combined with any bags
Col -247	327	119	15	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	Unit A14 has been combined with any bags
Col -247	327	119	16	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.0	Unit A14 has been combined with any bags
Col -247	327	119	17	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					61.6	Bulk shaped and impressed pieces. Unit A1
Col -247	327	119	18	A14	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					750.6	Bulk. Unit A14 has been combined with any
Col -247	327	119	19	A14	000-010			1X1M	1/4	METAL	MANUF	ARCHITECTURAL	HAIRPIN NAIL	RUSTED	FRAG	6	51.6	
Col -247	327	119	20	A14	000-010			1X1M	1/4	FLORAL	UNMOD	CHARCOAL					0.9	Unit A14 has been combined with any bags
Col -247	327	119	21	A14	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	106	41.9	Unit A14 has been combined with any bags
Col -247	327	119	22	A14	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		256.6	Unit A14 has been combined with any bags
Col -247	327	119	23	A14	020-030			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE			1	2.4	
Col -247	327	120	1	A14	010-020			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	7.2	Unit A14 has been combined with any bags
Col -247	327	120	2	A14	010-020			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	5.3	Unit A14 has been combined with any bags
Col -247	327	120	3	A14	010-020			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			12	23.0	Unit A14 has been combined with any bags
Col -247	327	120	4	A14	010-020			1X1M	1/4	METSED	MODIF	GROUND STONE	CORE/CORE TOOL		COMP	1	315.2	
Col -247	327	120	5	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	10.4	Unit A14 has been combined with any bags
Col -247	327	120	6	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.8	Unit A14 has been combined with any bags
Col -247	327	120	7	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.1	Unit A14 has been combined with any bags
Col -247	327	120	8	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					38.0	Bulk impressed and shaped clay. Unit A14 I
Col -247	327	120	9	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					413.5	Bulk. Unit A14 has been combined with any.
Col -247	327	120	10	A14	010-020			1X1M	1/4	FLORAL	UNMOD	CHARCOAL					0.1	Unit A14 has been combined with any bags
Col -247	327	120	11	A14	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	35	18.7	Unit A14 has been combined with any bags
Col -247	327	120	12	A14	010-020			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		125.5	Unit A14 has been combined with any bags
Col -247	327	120	13	A14	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	5.0	Unit A14 has been combined with any bags
Col -247	327	121	1	A14	020-030			1X1M	1/4	CHERT	MODIF	CHIPPED STONE	BIFACE			1	2.0	Unit A14 has been combined with any bags
Col -247	327	121	2	A14	020-030			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	Unit A14 has been combined with any bags
Col -247	327	121	3	A14	020-030			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			8	5.0	Unit A14 has been combined with any bags
Col -247	327	121	4	A14	020-030			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			4	1.3	Unit A14 has been combined with any bags
Col -247	327	121	5	A14	020-030			1X1M	1/4	METSED	MODIF	GROUND STONE	CORE/CORE TOOL		COMP	1	345.3	
Col -247	327	121	6	A14	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	8.5	Shaped clay, possible figurine fragment. Un
Col -247	327	121	7	A14	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	36.1	Unit A14 has been combined with any bags

Col -247	327	121	8		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.1	Unit A14 has been combined with any bags
Col -247	327	121	9		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.1	Unit A14 has been combined with any bags
Col -247	327	121	10		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				3	17.4	Unit A14 has been combined with any bags
Col -247	327	121	11		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.9	Unit A14 has been combined with any bags
Col -247	327	121	12		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.6	Unit A14 has been combined with any bags
Col -247	327	121	13		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	Unit A14 has been combined with any bags
Col -247	327	121	14		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					145.7	Bulk shaped and impressed clay. Unit A14 I
Col -247	327	121	15		A14	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					810.1	Unit A14 has been combined with any bags
Col -247	327	121	16	A	A14	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	112	39.7	Unit A14 has been combined with any bags
Col -247	327	121	16	B	A14	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	2	1.2	Unit A14 has been combined with any bags
Col -247	327	121	17		A14	020-030			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		297.1	Unit A14 has been combined with any bags
Col -247	327	121	18		A14	020-030			1X1M	1/4		FLORAL	UNMOD	CHARCOAL				1	0.5	Unit A14 has been combined with any bags
Col -247	327	122	1		A14	030-040			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			8	3.5	Unit A14 has been combined with any bags
Col -247	327	122	2		A14	030-040			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			5	2.5	Unit A14 has been combined with any bags
Col -247	327	122	3		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	122	4		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.8	Unit A14 has been combined with any bags
Col -247	327	122	5		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.1	Unit A14 has been combined with any bags
Col -247	327	122	6		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	6.0	Unit A14 has been combined with any bags
Col -247	327	122	7		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.9	Unit A14 has been combined with any bags
Col -247	327	122	8		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.6	Unit A14 has been combined with any bags
Col -247	327	122	9		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	Unit A14 has been combined with any bags
Col -247	327	122	10		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.4	Unit A14 has been combined with any bags
Col -247	327	122	11		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.2	Unit A14 has been combined with any bags
Col -247	327	122	12		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.7	Unit A14 has been combined with any bags
Col -247	327	122	13		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.6	Unit A14 has been combined with any bags
Col -247	327	122	14		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.3	Unit A14 has been combined with any bags
Col -247	327	122	15		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	4.0	Unit A14 has been combined with any bags
Col -247	327	122	16		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.5	Unit A14 has been combined with any bags
Col -247	327	122	17		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					65.1	Bulk shaped and impressed clay. Unit A14 I
Col -247	327	122	18		A14	030-040			1X1M	1/4		CLAY	MODIF	WORKED CLAY					658.9	Bulk. Unit A14 has been combined with any
Col -247	327	122	19		A14	030-040			1X1M	1/4		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	11.2	Clear with red lable "...way..". Unit A14 has
Col -247	327	122	20		A14	030-040			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	64	23.8	Unit A14 has been combined with any bags
Col -247	327	122	21		A14	030-040			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		384.4	Unit A14 has been combined with any bags
Col -247	327	123	1		A15	000-010			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			9	2.7	Unit A15 has been combined with any bags
Col -247	327	123	2		A15	000-010			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			11	85.4	Unit A15 has been combined with any bags
Col -247	327	123	3		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	123	4		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	8.5	Unit A15 has been combined with any bags
Col -247	327	123	5		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.0	Unit A15 has been combined with any bags
Col -247	327	123	6		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.6	Unit A15 has been combined with any bags
Col -247	327	123	7		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.3	Unit A15 has been combined with any bags
Col -247	327	123	8		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.8	Unit A15 has been combined with any bags
Col -247	327	123	9		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.2	Unit A15 has been combined with any bags
Col -247	327	123	10		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					22.0	Bulk impressed and shaped clay. Unit A15 I
Col -247	327	123	11		A15	000-010			1X1M	1/4		CLAY	MODIF	WORKED CLAY					486.7	Bulk. Unit A15 has been combined with any
Col -247	327	123	12		A15	000-010			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	30	11.8	Unit A15 has been combined with any bags
Col -247	327	123	13		A15	000-010			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		180.6	Unit A15 has been combined with any bags
Col -247	327	124	1		A15	010-020			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			10	3.0	Unit A15 has been combined with any bags
Col -247	327	124	2		A15	010-020			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3	Unit A15 has been combined with any bags
Col -247	327	124	3		A15	010-020			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			27	46.4	Unit A15 has been combined with any bags
Col -247	327	124	4		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.9	Unit A15 has been combined with any bags
Col -247	327	124	5		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	5.5	Unit A15 has been combined with any bags
Col -247	327	124	6		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.3	Unit A15 has been combined with any bags
Col -247	327	124	7		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				3	15.0	Unit A15 has been combined with any bags
Col -247	327	124	8		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	3.0	Clay "egg" fragment. Unit A15 has been cor
Col -247	327	124	9		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					61.0	Bulk impressed and shaped clay. Unit A15 I
Col -247	327	124	10		A15	010-020			1X1M	1/4		CLAY	MODIF	WORKED CLAY					786.2	Bulk. Unit A15 has been combined with any
Col -247	327	124	11		A15	010-020			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	60	38.0	Unit A15 has been combined with any bags
Col -247	327	124	12		A15	010-020			1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG		307.6	Unit A15 has been combined with any bags
Col -247	327	125	1		A15	020-030			1X1M	1/4		OBSID	UNMOD	CHIPPED STONE	FLAKES			8	5.0	Unit A15 has been combined with any bags
Col -247	327	125	2		A15	020-030			1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			8	6.8	Unit A15 has been combined with any bags
Col -247	327	125	3		A15	020-030			1X1M	1/4		CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	Unit A15 has been combined with any bags
Col -247	327	125	4		DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	125	5		A15	020-030			1X1M	1/4		BONE	MODIF	PIN	FLAT	MID	FRAG	1	0.5	Unit A15 has been combined with any bags
Col -247	327	125	6		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	2.1	Unit A15 has been combined with any bags
Col -247	327	125	7		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.0	Unit A15 has been combined with any bags
Col -247	327	125	8		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.2	Unit A15 has been combined with any bags
Col -247	327	125	9		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.9	Unit A15 has been combined with any bags
Col -247	327	125	10		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	1.6	Unit A15 has been combined with any bags
Col -247	327	125	11		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY				1	0.8	Unit A15 has been combined with any bags
Col -247	327	125	12		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					9.4	Bulk impressed and shaped clay. Unit A15 I
Col -247	327	125	13		A15	020-030			1X1M	1/4		CLAY	MODIF	WORKED CLAY					794.8	Bulk. Unit A15 has been combined with any
Col -247	327	125	14	A	A15	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	119	37.7	Unit A15 has been combined with any bags
Col -247	327	125	14	B	A15	020-030			1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	3	4.7	Unit A15 has been combined with any bags

Col -247	327	125	15		A15	020-030			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		434.2	Unit A15 has been combined with any bags
Col -247	327	126	1		A16	000-010			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.7	Unit A16 has been combined with any bags
Col -247	327	126	2		A16	000-010			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			5	2.4	Unit A16 has been combined with any bags
Col -247	327	126	3		A16	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL		POLISHED		1	0.4	
Col -247	327	126	4		A16	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	Unit A16 has been combined with any bags
Col -247	327	126	5		A16	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					185.7	Unit A16 has been combined with any bags
Col -247	327	126	6		A16	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					543.0	Unit A16 has been combined with any bags
Col -247	327	126	7		A16	000-010			1X1M	1/4	PLAST	MANUF	FOOD AND DRINK	PLASTIC		FRAG	1	0.4	Yellow/white plastic. Unit A16 has been com
Col -247	327	126	8		A16	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	28	23.6	Unit A16 has been combined with any bags
Col -247	327	126	9		A16	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		189.3	Unit A16 has been combined with any bags
Col -247	327	127	1		A16	010-020			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			10	9.2	Unit A16 has been combined with any bags
Col -247	327	127	2		A16	010-020			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			14	28.0	Unit A16 has been combined with any bags
Col -247	327	127	3		A16	010-020			1X1M	1/4	BONE	MODIF	PIN	FLAT	TIP	FRAG	3	5.3	Unit A16 has been combined with any bags
Col -247	327	127	4		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.6	Unit A16 has been combined with any bags
Col -247	327	127	5		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.2	Unit A16 has been combined with any bags
Col -247	327	127	6		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	Unit A16 has been combined with any bags
Col -247	327	127	7		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.1	Unit A16 has been combined with any bags
Col -247	327	127	8		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	4.4	Clay "egg" fragments. Unit A16 has been cc
Col -247	327	127	9		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					70.0	Bulk shaped and impressed clay. Unit A16 I
Col -247	327	127	10		A16	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					990.3	Bulk. Unit A16 has been combined with any
Col -247	327	127	11	B	A16	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL		TOOTH	FRAG	1	0.7	Tooth. Unit A16 has been combined with an
Col -247	327	127	11	A	A16	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	90	41.2	Unit A16 has been combined with any bags
Col -247	327	127	12		A16	010-020			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		383.3	Unit A16 has been combined with any bags
Col -247	327	128	1		A16	020-030			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			9	3.2	Unit A16 has been combined with any bags
Col -247	327	128	2		A16	020-030			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			14	40.7	Unit A16 has been combined with any bags
Col -247	327	128	3		A16	020-030			1X1M	1/4	BONE	UNMOD	FAUNAL		POLISHED		2	9.6	
Col -247	327	128	4		A16	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	6.8	Unit A16 has been combined with any bags
Col -247	327	128	5		A16	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.1	Unit A16 has been combined with any bags
Col -247	327	128	6		A16	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY					49.2	Bulk impressed and shaped clay. Unit A16 I
Col -247	327	128	7		A16	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY					787.1	Bulk. Unit A16 has been combined with any
Col -247	327	128	8		A16	020-030			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	85	39.0	Unit A16 has been combined with any bags
Col -247	327	128	9		A16	020-030			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		319.2	Unit A16 has been combined with any bags
Col -247	327	128	10		A16	020-030			1X1M	1/4	BONE	MODIF	DAGGER	CANNON	HANDLE	FRAG	1	6.3	Unit A16 has been combined with any bags
Col -247	327	128	11		A16	020-030			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	0.4	
Col -247	327	129	1		A17	000-010			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.7	Unit A17 has been combined with any bags
Col -247	327	129	2		A17	000-010			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			9	4.1	Unit A17 has been combined with any bags
Col -247	327	129	3		A17	000-010			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	Unit A17 has been combined with any bags
Col -247	327	129	4		A17	000-010			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			14	99.4	Unit A17 has been combined with any bags
Col -247	327	129	5		DECAT	DECAT	DECAT	DECAT	DECAT	DECA' DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col -247	327	129	6		A17	000-010			1X1M	1/4	BONE	MODIF	PIN	ROUND	TIP	FRAG	1	0.7	Unit A17 has been combined with any bags
Col -247	327	129	7		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	14.4	Unit A17 has been combined with any bags
Col -247	327	129	8		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	Unit A17 has been combined with any bags
Col -247	327	129	9		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	Unit A17 has been combined with any bags
Col -247	327	129	10		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	Unit A17 has been combined with any bags
Col -247	327	129	11		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	39.4	Unit A17 has been combined with any bags
Col -247	327	129	12		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.0	Unit A17 has been combined with any bags
Col -247	327	129	13		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	3.8	Unit A17 has been combined with any bags
Col -247	327	129	14		DECAT	DECAT	DECAT	DECAT	DECAT	DECA' DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	129	15		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					112.8	Bulk impressed and shaped clay. Unit A17 I
Col -247	327	129	16		A17	000-010			1X1M	1/4	CLAY	MODIF	WORKED CLAY					2273.7	Bulk. Unit A17 has been combined with any
Col -247	327	129	17		A17	000-010			1X1M	1/4	FLORAL	UNMOD	CHARCOAL				2	1.6	Unit A17 has been combined with any bags
Col -247	327	129	18		A17	000-010			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	128	70.4	Unit A17 has been combined with any bags
Col -247	327	129	19		A17	000-010			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		673.7	Unit A17 has been combined with any bags
Col -247	327	129	20		A17	000-010			1X1M	1/4	METSED	MODIF	GROUND STONE	PESTLE	WOODEN MORTAI	COMP		673.7	
Col -247	327	130	1		A17	010-020			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	3.0	Unit A17 has been combined with any bags
Col -247	327	130	2		A17	010-020			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			38	31.5	Unit A17 has been combined with any bags
Col -247	327	130	3		A17	010-020			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	2.4	Unit A17 has been combined with any bags
Col -247	327	130	4		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	155.1	Clay "egg". Unit A17 has been combined wi
Col -247	327	130	5		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.5	Unit A17 has been combined with any bags
Col -247	327	130	6		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	8.7	Clay "egg" fragments. Unit A17 has been cc
Col -247	327	130	7		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.7	Clay "egg" fragment. Unit A17 has been cor
Col -247	327	130	8		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.8	Unit A17 has been combined with any bags
Col -247	327	130	9		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	0.6	Unit A17 has been combined with any bags
Col -247	327	130	10		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY				3	5.4	Seed impressions. Unit A17 has been comb
Col -247	327	130	11		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					94.3	Bulk impressed and shaped clay. Unit A17 I
Col -247	327	130	12		A17	010-020			1X1M	1/4	CLAY	MODIF	WORKED CLAY					1246.1	Bulk. Unit A17 has been combined with any
Col -247	327	130	13		A17	010-020			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	76	40.5	Unit A17 has been combined with any bags
Col -247	327	130	14		A17	010-020			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		364.5	Unit A17 has been combined with any bags
Col -247	327	130	15		A17	010-020			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO			1		
Col -247	327	131	1		A17	020-030			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.8	Unit A17 has been combined with any bags
Col -247	327	131	2		A17	020-030			1X1M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.5	Unit A17 has been combined with any bags
Col -247	327	131	3		A17	020-030			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			1	3.0	Unit A17 has been combined with any bags
Col -247	327	131	4		A17	020-030			1X1M	1/4	METSED	MODIF	GROUND STONE	MANO		FRAG	1	39.6	Possible mano fragment. Unit A17 has beer

Col -247	327	131	5		A17	020-030			1X1M	1/4	BONE	MODIF	DAGGER	INDET		FRAG	1	1.4	Unit A17 has been combined with any bags
Col -247	327	131	6		A17	020-030			1X1M	1/4	SHELL	MODIF	BEAD	OLIVELLA	SPIRE-LOPPED		1	0.4	
Col -247	327	131	7		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	Unit A17 has been combined with any bags
Col -247	327	131	8		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.1	Unit A17 has been combined with any bags
Col -247	327	131	9		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.3	Unit A17 has been combined with any bags
Col -247	327	131	10		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.3	Unit A17 has been combined with any bags
Col -247	327	131	11		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	5.8	Unit A17 has been combined with any bags
Col -247	327	131	12		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	15.3	Clay "egg". Unit A17 has been combined wi
Col -247	327	131	13		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	8.5	Unit A17 has been combined with any bags
Col -247	327	131	14		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY				4	32.8	Unit A17 has been combined with any bags
Col -247	327	131	15		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY					46.0	Bulk impressed and shaped clay. Unit A17 I
Col -247	327	131	16		A17	020-030			1X1M	1/4	CLAY	MODIF	WORKED CLAY					908.7	Bulk. Unit A17 has been combined with any
Col -247	327	131	17		A17	020-030			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	108	60.2	Unit A17 has been combined with any bags
Col -247	327	131	18		A17	020-030			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		651.1	Unit A17 has been combined with any bags
Col -247	327	132	1		A17	030-040			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	BIFACE		COMP	1	10.2	33 cmbd, Artifact #1. Unit A17 has been cor
Col -247	327	132	2		A17	030-040			1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	3.9	Unit A17 has been combined with any bags
Col -247	327	132	3		A17	030-040			1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			22	12.1	Unit A17 has been combined with any bags
Col -247	327	132	4		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				7	24.4	Clay "egg" fragments. Unit A17 has been cc
Col -247	327	132	5		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.2	Unit A17 has been combined with any bags
Col -247	327	132	6		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	4.3	Unit A17 has been combined with any bags
Col -247	327	132	7		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	7.8	Unit A17 has been combined with any bags
Col -247	327	132	8		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	3.5	Unit A17 has been combined with any bags
Col -247	327	132	9		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	Unit A17 has been combined with any bags
Col -247	327	132	10		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	0.4	Unit A17 has been combined with any bags
Col -247	327	132	11		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				2	0.9	Unit A17 has been combined with any bags
Col -247	327	132	12		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.4	Unit A17 has been combined with any bags
Col -247	327	132	13		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	2.2	Unit A17 has been combined with any bags
Col -247	327	132	14		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY					76.6	Bulk impressed and shaped clay. Unit A17 I
Col -247	327	132	15		A17	030-040			1X1M	1/4	CLAY	MODIF	WORKED CLAY					581.2	Bulk. Unit A17 has been combined with any
Col -247	327	132	16	A	A17	030-040			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	128	57.3	Unit A17 has been combined with any bags
Col -247	327	132	16	B	A17	030-040			1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	2	2.5	Turtle shell?. Unit A17 has been combined \
Col -247	327	132	17		A17	030-040			1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG		438.9	Unit A17 has been combined with any bags
Col -247	327	132	18		A17	030-040			1X1M	1/4	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MIOSECTION	FRAG	1		
Col -247	327	133	1		A18/B18	000-010			1X2M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	7.6	
Col -247	327	133	2		A18/B18	000-010			1X2M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			12	38.1	
Col -247	327	133	3		A18/B18	000-010			1X2M	1/4	METSED	MODIF	GROUND STONE	MANO		FRAG	1	69.0	Possible hand stone
Col -247	327	133	4		A18/B18	000-010			1X2M	1/4	METSED	MODIF	GROUND STONE	COBBLE MILLING STONE		FRAG	1	36.7	Possible milling stone
Col -247	327	133	5		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	0.7	
Col -247	327	133	6		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	5.8	
Col -247	327	133	7		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	3.7	
Col -247	327	133	8		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	2.0	Resembles a button or a small mushroom
Col -247	327	133	9		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				2	7.2	Clay "egg" fragments
Col -247	327	133	10		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	Formed clay with shell
Col -247	327	133	11		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	133	12		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY					80.9	Bulk impressed and shaped clay
Col -247	327	133	13		A18/B18	000-010			1X2M	1/4	CLAY	MODIF	WORKED CLAY					603.0	Bulk
Col -247	327	133	14		A18/B18	000-010			1X2M	1/4	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	2	2.9	
Col -247	327	133	15		A18/B18	000-010			1X2M	1/4	BONE	UNMOD	FAUNAL			FRAG	105	66.7	
Col -247	327	133	16		A18/B18	000-010			1X2M	1/4	SHELL	UNMOD	BIVALVE			FRAG		570.1	
Col -247	327	134	1		A18/B18	010-020			1X2M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	1.6	
Col -247	327	134	2		A18/B18	010-020			1X2M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			20	47.2	
Col -247	327	134	3		A18/B18	010-020			1X2M	1/4	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	134	4		A18/B18	010-020			1X2M	1/4	BONE	MODIF	BEAD	TUBE	INDET	FRAG	1	0.4	
Col -247	327	134	5		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	1.2	
Col -247	327	134	6		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	10.1	
Col -247	327	134	7		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	7.1	
Col -247	327	134	8		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	6.0	
Col -247	327	134	9		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	8.9	
Col -247	327	134	10		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				5	11.7	Clay "egg" fragments
Col -247	327	134	11		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				2	2.5	Clay "egg" fragments
Col -247	327	134	12		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	2.0	
Col -247	327	134	13		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY					53.3	Bulk shaped and impressed clay
Col -247	327	134	14		A18/B18	010-020			1X2M	1/4	CLAY	MODIF	WORKED CLAY					829.0	Bulk
Col -247	327	134	15		A18/B18	010-020			1X2M	1/4	BONE	UNMOD	FAUNAL			FRAG	71	35.7	
Col -247	327	134	16		A18/B18	010-020			1X2M	1/4	SHELL	UNMOD	BIVALVE			FRAG		323.0	
Col -247	327	135	1		A18/B18	020-030			1X2M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			10	3.5	
Col -247	327	135	2		A18/B18	020-030			1X2M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			29	15.7	
Col -247	327	135	3		DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	135	4		DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	135	5		A18/B18	020-030			1X2M	1/4	METSED	MODIF	GROUND STONE	Schist		FRAG	1	3.0	
Col -247	327	135	6	A	A18/B18	020-030			1X2M	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	COMP	2	0.3	
Col -247	327	135	6	B	A18/B18	020-030			1X2M	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	COMP	2	0.3	
Col -247	327	135	7		A18/B18	020-030			1X2M	1/4	CLAY	MODIF	WORKED CLAY					27.2	Clay "egg", shattered, probably all same eg

Col -247	327	135	8	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	0.3	Clay bead or figurine fragment.
Col -247	327	135	9	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	127.5	
Col -247	327	135	10	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	3.9	
Col -247	327	135	11	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY				2	7.2	
Col -247	327	135	12	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY					124.5	Bulk shaped and impressed clay
Col -247	327	135	13	A18/B18	020-030	1X2M	1/4	CLAY	MODIF	WORKED CLAY					1201.5	Bulk
Col -247	327	135	14	A18/B18	020-030	1X2M	1/4	BONE	UNMOD	FAUNAL			FRAG	115	51.7	
Col -247	327	135	15	A18/B18	020-030	1X2M	1/4	SHELL	UNMOD	BIVALVE			FRAG		450.6	
Col -247	327	136	1	A18/B18	030-040	1X2M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	1.8	
Col -247	327	136	2	A18/B18	030-040	1X2M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			8	22.3	
Col -247	327	136	3	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	38.6	
Col -247	327	136	4	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY				3	30.2	
Col -247	327	136	5	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	1.6	
Col -247	327	136	6	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY				1	1.4	
Col -247	327	136	7	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY					51.4	Bulk impressed and shaped clay
Col -247	327	136	8	A18/B18	030-040	1X2M	1/4	CLAY	MODIF	WORKED CLAY					920.4	Bulk
Col -247	327	136	9	A18/B18	030-040	1X2M	1/4	BONE	UNMOD	FAUNAL			FRAG	127	60.2	
Col -247	327	136	10	A18/B18	030-040	1X2M	1/4	SHELL	UNMOD	BIVALVE			FRAG		459.2	
Col -247	327	137	1	A1	040-050	0.5X0.5M	1/8	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	2.5	
Col -247	327	137	2	A1	040-050	0.5X0.5M	1/8	BSALT	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	3.3	
Col -247	327	137	3	A1	040-050	0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			21	4.5	
Col -247	327	137	4	A1	040-050	0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			32	31.6	
Col -247	327	137	5	A1	040-050	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	1.4	textile impression
Col -247	327	137	6	A1	040-050	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	1.7	impressed w/ fingerprint
Col -247	327	137	7	A1	040-050	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				2	25.9	fragments are possibly a cross-section of cc
Col -247	327	137	8	A1	040-050	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				40	23.6	Bulk impressed and shaped clay
Col -247	327	137	9	A1	040-050	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					490.7	Bulk
Col -247	327	137	10	A1	040-050	0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	3	69.3	two deer tibia fragments, 1 small mammal lr
Col -247	327	137	11	A1	040-050	0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	250	25.8	count is an approximation
Col -247	327	137	12	A1	040-050	0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		155.8	
Col -247	327	138	1	A1	050-060	0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	0.4	
Col -247	327	138	2	A1	050-060	0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.6	
Col -247	327	138	3	A1	050-060	0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			60	16.5	
Col -247	327	138	4	A1	050-060	0.5X0.5M	1/8	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	150.7	possible core
Col -247	327	138	5	A1	050-060	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	30.0	Clay "egg"
Col -247	327	138	6	A1	050-060	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				4	19.4	Bulk impressed and shaped clay
Col -247	327	138	7	A1	050-060	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					532.4	Bulk
Col -247	327	138	8	A1	050-060	0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	360	26.2	count is an approximation
Col -247	327	138	9	A1	050-060	0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		183.3	
Col -247	327	139	1	A1	060-070	0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			16	2.1	
Col -247	327	139	2	A1	060-070	0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			6	9.1	
Col -247	327	139	3	A1	060-070	0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.2	
Col -247	327	139	4	A1	060-070	0.5X0.5M	1/8	METSED	MODIF	GROUND STONE		NOTCHED		1	109.6	possible net-sinker
Col -247	327	139	5	A1	060-070	0.5X0.5M	1/8	BONE	MODIF	AWL	CANNON	SULCUS		1	0.4	
Col -247	327	139	6	A1	060-070	0.5X0.5M	1/8	SHELL	MODIF	BEAD	OLIVELLA	L	COMP	1	0.1	THICK RECTANGLE
Col -247	327	139	7	A1	060-070	0.5X0.5M	1/8	SHELL	MODIF	BEAD	MACOMA	CLAM	COMP	1	0.1	
Col -247	327	139	8	A1	060-070	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				5	7.7	Clay "egg" fragments
Col -247	327	139	9	A1	060-070	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	1.1	Clay "egg" fragment w/ impression
Col -247	327	139	10	A1	060-070	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.3	possible figurine fragment
Col -247	327	139	11	A1	060-070	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				28	16.8	Bulk impressed and shaped clay
Col -247	327	139	11	A1	060-070	0.5X0.5M	1/8	METSED	MODIF	GROUND STONE	MANO			1		
Col -247	327	139	12	A1	060-070	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					367.1	Bulk
Col -247	327	139	13	A1	060-070	0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	510	38.2	
Col -247	327	139	14	A1	060-070	0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		274.7	
Col -247	327	139	15	A1	060-070	0.5X0.5M	1/8	SHELL	UNMOD	GASTROPOD			COMP	2	0.1	
Col -247	327	139	16	A1	060-070	0.5X0.5M	1/8	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	0.1	
Col -247	327	139	17	A1	060-070	0.5X0.5M	1/8	METSED	MODIF	GROUND STONE	MANO			1		
Col -247	327	140	1	A1	070-080	0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			15	3.4	
Col -247	327	140	2	A1	070-080	0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			97	31.9	
Col -247	327	140	3	A1	070-080	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.2	
Col -247	327	140	4	A1	070-080	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				6	7.4	
Col -247	327	140	5	A1	070-080	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					384.2	
Col -247	327	140	6	A1	070-080	0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	503	28.2	
Col -247	327	140	7	A1	070-080	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	140	7	A1	070-080	0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		105.6	
Col -247	327	140	8	A1	070-080	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	140	8	A1	070-080	0.5X0.5M	1/8	SHELL	UNMOD	GASTROPOD			COMP		0.1	
Col -247	327	141	1	A1	080-090	0.5X0.5M	1/8	METSED	MODIF	CHIPPED STONE	EMF			1	8.9	
Col -247	327	141	2	A1	080-090	0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			8	0.6	
Col -247	327	141	3	A1	080-090	0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			38	17.1	
Col -247	327	141	4	A1	080-090	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.6	
Col -247	327	141	5	A1	080-090	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				8	6.8	Bulk impressed and shaped clay
Col -247	327	141	6	A1	080-090	0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					100.6	Bulk

Col -247	327	141	7	A1	080-090			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	264	27.7	
Col -247	327	141	8	A1	080-090			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		189.2	
Col -247	327	141	9	A1	080-090			0.5X0.5M	1/8	SHELL	UNMOD	GASTROPOD			COMP	1	0.1	
Col -247	327	142	1	A1	090-100			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			13	1.0	
Col -247	327	142	2	A1	090-100			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			72	27.2	
Col -247	327	142	3	A1	090-100			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	142	4	A1	090-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				13	24.8	
Col -247	327	142	5	A1	090-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	2.6	
Col -247	327	142	6	A1	090-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					334.5	
Col -247	327	142	7	A1	090-100			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	469	38.6	
Col -247	327	142	8	A1	090-100			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		126.9	
Col -247	327	143	1	A1	100-110			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			11	0.5	
Col -247	327	143	2	A1	100-110			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			12	27.5	
Col -247	327	143	3	A1	100-110			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.2	
Col -247	327	143	4	A1	100-110			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.3	
Col -247	327	143	5	A1	100-110			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				3	0.7	Possible figurine fragments
Col -247	327	143	6	A1	100-110			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				2	4.0	
Col -247	327	143	7	A1	100-110			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					118.3	
Col -247	327	143	8	A1	100-110			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	434	24.5	
Col -247	327	143	9	A1	100-110			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		114.4	
Col -247	327	144	1	A1	110-120			0.5X0.5M	1/8	BSALT	MODIF	CHIPPED STONE	PROJ POINT			1	10.7	w/ contracting stem
Col -247	327	144	2	A1	110-120			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	0.3	
Col -247	327	144	3	A1	110-120			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			19	0.5	
Col -247	327	144	4	A1	110-120			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.1	
Col -247	327	144	5	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				3	0.7	Possible figurine fragments
Col -247	327	144	6	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.1	Object appears to have a formed hole?
Col -247	327	144	7	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	3.4	w/ basketry impression
Col -247	327	144	8	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	3.6	vessel rim fragment w/ cordage impression?
Col -247	327	144	9	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				10	12.2	Bulk impressed and shaped clay
Col -247	327	144	10	A1	110-120			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					123.9	Bulk
Col -247	327	144	11	A1	110-120			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	292	19.6	
Col -247	327	144	12	A1	110-120			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		94.2	
Col -247	327	145	1	A1	120-130			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	0.2	
Col -247	327	145	2	A1	120-130			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			51	21.0	
Col -247	327	145	3	A1	120-130			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.1	
Col -247	327	145	4	A1	120-130			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				2	0.2	Possible figurine fragments
Col -247	327	145	5	A1	120-130			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				12	8.4	
Col -247	327	145	6	A1	120-130			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					119.8	
Col -247	327	145	7	A1	120-130			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	173	12.4	
Col -247	327	145	8	A1	120-130			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		57.0	
Col -247	327	145	9	A1	120-130			0.5X0.5M	1/8	FLORAL	UNMOD	SEEDS/NUTS				1	0.1	
Col -247	327	146	1	A1	130-140			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	0.4	
Col -247	327	146	2	A1	130-140			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	146	3	A1	130-140			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	10.3	possible vessel rim fragment
Col -247	327	146	4	A1	130-140			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				2	0.3	Possible figurine fragments
Col -247	327	146	5	A1	130-140			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				7	2.1	Bulk impressed and shaped clay
Col -247	327	146	6	A1	130-140			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					28.1	Bulk
Col -247	327	146	7	A1	130-140			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	119	8.5	
Col -247	327	146	8	A1	130-140			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		68.6	
Col -247	327	147	1	A1	140-150			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col -247	327	147	2	A1	140-150			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			6	13.2	
Col -247	327	147	3	A1	140-150			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				6	4.7	Bulk impressed and shaped clay
Col -247	327	147	4	A1	140-150			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					33.8	Bulk
Col -247	327	147	5	A1	140-150			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	74	9.8	
Col -247	327	147	6	A1	140-150			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		70.3	
Col -247	327	148	1	A1	150-160			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	0.1	
Col -247	327	148	2	A1	150-160			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.4	
Col -247	327	148	3	A1	150-160			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			13	0.6	
Col -247	327	148	4	A1	150-160			0.5X0.5M	1/6	CLAY	MODIF	WORKED CLAY				2	0.3	
Col -247	327	148	5	A1	150-160			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					29.2	
Col -247	327	148	6	A1	150-160			0.5X0.5M	1/8	FLORAL	UNMOD	CHARCOAL					3.0	charcoal or baked clay/dirt??
Col -247	327	148	7	A1	150-160			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	114	9.0	
Col -247	327	148	8	A1	150-160			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		35.7	
Col -247	327	148	9	A1	150-160			0.5X0.5M	1/8	FLORAL	UNMOD	CHARCOAL				3	0.2	nutshell
Col -247	327	148	10	A1	150-160			0.5X0.5M	1/8	FLORAL	UNMOD	CHARCOAL				1	0.1	
Col -247	327	149	1	B1	000-100			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			10	0.8	
Col -247	327	149	2	B1	000-100			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			33	18.1	
Col -247	327	149	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col -247	327	149	4	B1	000-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	2.5	vessel fragment? Could be quartzite.
Col -247	327	149	5	B1	000-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	1.2	object impressed with grass or reed
Col -247	327	149	6	B1	000-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				10	19.9	Bulk impressed and shaped clay
Col -247	327	149	7	B1	000-100			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					134.4	Bulk
Col -247	327	149	8	B1	000-100			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	180	13.4	

Col -247	327	149	9	B1	000-010			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		34.5	
Col -247	327	150	1	B1	010-020			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			17	2.9	
Col -247	327	150	2	B1	010-020			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			21	20.5	
Col -247	327	150	3	B1	010-020			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	1.4	
Col -247	327	150	4	B1	010-020			0.5X0.5M	1/6	BONE	MODIF	PIN	ROUND	MID	FRAG	1	0.1	object is striated
Col -247	327	150	5	B1	010-020			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.3	possible figurine fragment
Col -247	327	150	6	B1	010-020			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				13	39.7	Bulk impressed and shaped clay
Col -247	327	150	7	B1	010-020			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					141.7	Bulk
Col -247	327	150	8	B1	010-020			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL		SCAPULA	FRAG	1	57.5	arteodactyl scapula (deer?)
Col -247	327	150	9	B1	010-020			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL		SCAPULA	FRAG	1	142.0	arteodactyl scapula (elk?)—2 fragments
Col -247	327	150	10	B1	010-020			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	275	28.7	count is an approximation
Col -247	327	150	11	B1	010-020			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		80.1	
Col -247	327	151	1	B1	020-030			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	1.8	
Col -247	327	151	2	B1	020-030			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			1	1.8	
Col -247	327	151	3	B1	020-030			0.5X0.5M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col -247	327	151	4	B1	020-030			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	5.3	clay "egg" fragment
Col -247	327	151	5	B1	020-030			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				8	22.2	Bulk impressed and shaped clay
Col -247	327	151	6	B1	020-030			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					196.2	
Col -247	327	151	7	B1	020-030			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	128	25.2	
Col -247	327	151	8	B1	020-030			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		77.8	
Col -247	327	152	1	B1	030-040			0.5X0.5M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			22	4.5	
Col -247	327	152	2	B1	030-040			0.5X0.5M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			2	4.1	
Col -247	327	152	3	B1	030-040			0.5X0.5M	1/8	SHELL	MODIF	BEAD	MACOMA	DISK	COMP	1	0.1	
Col -247	327	152	4	B1	030-040			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				5	0.8	possible figurine fragments
Col -247	327	152	5	B1	030-040			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				1	0.4	
Col -247	327	152	6	B1	030-040			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY				12	10.2	Bulk impressed and shaped clay
Col -247	327	152	7	B1	030-040			0.5X0.5M	1/8	CLAY	MODIF	WORKED CLAY					381.0	
Col -247	327	152	8	B1	030-040			0.5X0.5M	1/8	BONE	UNMOD	FAUNAL			FRAG	310	19.2	
Col -247	327	152	9	B1	030-040			0.5X0.5M	1/8	SHELL	UNMOD	BIVALVE			FRAG		134.1	
Col -247	327	153	1	NA	EXPOS	Bur. #1		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES					OH BO-00-28 #20
Col -247	327	153	2	NA	EXPOS	Bur. #1		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	153	3	NA	EXPOS	Bur. #1		1X1M	1/4	BONE	UNMOD	FAUNAL		POLISHED		1		
Col -247	327	153	4	NA	EXPOS	Bur. #1		1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk impressed and shaped clay
Col -247	327	153	5	NA	EXPOS	Bur. #1		1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk
Col -247	327	153	6	NA	EXPOS	Bur. #1		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	153	7	NA	EXPOS	Bur. #1		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	153	8	NA	EXPOS	Bur. #1		1X1M	1/4	SHELL	UNMOD	GASTROPOD			COMP	1		
Col -247	327	154	1	NA	MATRIX	Bur. #1		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	154	2	NA	MATRIX	Bur. #1		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1		
Col -247	327	154	3	NA	MATRIX	Bur. #1		1X1M	1/4	CLAY	MODIF	WORKED CLAY						Bulk clay
Col -247	327	154	4	NA	MATRIX	Bur. #1		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	154	5	NA	MATRIX	Bur. #1		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	155	1	NA	EXPOS	Bur. #1		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1		Clay "egg". From wall extension above buria
Col -247	327	155	2	NA	EXPOS	Bur. #1		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG	4		From wall extension above burial.
Col -247	327	155	3	NA	EXPOS	Bur. #1		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			From wall extension above burial.
Col -247	327	156	1	NA	EXPOS	Bur. #2		1X1M	1/8	CLAY	MODIF	WORKED CLAY						Feature 2 in burial exposure.
Col -247	327	156	2	NA	EXPOS	Bur. #2		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG			Feature 2 in burial exposure.
Col -247	327	156	3	NA	EXPOS	Bur. #2		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG			Feature 2 in burial exposure.
Col -247	327	157	1	NA	MATRIX	Bur. #2		1X1M	1/4	CLAY	MODIF	WORKED CLAY						Unit A6
Col -247	327	157	2	NA	MATRIX	Bur. #2		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG			Unit A6
Col -247	327	157	3	NA	MATRIX	Bur. #2		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			Unit A8
Col -247	327	157	4	NA	MATRIX	Bur. #2		1X1M	1/8	FLORAL	UNMOD	SEEDS/NUTS		BURNED				Unit A6
Col -247	327	158	1	NA	EXPOS	Bur. #3		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	158	2	NA	EXPOS	Bur. #3		1X1M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	158	3	NA	EXPOS	Bur. #3		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	158	4	NA	EXPOS	Bur. #3		1X1M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	158	5	NA	EXPOS	Bur. #3		1X1M	1/8	METSED	MODIF	GROUND STONE	PLUMMET	SHAPED	FRAG	1		Perforation at tip.
Col -247	327	158	6	NA	EXPOS	Bur. #3		1X1M	1/8	CLAY	MODIF	WORKED CLAY						Shaped and impressed clay
Col -247	327	158	7	NA	EXPOS	Bur. #3		1X1M	1/4	CLAY	MODIF	WORKED CLAY						
Col -247	327	158	8	NA	EXPOS	Bur. #3		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	158	9	NA	EXPOS	Bur. #3		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	158	10	NA	EXPOS	Bur. #3		1X1M	1/4	FLORAL	UNMOD	PETRIFIED WOOD						Unit A5, 70-90 cm
Col -247	327	159	1	NA	MATRIX	Bur. #3		1X1M	1/8	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG			
Col -247	327	159	2	NA	MATRIX	Bur. #3	ART #3	1X1M	1/8	CLAY	MODIF	WORKED CLAY						Clay balls found in pelvis.
Col -247	327	159	3	NA	MATRIX	Bur. #3		1X1M	1/8	CLAY	MODIF	WORKED CLAY						Clay "pillow" found under thoracic verts.
Col -247	327	159	4	NA	MATRIX	Bur. #3		1X1M	1/8	CLAY	MODIF	WORKED CLAY						
Col -247	327	159	5	NA	MATRIX	Bur. #3		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	159	6	NA	MATRIX	Bur. #3		1X1M	1/4	SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	159	7	NA	MATRIX	Bur. #3	ART #4	1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG	1		Shell found in abdomen.
Col -247	327	160	1	NA	EXPOS	Bur. #4		1X1M	1/8	OBSID	MODIF	CHIPPED STONE	BIFACE		COMP	1	3.1	CS point
Col -247	327	160	2	NA	EXPOS	Bur. #4		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	160	3	NA	EXPOS	Bur. #4		1X1M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	160	4	NA	EXPOS	Bur. #4		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES					

Col -247	327	160	5		NA	EXPOS	Bur. #4		1X1M	1/8	CLAY	MODIF	WORKED CLAY				2	Rapid recovery
Col -247	327	160	6		NA	EXPOS	Bur. #4		1X1M	1/8	CLAY	MODIF	WORKED CLAY					Clay nuggets, rapid recovery
Col -247	327	160	7		NA	EXPOS	Bur. #4		1X1M	1/8	BONE	MODIF	DAGGER	CANNON	ELK	FRAG	1	
Col -247	327	160	8		NA	EXPOS	Bur. #4		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	160	9		NA	EXPOS	Bur. #4		1X1M	1/8	SHELL	UNMOD	GASTROPOD			COMP	1	
Col -247	327	160	10		NA	EXPOS	Bur. #4		1X1M	1/8	FLORAL	UNMOD	CHARCOAL					
Col -247	327	160	11		NA	EXPOS	Bur. #4		1X1M	1/8	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	4	green and clear small fragments.
Col -247	327	161	1		NA	MATRIX	Bur. #4		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	
Col -247	327	161	2		NA	MATRIX	Bur. #4		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES			17	
Col -247	327	161	3		NA	MATRIX	Bur. #4		1X1M	1/8	CLAY	MODIF	WORKED CLAY					
Col -247	327	161	4		NA	MATRIX	Bur. #4	ART #2	1X1M	1/8	CLAY	MODIF	WORKED CLAY				1	Large chunk of clay.
Col -247	327	161	5		NA	MATRIX	Bur. #4	ART #3	1X1M	1/8	CLAY	MODIF	WORKED CLAY				1	Large chunk of clay with floral impressions.
Col -247	327	161	6		NA	MATRIX	Bur. #4	ART #4	1X1M	1/8	CLAY	MODIF	WORKED CLAY				2	Two large chunks of clay.
Col -247	327	161	7		NA	MATRIX	Bur. #4		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	161	8		NA	MATRIX	Bur. #4		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		Unit B6
Col -247	327	161	9		NA	MATRIX	Bur. #4	ART #5	1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	161	10		NA	MATRIX	Bur. #4	ART #6	1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	161	11		NA	MATRIX	Bur. #4	ART #7	1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		Found with skeleton
Col -247	327	161	12		NA	MATRIX	Bur. #4	ART #10	1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		Found under right femur.
Col -247	327	162	1		NA	MATRIX	Bur. #5		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	162	2		NA	MATRIX	Bur. #5		1X1M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	
Col -247	327	162	3		NA	MATRIX	Bur. #5		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	162	4		NA	MATRIX	Bur. #5		1X1M	1/4	METSED	MODIF	GROUND STONE		Groundstone	FRAG	1	
Col -247	327	162	5		NA	MATRIX	Bur. #5		1X1M	1/8	CLAY	MODIF	WORKED CLAY					
Col -247	327	162	6		NA	MATRIX	Bur. #5		1X1M	1/8	CLAY	MODIF	WORKED CLAY					
Col -247	327	162	7		NA	MATRIX	Bur. #5		1X1M	1/4	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	162	7		NA	MATRIX	Bur. #5		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	162	8		NA	MATRIX	Bur. #5		1X1M	1/8	FLORAL	UNMOD	CHARCOAL				1	
Col -247	327	163	9		NA	EXPOS	Bur. #6		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			13	
Col -247	327	163	10		NA	EXPOS	Bur. #6		1X1M	1/8	SHELL	MODIF	WORKED SHELL	BEAD		COMP	11	
Col -247	327	163	11	A	NA	EXPOS	Bur. #6		1X1M	1/8	SHELL	MODIF	BEAD	HALIOTIS	DISK	COMP	1	
Col -247	327	163	11	B	NA	EXPOS	Bur. #6		1X1M	1/8	SHELL	MODIF	BEAD	HALIOTIS	DISK	COMP	1	
Col -247	327	163	11	C	NA	EXPOS	Bur. #6		1X1M	1/8	SHELL	MODIF	ORNAMENT	HALIOTIS	PENDANT	COMP	1	SMALL TRIANGLE
Col -247	327	163	12		NA	EXPOS	Bur. #6		1X1M	1/8	CLAY	MODIF	WORKED CLAY				1	Shell impression
Col -247	327	163	13		NA	EXPOS	Bur. #6		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	163	14		NA	EXPOS	Bur. #6		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	164	1		NA	MATRIX	Bur. #6		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	164	2		NA	MATRIX	Bur. #6		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	164	3		NA	MATRIX	Bur. #6		1X1M	1/8	SHELL	MODIF	ORNAMENT	HALIOTIS	PENDANT	FRAG	1	SMALL CLAW-SHAPED ORNAMENT
Col -247	327	164	4	B	NA	MATRIX	Bur. #6		1X1M	1/8	SHELL	MODIF	BEAD	OLIVELLA	C3	COMP	1	
Col -247	327	164	4	A	NA	MATRIX	Bur. #6		1X1M	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2/G3	COMP	42	21 G2, 21G3
Col -247	327	164	5		NA	MATRIX	Bur. #6		1X1M	1/4	CLAY	MODIF	WORKED CLAY				1	
Col -247	327	164	6		NA	MATRIX	Bur. #6		1X1M	1/4	CLAY	MODIF	WORKED CLAY					Bulk
Col -247	327	164	7		NA	MATRIX	Bur. #6		1X1M	1/8	BONE	UNMOD	FAUNAL		CRANIAL	FRAG	1	faunal bone found in close proximity to indiv
Col -247	327	164	8		NA	MATRIX	Bur. #6		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	164	9		NA	MATRIX	Bur. #6		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		found under chest of individual interred
Col -247	327	164	10		NA	MATRIX	Bur. #6		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	165	1		NA	EXPOS	Bur. #7		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	165	2		NA	EXPOS	Bur. #7		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	165	3		NA	EXPOS	Bur. #7		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	166	1		NA	MATRIX	Bur. #7		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	
Col -247	327	166	2		NA	MATRIX	Bur. #7		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES				
Col -247	327	166	3		NA	MATRIX	Bur. #7		1X1M	1/8	CLAY	MODIF	WORKED CLAY					Bulk
Col -247	327	166	4		NA	MATRIX	Bur. #7		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	166	5		NA	MATRIX	Bur. #7		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	167	1		NA	EXPOS	Bur. #8		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	167	2		NA	EXPOS	Bur. #8		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	167	3		NA	EXPOS	Bur. #8		1X1M	1/8	FLORAL	UNMOD	SEEDS/NUTS					charred
Col -247	327	168	1		NA	MATRIX	Bur. #8		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		one bag of faunal bone--is there more??
Col -247	327	169	1		NA	MATRIX	Bur. 8/9		1X1M	1/8	SHELL	MODIF	ORNAMENT	HALIOTIS	PENDANT	FRAG	1	LARGE DISK
Col -247	327	169	2		NA	MATRIX	Bur. 8/9		1X1M	1/8	SHELL	MODIF	ORNAMENT	HALIOTIS	PENDANT	FRAG	1	LARGE DISK
Col -247	327	170	1		NA	MATRIX	Bur. #9		1X1M	1/8	METSED	UNMOD	CHIPPED STONE	FLAKES				underlying left femur
Col -247	327	170	2		NA	MATRIX	Bur. #9		1X1M	1/8	METSED	MODIF	GROUND STONE	MANO		FRAG	1	
Col -247	327	170	3		NA	MATRIX	Bur. #9		1X1M	1/8	CLAY	MODIF	WORKED CLAY					
Col -247	327	170	4		NA	MATRIX	Bur. #9		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	170	5		NA	MATRIX	Bur. #9		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	171	1		NA	EXPOS	Bur. #10		1X1M	1/4	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	
Col -247	327	171	2		NA	EXPOS	Bur. #10		1X1M	1/4	METSED	UNMOD	CHIPPED STONE	FLAKES			4	
Col -247	327	171	3		NA	EXPOS	Bur. #10		1X1M	1/8	CLAY	MODIF	WORKED CLAY				3	
Col -247	327	171	4		NA	EXPOS	Bur. #10		1X1M	1/8	BONE	UNMOD	FAUNAL			FRAG		
Col -247	327	171	5		NA	EXPOS	Bur. #10		1X1M	1/8	SHELL	UNMOD	BIVALVE			FRAG		
Col -247	327	172	1		NA	MATRIX	Bur. #10		1X1M	1/8	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	
Col -247	327	172	2		NA	MATRIX	Bur. #10		1X1M	1/8	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	

Col -247	327	172	3	NA	MATRIX	Bur. #10		1X1M	1/8		METSED	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	172	4	NA	MATRIX	Bur. #10		1X1M	1/8		CLAY	MODIF	WORKED CLAY				8		
Col -247	327	172	5	NA	MATRIX	FEAT 10		1X1M	1/8		CLAY	MODIF	WORKED CLAY						
Col -247	327	172	6	NA	MATRIX	Bur. #10		1X1M	1/8		BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	172	7	NA	MATRIX	Bur. #10		1X1M	1/8		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	173	1	NA	MATRIX	Bur. #11		1X1M	1/8		OBSID	UNMOD	CHIPPED STONE	FLAKES			2		
Col -247	327	173	2	NA	MATRIX	Bur. #11		1X1M	1/8		METSED	UNMOO	CHIPPED STONE	FLAKES			16		
Col -247	327	173	3	NA	MATRIX	Bur. #11		1X1M	1/8		CLAY	MODIF	WORKED CLAY						
Col -247	327	173	4	NA	MATRIX	Bur. #11		1X1M	1/8		BONE	UNMOD	FAUNAL			FRAG			
Col -247	327	173	5	NA	MATRIX	Bur. #11		1X1M	1/8		SHELL	UNMOD	BIVALVE			FRAG			
Col -247	327	174	1	DECAT	DECAT	DECAT	DECAT	OECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	174	1	B1	LEVEL 1	FEAT 10		1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES			4		Two bags
Col -247	327	174	2	B1	LEVEL 1	FEAT 10		1X1M	1/4		CLAY	MODIF	WORKED CLAY						Two bags
Col -247	327	174	3	B1	LEVEL 1	FEAT 10		1X1M	1/4		BONE	UNMOD	FAUNAL			FRAG	1		
Col -247	327	174	4	B1	LEVEL 1	FEAT 10		1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			Four Bags
Col -247	327	174	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col -247	327	174	6	B1	LEVEL 2	FEAT 10		1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			Two bags
Col -247	327	174	7	B1	MATRIX	FEAT 10		1X1M			BONE	UNMOD	FAUNAL			FRAG			One bag
Col -247	327	174	8	B1	MATRIX	FEAT 10		1X1M			SHELL	UNMOD	BIVALVE			FRAG			One bag
Col -247	327	174	9	B1	MATRIX	FEAT 10		1X1M			FLORAL	UNMOD	CHARCOAL				3		Burnt organics
Col -247	327	174	10	B1	060-070	FEAT 10		1X1M			BONE	UNMOD	FAUNAL			FRAG			Only one bag labeled 60-70, Feature 10.
Col -247	327	174	11	B1	MATRIX	FEAT 10		1X1M	1/4		METSED	UNMOD	CHIPPED STONE	FLAKES					
Col -247	327	174	12	B1	MATRIX	FEAT 10		1X1M			CLAY	MODIF	WORKED CLAY						
Col -247	327	174	13	B1	MATRIX	FEAT 10		1X1M	1/8		BONE	UNMOD	FAUNAL			FRAG			One bag 1/8, one bag 1/4 inch screen.
Col -247	327	174	14	B1	MATRIX	FEAT 10		1X1M	1/4		SHELL	UNMOD	BIVALVE			FRAG			Two bags.
Col-158	328	1	1	A1	000-010			1X2M	1/4	LOCUS A	METSED	MODIF	GROUND STONE	PESTLE	BATTERED	COMP	1	446.6	
Col-158	328	1	2	A1	000-010			1X2M	1/4	LOCUS A	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.8	
Col-158	328	1	3	A1	000-010			1X2M	1/4	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	15.1	
Col-158	328	1	4	A1	000-010			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			6	5.5	
Col-158	328	1	5	A1	000-010			1X2M	1/4	LOCUS A	BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1	0.4	
Col-158	328	1	6	A1	000-010			1X2M	1/4	LOCUS A	BONE	MODIF	AWL	CANNON	SULCUS	FRAG	1	1.1	Deer cannon bone, medial sulcus
Col-158	328	1	7	A1	000-010			1X2M	1/4	LOCUS A	SHELL	MODIF	BEAD	OLIVELLA	SADDLE	FRAG	1	0.1	
Col-158	328	1	8	A1	000-010			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				118	70.7	
Col-158	328	1	9	A1	000-010			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	3	0.8	
Col-158	328	1	10	A1	000-010			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	1.0	
Col-158	328	1	11	A1	000-010			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	6	2.7	
Col-158	328	1	12	A1	000-010			1X2M	1/4	LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	9	5.4	
Col-158	328	1	13	A1	000-010			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	161	69.3	
Col-158	328	1	14	A1	000-010			1X2M	1/4	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		185.3	
Col-158	328	2	8	A1	000-010			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	811	55.2	
Col-158	328	3	1	A1	020-030			1X2M	1/4	LOCUS A	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	1.3	
Col-158	328	3	2	A1	020-030			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			34	1.0	
Col-158	328	3	3	A1	020-030			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				1	0.3	
Col-158	328	3	4	A1	020-030			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				47	20.6	MAY CONTAIN SOME WITH IMPRESSION
Col-158	328	3	5	A1	020-030			1X2M	1/8	LOCUS A	CERAM	MANUF	FOOD AND DRINK	CERAMIC	STONEWARE	FRAG	1	0.9	
Col-158	328	3	6	A1	020-030			1X2M	1/8	LOCUS A	CERAM	MANUF	FOOD AND DRINK	CERAMIC	STONEWARE	FRAG	1	0.3	
Col-158	328	3	7	A1	020-030			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	3.0	
Col-158	328	3	8	A1	020-030			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	5	2.3	
Col-158	328	3	9	A1	020-030			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	12	0.8	
Col-158	328	3	10	A1	020-030			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	2.2	
Col-158	328	3	11	A1	020-030			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	2	0.1	
Col-158	328	3	12	A1	020-030			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	16	1.4	
Col-158	328	3	13	A1	020-030			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	19	1.6	
Col-158	328	3	14	A1	020-030			1X2M	1/4	LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	24	8.9	
Col-158	328	3	15	A1	020-030			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	99	27.4	
Col-158	328	3	16	A1	020-030			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	488	22.7	
Col-158	328	3	17	A1	020-030			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		56.0	
Col-158	328	3	18	A1	020-030			1X2M	1/8	LOCUS A	FLORAL	UNMOD	SEEDS/NUTS			COMP	3	0.1	
Col-158	328	4	1	A1	030-040			1X2M	1/8	LOCUS A	METSED	MODIF	GROUND STONE	PESTLE		FRAG	1	357.9	
Col-158	328	4	2	A1	030-040			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	0.4	
Col-158	328	4	3	A1	030-040			1X2M	1/8	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col-158	328	4	4	A1	030-040			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	1	0.3	
Col-158	328	4	5	A1	030-040			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	2	0.1	
Col-158	328	4	6	A1	030-040			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	5	0.4	
Col-158	328	4	7	A1	030-040			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	0.1	
Col-158	328	4	8	A1	030-040			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	245	11.7	
Col-158	328	4	9	A1	030-040			1X2M	1/8	LOCUS A	FLORAL	UNMOD	SEEDS/NUTS			COMP	4	0.1	
Col-158	328	5	1	A1	040-050			1X2M	1/8	LOCUS A	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	0.3	
Col-158	328	5	2	A1	040-050			1X2M	1/4	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	0.9	
Col-158	328	5	3	A1	040-050			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			66	2.7	
Col-158	328	5	4	A1	040-050			1X2M	1/8	LOCUS A	METSED	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.8	
Col-158	328	5	5	A1	040-050			1X2M	1/8	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			5	4.9	
Col-158	328	5	6	A1	040-050			1X2M	1/8	LOCUS A	BONE	MODIF	AWL	CANNON	SPLIT	FRAG	2	1.6	

Col-158	328	5	7	A1	040-050			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1	0.1	
Col-158	328	5	8	A1	040-050			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1	2.1	
Col-158	328	5	9	A1	040-050			1X2M	1/8	LOCUS A	SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	2	0.1	
Col-158	328	5	10	A1	040-050			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				1	0.7	CYLINDRICAL SHAPED
Col-158	328	5	11	A1	040-050			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				144	105.8	
Col-158	328	5	12	A1	040-050			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	0.1	
Col-158	328	5	13	A1	040-050			1X2M	1/8	LOCUS A	METAL	MANUF	ARCHITECTURAL	NAILS	RUSTED	FRAG	4	5.2	
Col-158	328	5	14	A1	040-050			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	224	73.9	
Col-158	328	5	15	A1	040-050			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1320	38.3	
Col-150	328	5	16	A1	040-050			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		278.1	
Col-158	328	5	17	A1	040-050			1X2M	1/8	LOCUS A	SHELL	UNMOD	GASTROPOD			COMP	2	0.1	
Col-158	328	5	18	A1	040-050			1X2M	1/8	LOCUS A	FLORAL	UNMOD	SEEDS/NUTS			COMP	41	0.4	
Col-158	328	5	19	A1	040-050			1X2M	1/4	LOCUS A	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	0.1	
Col-158	328	6	1	A1	050-060			1X2M	1/4	LOCUS A	OBSID	MODIF	CHIPPED STONE	BIFACE		COMP	1	1.3	
Col-158	328	6	2	A1	050-060			1X2M	1/4	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	1.0	
Col-156	328	6	3	A1	050-060			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			35	1.1	
Col-158	328	6	4	A1	050-060			1X2M	1/4	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	0.8	
Col-158	328	6	5	A1	050-060			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			18	18.4	
Col-158	328	6	6	A1	050-060			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1	1.8	
Col-158	328	6	7	A1	050-060			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				16.7	7.6	
Col-158	328	6	8	A1	050-060			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				137	65.5	
Col-158	328	6	9	A1	050-060			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	1.0	
Col-158	328	6	10	A1	050-060			1X2M	1/4	LOCUS A	METAL	MANUF	ARCHITECTURAL	NAIL		FRAG	1	1.6	
Col-158	328	6	11	A1	050-060			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1283	41.2	
Col-158	328	6	12	A1	050-060			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	293	70.9	
Col-158	328	6	13	A1	050-060			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		36.4	
Col-158	328	6	14	A1	050-060			1X2M	1/4	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		249.0	
Col-158	328	6	15	A1	050-060			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG	1	0.1	pearl
Col-158	328	6	16	A1	050-060			1X2M	1/8	LOCUS A	SHELL	UNMOD	GASTROPOD			COMP	2	0.1	
Col-158	328	6	17	A1	050-060			1X2M	1/4	LOCUS A	FLORAL	UNMOD	CHARCOAL			FRAG	30	7.0	
Col-158	328	6	18	A1	050-060			1X2M	1/8	LOCUS A	FLORAL	UNMOD	CHARCOAL			FRAG	95	1.6	
Col-158	328	7	1	A1	060-070			1X2M	1/4	LOCUS A	OBSID	MODIF	CHIPPED STONE	PREFORM		FRAG	1	0.6	
Col-158	328	7	2	A1	060-070			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			14	0.5	
Col-158	328	7	3	A1	060-070			1X2M	1/8	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	15.6	
Col-158	328	7	4	A1	060-070			1X2M	1/8	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			8	9.6	
Col-158	328	7	5	A1	060-070			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				13	18.6	
Col-158	328	7	6	A1	060-070			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	0.1	
Col-158	328	7	7	A1	060-070			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK		CLEAR	FRAG	2	0.1	
Col-158	328	7	8	A1	060-070			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	633	51.3	
Col-158	328	7	9	A1	060-070			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		126.2	
Col-158	328	7	10	A1	060-070			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG	1	0.1	clover shaped freshwater pearl
Col-158	328	7	11	A1	060-070			1X2M	1/8	LOCUS A	FLORAL	UNMOD	CHARCOAL			FRAG	15	1.9	
Col-158	328	8	1	A2	000-010			1X2M		LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			20	0.9	
Col-158	328	8	2	A2	000-010			1X2M		LOCUS A	CLAY	MODIF	WORKED CLAY				1	0.1	
Col-158	328	8	3	A2	000-010			1X2M		LOCUS A	CLAY	MODIF	WORKED CLAY				17	12.5	
Col-158	328	8	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-158	328	8	5	A2	000-010			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	54	11.2	
Col-158	328	8	6	A2	000-010			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	92	25.1	
Col-158	328	8	7	A2	000-010			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-DARK OLI\	FRAG	2	0.4	
Col-158	328	8	8	A2	000-010			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	OTHER	FRAG	1	0.3	PINK
Col-158	328	8	9	A2	000-010			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	14	1.5	
Col-158	328	8	10	A2	000-010			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	14	3.6	
Col-158	328	8	11	A2	000-010			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	119	21.7	
Col-158	328	8	12	A2	000-010			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	BARBED WIRE	RUSTED	FRAG	3	8.2	
Col-158	328	8	13	A2	000-010			1X2M		LOCUS A	PLAST	MANUF	ARCHITECTURAL	MISC		FRAG	4	4.0	
Col-158	328	8	14	A2	000-010			1X2M		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	347	31.6	
Col-158	328	8	15	A2	000-010			1X2M		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		6.3	
Col-158	328	8	16	A2	000-010			1X2M		LOCUS A	FLORAL	UNMOD	SEEDS/NUTS			COMP	2	0.0	
Col-158	328	9	1	A2	010-020			1X2M	1/4	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	1.2	
Col-158	328	9	2	A2	010-020			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			1	0.5	
Col-158	328	9	3	A2	010-020			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				16	7.4	
Col-158	328	9	4	A2	010-020			1X2M		LOCUS A	CERAM	MANUF	FOOD AND DRINK	CERAMIC	STONEWARE	FRAG	1	18.2	
Col-158	328	9	5	A2	010-020			1X2M		LOCUS A	METAL	MANUF	EQUIPMENT		RUSTED	COMP	1	60.4	SMALL "RAILROAD SPIKE"
Col-158	328	9	6	A2	010-020			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	31	9.3	
Col-158	328	9	7	A2	010-020			1X2M	1/4	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG	18	2.8	
Col-158	328	10	1	A2	020-030			1X2M		LOCUS A	BSALT	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.3	
Col-158	328	10	2	A2	020-030			1X2M		LOCUS A	OBSID	MODIF	CHIPPED STONE	EMF		COMP	1	0.5	
Col-158	328	10	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-158	328	10	4	A2	020-030			1X2M		LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.4	shatter
Col-158	328	10	5	A2	020-030			1X2M		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			23	73.7	shatter
Col-158	328	10	6	A2	020-030			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				51	40.9	SOME WITH IMPRESSIONS
Col-158	328	10	7	A2	020-030			1X2M	1/4	LOCUS A	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	2	1.3	WHITE GLAZED
Col-158	328	10	8	A2	020-030			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	OTHER	FRAG	1	0.7	amethyst

Col-158	328	10	9	A2	020-030			1X2M		LOCUS A	GLASS	MANUF	PERSONAL EFFEC	BOTTLE	CLEAR	FRAG	4	2.8	POSSIBLE MEDICINE BOTTLE
Col-158	328	10	10	A2	020-030			1X2M		LQCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	14	17.5	
Col-158	328	10	11	A2	020-030			1X2M		LOCUS A	METAL	MANUF	FOOD AND DRINK	CAN	RUSTED	FRAG	24	10.6	POSSIBLE CAN
Col-158	328	10	12	A2	020-030			1X2M		LOCUS A	METAL	MANUF	FOOD AND DRINK	CAN		FRAG	1	0.4	PULL TAB MINUS THE RING
Col-158	328	10	13	A2	020-030			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	1	0.7	
Col-158	328	10	14	A2	020-030			1X2M		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	46	14.6	
Col-158	328	10	15	A2	020-030			1X2M		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG	85	17.6	
Col-158	328	11	1	A2	030-040			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			17	0.6	
Col-158	328	11	2	A2	030-040			1X2M	1/8	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col-158	320	11	3	A2	030-040			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				25	18.3	
Col-158	328	11	4	A2	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	5	4.3	
Col-158	328	11	5	A2	030-040			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	1	0.2	
Col-158	328	11	6	A2	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	2	0.5	
Col-158	328	11	7	A2	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	1.9	
Col-158	328	11	8	A2	030-040			1X2M	1/8	LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	8	3.6	
Col-158	328	11	9	A2	030-040			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	COMP	1	2.8	
Col-158	328	11	10	A2	030-040			1X2M		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	461	36.1	
Col-158	328	11	11	A2	030-040			1X2M		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		4.0	
Col-158	328	12	1	A2	040-050			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			8	0.4	
Col-158	328	12	2	A2	040-050			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			10	4.3	SOME CULTURAL
Col-158	328	12	3	A2	040-050			1X2M		LOCUS A	CLAY	MODIF	WORKED CLAY				1	1.3	
Col-158	328	12	4	A2	040-050			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				21	20.3	
Col-158	328	12	5	A2	040-050			1X2M	1/4	LOCUS A	CERAM	MANUF	FOOD AND DRINK	CERAMIC		COMP	1	0.4	WHITE GLAZED
Col-158	328	12	6	A2	040-050			1X2M		LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	6	1.6	
Col-158	328	12	7	A2	040-050			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	2	0.1	
Col-158	328	12	8	A2	040-050			1X2M	1/8	LOCUS A	GLASS	MANUF	FOOD AND DRINK		GREEN-LIGHT	FRAG	2	0.4	
Col-158	328	12	9	A2	040-050			1X2M		LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC	RUSTED	FRAG	4	2.2	
Col-158	328	12	10	A2	040-050			1X2M		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	371	32.4	
Col-158	328	12	11	A2	040-050			1X2M		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		23.8	
Col-158	328	13	1	A2	050-060			1X2M		LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			15	0.4	
Col-158	328	13	2	A2	050-060			1X2M		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			1	1.6	
Col-158	328	13	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	13	4	A2	050-060			1X2M		LOCUS A	CLAY	MODIF	WORKED CLAY				54	53.7	
Col-158	328	13	5	A2	050-060			1X2M		LOCUS A	CNCRT	MANUF	ARCHITECTURAL			FRAG	49	27.8	ASPHALT
Col-158	328	13	6	A2	050-060			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	2	0.4	
Col-158	328	13	7	A2	050-060			1X2M	1/4	LOCUS A	METAL	MANUF	ARCHITECTURAL	MISC		FRAG	2	18.5	
Col-158	328	13	8	A2	050-060			1X2M	1/4	LOCUS A	FLORAL	UNMOD	CHARCOAL			FRAG	1	0.1	
Col-158	328	13	9	A2	050-080			1X2M		LOCUS A	FLORAL	UNMOD	SEEDS/NUTS			FRAG	1	0.1	
Col-158	328	13	10	A2	050-060			1X2M		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	261	35.6	
Col-158	328	13	11	A2	050-060			1X2M		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		123.2	
Col-158	328	14	1	A2	060-070			1X2M	1/8	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	0.1	
Col-158	328	14	2	A2	060-070			1X2M	1/8	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col-158	328	14	3	A2	060-070			1X2M	1/8	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			2	8.3	
Col-158	328	14	4	A2	060-070			1X2M	1/8	LOCUS A	BONE	MODIF	AWL	CANNON	SPLIT	FRAG	2	1.2	
Col-158	328	14	5	A2	060-070			1X2M	1/8	LOCUS A	CLAY	MODIF	WORKED CLAY				29	15.4	
Col-158	328	14	6	A2	060-070			1X2M	1/8	LOCUS A	OTZT	UNMOD	CRYSTAL				1	0.1	QUARTZ CRYSTAL
Col-158	328	14	7	A2	060-070			1X2M	1/8	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	89	8.7	
Col-158	328	14	8	A2	060-070			1X2M	1/8	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		1.8	
Col-158	328	14	9	A2	060-070			1X2M	1/8	LOCUS A	FLORAL	UNMOD	CHARCOAL			FRAG	15	0.3	
Col-158	328	15	1	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	15	2	B1	000-010			1X2M		LOCUS B	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.5	
Col-158	328	15	3	B1	000-010			1X2M		LOCUS B	CLAY	MODIF	WORKED CLAY				36	14.2	
Col-158	328	15	4	B1	000-010			1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	34	14.2	
Col-158	328	15	5	B1	000-010			1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		10.4	
Col-158	328	16	1	B1	010-020			1X2M		LOCUS B	METSED	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	8.9	TIP MISSING
Col-158	328	16	2	B1	010-020			1X2M		LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	0.6	
Col-158	328	16	3	B1	010-020			1X2M		LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.2	
Col-158	328	16	4	B1	010-020			1X2M		LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.3	
Col-158	328	16	5	B1	010-020			1X2M		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			17	4.7	
Col-158	328	16	6	B1	010-020			1X2M		LOCUS B	CLAY	MODIF	WORKED CLAY				73	24.7	
Col-158	328	16	7	B1	010-020			1X2M		LOCUS B	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	2	0.9	
Col-158	328	16	8	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	9	0.8	
Col-158	328	16	9	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	40	7.3	
Col-158	328	16	10	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	76	15.8	
Col-158	328	16	11	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-DARK OLI	FRAG	10	4.0	
Col-158	328	16	12	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	CUP	MILK GLASS	FRAG	2	1.5	
Col-158	328	16	13	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AOUA	FRAG	15	2.4	
Col-158	328	16	14	B1	010-020			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	OTHER	FRAG	1	1.4	
Col-158	328	16	15	B1	010-020			1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	96	15.4	
Col-158	328	16	16	B1	010-020			1X2M		LOCUS B	METAL	MANUF	ARCHITECTURAL	WIRE	RUSTED	FRAG	1	4.8	
Col-158	328	16	17	B1	010-020			1X2M		LOCUS B	METAL	MANUF	ARCHITECTURAL	NAIL	RETOUCHED	COMP	4	9.9	
Col-158	328	16	18	B1	010-020			1X2M		LOCUS B	METAL	MANUF	PERSONAL EFFECT			COMP	1	0.0	steel shot
Col-158	328	16	19	B1	010-020			1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	497	39.1	

Col-158	328	16	20	B1	010-020			1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		56.4	
Col-158	328	16	21	B1	010-020			1X2M		LOCUS B	SHELL	UNMOD	GASTROPOD			COMP	1	0.0	
Col-158	328	16	22	B1	010-020			1X2M		LOCUS B	FLORAL	UNMOO	SEEDS/NUTS			FRAG	2	0.0	
Col-158	328	16	23	B1	010-020			1X2M		LOCUS B	SAMPL	UNMOD	SAMPLES	SOIL		FRAG	7		ash
Col-158	328	17	1	B1	020-030			1X2M		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	0.6	
Col-158	328	17	2	B1	020-030			1X2M		LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	7.6	
Col-158	328	17	3	B1	020-030			1X2M		LOCUS B	CLAY	MODIF	WORKED CLAY				18	4.5	
Col-158	328	17	4	B1	020-030			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	2.1	
Col-158	328	17	5	B1	020-030			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-LIGHT	FRAG	2	0.3	
Col-158	328	17	6	B1	020-030			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	3	1.1	
Col-158	328	17	7	B1	020-030			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-DARK OLI	FRAG	1	1.1	
Col-158	328	17	8	B1	020-030			1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	2.5	
Col-158	328	17	9	B1	020-030			1X2M		LOCUS B	METAL	MANUF	EQUIPMENT		RUSTED	COMP	1	162.3	KEY OF SOME SORT LARGE
Col-158	328	17	10	B1	020-030			1X2M		LOCUS B	METAL	MANUF	EQUIPMENT		RUSTED	FRAG	1	83.6	METAL FILE
Col-158	328	17	11	B1	020-030			1X2M		LOCUS B	METAL	MANUF	ARCHITECTURAL	NAIL		FRAG	8	5.8	SQUARE NAILS
Col-158	328	17	12	B1	020-030.			1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	64	22.7	
Col-158	328	17	13	B1	020-030			1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		44.4	
Col-158	328	18	1	B1	030-040			1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.3	
Col-158	328	18	2	B1	030-040			1X2M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			6	0.1	
Col-158	328	18	3	B1	030-040			1X2M	1/4	LOCUS B	CHERT	MODIF	CHIPPED STONE	BIFACE		COMP	2	6.8	
Col-158	328	18	4	B1	030-040			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				56	50.8	
Col-158	328	18	5	B1	030-040			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	3	12.5	
Col-158	328	18	6	B1	030-040			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	3.4	
Col-158	328	18	7	B1	030-040			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	2	1.5	
Col-158	328	18	8	B1	030-040			1X2M	1/4	LOCUS B	CERAM	MANUF	FOOD AND DRINK	CERAMIC	STONEWARE	FRAG	1	2.4	DARK BROWN
Col-158	328	18	9	B1	030-040			1X2M	1/4	LOCUS B	METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	FRAG	10	13.5	SCREW, NAIL, AND OTHER ITMES
Col-158	328	18	10	B1	030-040			1X2M	1/8	LOCUS B	PLAST	MANUF	PERSONAL EFFECT			FRAG	2	0.8	BURLAP??
Col-158	328	18	11	B1	030-040			1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	113	22.0	
Col-158	328	18	12	B1	030-040			1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		51.5	
Col-158	328	18	13	B1	030-040			1X2M	1/4	LOCUS B	PLAST	MANUF	PERSONAL EFFECT			FRAG	2	11.3	ASPHALT
Col-158	328	19	1	B1	040-050			1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.3	
Col-158	328	19	2	B1	040-050			1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			12	2.8	
Col-158	328	19	3	B1	040-050			1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			5	9.6	
Col-158	328	19	4	B1	040-050			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				119	101.3	
Col-158	328	19	5	B1	040-050			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	4	0.3	
Col-158	328	19	6	B1	040-050			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	2	1.6	CLEAR WITH YELLOW
Col-158	328	19	7	B1	040-050			1X2M	1/4	LOCUS B	GLASS	MANUF	PERSONAL EFFECT		RED	FRAG	1	0.1	
Col-158	328	19	8	B1	040-050			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AOUA	FRAG	2	0.3	
Col-158	328	19	9	B1	040-050			1X2M	1/4	LOCUS B	METAL	MANUF	ARCHITECTURAL	POSSIBLE FINISH NAIL		COMP	1	0.5	
Col-158	328	19	10	B1	040-050			1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	248	33.1	
Col-158	328	19	11	B1	040-050			1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		65.9	
Col-158	328	19	12	B1	040-050			1X2M	1/8	LOCUS B	SHELL	UNMOD	GASTROPOD			COMP	1	0.1	
Col-158	328	19	13	B1	040-050			1X2M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS			COMP	8	0.1	PROBABLY ALL INTRUSIVE
Col-158	328	20	1	B1	050-060			1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			27	1.2	
Col-158	328	20	2	B1	050-060			1X2M	1/8	LOCUS B	CHERT	UNMOD	CHIPPED STONE	FLAKES			3	0.2	
Col-158	328	20	3	B1	050-060			1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			10	8.4	
Col-158	328	20	4	B1	050-060			1X2M	1/4	LOCUS B	METSED	MODIF	CHIPPED STONE	EMF		COMP	1	58.4	
Col-158	328	20	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-158	328	20	6	B1	050-060			1X2M	1/4	LOCUS B	BONE	MODIF	AWL	CANNON	SPLIT	FRAG	1	0.8	POSSIBLE AWL
Col-158	328	20	7	B1	050-060			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				323	758.3	
Col-158	328	20	8	B1	050-060			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				3	7.7	
Col-158	328	20	9	B1	050-060			1X2M	1/4	LOCUS B	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	1	0.7	WHITE GLAZED
Col-158	328	20	10	B1	050-060			1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE		FRAG	1	0.9	CLEAR WITH YELLOW
Col-158	328	20	11	B1	050-060			1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	601	72.3	
Col-158	328	20	12	B1	050-060			1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		306.7	
Col-158	328	20	13	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-158	328	20	14	B1	050-060			1X2M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG	2	0.4	WOOD
Col-158	328	20	15	B1	050-060			1X2M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS			COMP	4	0.2	
Col-158	328	20	16	B1	050-060			1X2M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG	10	2.0	
Col-158	328	20	17	B1	050-060			1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT	MARGIN	FRAG	1	0.1	
Col-158	328	20	18	B1	050-060			1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT	TIP	FRAG	1	0.1	
Col-158	328	21	1	B1	060-070			1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.9	BASE AND MIDSECTION-- TIP MISSING
Col-158	328	21	2	B1	060-070			1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PREFORM		FRAG	1	0.6	
Col-158	328	21	3	B1	060-070			1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.2	
Col-158	328	21	4	B1	060-070			1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	21.9	
Col-158	328	21	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-158	328	21	6	B1	060-070			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				16	53.8	
Col-158	328	21	7	B1	060-070			1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				248	244.4	
Col-158	328	21	8	B1	060-070			1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	135	50.1	
Col-158	328	21	9	B1	060-070			1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		283.3	
Col-158	328	21	10	B1	060-070			1X2M	1/4	LOCUS B	SHELL	UNMOD	GASTROPOD			FRAG	1	0.2	SNAIL
Col-158	328	21	11	B1	060-070			1X2M	1/4	LOCUS B	SAMPL	UNMOD	SAMPLES	SOIL		FRAG	18	217.3	
Col-158	328	22	1	B1	070-080			0.5X1M		LOCUS B	OBSID	MODIF	CHIPPED STONE	BIFACE		FRAG	1	0.5	

Col-158	328	22	2	B1	070-080		0.5X1M		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				1	0.1	
Col-158	328	22	3	B1	070-080		0.5X1M		LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				6	28.9	
Col-158	328	22	4	B1	070-080		0.5X1M		LOCUS B	BONE	UNMOD	FAUNAL				FRAG	67	23.6	
Col-158	328	22	5	B1	070-080		0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY					150	781.4	2 LARGE BAGS
Col-158	328	22	6	B1	070-080		0.5X1M		LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		206.4	
Col-158	328	22	7	B1	070-080		0.5X1M		LOCUS B	FLORAL	UNMOD	CHARCOAL				FRAG	6	0.3	
Col-158	328	22	8	B1	070-080		0.5X1M		LOCUS B	SAMPL	UNMOD	SAMPLES	ASH			COMP	8	28.9	
Col-158	328	22	9	B1	070-080		0.5X1M		LOCUS B	SAMPL	UNMOD	SAMPLES	SOIL			COMP	5	32.6	
Col-158	328	23	1	B1	080-090		0.5X1M		LOCUS B	OBSID	MODIF	CHIPPED STONE	DRILL			FRAG	1	0.1	
Col-158	328	23	2	B1	080-090		0.5X1M		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				9	0.2	
Col-158	328	23	3	B1	080-090		0.5X1M		LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				1	0.7	
Col-158	328	23	4	B1	080-090		0.5X1M		LOCUS B	BONE	MODIF	GORGE	BIPOINT			COMP	1	1.4	
Col-158	328	23	5	B1	080-090		0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY					21	53.8	
Col-158	328	23	6	B1	080-090		0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY					197	74.0	
Col-158	328	23	7	B1	080-090		0.5X1M		LOCUS B	BONE	UNMOD	FAUNAL				FRAG	86	24.8	
Col-158	328	23	8	B1	080-090		0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	534	14.8	
Col-158	328	23	9	B1	080-090		0.5X1M		LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		150.5	
Col-158	328	23	10	B1	080-090		0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL				FRAG	12	0.9	
Col-158	328	23	11	B1	080-090		0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS				COMP	2	0.1	CHARRED
Col-158	328	24	1	B1	080-090	FEAT 1	0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY					6	212.0	
Col-158	328	24	2	B1	080-090	FEAT 1	0.5X1M		LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		160.4	
Col-158	328	24	3	B1	102-110	FEAT 1	NA		LOCUS B	CLAY	MODIF	WORKED CLAY					2	206.2	BELOW FEATURE 1
Col-158	328	25	1	B1	090-100		0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				4	0.3	
Col-158	328	25	2	B1	090-100		0.5X1M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				4	36.7	
Col-158	328	25	3	B1	090-100		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					23	51.3	
Col-158	328	25	4	B1	090-100		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					137	149.0	
Col-158	328	25	5	B1	090-100		0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	563	20.3	
Col-158	328	25	6	B1	090-100		0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	72	25.0	
Col-158	328	25	7	B1	090-100		0.5X1M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		241.7	
Col-158	328	25	8	B1	090-100		0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL				FRAG	15	0.9	
Col-158	328	25	9	B1	090-100		0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS				COMP	2	0.0	
Col-158	328	26	1	B1	100-120		0.5X1M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				2	0.5	
Col-158	328	26	2	B1	100-120		0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				10	0.4	
Col-158	328	26	3	B1	100-120		0.5X1M	1/4	LOCUS B	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL			COMP		34.6	
Col-158	328	26	4	B1	100-120		0.5X1M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				9	53.1	SOME BASALT ALSO
Col-158	328	26	5	B1	100-120		0.5X1M	1/8	LOCUS B	BONE	MODIF	AWL	CANNON		THICK	FRAG	1	2.8	
Col-158	328	26	8	B1	100-120		0.5X1M		LOCUS B	BONE	UNMOD	FAUNAL				FRAG	1	2.0	
Col-158	328	26	7	B1	100-120		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					26	72.7	
Col-158	328	26	8	B1	100-120		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					149	208.8	
Col-158	328	26	9	B1	100-120		0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	750	54.5	
Col-158	328	26	10	B1	100-120		0.5X1M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		371.0	
Col-158	328	26	11	B1	100-120		0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS				COMP	4	0.2	
Col-158	328	27	1	B1	120-130		0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				6	0.2	
Col-158	328	27	2	B1	120-130		0.5X1M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				2	1.0	
Col-158	328	27	3	B1	120-130		0.5X1M	1/4	LOCUS B	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL			COMP	1	53.4	
Col-158	328	27	4	B1	120-130		0.5X1M	1/4	LOCUS B	METSED	MODIF	GROUND STONE			NOTCHED	COMP	1	107.0	Notched net weight
Col-158	328	27	5	B1	120-130		0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY					1	0.1	WITH FINGERPRINT
Col-158	328	27	6	B1	120-130		0.5X1M	1/8	LOCUS B	CLAY	MODIF	WORKED CLAY					17	43.6	
Col-158	328	27	7	B1	120-130		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					166	87.1	
Col-158	328	27	8	B1	120-130		0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	359	22.7	
Col-158	328	27	9	B1	120-130		0.5X1M		LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		379.2	
Col-158	328	27	10	B1	120-130		0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS				COMP	1	0.0	
Col-158	328	27	11	B1	120-130		0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL				FRAG	29	2.9	
Col-158	328	28	1	B1	130-140		0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				3	0.1	
Col-158	328	28	2	B1	130-140		0.5X1M	1/8	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				1	0.0	
Col-158	328	28	3	B1	130-140		0.5X1M	1/8	LOCUS B	CLAY	MODIF	WORKED CLAY					10	7.2	
Col-158	328	28	4	B1	130-140		0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					129	57.1	
Col-158	328	28	5	B1	130-140		0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	119	3.8	
Col-158	328	28	6	B1	130-140		0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	187	8.5	
Col-158	328	28	7	B1	130-140		0.5X1M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		188.2	
Col-158	328	28	8	B1	130-140		0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL				FRAG	358	3.6	
Col-158	328	28	9	B1	130-140		0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS				COMP	21	0.5	
Col-158	328	29	1	B2	SURFACE		NA		LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT			FRAG	1	3.4	
Col-158	328	29	2	B2	SURFACE		NA		LOCUS B	OBSID	MODIF	CHIPPED STONE	EMF		UNIFACIAL	FRAG	1	4.3	
Col-158	328	29	3	B2	SURFACE		NA		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				1	1.1	
Col-158	328	29	4	B2	SURFACE		NA		LOCUS B	BONE	UNMOD	FAUNAL			HUMERUS	FRAG	1	27.8	DOG HUMERUS
Col-158	328	31	1	B2	010-020		1X2M		LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				4	3.7	
Col-158	328	31	2	B2	010-020		1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES				17	19.0	
Col-158	328	31	3	B2	010-020		1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					10	21.8	
Col-158	328	31	4	B2	010-020		1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY					58	33.2	
Col-158	328	31	5	B2	010-020		1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL				FRAG	47	12.4	
Col-158	328	31	6	B2	010-020		1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE				FRAG		40.6	
Col-158	328	32	1	B2	020-030		1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES				5	3.5	

Col-158	328	32	2	B2	020-030	1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	10.6	
Col-158	328	32	3	B2	020-030	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				9	14.8	
Col-158	328	32	4	B2	020-030	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				40	15.8	
Col-158	328	32	5	B2	020-030	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	4	19.8	
Col-158	328	32	6	B2	020-030	1X2M	1/4	LOCUS B	METAL	MANUF	MISC		RUSTED	FRAG	10	50.0	
Col-158	328	32	7	B2	020-030	1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	34	12.6	
Col-158	328	32	8	B2	020-030	1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		50.6	
Col-158	328	32	9	B2	020-030	1X2M	1/4	LOCUS B	SAMPL	UNMOD	SAMPLES	SOIL		FRAG	3	2.1	
Col-158	328	33	1	B2	030-040	1X2M		LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		FRAG	1	0.2	
Col-158	328	33	2	B2	030-040	1X2M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			21	0.7	
Col-158	328	33	3	B2	030-040	1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	2.8	SHATTER
Col-158	328	33	4	B2	030-040	1X2M	1/8	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			6	0.3	
Col-158	328	33	5	B2	030-040	1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			10	6.8	
Col-158	328	33	6	B2	030-040	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				7	10.1	
Col-158	328	33	7	B2	030-040	1X2M	1/8	LOCUS B	CLAY	MODIF	WORKED CLAY				43	4.4	
Col-158	328	33	8	B2	030-040	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				48	29.5	
Col-158	328	33	9	B2	030-040	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	19	4.9	
Col-158	328	33	10	B2	030-040	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	21	7.9	
Col-158	328	33	11	B2	030-040	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	2	0.1	
Col-158	328	33	12	B2	030-040	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	2	0.0	
Col-158	328	33	13	B2	030-040	1X2M	1/4	LOCUS B	METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	COMP	1	2.2	
Col-158	328	33	14	B2	030-040	1X2M	1/4	LOCUS B	METAL	MANUF	FOOD AND DRINK	CAN	RUSTED	FRAG	79	43.8	
Col-158	328	33	15	B2	030-040	1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	52	12.9	
Col-158	328	33	16	B2	030-040	1X2M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	330	11.2	
Col-158	328	33	17	B2	030-040	1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		62.5	
Col-158	328	33	18	B2	030-040	1X2M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		18.6	
Col-158	328	33	19	B2	030-040	1X2M	1/8	LOCUS B	SHELL	UNMOD	GASTROPOD			COMP	1	0.0	
Col-158	328	34	1	B2	040-050	1X2M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PREFORM		FRAG	1	1.1	
Col-158	328	34	2	B2	040-050	1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	0.6	
Col-158	328	34	3	B2	040-050	1X2M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			14	0.5	
Col-158	328	34	4	B2	040-050	1X2M	1/4	LOCUS B	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	332.8	
Col-158	328	34	5	B2	040-050	1X2M	1/8	LOCUS B	SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	1	0.1	
Col-158	328	34	6	B2	040-050	1X2M	1/8	LOCUS B	CLAY	MODIF	WORKED CLAY				6	8.9	
Col-158	328	34	7	B2	040-050	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				163	65.1	
Col-158	328	34	8	B2	040-050	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	1	1.3	
Col-158	328	34	9	B2	040-050	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	5	3.1	
Col-158	328	34	10	B2	040-050	1X2M	1/4	LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	5	1.9	
Col-158	328	34	11	B2	040-050	1X2M	1/8	LOCUS B	METAL	MANUF	PERSONAL EFFECT			FRAG	1	0.3	Section of chain, jewelry
Col-158	328	34	12	B2	040-050	1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	73	31.1	
Col-158	328	34	13	B2	040-050	1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	7	19.8	
Col-158	328	34	14	B2	040-050	1X2M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	426	15.5	
Col-158	328	34	15	B2	040-050	1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		109.7	
Col-158	328	34	16	B2	040-050	1X2M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		9.6	
Col-158	328	34	17	B2	040-050	1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		22.5	
Col-158	328	35	1	B2	050-060	1X2M		LOCUS B	OBSID	MODIF	CHIPPED STONE	PREFORM		COMP	1	3.2	
Col-158	320	35	2	B2	050-060	1X2M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			15	0.4	
Col-158	328	35	3	B2	050-060	1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	3.4	
Col-158	328	35	4	B2	050-060	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				5	5.8	
Col-158	328	35	5	B2	050-060	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				176	116.3	
Col-158	328	35	6	B2	050-060	1X2M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	177	5.3	
Col-158	328	35	7	B2	050-060	1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	68	23.1	
Col-158	328	35	8	B2	050-060	1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		158.8	
Col-158	328	35	9	B2	050-060	1X2M	1/8	LOCUS B	SHELL	UNMOD	GASTROPOD			COMP	1	0.0	
Col-158	328	36	1	B2	060-070	1X2M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			3	0.8	
Col-158	328	36	2	B2	060-070	1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			5	14.1	
Col-158	328	36	3	B2	060-070	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				11	21.2	
Col-158	328	36	4	B2	060-070	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				338	299.6	
Col-158	328	36	5	B2	060-070	1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	2.3	
Col-158	328	36	6	B2	060-070	1X2M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	168	94.8	
Col-158	328	36	7	B2	060-070	1X2M	1/4	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		513.7	
Col-158	328	36	8	B2	060-070	1X2M		LOCUS B	SAMPL	UNMOD	SAMPLES	SOIL		FRAG	3	5.2	
Col-158	328	37	1	B2	070-085	1X2M	1/4	LOCUS B	BSALT	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	1.8	
Col-158	328	37	2	B2	070-085	1X2M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			4	2.2	
Col-158	328	37	3	B2	070-085	1X2M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			9	94.5	NOT ALL FLAKES
Col-158	328	37	4	B2	070-085	1X2M	1/4	LOCUS B	BONE	MODIF	AWL	CANNON	THICK	FRAG	1	1.5	
Col-158	328	37	5	B2	070-085	1X2M		LOCUS B	CLAY	MODIF	WORKED CLAY				2	51.3	BOWL FRAGMENTS
Col-158	328	37	6	B2	070-085	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				9	43.0	
Col-158	328	37	7	B2	070-085	1X2M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				258	304.6	
Col-158	328	37	8	B2	070-085	1X2M		LOCUS B	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	2	2.4	
Col-158	328	37	9	B2	070-085	1X2M		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	208	128.4	
Col-158	328	37	10	B2	070-085	1X2M		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		1267.8	
Col-158	328	37	11	B2	070-085	1X2M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG	10	1.0	
Col-158	328	38	1	B2	085-090	0.5X1M	1/4	LOCUS B	METSED	MODIF	CHIPPED STONE	FFT		COMP	1	33.2	

Col-158	328	38	2	B2	085-090			0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			14	0.8	
Col-158	328	38	3	B2	085-090			0.5X1M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			7	1.5	
Col-158	328	38	4	B2	085-090			0.5X1M	1/8	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			3	1.2	
Col-158	328	38	5	B2	085-090			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				12	38.2	
Col-158	328	38	6	B2	085-090			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				136	92.8	
Col-158	328	38	7	B2	085-090			0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	131	40.5	
Col-158	328	38	8	B2	085-090			0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	440	13.6	
Col-158	328	38	9	B2	085-090			0.5X1M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		428.5	
Col-158	328	38	10	B2	085-090			0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS			FRAG		0.3	
Col-158	328	38	11	B2	085-090			0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG		1.0	
Col-158	328	39	1	B2	090-100			0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.1	
Col-158	328	39	2	B2	090-100			0.5X1M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col-158	328	39	3	B2	090-100			0.5X1M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	6.5	
Col-158	328	39	4	B2	090-100			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				9	38.6	
Col-158	328	39	5	B2	090-100			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				103	82.8	
Col-158	328	39	6	B2	090-100			0.5X1M	1/4	LOCUS B	METAL	MANUF	ARCHITECTURAL	NAIL	RUSTED	COMP	3	3.6	ONE SQUARE, 2 WIRE NAILS
Col-158	328	39	7	B2	090-100			0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	51	23.3	
Col-158	328	39	8	B2	090-100			0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	498	16.0	
Col-158	328	39	9	B2	090-100			0.5X1M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		544.1	
Col-158	328	39	10	B2	090-100			0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG		3.4	
Col-158	328	40	1	B2	110-110			0.5X1M	1/4	LOCUS B	OBSID	MODIF	CHIPPED STONE	PROJ POINT		COMP	1	2.0	SMALL CORNER NOTCHED POINT MISSI
Col-158	328	40	2	B2	110-110			0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			11	0.3	
Col-158	328	40	3	B2	110-110			0.5X1M	1/4	LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			2	0.4	
Col-158	328	40	4	B2	110-110			0.5X1M	1/8	LOCUS B	SHELL	MODIF	BEAD	OLIVELLA	M SEQUIN	COMP	1	0.0	
Col-158	328	40	5	B2	110-110			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				13	13.8	
Col-158	328	40	6	B2	110-110			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				132	115.8	
Col-158	328	40	7	B2	110-110			0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	78	20.3	
Col-158	328	40	8	B2	110-110			0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	546	14.2	
Col-156	328	40	9	B2	110-110			0.5X1M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		327.6	
Col-158	328	40	10	B2	110-110			0.5X1M	1/4	LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG		2.3	
Col-158	328	40	11	B2	110-110			0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS			COMP	5	0.1	
Col-158	328	41	1	B2	110-120			0.5X1M	1/8	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			9	0.3	
Col-158	328	41	2	B2	110-120			0.5X1M	1/4	LOCUS B	OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col-158	328	41	3	B2	110-120			0.5X1M		LOCUS B	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col-158	328	41	4	B2	110-120			0.5X1M		LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	2.6	
Col-158	328	41	5	B2	110-120			0.5X1M	1/4	LOCUS B	CLAY	MODIF	WORKED CLAY				10	39.7	
Col-158	328	41	6	B2	110-120			0.5X1M		LOCUS B	CLAY	MODIF	WORKED CLAY				28	104.4	
Col-158	328	41	7	B2	110-120			0.5X1M	1/4	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	75	20.5	
Col-158	328	41	8	B2	110-120			0.5X1M	1/8	LOCUS B	BONE	UNMOD	FAUNAL			FRAG	310	9.4	
Col-158	328	41	9	B2	110-120			0.5X1M	1/8	LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		307.7	
Col-158	328	41	10	B2	110-120			0.5X1M	1/8	LOCUS B	FLORAL	UNMOD	SEEDS/NUTS			COMP	1	0.0	
Col-158	328	42	1	A1	030-040			1X2M	1/4	LOCUS A	OBSID	UNMOD	CHIPPED STONE	FLAKES			2	0.3	
Col-158	328	42	2	A1	030-040			1X2M	1/4	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	1.0	
Col-158	328	42	3	A1	030-040			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			7	13.0	
Col-158	328	42	4	A1	030-040			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				164.5	89.0	
Col-158	328	42	5	A1	030-040			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				301.1	151.0	
Col-158	328	42	6	A1	030-040			1X2M	1/4	LOCUS A	BONE	UNMOD	FAUNAL			FRAG	126	44.3	
Col-158	328	42	7	A1	030-040			1X2M	1/4	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		153.4	
Col-158	328	43	1	C1	000-010			1X2M	1/4	LOCUS C	METSED	UNMOD	CHIPPED STONE	FLAKES			6	9.9	
Col-158	328	43	2	C1	000-010			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				3	3.0	
Col-158	328	43	3	C1	000-010			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	0.2	
Col-158	328	43	4	C1	000-010			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	0.3	
Col-158	328	43	5	C1	000-010			1X2M	1/4	LOCUS C	METAL	MANUF	MISC		RUSTED	FRAG	4	4.7	
Col-158	328	43	6	C1	000-010			1X2M	1/4	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	25	9.6	
Col-158	328	43	7	C1	000-010			1X2M	1/4	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		22.4	
Col-158	328	43	8	DECAT	DECAT	OECAT	DECAT	DECAT	DECA'	DECAT	OECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA1	DECAT	DECAT
Col-158	328	44	1	C1	010-020			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				3	16.0	
Col-158	328	44	2	C1	010-020			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				10	6.9	
Col-158	328	44	3	C1	010-020			1X2M	1/4	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	12	3.2	
Col-158	328	44	4	C1	010-020			1X2M	1/4	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		23.1	
Col-158	328	45	1	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col-158	328	45	2	C1	020-030			1X2M	1/4	LOCUS C	METSED	UNMOD	CHIPPED STONE	FLAKES			3	2.4	
Col-158	328	45	3	C1	020-030			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				3	2.5	
Col-158	328	45	4	C1	020-030			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				27	23.4	
Col-158	328	45	5	C1	020-030			1X2M	1/4	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	44	12.5	
Col-158	328	45	6	C1	020-030			1X2M	1/4	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		41.1	
Col-158	328	45	7	C1	020-030			1X2M	1/4	LOCUS C	CHERT	MODIF	CHIPPED STONE	BIFACE		FRAG	2	41.3	??FIRE CRACKED ROCK
Col-158	328	46	1	C1	030-040			1X2M	1/4	LOCUS C	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col-158	328	46	2	C1	030-040			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				1	3.6	
Col-158	328	46	3	C1	030-040			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	1.2	
Col-156	328	46	4	C1	030-040			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AQUA	FRAG	2	0.6	
Col-158	328	46	5	C1	030-040			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	GREEN-BRIGHT	FRAG	1	0.0	
Col-156	328	46	6	C1	030-040			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	COBALT BLUE	FRAG	1	0.0	

Col-158	328	46	7	C1	030-040			1X2M	1/4	LOCUS C	GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	2	0.6	
Col-158	328	46	8	C1	030-040			1X2M	1/4	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	84	3.7	
Col-158	328	46	9	C1	030-040			1X2M	1/4	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		22.9	
Col-158	328	47	1	C1	040-050			1X2M	1/4	LOCUS C	CLAY	MODIF	WORKED CLAY				1	0.7	
Col-158	328	47	2	C1	040-050			1X2M	1/4	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	10	3.6	
Col-158	328	47	3	C1	040-050			1X2M	1/8	LOCUS C	BONE	UNMOD	FAUNAL			FRAG	52	1.8	
Col-158	328	47	4	C1	040-050			1X2M	1/4	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		18.9	
Col-158	328	47	5	C1	040-050			1X2M	1/8	LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		4.7	
Col-158	328	47	6	C1	040-050			1X2M	1/8	LOCUS C	FLORAL	UNMOD	CHARCOAL			FRAG	14	0.2	
Col-158	328	48	1	D1	163-183			1X2M	1/8	LOCUS D	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	0.4	
Col-158	328	48	2	D1	163-183			1X2M	1/8	LOCUS D	CHERT	UNMOD	CHIPPED STONE	FLAKES			2	5.4	
Col-158	328	48	3	D1	163-183			1X2M	1/8	LOCUS D	METSED	UNMOD	CHIPPED STONE	FLAKES			13	0.5	
Col-158	328	48	4	D1	163-183			1X2M	1/4	LOCUS D	METSED	UNMOD	CHIPPED STONE	FLAKES			49	68.3	
Col-158	328	48	5	D1	163-183			1X2M	1/8	LOCUS D	BONE	MODIF	GORGE	BIPOINT		COMP	1	0.1	
Col-158	328	48	6	D1	163-183			1X2M	1/8	LOCUS D	BONE	MODIF	AWL	CANNON	SPLIT	COMP	1	10.0	
Col-158	328	48	7	D1	163-183			1X2M	1/8	LOCUS D	SHELL	MODIF	BEAD	OLIVELLA	SADDLE	FRAG	1	0.0	
Col-158	328	48	8	D1	163-183			1X2M	1/8	LOCUS D	FLORAL	MODIF	POSS TEXTILE			FRAG		0.0	
Col-158	328	48	9	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY				3	1.6	
Col-158	328	48	10	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY				1	12.8	
Col-158	328	48	11	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY				1	13.5	
Col-158	328	48	12	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY				1	11.3	POSSIBLE POT SHERD
Col-158	328	48	13	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY				29	35.7	
Col-158	328	48	14	D1	163-183			1X2M	1/4	LOCUS D	CLAY	MODIF	WORKED CLAY				1030	379.9	
Col-158	328	48	15	D1	163-183			1X2M	1/8	LOCUS D	CLAY	MODIF	WORKED CLAY					878.0	MANY SMALL BALLS
Col-158	328	48	16	D1	163-183			1X2M	1/8	LOCUS D	BONE	UNMOD	FAUNAL			FRAG	1596	47.7	
Col-158	328	48	17	D1	163-183			1X2M	1/4	LOCUS D	BONE	UNMOD	FAUNAL			FRAG	193	52.0	
Col-158	328	48	18	D1	163-183			1X2M	1/8	LOCUS D	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	0.0	
Col-158	328	48	19	D1	163-183			1X2M	1/4	LOCUS D	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	0.1	
Col-158	328	48	20	D1	163-183			1X2M	1/4	LOCUS D	FLORAL	UNMOD	CHARCOAL			FRAG		17.3	
Col-158	328	48	21	D1	163-183			1X2M	1/8	LOCUS D	FLORAL	UNMOD	CHARCOAL			FRAG		13.9	
Col-158	328	48	22	D1	163-183			1X2M	1/4	LOCUS D	FLORAL	UNMOD	SEEDS/NUTS			COMP	2	0.2	
Col-158	328	48	23	D1	163-183			1X2M	1/8	LOCUS D	FLORAL	UNMOD	SEEDS/NUTS			COMP	110	1.8	
Col-158	328	48	24	D1	163-183			1X2M	1/8	LOCUS D	SHELL	UNMOD	GASTROPOD			COMP	1	0.1	
Col-158	328	48	25	D1	163-183			1X2M	1/8	LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		445.8	
Col-158	328	48	26	D1	163-183			1X2M	1/4	LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		1889.7	3 BAGS
Col-158	328	49	1	TRENCH	TRENCH 5			NA		LOCUS D	BONE	UNMOD	FAUNAL			FRAG	1	2.1	
Col-158	328	49	2	TRENCH	TRENCH 5			NA		LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		5.6	
Col-158	328	50	1	TRENCH	TRENCH 6			NA		LOCUS D	METSED	UNMOD	CHIPPED STONE	FLAKES			18	5.5	
Col-158	328	50	2	TRENCH	TRENCH 6			NA		LOCUS D	BONE	MODIF	J HOOK	HOOK		COMP	2	0.9	
Col-158	328	50	3	TRENCH	TRENCH 6			NA		LOCUS D	CLAY	MODIF	WORKED CLAY				1627	88.8	
Col-158	328	50	4	TRENCH	TRENCH 6			NA		LOCUS D	CERAM	MANUF	FOOD AND DRINK	CERAMIC		FRAG	2	6.8	WHITE GLAZE
Col-158	328	50	5	TRENCH	TRENCH 6			NA		LOCUS D	METAL	MANUF	MISC		RUSTED	FRAG	4	65.5	
Col-158	328	50	6	TRENCH	TRENCH 6			NA		LOCUS D	GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	0.6	
Col-158	328	50	7	TRENCH	TRENCH 6			NA		LOCUS D	BONE	UNMOD	FAUNAL			FRAG	276	16.2	
Col-158	328	50	8	TRENCH	TRENCH 6			NA		LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		519.2	
Col-158	328	50	9	TRENCH	TRENCH 6			NA		LOCUS D	FLORAL	UNMOD	SEEDS/NUTS			COMP	12	0.4	
Col-158	328	50	10	TRENCH	TRENCH 6			NA		LOCUS D	FLORAL	UNMOD	CHARCOAL			FRAG		1.3	
Col-158	328	51	1	TRENCH	TRENCH 7			NA		LOCUS D	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	153.7	?Andesite?
Col-158	328	51	2	TRENCH	TRENCH 7			NA	1/8	LOCUS D	OBSID	UNMOD	CHIPPED STONE	FLAKES			5	0.4	
Col-158	328	51	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col-158	328	51	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col-158	328	51	5	TRENCH	TRENCH 7			NA	1/8	LOCUS D	METSED	UNMOD	CHIPPED STONE	FLAKES			54	14.8	
Col-158	328	51	6	TRENCH	TRENCH 7			NA		LOCUS D	CLAY	MODIF	WORKED CLAY				21	34.8	
Col-156	328	51	7	TRENCH	TRENCH 7			NA		LOCUS D	CLAY	MODIF	WORKED CLAY				1014	99.4	
Col-158	328	51	8	TRENCH	TRENCH 7			NA	1/8	LOCUS D	BONE	UNMOD	FAUNAL			FRAG	488	28.1	
Col-158	328	51	9	TRENCH	TRENCH 7			NA	1/8	LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		46.5	
Col-158	328	51	10	TRENCH	TRENCH 7			NA		LOCUS D	FLORAL	UNMOD	SEEDS/NUTS			COMP	3	0.1	
Col-158	328	51	11	TRENCH	TRENCH 7			NA		LOCUS D	FLORAL	UNMOD	CHARCOAL			FRAG	43	4.0	INCLUDES SEEDS
Col-158	328	51	12	TRENCH	TRENCH 7			NA		LOCUS D	SAMPL	UNMOD	SAMPLES	SOIL		FRAG		1870.0	WEIGHT INCLUDES BAG WEIGHT
Col-158	328	52	1	TRENCH	TRENCH 8			NA		LOCUS D	BONE	UNMOD	HUMAN BONE			COMP	1	0.5	HUMAN TOOTH
Col-158	328	52	2	TRENCH	TRENCH 8			NA		LOCUS D	METSED	MODIF	GROUND STONE	SHARPENER	GROOVED	FRAG	1	5.4	Historic
Col-158	328	52	3	TRENCH	TRENCH 8			NA		LOCUS D	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	109.6	
Col-158	328	52	4	TRENCH	TRENCH 8			NA		LOCUS D	METSED	UNMOD	CHIPPED STONE	FLAKES			3	15.7	
Col-158	328	52	5	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT
Col-158	328	52	6	TRENCH	TRENCH 8			NA		LOCUS D	SAMPL	UNMOD	SAMPLES	SOIL		FRAG	22	3.4	CONTAINS SHELL FRAGMENTS
Col-158	328	52	7	TRENCH	TRENCH 8			NA		LOCUS D	BONE	UNMOD	FAUNAL			FRAG	3	0.4	
Col-158	328	52	8	TRENCH	TRENCH 8			NA		LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		128.9	
Col-158	328	52	9	TRENCH	TRENCH 8			NA		LOCUS D	SAMPL	UNMOD	SAMPLES	ASH		FRAG		4.2	ASH SAMPLE
Col-158	328	53	1	TRENCH	TRENTH 10			NA		LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		1.4	
Col-158	328	54	1	TRENCH	TRENCH 11			NA		LOCUS D	SHELL	UNMOD	BIVALVE			FRAG		9.7	
Col-158	328	55	1	TRENCH	TRENCH 14			NA		LOCUS C	BONE	UNMOD	FAUNAL			FRAG	1	0.7	
Col-158	328	56	1	DECAT	DECAT	DECAT	DECAT	DECAT	DECA'	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	56	2	TRENCH	TRENCH 15			NA		LOCUS C	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	59.4	

Col-158	328	56	3	TRENCH	TRENCH 15			NA		LOCUS C	BONE	UNMOD	FAUNAL			FRAG	4	6.2	
Col-158	328	56	4	TRENCH	TRENCH 15			NA		LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		27.2	
Col-158	328	57	1	TRENCH	TRENCH 16			NA		LOCUS C	SAMPL	UNMOD	SAMPLES	ROCK	FIRE-AFFECTED	FRAG	1	35.0	
Col-158	328	57	2	TRENCH	TRENCH 16			NA		LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		11.8	
Col-158	328	58	1	TRENCH	TRENCH 17			NA		LOCUS C	METSED	UNMOD	CHIPPED STONE	FLAKES			1	0.1	
Col-158	328	58	2	TRENCH	TRENCH 17			NA		LOCUS C	BONE	UNMOD	FAUNAL			FRAG	13	11.7	
Col-158	328	58	3	TRENCH	TRENCH 17			NA		LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		71.2	
Col-158	328	59	1	TRENCH	TRENCH 18			NA		LOCUS C	BONE	UNMOD	FAUNAL			FRAG	1	0.7	
Col-158	328	59	2	TRENCH	TRENCH 18			NA		LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		35.4	
Col-158	328	60	1	TRENCH	TRENCH 19			NA		LOCUS C	CLAY	MODIF	WORKED CLAY				1	6.2	
Col-158	328	60	2	TRENCH	TRENCH 19			NA		LOCUS C	SHELL	UNMOD	BIVALVE			FRAG		38.2	
Col-158	328	61	1	TRENCH	TRENCH 20			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	1	1.1	
Col-158	328	61	2	TRENCH	TRENCH 20			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		16.0	
Col-158	328	61	3	TRENCH	TRENCH 20			NA		LOCUS B	FLORAL	UNMOD	CHARCOAL			FRAG		0.0	
Col-158	328	62	1	TRENCH	TRENCH 21			NA		LOCUS B	METSED	UNMOD	CHIPPED STONE	FLAKES			1	3.2	
Col-158	328	62	2	TRENCH	TRENCH 21			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	12	15.6	
Col-158	328	62	3	TRENCH	TRENCH 21			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		49.1	
Col-158	328	63	1	TRENCH	TRENCH 22			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	1	0.2	
Col-158	328	63	2	TRENCH	TRENCH 22			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		1.8	
Col-158	328	64	1	TRENCH	TRENCH 23			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		1.0	
Col-158	328	65	1	TRENCH	TRENCH 24			NA		LOCUS B	BONE	UNMOD	HUMAN BONE			FRAG	3	13.2	
Col-158	328	65	2	TRENCH	TRENCH 24			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	5	13.4	FOUND ON SURFACE NEAR TRENCH 24
Col-158	328	66	1	TRENCH	TRENCH 25			NA		LOCUS B	BONE	UNMOD	HUMAN BONE			FRAG	3	55.9	
Col-158	328	66	2	TRENCH	TRENCH 25			NA		LOCUS B	BONE	MODIF	AWL	CANNON	THICK	FRAG	1	3.7	
Col-158	328	66	3	TRENCH	TRENCH 25			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	3	7.3	
Col-158	328	67	1	TRENCH	TRENCH 26			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	1	7.6	
Col-158	328	67	2	TRENCH	TRENCH 26			NA		LOCUS B	CLAY	MODIF	WORKED CLAY				2	199.2	
Col-158	328	67	3	TRENCH	TRENCH 26			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG	5	11.2	
Col-158	328	68	1	TRENCH	TRENCH 27			NA		LOCUS B	BONE	UNMOD	FAUNAL			FRAG	3	13.0	
Col-158	328	68	2	TRENCH	TRENCH 27			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		0.4	
Col-158	328	69	1	TRENCH	TRENCH 28			NA		LOCUS B	SHELL	UNMOO	BIVALVE			FRAG		2.2	
Col-158	328	70	1	TRENCH	TRENCH 29			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		0.7	
Col-158	328	71	1	TRENCH	TRENCH 30			NA		LOCUS B	SHELL	UNMOD	BIVALVE			FRAG		6.2	
Col-158	328	72	1	TRENCH	TRENCH 31			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	3	0.5	
Col-158	328	72	2	TRENCH	TRENCH 31			NA		LOCUS A	CLAY	MODIF	WORKED CLAY				2	5.7	
Col-158	328	72	3	TRENCH	TRENCH 31			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		33.7	
Col-158	328	73	1	TRENCH	TRENCH 32			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		14.5	
Col-158	328	74	1	TRENCH	TRENCH 33			NA		LOCUS A	SPSTN	MODIF	GROUND STONE	BOWL	SHAPED	FRAG	1	180.2	Soapstone
Col-158	328	74	2	TRENCH	TRENCH 33			NA		LOCUS A	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	211.9	
Col-158	328	74	3	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT
Col-158	328	74	4	TRENCH	TRENCH 33			NA		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			5	17.3	
Col-158	328	74	5	TRENCH	TRENCH 33			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	16	4.5	
Col-158	328	74	6	TRENCH	TRENCH 33			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		11.7	
Col-158	328	74	7	TRENCH	TRENCH 33			NA		LOCUS A	SAMPL	UNMOD	SAMPLES	SOIL		FRAG		1186.8	
Col-158	328	75	1	TRENCH	TRENCH 34			NA		LOCUS A	SAMPL	UNMOD	SAMPLES	ROCK	FIRE-AFFECTED	FRAG	1	100.2	
Col-158	328	75	2	TRENCH	TRENCH 34			NA		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			1	20.6	WATER WORN BASALT
Col-158	328	75	3	TRENCH	TRENCH 34			NA		LOCUS A	CLAY	MODIF	WORKED CLAY				2	1.5	
Col-158	328	75	4	TRENCH	TRENCH 34			NA		LOCUS A	SHELL	MODIF	BEAD	OLIVELLA	SPIRE-LOPPED	COMP	1	0.5	
Col-158	328	75	5	TRENCH	TRENCH 34			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	24	15.5	
Col-158	328	75	6	TRENCH	TRENCH 34			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		229.4	
Col-158	328	76	1	TRENCH	TRENCH 35			NA		LOCUS A	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		COMP	1	47.1	
Col-158	328	76	2	TRENCH	TRENCH 35			NA		LOCUS A	CLAY	MODIF	WORKED CLAY				3	102.1	
Col-158	328	76	3	TRENCH	TRENCH 35			NA		LOCUS A	BONE	UNMOD	HUMAN BONE			FRAG	2	35.1	
Col-158	328	76	4	TRENCH	TRENCH 35			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	27	40.8	
Col-158	328	76	5	TRENCH	TRENCH 35			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		202.1	
Col-158	328	77	1	TRENCH	TRENCH 36			NA		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			1	0.6	
Col-158	328	77	2	TRENCH	TRENCH 36			NA		LOCUS A	CLAY	MODIF	WORKED CLAY				2	2.8	
Col-158	328	77	3	TRENCH	TRENCH 36			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	4	5.7	
Col-158	328	77	4	TRENCH	TRENCH 36			NA		LOCUS A	BONE	UNMOD	HUMAN BONE			FRAG	3	50.4	HUMAN VS FAUNAL SHAFT FRAGS
Col-158	328	77	5	TRENCH	TRENCH 36			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		85.5	
Col-158	328	77	6	TRENCH	TRENCH 36			NA		LOCUS A	SAMPL	UNMOD	SAMPLES	SOIL		FRAG		298.0	
Col-158	328	78	1	TRENCH	TRENCH 37			NA		LOCUS A	BSALT	MODIF	CHIPPED STONE	PREFORM		FRAG	1	2.6	
Col-158	328	78	2	TRENCH	TRENCH 37			NA		LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			3	27.5	
Col-158	328	78	3	TRENCH	TRENCH 37			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	3	5.8	
Col-158	328	78	4	TRENCH	TRENCH 37			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		64.9	
Col-158	328	78	5	TRENCH	TRENCH 37			NA		LOCUS A	SAMPL	UNMOD	SAMPLES	SOIL		FRAG		3.7	
Col-158	328	79	1	TRENCH	TRENCH 38			NA		LOCUS A	METSED	MODIF	CHIPPED STONE	CORE/CORE TOOL		FRAG	1	51.6	
Col-158	328	79	2	TRENCH	TRENCH 38			NA		LOCUS A	FLORAL	MANUF	ARCHITECTURAL	WOOD		FRAG	1	2.0	ORGANIC SUBSTANCE UNKNOWN
Col-158	328	80	1	TRENCH	TRENCH 39			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	1	1.5	
Col-158	328	81	1	TRENCH	TRENCH 40			NA		LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		0.1	
Col-158	328	82	1	TRENCH	TRENCH 41			NA		LOCUS A	BONE	UNMOD	FAUNAL			FRAG	2	12.1	
Col-158	328	82	2	TRENCH	TRENCH 41			NA		LOCUS A	SAMPL	UNMOD	SAMPLES	SOIL		FRAG		1433.7	CLAY FEATURE
Col-158	328	83	1	NA	SURFACE			NA		LOCUS A	OTHER	MODIF	GROUND STONE	PESTLE		FRAG		528.8	SURFACE

Col-158	328	83	2	UNK	UNK	UNK		UNK	UNK		OBSID	MODIF	CHIPPED STONE	EMF		COMP	1	9.0	
Col-158	328	83	3	UNK	UNK	UNK		UNK	UNK		OBSID	UNMOD	CHIPPED STONE	FLAKES			1	0.2	
Col-158	328	83	4	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	OECAT	DECAT	OECAT	DECAT	DECAT	DECAT
Col-158	328	84	1	A1	030-040			1X2M	1/4	LOCUS A	CHERT	UNMOD	CHIPPED STONE	FLAKES			1	1.5	BANDED CHERT
Col-158	328	84	2	A1	830-040			1X2M	1/4	LOCUS A	METSED	UNMOD	CHIPPED STONE	FLAKES			13	30.1	
Col-158	328	84	3	A1	030-040			1X2M	1/4	LOCUS A	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	84	4	A1	030-040			1X2M	1/4	LOCUS A	CLAY	MODIF	WORKED CLAY				8	11.6	
Col-158	328	84	5	A1	030-040			1X2M	1/4	LOCUS A	CLAY	UNMOD	FIRED CLAY				24	24.2	
Col-158	328	84	8	A1	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK		AQUA	FRAG	1	5.5	BURNISHED, BLUE GREEN
Col-158	328	84	7	A1	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK		CLEAR	FRAG	1	0.2	
Col-158	328	84	8	A1	030-040			1X2M	1/4	LOCUS A	GLASS	MANUF	FOOD AND DRINK		AMBER	FRAG	1	0.6	
Col-158	328	84	9	A1	030-040			1X2M	1/4	LOCUS A	METAL	MANUF	MISC		RUSTED	FRAG	4	15.8	POSSIBLE CAN FRAG PLUS NAILS
Col-158	328	84	10	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	84	11	A1	030-040			1X2M	1/4	LOCUS A	SHELL	UNMOD	BIVALVE			FRAG		19.4	
Col-158	328	85	1	UNK	UNK	UNK		UNK	UNK		OBSID	UNMOD	CHIPPED STONE	FLAKES			5	0.2	
Col-158	328	85	2	UNK	UNK	UNK		UNK	UNK		CLAY	MODIF	WORKED CLAY				5	4.3	
Col-158	328	85	3	UNK	UNK	UNK		UNK	UNK		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	1	3.8	EMBOSSED
Col-158	328	85	4	UNK	UNK	UNK		UNK	UNK		GLASS	MANUF	FOOD AND DRINK	BOTTLE	AMBER	FRAG	1	0.1	
Col-158	328	85	5	UNK	UNK	UNK		UNK	UNK		GLASS	MANUF	FOOD AND DRINK	BOTTLE	CLEAR	FRAG	5	3.1	
Col-158	328	85	6	UNK	UNK	UNK		UNK	UNK		METAL	MANUF	MISC	WIRE	RUSTED	FRAG	4	1.5	UN KNOWN
Col-158	328	85	7	DECAT	DECAT	DECAT	DECAT	DECAT	DECA	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT	DECAT
Col-158	328	85	8	UNK	UNK	UNK		UNK	UNK		SHELL	UNMOD	BIVALVE			FRAG		14.2	

APPENDIX B: ARTIFACT DATA

SITE	PA	ACC	LOT	CAT	UNIT	DEPTH	ILL	MAT	OH	FRM	TYPE	PART	EUs	CTX	EDGE<	LNG	WMX	THK	T:W	WGT	REMARK
Core Tools																					
Col -247		327	138	4	A1	050-060		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	74	N/A	N/A	N/A	-	150.7	
Col -247		327	59	5	B1	050-060		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	66	N/A	N/A	N/A	-	53.5	
Col -247		327	63	14	B1	090-100		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	92	N/A	N/A	N/A	-	62.0	
Col -247		327	102	20	B5	040-050		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	89	N/A	N/A	N/A	-	34.4	
Col -247		327	109	16	B6	010-020		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	95	N/A	N/A	N/A	-	44.4	
Col -247		327	35	2	A4	090-100		METSED	-	CORE TOOL	HMR	COMP	n/a	X	78	77.5	65.5	39.0	0.60	277.9	
Col -247		327	85	15	B3	070-080		METSED	-	CORE TOOL	HMR	COMP	n/a	X	86	94.6	77.0	63.4	0.82	648.4	
Col -247		327	115	7	B6	070-080		METSED	-	CORE TOOL	HMR	COMP	n/a	X	107	49.1	50.3	47.6	0.95	168.3	
Col -247		327	120	4	A14	010-020		METSED	-	CORE TOOL	HMR	COMP	n/a	X	103	76.1	73.9	45.2	0.61	315.2	
Col -247		327	83	22	B3	050-060		METSED	-	CORE TOOL	HMR	FRAG	n/a	X	75	60.7	42.5	39.9	0.94	152.6	
															89.8	71.6	61.8	47.0	0.8	312.5	
Col -247		327	25	3	A3	120-130		METSED	-	CORE TOOL	COR	COMP	n/a	X	54	54.2	44.8	32.6	0.73	58.2	
Col -247		327	42	5	A5	040-050		METSED	-	CORE TOOL	COR	COMP	n/a	X	75	51.6	39.6	31.4	0.79	70.3	
Col -247		327	74	5	B2	090-100		METSED	-	CORE TOOL	COR	COMP	n/a	X	68	77.4	53.6	47.2	0.88	216.0	SINGLE-STRUCK
Col -247		327	83	23	B3	050-060		METSED	-	CORE TOOL	COR	COMP	n/a	X	82	54.9	33.9	33.5	0.99	71.8	
Col -247		327	88	11	B3	100-110		METSED	-	CORE TOOL	COR	COMP	n/a	X	68	84.3	49.1	32.7	0.67	146.9	
Col -247		327	108	11	B6	000-010		METSED	-	CORE TOOL	COR	COMP	n/a	X	73	44.3	39.2	36.9	0.94	61.8	
Col -247		327	121	5	A14	020-030		METSED	-	CORE TOOL	COR	COMP	n/a	X	83	78.3	65.2	51.8	0.79	345.3	
Col-158		328	27	3	B1	120-130		METSED	-	CORE TOOL	COR	COMP	n/a	X	76	47.6	34.7	25.8	0.74	53.4	
Col-158		328	51	1	T7	LOCUS D		METSED	-	CORE TOOL	COR	COMP	n/a	X	76	63.1	48.7	38.8	0.80	153.7	
Col-158		328	74	2	T33	LOCUS A		METSED	-	CORE TOOL	COR	COMP	n/a	X	68	72.2	62.2	34.6	0.56	211.9	
															72.3	62.8	47.1	36.5	0.8	138.8	
Col -247		327	35	3	A4	090-100		METSED	-	CORE TOOL	CH L	COMP	n/a	X	43	84.5	69.1	37.4	0.54	239.4	
Col-158		328	34	4	B2	040-050		METSED	-	CORE TOOL	CH L	COMP	n/a	X	67	85.2	80.9	44.4	0.55	332.8	
Col -247		327	65	3	B2	000-010		METSED	-	CORE TOOL	CH L	COMP	n/a	X	73	64.7	67.3	47.1	0.70	263.7	
Col -247		327	115	6	B6	070-080		METSED	-	CORE TOOL	CH L	COMP	n/a	X	79	64.7	63.6	48.3	0.76	264.5	
Col -247		327	107	1	B5	090-100		METSED	-	CORE TOOL	CH L	COMP	n/a	X	63	74.8	73	43.6	0.60	244.3	
															65.0	74.8	70.8	44.2	0.6	268.9	
Col -247		327	65	13	B2	000-010		METSED	-	CORE TOOL	CHS	COMP	n/a	X	90	60.7	52.1	32.8	0.6	119.0	
Col -247		327	77	4	B3	000-010		METSED	-	CORE TOOL	CHS	COMP	n/a	X	73	52.0	48.3	23.4	0.5	64.9	
Col -247		327	85	16	B3	070-080		METSED	-	CORE TOOL	CHS	COMP	n/a	X	63	65.4	50.9	25.7	0.5	89.7	
Col -247		327	95	16	B4	060-070		CHERT	-	CORE TOOL	CHS	COMP	n/a	X	55	69.1	58.4	25.1	0.4	132.0	
Col -247		327	110	14	B6	020-030		METSED	-	CORE TOOL	CHS	COMP	n/a	X	60	54.8	49.0	18.1	0.4	56.7	
Col-158		328	52	3	T8	LOCUS D		METSED	-	CORE TOOL	CHS	COMP	n/a	X	74	66.9	56.1	29.8	0.5	109.6	
Col-158		328	56	2	T15	LOCUS C		METSED	-	CORE TOOL	CHS	COMP	n/a	X	58	58.7	46.5	16.7	0.4	59.4	
															67.6	61.1	51.6	24.5	0.5	90.2	
Col -247		327	56	10	B1	020-030		METSED	-	CORE TOOL	UNK	FRAG	n/a	X	76	N/A	N/A	N/A	-	92.2	
Col-158		328	76	1	T35	LOCUS A		METSED	-	CORE TOOL	UNK	FRAG	n/a	X	69	N/A	N/A	N/A	-	47.1	
Col-158		328	79	1	T38	LOCUS A		METSED	-	CORE TOOL	UNK	FRAG	n/a	X	68	N/A	N/A	N/A	-	51.6	
Obsidian EMFs																					
Col-245		326	1	5	NA	MIXED		OBSID	-	EMF	SM	COMP	2	1	57	26.9	18.1	7.2	0.40	2.7	CC/FL
Col -247		327	28	2	A4	000-010		OBSID	-	EMF	SM	COMP	2	2	50	36.3	26.2	8.3	0.32	8.1	CV/CC
Col -247		327	39	2	A5	010-020		OBSID	-	EMF	SM	COMP	2	1	37	37.0	19.9	4.2	0.21	2.6	FL/FL
Col -247		327	70	15	B2	050-060		BL	2.7	EMF	SM	COMP	1	-	65	21.9	19.1	3.8	0.20	1.3	FL
Col -247		327	78	1	B3	010-020		OBSID	-	EMF	SM	COMP	1	-	60	22.4	16.3	5.1	0.31	1.7	FL
Col -247		327	90	4	B4	010-020		OBSID	-	EMF	SM	COMP	2	1	72	25.2	19.5	8.1	0.42	2.1	FL/FL
															56.8	28.3	19.9	6.1	0.3	3.1	

Metased Spall Tools																			
Col -247	327	11	2	A2	100-110	METSED	-	SPALL		COMP	1	1	56.0	52.1	33.5	17.6	0.53	31.8	SHAPING
Col -247	327	17	4	A3	010-020	METSED	-	SPALL		COMP	1	1	25.0	59.2	32.3	10.3	0.32	18.5	USE ONLY
Col -247	327	71	2	B2	060-070	METSED	-	SPALL		COMP	1	1	51.0	86.9	64.7	22.2	0.34	122.5	USE ONLY
Col -247	327	74	3	B2	090-100	METSED	-	SPALL		COMP	1	1	64.0	56.5	37.5	24.1	0.64	40.8	SHAPING
Col -247	327	93	17	B4	040-050	METSED	-	SPALL		COMP	1	1	56.0	49.7	32.2	18.5	0.57	32.5	SHAPING
Col -247	327	141	1	A1	080-090	METSED	-	SPALL		COMP	1	1	45.0	42.7	22.3	11.7	0.52	8.9	USE ONLY
Col-158	328	20	4	B1	050-060	METSED	-	SPALL		COMP	1	1	31.0	66.6	43.0	17.1	0.40	56.4	USE ONLY
Col-158	328	38	1	B2	085-090	METSED	-	SPALL		COMP	1	1	33.0	71.8	37.8	12.7	0.34	33.2	USE ONLY
												14.0	46.7	62.4	39.6	17.7	0.5	49.1	
FFTs																			
327	327	61	14	B1	070-080	BL	5.9	FFT	DOME	CMP	2	-	44.0	30.9	25.3	12.1	0.48	8.1	SERRATED
Small Core																			
Col-246/H	325	4	5	BDIRT	n/a	OBSID	-	EMF	SMAL	COMP	n/a	-	76	31.9	25.2	17.4	0.69	11.0	
UNK																			
Col-245	326	5	7	LMIDD			-	SPALL									#DIV/0!	6.3	
Col -247	327	18	2	A3	020-040	OBSID	-	SPALL									#DIV/0!	0.8	
Col -247	327	18	3	A3	020-040	OBSID	-	SPALL									#DIV/0!	0.9	
Col -247	327	28	1	A4	000-010	OBSID	-	SPALL									#DIV/0!	0.1	
Col -247	327	36	1	A4-5	050-070	OBSID	-	SPALL									#DIV/0!	4.9	
Col -247	327	36	2	A4-5	050-070	OBSID	-	SPALL									#DIV/0!	0.9	
Col -247	327	40	1	A5	020-030	OBSID	-	SPALL									#DIV/0!	0.4	
Col -247	327	42	1	A5	040-050	OBSID	-	SPALL									#DIV/0!	2.6	
Col -247	327	50	2	A6	020-030	OBSID	-	SPALL									#DIV/0!	2.2	
Col -247	327	67	1	B2	020-030	OBSID	-	SPALL									#DIV/0!	0.3	
Col -247	327	95	2	B4	060-070	BSALT	-	SPALL									#DIV/0!	1.3	
Col -247	327	101	1	B5	020-040	OBSID	-	SPALL									#DIV/0!	1.2	
Col -247	327	108	2	B6	000-010	OBSID	-	SPALL									#DIV/0!	0.6	
Col-158	328	10	2	A2	020-030	OBSID	-	SPALL		COMP							#DIV/0!	0.5	
Col-158	328	23	1	B1	080-090	OBSID	-	SPALL		FRAG							#DIV/0!	0.1	
Col-158	328	29	2	B2	SURFACE	OBSID	-	SPALL		FRAG							#DIV/0!	4.3	
Col-158	328	83	2	UNK	UNK	OBSID	-	SPALL		COMP							#DIV/0!	9.0	
Col-245	326	1	6	NA	MIXED	OBSID	-	CORE TOOL		COMP							#DIV/0!	3.5	
Col-158	328	26	3	B1	100-120	METSED	-	CORE TOOL			n/a	X					#DIV/0!	34.6	
Col -247	327	129	5	A17	000-010	METSED	-	CORE TOOL			n/a	X					#DIV/0!	78.2	

SITE	ACC	LOT	CAT	SUB	LNG	WDT	MPERF	THK	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	PART	#	WGT	REMARKS
RESRD	327	163	11	A					BUR 6	EXPOS	1/8	SHELL	MODIF	BEAD	HALIOTIS	DISK	CMP	1		
RESRD	327	163	11	B					BUR 6	EXPOS	1/8	SHELL	MODIF	BEAD	HALIOTIS	DISK	CMP	1		
RESRD	327	12	5						A2	110-120	1/4	SHELL	MODIF	BEAD	HALIOTIS	SQUARE	CMP	1	0.1	
RESRD	327	83	6		9.2	8.8	2.1	1.9	B3	050-060	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	CMP	1	0.21	
RESRD	327	135	6	A	7.2	7.1	2.8	2.0	A18	020-030	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	CMP	1	0.13	BURNED
RESRD	327	135	6	B	7.4	7.0	2.4	2.0	A18	020-030	1/4	SHELL	MODIF	BEAD	MACOMA	DISK	CMP	1	0.13	BURNED
RESRD	327	139	7		5.0	4.7	2.1	1.6	A1	060-070	1/8	SHELL	MODIF	BEAD	MACOMA	DISK	CMP	1	0.1	
RESRD	327	152	3		4.3	4.2	2.2	1.3	B1	030-040	1/8	SHELL	MODIF	BEAD	MACOMA	DISK	CMP	1	0.05	TINY; BURNED
					6.6	6.4	2.3	1.8										5		
CCCH	325	1	12		14.2	9.2	3.0	N/A	N/A	3A	1/8	SHELL	MODIF	BEAD	OLIVELLA	A1	CMP	1	0.4	
CCCH	325	4	9		12.2	7.3	3.7	N/A	N/A	BCKDRT	1/4	SHELL	MODIF	BEAD	OLIVELLA	A1	CMP	1	0.3	
RESRD	327	84	7		11.6	7.8	2.6	N/A	B3	060-070	1/4	SHELL	MODIF	BEAD	OLIVELLA	A1	CMP	1	0.5	BURNED
RESRD	327	131	6		11.8	6.7	2.1	N/A	A17	020-030	1/4	SHELL	MODIF	BEAD	OLIVELLA	A1	CMP	1	0.35	
STEGE	328	75	4		11.1	7.9	3.4	N/A	T34	N/A	N/A	SHELL	MODIF	BEAD	OLIVELLA	A1	CMP	1	0.5	DECOMPOSED
RESRD	327	72	12		N/A	N/A	N/A	N/A	B2	070-080	1/4	SHELL	MODIF	BEAD	OLIVELLA	A2	FRAG	1	0.3	
					12.2	7.8	3.0											6		
RESRD	327	164	4	B	8.0	6.3	2.7	1.3	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	C3	CMP	1		
STEGE	328	1	7						A1	000-010	1/4	SHELL	MODIF	BEAD	OLIVELLA	F2/F3	FRAG	1	0.1	
STEGE	328	48	7						D1	163-183	1/8	SHELL	MODIF	BEAD	OLIVELLA	F3	FRAG	1	0.01	BURNED
RESRD	327	164	4	A	7.3	6.5	2.6	0.9	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 LG	CMP	1		
RESRD	327	164	4	A	5.4	5.3	2.7	1.0	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	5.6	5.5	1.8	0.8	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	5.6	5.3	2.6	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	5.6	5.1	2.7	1.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	5.7	5.7	2.3	1.0	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.0	5.8	2.1	1.0	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.0	5.7	2.3	0.9	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.0	6.0	2.7	0.8	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.0	6.0	2.7	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.1	6.0	1.3	1.4	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.1	6.0	2.0	0.6	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.1	5.5	2.3	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.3	6.1	2.4	0.9	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.3	5.7	2.5	1.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.4	5.7	2.2	1.3	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.4	6.2	2.4	0.7	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.4	6.2	2.5	0.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.5	6.5	2.3	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.7	6.6	2.5	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
RESRD	327	164	4	A	6.8	6.4	2.2	1.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G2 SM	CMP	1		
					6.2	5.9	2.3	1.0										21		
RESRD	327	164	4	B	5.1	2.8	2.7	1.0	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	B	5.1	3.0	2.6	1.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	B	5.1	3.2	3.2	1.3	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	B	5.2	3.0	2.8	0.8	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	5.9	5.8	3.1	0.9	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	6.0	5.8	2.8	1.0	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	6.0	5.5	2.9	1.1	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	6.1	5.9	3.0	1.2	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	6.2	5.9	3.1	1.3	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4	A	6.3	6.0	2.9	0.8	BUR 6	MATRIIX	1/8	SHELL	MODIF	BEAD	OLIVELLA	G3 SM	CMP	1		

RESRD	327	164	4 A	6.3	6.0	3.5	1.8	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	6.6	6.4	2.9	1.2	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	6.6	6.0	3.2	1.3	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	6.7	6.3	3.0	1.1	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	6.9	6.5	3.0	1.1	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	7.0	6.5	2.9	1.0	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 SM	CMP	1		
RESRD	327	164	4 A	7.1	6.9	3.0	1.5	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 LG	CMP	1		
RESRD	327	164	4 A	7.1	6.9	3.2	1.2	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 LG	CMP	1		
RESRD	327	164	4 A	7.1	6.7	3.5	1.4	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 LG	CMP	1		
RESRD	327	164	4 A	7.3	7.0	2.8	1.4	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 LG	CMP	1		
RESRD	327	164	4 A	7.3	6.7	2.8	1.1	BUR 6	MATRIX	1/8	SHELL	MODIF BEAD	OLIVELLA	G3 LG	CMP	1		
				6.3	5.7	3.0	1.2									21		
RESRD	327	139	6	6.6	4.4	2.3	1.3	A1	060-070	1/8	SHELL	MODIF BEAD	OLIVELLA	L2	CMP	1	0.1	
CCCH	325	1	11	9.1	6.9	1.3	1.1	N/A	3A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
CCCH	325	1	11	8.1	6.4	1.3	0.7	N/A	3A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
CCCH	325	1	11	8.0	6.0	1.5	1.0	N/A	3A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
CCCH	325	1	11	7.1	4.9	0.8	1.0	N/A	3A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
CCCH	325	1	11	6.7	4.6	1.1	0.6	N/A	3A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
CCCH	325	3	1					N/A	ST	1/4	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	BROKEN
CCCH	325	4	8	7.9	5.6	1.3	1.1	N/A	BCKDRT	1/4	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	1	
CCCH	325	5	4	6.7	4.1	1.9	0.9	N/A	2A	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	BURNED
STEGE	328	5	9 A	8.1	5.1	1.7	1.2	A1	040-050	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
STEGE	328	5	9 B	7.9	3.7	1.1	1.1	A1	040-050	1/8	SHELL	MODIF BEAD	OLIVELLA	M1c	CMP	1	0.1	
STEGE	328	34	5	8.8	5.6	1.4	0.8	B2	040-050	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.1	
STEGE	328	40	4	6.5	4.0	0.8	0.9	B2	110-110	1/8	SHELL	MODIF BEAD	OLIVELLA	M1a	CMP	1	0.01	
				7.7	5.2	1.3	0.9									12		
CCCH	325	1	9 A	9.9		3.4	4.3	N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.6	FACES GROUND
CCCH	325	1	9 B	7.3		3.0	2.3	N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.6	FACES GROUND
CCCH	325	1	10	6.0		3.0	1.9	N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.1	FACE GROUND
CCCH	325	1	14	12.4		3.4	4.4	N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	FRAG	1	0.1	FACE GROUND
CCCH	325	5	2	6.2		2.7	2.2	N/A	2A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.1	FACE GROUND
CCCH	325	6	2	7.7		3.1	2.9	N/A	2B	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.2	BURNED; SPLIT
CCCH	325	1	13 A	11.7		3.6	2.6	N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.7	ONE FACE GROUND
CCCH	325	1	13 B					N/A	3A	1/8	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	CMP	1	0.7	ONE FACE GROUND
CM-7	326	3	7	9.1		3.1	2.8	N/A	UPMDD	1/4	SHELL	MODIF BEAD	SAXIDOMUS	CSDB	FRAG	1	0.3	FACE GROUND
				8.8		3.2	2.9									9		

SITE	ACC	LOT	CAT	SUB	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	PART	#	WGT	REMARKS
RESRD	327	164	3		BUR 6	MATRIIX	1/8	SHELL	MODIF	ORNA	HALIOTIS	PENDANT	FRAG	1		SMALL CLAW
RESRD	327	169	1		BUR 8/9	MATRIIX	1/8	SHELL	MODIF	ORNA	HALIOTIS	PENDANT	FRAG	1		LARGE DISK
RESRD	327	169	2		BUR 8/9	MATRIIX	1/8	SHELL	MODIF	ORNA	HALIOTIS	PENDANT	FRAG	1		LARGE DISK
RESRD	327	163	11	C	BUR 6	EXPOS	1/8	SHELL	MODIF	ORNA	HALIOTIS	PENDANT	CMP	1		SMALL TRIANGLE
RESRD	327	18	7		A3	020-040	1/4	SHELL	MODIF	ORNA	GONIDEA	DRILLED	FRAG	1	0.5	
RESRD	327	50	6		A6	020-030	1/4	SHELL	MODIF	ORNA	GONIDEA	DRILLED	FRAG	1	0.4	

SITE	ACC	LOT	CAT	SUB	LNG	WDT	THK	T:W	BURN	UNIT	LEVEL	MAT	CAT	DESC1	DESC2	DESC3	PART	#	WGT	REMARKS
RESRD	327	26	6		13.3	11.0	7.6	0.7	CALC	A3	130-140	ANTL	MODIF	WEDGE	INDET		TIP	1	0.6	
RESRD	327	97	5		16.7	13.8	2.8	0.2	BRWN	B4	080-090	ANTL	MODIF	PENDANT	DRILLED	INDET	END	1	1	
STEGE	328	50	2		27.3	14.1	2.7	0.2	N/A	T6		BONE	MODIF	J HOOK			CMP	1	0.9	GLUED
RESRD	327	107	6		19.5	7.0	3.3	0.5	N/A	B5	090-100	BONE	MODIF	STRIGIL	RIB	INDET	MID	1	0.8	
STEGE	328	23	4		55.5	5.2	4.4	0.8	BLCK	B1	080-090	BONE	MODIF	GORGE	BIPOINT		CMP	1	1.4	
STEGE	328	48	5		19.5	2.2	2.2	1.0	N/A	D1	163-183	BONE	MODIF	GORGE	BIPOINT		CMP	1	0.1	
CM-7	326	5	12	B	18.3	9.2	7.7	0.8	BRWN	N/A	LMIDD	BONE	MODIF	TUBE	BEAD		CMP	1		HIGH POLISH; DUCK TO GOOSE SIZED
RESRD	327	134	4		25.0	8.9	1.3	0.1	BRWN	A18	010-020	BONE	MODIF	TUBE	INDET	INDET	MRG	1	0.41	
RESRD	327	24	3		37.4	7.0	6.3	0.9	BRWN	A3	110-120	BONE	MODIF	TUBE	WHISTLE		END	1	1	FEMUR DIAPHYSIS
CCCH	325	1	15		6.7	6.8	2.9	0.4	CALC	N/A	3A	BONE	MODIF	TUBE	EARTUBE	INCISED	MRG	1	0.1	CROSS-HATCH
RESRD	327	160	7		117.5	35.4	14.4	0.4	N/A	BUR 4	EXP	BONE	MODIF	DAGGER	CANNON	SPLIT	HNDL	1		ELK
RESRD	327	27	4		21.4	11.1	3.4	0.3	CALC	A3	140-150	BONE	MODIF	DAGGER	INDET		TIP	1	1.1	
RESRD	327	115	8		100.2	25.8	3.8	0.1	BRWN	B6	070-080	ANTL	MODIF	DAGGER	INDET	INDET	END	1	11.4	ART #1
RESRD	327	30	4		37.4	27.0	13.0	0.5	BLCK	A4	020-040	BONE	MODIF	DAGGER	HANDLE		END	1	5	MAY BE TIBIA
RESRD	327	109	4		28.6	6.6	4.3	0.7	BRWN	B6	010-020	BONE	MODIF	DAGGER	INDET	INDET	MRG	1	0.95	
RESRD	327	112	6		23.9	15.5	4.9	0.3	BRWN	B6	040-050	BONE	MODIF	DAGGER	INDET	INDET	MRG	1	1.81	
RESRD	327	85	3		28.7	15.2	5.9	0.4	BRWN	B3	070-080	BONE	MODIF	DAGGER	INDET		MID	1	2.97	
RESRD	327	128	10		44.8	14.0	4.8	0.3	BRWN	A16	020-030	BONE	MODIF	DAGGER	CANNON	SPLIT	MID	1	4.3	GRAVER SCARS
RESRD	327	131	5		19.9	9.9	4.4	0.4	BRN	A17	020-030	BONE	MODIF	DAGGER	INDET	INDET	MID	1	1.43	
RESRD	327	3	5		23.5	15.1	4.2	0.3	BRWN	A1	030-040	BONE	MODIF	PIN	FLAT	INDET	MRG	1	1.8	
RESRD	327	11	4		31.1	8.4	4.1	0.5	BRWN	A2	100-110	BONE	MODIF	PIN	FLAT	INDET	MID	1	1.5	POLISHED
RESRD	327	14	6		10.5	9.0	2.7	0.3	BRWN	A2	130-140	BONE	MODIF	PIN	FLAT	INDET	MRG	1	0.3	
RESRD	327	125	5		18.9	8.0	3.3	0.4	BRWN	A15	020-030	BONE	MODIF	PIN	FLAT	INDET	MID	1	0.5	
RESRD	327	127	3		26.0	9.0	2.5	0.3	BRWN	A16	010-020	BONE	MODIF	PIN	FLAT	INDET	TIP	1	1.4	
RESRD	327	93	4		10.8	6.6	1.8	0.3	BRWN	B4	040-050	BONE	MODIF	PIN	FLAT	INDET	MRG	1	0.13	
CM-7	326	5	12	E	4.8	3.0	3.0	1.0	BRWN	N/A	LMIDD	BONE	MODIF	PIN	CYLINDRICAL	INDET	TIP	1		
RESRD	327	71	4		15.0	5.4	5.2	1.0	BRWN	B2	060-070	BONE	MODIF	PIN	CYLINDRICAL	INDET	MID	1	0.6	
RESRD	327	129	6		25.4	5.8	5.2	0.9	BRWN	A17	000-010	BONE	MODIF	PIN	CYLINDRICAL	INDET	TIP	1	0.73	
RESRD	327	150	4		9.6	2.9	2.8	1.0	BRWN	B1	010-020	BONE	MODIF	NEEDLE	CYLINDRICAL	INDET	MID	1	0.1	
CM-7	326	5	12	D	13.4	5.1	3.7	0.7	CALC	N/A	LMIDD	BONE	MODIF	NEEDLE	CYLINDRICAL	INDET	MID	1		
CM-7	326	5	13		100.6	13.8	6.8	0.5	N/A	N/A	LMIDD	BONE	MODIF	AWL	CANNON	SPLIT	CMP	1	4.9	HIGH POLISH; SHOULDER
STEGE	328	48	6		126.2	14.5	9.5	0.7	N/A	D1	163-183	BONE	MODIF	AWL	CANNON	SPLIT	CMP	1	10	
STEGE	328	14	4		30.8	9.2	4.8	0.5	N/A	A2	060-070	BONE	MODIF	AWL	CANNON	SPLIT	MID	1	1.2	2 PIECES
STEGE	328	20	6		29.5	5.0	4.0	0.8	N/A	B1	050-060	BONE	MODIF	AWL	CANNON	SPLIT	MID	1	0.8	
CM-7	326	5	12	A	90.9	12.9	4.8	0.4	N/A	N/A	LMIDD	BONE	MODIF	AWL	CANNON	SPLIT	PRX	1	2	PIECES; GRAVER SCARS; POLISH
CCCH	325	1	16		20.3	3.7	2.9	0.8	N/A	N/A	3A	BONE	MODIF	AWL	CANNON	SPLIT	TIP	1	0.3	HIGH POLISH
CCCH	325	1	17		22.6	5.9	3.8	0.6	CALC	N/A	3A	BONE	MODIF	AWL	CANNON	SPLIT	TIP	1	0.4	
CM-7	326	3	6		16.4	4.7	4.3	0.9	CALC	N/A	UMIDD	BONE	MODIF	AWL	CANNON	SPLIT	TIP	1	0.2	
STEGE	328	1	5		22.6	5.6	3.2	0.6	N/A	A1	000-010	BONE	MODIF	AWL	CANNON	SPLIT	TIP	1	0.4	
STEGE	328	5	6		54.5	8.4	4.0	0.5	N/A	A1	040-050	BONE	MODIF	AWL	CANNON	SPLIT	TIP	1	1.6	2 PIECES
CM-7	326	5	12	C	24.0	8.2	5.2	0.6	BRWN	N/A	LMIDD	BONE	MODIF	AWL	CANNON	SPLIT	MRG	1		
STEGE	328	1	6		22.1	6.4	7.7	1.2	BRWN	A1	000-010	BONE	MODIF	AWL	CANNON	SULCUS	MID	1	1.1	
RESRD	327	39	6		12.1	9.8	4.6	0.5	BROWN	A5	010-020	BONE	MODIF	AWL	CANNON	SULCUS	MID	1	0.1	
RESRD	327	139	5		11.6	7.5	3.3	0.4	BRWN	A1	060-070	BONE	MODIF	AWL	CANNON	SULCUS	MRG	1	0.4	
STEGE	328	26	5		50.9	11.0	7.7	0.7	N/A	B1	100-120	BONE	MODIF	AWL	CANNON	THICK	MRG	1	2.8	BLUNT TIP

STEGE	328	66	2	47.4	10.3	7.0	0.7	N/A	T25		BONE	MODIF	AWL	CANNON	THICK	MID	1	3.7
STEGE	328	37	4	30.4	10.3	5.3	0.5	N/A	B2	070-085	BONE	MODIF	AWL	CANNON	THICK	TIP	1	1.5 BLUNT TIP

SITE	ACC	LOT	CAT	TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	#	WGT	REMARKS
CCCH	325	1	18	3	N/A	3A.	N/A	1/8	CLAY	CERAM	POTTERY	INCISED	1	15.7	
CCCH	325	1	19	3	N/A	3A	N/A	1/8	CLAY	CERAM	POTTERY		1	8.6	
CCCH	325	1	20	10 B	N/A	3A	1/8	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	19.2	
CCCH	325	1	21	8 A	N/A	3A	1/8	CLAY	MODIF	CERAM	BALL	SMALL	1	11.6	
CCCH	325	1	22A	2	N/A	3A	1/8	CLAY	MOD	CERAM	SHAPED	SPECIFIC	21	151.8	
CCCH	325	1	22B	8 B	N/A	3A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	4.2	
CCCH	325	1	22C	8 B	N/A	3A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	8.3	
CCCH	325	1	22D	2	N/A	3A	N/A	1/8	CLAY	CERAM	SHAPED	SPECIFIC	1	13.7	
CCCH	325	1	22E	8 B	N/A	3A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	10.7	
CCCH	325	1	22F	2	N/A	3A	N/A	1/8	CLAY	CERAM	SHAPED	SPECIFIC	2	4.5	
CCCH	325	1	22G	8 B	N/A	3A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	8.1	
CCCH	325	1	22H	9	N/A	3A	N/A	1/8	CLAY	CERAM	FIGURINE		1	11.1	
CCCH	325	1	22I	8 B	N/A	3A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	2.8	
CCCH	325	3	6	2	N/A	ST	N/A	1/4	CLAY	CERAM	SHAPED	SPECIFIC	2	33.1	
CCCH	325	4	10	7	N/A	BDIRT	N/A	1/4	CLAY	CERAM	BEAD		1	0.3	
CCCH	325	4	11	2	N/A	BDIRT	N/A	1/4	CLAY	CERAM	SHAPED	SPECIFIC	13	88.9	
CCCH	325	5	6	2	N/A	2A	N/A	1/8	CLAY	CERAM	SHAPED	SPECIFIC	2	10.9	
CCCH	325	6	3	2	N/A	2B	N/A	1/8	CLAY	CERAM	SHAPED	SPECIFIC	2	2.2	
CCCH	325	7	1	8 B	N/A	2A	N/A	1/8	CLAY	CERAM	BALL	PINCHED	1	5.4	
CM-7	326	4	5	10 A	N/A	UPR SILT	1/8	CLAY	MODIF	CERAM	LOAF		1	26.4	
CM-7	326	5	15	7	N/A	LWR MDDN	N/A	1/8	CLAY	CERAM	BEAD		1	0.1	
CM-7	326	5	17	2	N/A	LWR MDDN	N/A	1/8	CLAY	CERAM	SHAPED	SPECIFIC	10	53.5	
FG	326	10	62	10 A	N/A	EXC #1	N/A	CLAY	MODIF	CERAM	LOAF		1	78.6	
FG	326	10	107	10 A	N/A	SURF	N/A	CLAY	MODIF	CERAM	LOAF		1	89.6	
RESRD	327	1	3	1	A1	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	9	62.4	
RESRD	327	2	4	1	A1	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	9	20.9	
RESRD	327	3	6	1	A1	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	17	65.1	
RESRD	327	5	4	6 A	A2	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	2	1.8	
RESRD	327	5	6	1	A2	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	29	78.5	
RESRD	327	6	4	2	A2	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	13.2	
RESRD	327	6	5	3	A2	020-040	1/4	1/4	CLAY	CERAM	POTTERY		1	15.5	
RESRD	327	6	6	8 C	A2	020-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.1	TEXTILE
RESRD	327	6	7	8 C	A2	020-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4	TEXTILE
RESRD	327	6	8	1	A2	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	80	214.9	
RESRD	327	7	4	5	A2	040-060	1/4	CLAY	MODIF	CERAM	DAUBER		1	7.6	
RESRD	327	7	5	1	A2	040-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	36	353.1	
RESRD	327	9	4	2	A2	070-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	20.6	
RESRD	327	11	5	6 A	A2	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8	
RESRD	327	11	6	1	A2	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	21	104.5	
RESRD	327	11	10	4	A2	100-110	1/4	CLAY	MODIF	CERAM	EGG		1	4.3	
RESRD	327	12	6	1	A2	110-120	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	16	84.7	
RESRD	327	12	11	6 A	A2	110-120	1/4	CLAY	UNMOD	CERAM	ROLLED	SMALL	1	5.3	
RESRD	327	13	6	2	A2	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.6	
RESRD	327	13	7	4	A2	120-130	1/4	CLAY	MODIF	CERAM	EGG		1	6.3	
RESRD	327	13	8	2	A2	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	10.1	
RESRD	327	13	9	2	A2	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.7	
RESRD	327	13	10	1	A2	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	23	103.7	
RESRD	327	14	7	1	A2	130-140	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	22	42.5	
RESRD	327	15	4	1	A2	140-150	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	19.0	
RESRD	327	16	5	2	A3	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	0.6	
RESRD	327	16	6	1	A3	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	16	112.2	
RESRD	327	17	5	4	A3	010-020	1/4	CLAY	MODIF	CERAM	EGG		3	11.8	
RESRD	327	17	6	8 C	A3	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	4.4	TEXTILE

RESRD	327	17	7	8 B	A3	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	0.8	ART #7
RESRD	327	17	8	2	A3	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	17	9	1	A3	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	23	189.0	
RESRD	327	18	8	1	A3	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	30	147.0	
RESRD	327	19	3	9	A3	040-060	1/4	CLAY	MODIF	CERAM	FIGURINE		1	1.2	
RESRD	327	20	2	2	A3	050-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	23.2	
RESRD	327	23	8	2	A3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.5	
RESRD	327	23	9	6 B	A3	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	2	4.8	
RESRD	327	23	10	6 B	A3	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	2	5.3	
RESRD	327	23	11	6 A	A3	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.1	
RESRD	327	23	12	2	A3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	23	14	8 B	A3	100-110	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.0	ART #6
RESRD	327	23	15	2	A3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.9	possible leaf impression
RESRD	327	23	16	1	A3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	28	48.9	
RESRD	327	24	4	6 A	A3	110-120	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.3	
RESRD	327	24	5	8 C	A3	110-120	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3	TEXTILE
RESRD	327	24	6	1	A3	110-120	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	13	41.0	
RESRD	327	25	8	8 E	A3	120-130	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	PRINT
RESRD	327	25	9	1	A3	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	1	0.8	
RESRD	327	25	10	1	A3	120-130	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	18	51.0	
RESRD	327	26	7	8 E	A3	130-140	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	PRINT
RESRD	327	26	8	1	A3	130-140	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	23	53.0	
RESRD	327	27	5	7	A3	140-150	1/4	CLAY	MODIF	CERAM	BEAD		1	0.4	
RESRD	327	27	6	2	A3	140-150	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	0.3	
RESRD	327	28	6	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	8.2	
RESRD	327	28	7	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.6	
RESRD	327	28	8	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.8	
RESRD	327	28	9	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.5	
RESRD	327	28	10	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	28	11	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.9	
RESRD	327	28	12	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.9	
RESRD	327	28	13	2	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.9	
RESRD	327	28	14	1	A4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	29	65.0	
RESRD	327	30	5	4	A4	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	35.4	
RESRD	327	30	6	4	A4	020-040	1/4	CLAY	MODIF	CERAM	EGG		3	8.9	
RESRD	327	30	7	1	A4	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	30	115.0	
RESRD	327	31	3	6 B	A4	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.5	
RESRD	327	31	4	2	A4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.8	
RESRD	327	35	4	2	A4	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.9	
RESRD	327	35	5	2	A4	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.8	
RESRD	327	36	7	2	A4/5	050-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	27.2	
RESRD	327	38	4	4	A5	000-010	1/4	CLAY	MODIF	CERAM	EGG		1	4.3	
RESRD	327	38	5	8 A	A5	000-010	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.5	
RESRD	327	38	6	2	A5	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.5	
RESRD	327	38	7	1	A5	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	13	13.0	
RESRD	327	39	7	4	A5	010-020	1/4	CLAY	MODIF	CERAM	EGG		3	4.9	
RESRD	327	39	8	2	A5	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	1.5	
RESRD	327	39	9	1	A5	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	29	96.0	
RESRD	327	40	5	10 B	A5	020-030	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	12.2	
RESRD	327	40	6	4	A5	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	1.8	
RESRD	327	40	7	2	A5	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.9	
RESRD	327	40	8	9	A5	020-030	1/4	CLAY	MODIF	CERAM	FIGURINE		1	0.8	
RESRD	327	40	9	1	A5	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	58	171.0	
RESRD	327	42	6	4	A5	040-050	1/4	CLAY	MODIF	CERAM	EGG		1	2.7	

RESRD	327	42	7	6 A	A5	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	2	0.9	
RESRD	327	42	8	1	A5	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	90	320.0	
RESRD	327	47	5	1	A5	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	21	46.0	
RESRD	327	48	4	1	A6	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	18	66.0	
RESRD	327	49	5	4	A6	010-020	1/4	CLAY	MODIF	CERAM	EGG		3	10.5	
RESRD	327	49	6	8 B	A6	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	10.2	
RESRD	327	49	7	1	A6	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	27	68.0	
RESRD	327	50	7	1	A6	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	5	20.7	
RESRD	327	50	8	1	A6	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	30	150.0	
RESRD	327	50	13	4	A6	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	11.9	
RESRD	327	51	3	10 B	A6	020-040	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	34.8	
RESRD	327	51	4	9	A6	020-040	1/4	CLAY	MODIF	CERAM	FIGURINE		1	1.0	
RESRD	327	51	5	1	A6	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	9	35.0	
RESRD	327	54	5	1	B1	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	9	38.9	
RESRD	327	55	4	1	B1	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	45	129.2	
RESRD	327	56	4	4	B1	020-030	1/4	CLAY	MODIF	CERAM	EGG		2	9.0	
RESRD	327	56	5	8 B	B1	020-030	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	2.6	
RESRD	327	56	6	9	B1	020-030	1/4	CLAY	MODIF	CERAM	FIGURINE		1	4.3	
RESRD	327	56	7	2	B1	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	56	8	1	B1	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	124	268.9	
RESRD	327	57	2	2	B1	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	10.2	
RESRD	327	58	4	4	B1	040-050	1/4	CLAY	MODIF	CERAM	EGG		1	3.1	
RESRD	327	58	5	1	B1	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	209	319.0	
RESRD	327	59	8	4	B1	050-060	1/4	CLAY	MODIF	CERAM	EGG		1	2.4	
RESRD	327	59	9	2	B1	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	59	10	2	B1	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.6	
RESRD	327	59	11	6 B	B1	050-060	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.0	
RESRD	327	59	12	1	B1	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	61	176.6	
RESRD	327	60	5	6 B	B1	060-070	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.0	
RESRD	327	60	6	2	B1	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.9	
RESRD	327	60	7	2	B1	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.2	
RESRD	327	60	8	1	B1	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	42	84.8	
RESRD	327	61	5	6 A	B1	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.0	
RESRD	327	61	6	8 B	B1	070-080	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	7.1	PLANT IMPRESSED
RESRD	327	61	7	2	B1	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.2	
RESRD	327	61	8	8 A	B1	070-080	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	3.6	
RESRD	327	61	9	1	B1	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	35	81.7	
RESRD	327	62	7	7	B1	080-090	1/4	CLAY	MODIF	CERAM	BEAD		1	0.6	
RESRD	327	62	8	4	B1	080-090	1/4	CLAY	MODIF	CERAM	EGG		1	5.5	
RESRD	327	62	9	7	B1	080-090	1/4	CLAY	MODIF	CERAM	BEAD		1	0.4	
RESRD	327	62	10	1	B1	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	36	56.9	
RESRD	327	63	4	8 C	B1	090-100	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	TEXTILE
RESRD	327	63	5	8 E	B1	090-100	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.3	PRINT
RESRD	327	63	6	7	B1	090-100	1/4	CLAY	MODIF	CERAM	BEAD		1	0.4	
RESRD	327	63	7	1	B1	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	36	58.1	
RESRD	327	64	7	2	B1	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.2	seed/vegetal impressions?
RESRD	327	64	8	8 A	B1	100-110	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.6	
RESRD	327	64	9	6 A	B1	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8	
RESRD	327	64	10	1	B1	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	19	32.4	
RESRD	327	65	5	2	B2	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.8	
RESRD	327	65	6	4	B2	000-010	1/4	CLAY	MODIF	CERAM	EGG		2	2.4	
RESRD	327	65	7	1	B2	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	19	29.0	
RESRD	327	65	12	8 A	B2	000-010	1/4	CLAY	UNMOD	CERAM	BALL	SMALL	1	19.9	
RESRD	327	66	3	6 B	B2	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.6	

RESRD	327	66	4	8 C	B2	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	TEXTILE
RESRD	327	66	5	2	B2	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.6	
RESRD	327	66	6	7	B2	010-020	1/4	CLAY	MODIF	CERAM	BEAD		1	0.5	
RESRD	327	66	7	2	B2	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	grass impressions
RESRD	327	66	8	8 B	B2	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	19.4	
RESRD	327	66	9	2	B2	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.0	
RESRD	327	66	10	11	B2	010-020	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	1	8.8	
RESRD	327	66	11	4	B2	010-020	1/4	CLAY	MODIF	CERAM	EGG		2	3.0	
RESRD	327	66	12	1	B2	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	54	141.2	
RESRD	327	67	4	4	B2	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	2.4	
RESRD	327	67	5	1	B2	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	85	148.6	
RESRD	327	68	4	1	B2	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	17	24.8	
RESRD	327	69	3	4	B2	040-050	1/4	CLAY	MODIF	CERAM	EGG		1	31.0	
RESRD	327	69	4	8 C	B2	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3	TEXTILE
RESRD	327	69	5	6 A	B2	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.2	
RESRD	327	69	6	8 B	B2	040-050	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	2.1	
RESRD	327	69	7	8 D	B2	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.8	PLANT
RESRD	327	69	8	8 D	B2	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.5	PLANT
RESRD	327	69	9	2	B2	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.8	
RESRD	327	69	10	2	B2	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.2	
RESRD	327	69	11	1	B2	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	48	120.3	
RESRD	327	70	7	2	B2	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.6	
RESRD	327	70	8	8 D	B2	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.8	PLANT
RESRD	327	70	9	8 C	B2	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	TEXTILE
RESRD	327	70	10	8 A	B2	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	3.1	
RESRD	327	70	11	8 D	B2	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.1	PLANT
RESRD	327	70	12	1	B2	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	49	85.6	
RESRD	327	71	5	4	B2	060-070	1/4	CLAY	MODIF	CERAM	EGG		1	2.0	
RESRD	327	71	6	1	B2	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	37	68.5	
RESRD	327	72	5	2	B2	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	4.5	
RESRD	327	72	6	10 A	B2	070-080	1/4	1/4	MODIF	CERAM	LOAF		1	6.7	
RESRD	327	72	7	2	B2	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.8	
RESRD	327	72	8	1	B2	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	25	46.2	
RESRD	327	73	4	1	B2	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	31	60.0	
RESRD	327	75	1	1	B1/2	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	38	80.6	
RESRD	327	76	6	6 B	B2	100-110	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	6.9	
RESRD	327	76	7	8 B	B2	100-110	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	3.1	
RESRD	327	76	8	7	B2	100-110	1/4	CLAY	MODIF	CERAM	BEAD		1	0.4	
RESRD	327	76	9	8 C	B2	100-110	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.4	TEXTILE
RESRD	327	76	10	1	B2	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	36	61.3	
RESRD	327	77	5	8 C	B3	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	5.5	TEXTILE
RESRD	327	77	6	7	B3	000-010	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3	
RESRD	327	77	7	1	B3	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	22	36.5	
RESRD	327	78	4	4	B3	010-020	1/4	CLAY	MODIF	CERAM	EGG		5	11.8	
RESRD	327	78	5	10 C	B3	010-020	1/4	CLAY	MODIF	CERAM	IMPRESSED	PRINT	1	13.3	
RESRD	327	78	6	1	B3	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	41	114.2	
RESRD	327	78	10	4	B3	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	2.2	
RESRD	327	80	4	3	B3	020-030	1/4	1/4	CLAY	CERAM	POTTERY		1	29.0	ART #4. 130w/345s/33bs
RESRD	327	80	5	8 A	B3	020-030	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	3.3	
RESRD	327	80	6	8 A	B3	020-030	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.8	
RESRD	327	80	7	8 B	B3	020-030	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	4.3	Two fragments
RESRD	327	80	8	4	B3	020-030	1/4	CLAY	MODIF	CERAM	EGG		2	15.5	
RESRD	327	80	9	1	B3	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	151	349.4	
RESRD	327	81	3	2	B3	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	

RESRD	327	81	4	6 A	B3	020-040	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.9
RESRD	327	81	5	4	B3	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	1.6
RESRD	327	81	6	1	B3	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	48	148.8
RESRD	327	82	4	7	B3	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3
RESRD	327	82	5	8 A	B3	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.4
RESRD	327	82	6	6 A	B3	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8
RESRD	327	82	7	1	B3	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	56	93.9
RESRD	327	83	7	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	11.8
RESRD	327	83	8	8 D	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.6 PLANT
RESRD	327	83	9	8 A	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.3 oblong
RESRD	327	83	10	9	B3	050-060	1/4	CLAY	MODIF	CERAM	FIGURINE		1	2.0 2 Fragments
RESRD	327	83	11	4	B3	050-060	1/4	CLAY	MODIF	CERAM	EGG		2	4.9
RESRD	327	83	12	8 A	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	5.2
RESRD	327	83	13	11	B3	050-060	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	1	1.1
RESRD	327	83	14	8 C	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	5.8 TEXTILE
RESRD	327	83	15	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	0.8
RESRD	327	83	16	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	0.7
RESRD	327	83	18	1	B3	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	195	173.1
RESRD	327	84	6	7	B3	060-070	1/4	CLAY	MODIF	CERAM	BEAD		1	0.8
RESRD	327	84	8	6 A	B3	060-070	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.4
RESRD	327	84	9	4	B3	060-070	1/4	CLAY	MODIF	CERAM	EGG		1	7.8
RESRD	327	84	10	8 D	B3	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.5 PLANT
RESRD	327	84	11	1	B3	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	79	116.2
RESRD	327	85	4	6 B	B3	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.6
RESRD	327	85	5	2	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.0
RESRD	327	85	6	4	B3	070-080	1/4	CLAY	MODIF	CERAM	EGG		3	6.5
RESRD	327	85	7	9	B3	070-080	1/4	CLAY	MODIF	CERAM	FIGURINE		1	2.1
RESRD	327	85	8	2	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.5
RESRD	327	85	9	8 A	B3	070-080	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.1 WRAPPED
RESRD	327	85	10	1	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	75	122.9
RESRD	327	86	5	10 A	B3	080-090	1/4	CLAY	MODIF	CERAM	LOAF		1	45.8
RESRD	327	86	6	8 A	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	28.9
RESRD	327	86	7	8 C	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.8 TEXTILE
RESRD	327	86	8	10 A	B3	080-090	1/4	CLAY	MODIF	CERAM	LOAF		1	31.3
RESRD	327	86	9	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.1
RESRD	327	86	10	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.1
RESRD	327	86	11	8 D	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.0 PLANT
RESRD	327	86	12	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.7
RESRD	327	86	13	1	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	95	144.2
RESRD	327	87	4	4	B3	090-100	1/4	CLAY	MODIF	CERAM	EGG		2	4.1
RESRD	327	87	5	1	B3	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	39	60.6
RESRD	327	88	4	8 A	B3	100-110	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	13.1
RESRD	327	88	5	8 A	B3	100-110	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.8
RESRD	327	88	7	1	B3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	25.4
RESRD	327	89	6	4	B4	000-010	1/4	CLAY	MODIF	CERAM	EGG		1	5.2
RESRD	327	89	7	6 A	B4	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.5
RESRD	327	89	8	1	B4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	27	27.0
RESRD	327	90	7	8 B	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.8
RESRD	327	90	8	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	35.3
RESRD	327	90	9	8 C	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.9 TEXTILE
RESRD	327	90	10	8 A	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	10.3
RESRD	327	90	11	6 B	B4	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	2	2.7
RESRD	327	90	12	4	B4	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	4.1
RESRD	327	90	13	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4

RESRD	327	90	14	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	90	15	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.1	
RESRD	327	90	16	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.2	
RESRD	327	90	17	4	B4	010-020	1/4	CLAY	MODIF	CERAM	EGG		2	7.1	
RESRD	327	90	18	1	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	37	53.1	
RESRD	327	92	4	8 E	B4	020-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	6.2	PRINT
RESRD	327	92	5	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		1	69.4	
RESRD	327	92	6	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		1	53.9	
RESRD	327	92	7	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		3	114.7	
RESRD	327	92	8	4	B4	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	14.3	
RESRD	327	92	9	4	B4	020-040	1/4	CLAY	MODIF	CERAM	EGG		4	17.6	
RESRD	327	92	10	8 B	B4	020-040	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.9	
RESRD	327	92	11	1	B4	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	28	55.1	
RESRD	327	93	5	7	B4	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	1.2	
RESRD	327	93	6	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.8	
RESRD	327	93	7	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.6	
RESRD	327	93	8	2	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	17.2	
RESRD	327	93	9	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.0	
RESRD	327	93	10	2	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.6	
RESRD	327	93	11	6 A	B4	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.4	
RESRD	327	93	12	4	B4	040-050	1/4	CLAY	MODIF	CERAM	EGG		3	5.0	
RESRD	327	93	13	1	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	84	130.6	
RESRD	327	94	5	6 A	B4	050-060	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.7	
RESRD	327	94	6	4	B4	050-060	1/4	CLAY	MODIF	CERAM	EGG		1	1.0	
RESRD	327	94	7	1	B4	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	23	97.3	
RESRD	327	95	6	8 E	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.8	PRINT
RESRD	327	95	7	2	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	8.0	
RESRD	327	95	8	2	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.6	
RESRD	327	95	9	8 D	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.6	PLANT
RESRD	327	95	10	8 A	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.4	
RESRD	327	95	11	1	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	40	77.3	
RESRD	327	96	7	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.6	
RESRD	327	96	8	6 A	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.3	
RESRD	327	96	9	8 E	B4	070-080	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	4.3	PRINT
RESRD	327	96	10	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	96	11	8 C	B4	070-080	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.1	TEXTILE
RESRD	327	96	12	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.3	
RESRD	327	96	13	6 B	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.7	
RESRD	327	96	14	6 B	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.4	
RESRD	327	96	15	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	
RESRD	327	96	16	10 A	B4	070-080	1/4	CLAY	MODIF	CERAM	LOAF		1	37.5	
RESRD	327	96	17	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	96	18	1	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	157	141.0	
RESRD	327	96	22	4	B4	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	1.4	
RESRD	327	97	6	2	B4	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	97	7	8 B	B4	080-090	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	14.8	
RESRD	327	97	8	10 B	B4	080-090	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	14.0	
RESRD	327	97	9	4	B4	080-090	1/4	CLAY	MODIF	CERAM	EGG		1	2.6	
RESRD	327	97	10	8 E	B4	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	12.6	PRINT
RESRD	327	97	11	6 B	B4	080-090	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.3	
RESRD	327	97	12	1	B4	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	106	354.5	
RESRD	327	98	4	4	B4	090-100	1/4	CLAY	MODIF	CERAM	EGG		2	6.7	
RESRD	327	98	5	9	B4	090-100	1/4	CLAY	MODIF	CERAM	FIGURINE		1	0.7	
RESRD	327	98	6	1	B4	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	80.1	

RESRD	327	81	4	6 A	B3	020-040	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.9	
RESRD	327	81	5	4	B3	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	1.6	
RESRD	327	81	6	1	B3	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	48	148.8	
RESRD	327	82	4	7	B3	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3	
RESRD	327	82	5	8 A	B3	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.4	
RESRD	327	82	6	6 A	B3	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8	
RESRD	327	82	7	1	B3	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	56	93.9	
RESRD	327	83	7	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	11.8	
RESRD	327	83	8	8 D	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.6	PLANT
RESRD	327	83	9	8 A	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.3	oblong
RESRD	327	83	10	9	B3	050-060	1/4	CLAY	MODIF	CERAM	FIGURINE		1	2.0	2 Fragments
RESRD	327	83	11	4	B3	050-060	1/4	CLAY	MODIF	CERAM	EGG		2	4.9	
RESRD	327	83	12	8 A	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	5.2	
RESRD	327	83	13	11	B3	050-060	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	1	1.1	
RESRD	327	83	14	8 C	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	5.8	TEXTILE
RESRD	327	83	15	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	0.8	
RESRD	327	83	16	8 B	B3	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	0.7	
RESRD	327	83	18	1	B3	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	195	173.1	
RESRD	327	84	6	7	B3	060-070	1/4	CLAY	MODIF	CERAM	BEAD		1	0.8	
RESRD	327	84	8	6 A	B3	060-070	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.4	
RESRD	327	84	9	4	B3	060-070	1/4	CLAY	MODIF	CERAM	EGG		1	7.8	
RESRD	327	84	10	8 D	B3	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.5	PLANT
RESRD	327	84	11	1	B3	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	79	116.2	
RESRD	327	85	4	6 B	B3	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.6	
RESRD	327	85	5	2	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.0	
RESRD	327	85	6	4	B3	070-080	1/4	CLAY	MODIF	CERAM	EGG		3	6.5	
RESRD	327	85	7	9	B3	070-080	1/4	CLAY	MODIF	CERAM	FIGURINE		1	2.1	
RESRD	327	85	8	2	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.5	
RESRD	327	85	9	8 A	B3	070-080	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.1	WRAPPED
RESRD	327	85	10	1	B3	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	75	122.9	
RESRD	327	86	5	10 A	B3	080-090	1/4	CLAY	MODIF	CERAM	LOAF		1	45.8	
RESRD	327	86	6	8 A	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	28.9	
RESRD	327	86	7	8 C	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.8	TEXTILE
RESRD	327	86	8	10 A	B3	080-090	1/4	CLAY	MODIF	CERAM	LOAF		1	31.3	
RESRD	327	86	9	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.1	
RESRD	327	86	10	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.1	
RESRD	327	86	11	8 D	B3	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.0	PLANT
RESRD	327	86	12	2	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.7	
RESRD	327	86	13	1	B3	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	95	144.2	
RESRD	327	87	4	4	B3	090-100	1/4	CLAY	MODIF	CERAM	EGG		2	4.1	
RESRD	327	87	5	1	B3	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	39	60.6	
RESRD	327	88	4	8 A	B3	100-110	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	13.1	
RESRD	327	88	5	8 A	B3	100-110	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.8	
RESRD	327	88	7	1	B3	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	25.4	
RESRD	327	89	6	4	B4	000-010	1/4	CLAY	MODIF	CERAM	EGG		1	5.2	
RESRD	327	89	7	6 A	B4	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.5	
RESRD	327	89	8	1	B4	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	27	27.0	
RESRD	327	90	7	8 B	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.8	
RESRD	327	90	8	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	35.3	
RESRD	327	90	9	8 C	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.9	TEXTILE
RESRD	327	90	10	8 A	B4	010-020	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	10.3	
RESRD	327	90	11	6 B	B4	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	2	2.7	
RESRD	327	90	12	4	B4	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	4.1	
RESRD	327	90	13	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	

RESRD	327	90	14	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	90	15	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.1	
RESRD	327	90	16	2	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.2	
RESRD	327	90	17	4	B4	010-020	1/4	CLAY	MODIF	CERAM	EGG		2	7.1	
RESRD	327	90	18	1	B4	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	37	53.1	
RESRD	327	92	4	8 E	B4	020-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	6.2	PRINT
RESRD	327	92	5	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		1	69.4	
RESRD	327	92	6	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		1	53.9	
RESRD	327	92	7	10 A	B4	020-040	1/4	CLAY	MODIF	CERAM	LOAF		3	114.7	
RESRD	327	92	8	4	B4	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	14.3	
RESRD	327	92	9	4	B4	020-040	1/4	CLAY	MODIF	CERAM	EGG		4	17.6	
RESRD	327	92	10	8 B	B4	020-040	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.9	
RESRD	327	92	11	1	B4	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	28	55.1	
RESRD	327	93	5	7	B4	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	1.2	
RESRD	327	93	6	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.8	
RESRD	327	93	7	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.6	
RESRD	327	93	8	2	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	17.2	
RESRD	327	93	9	8 A	B4	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.0	
RESRD	327	93	10	2	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.6	
RESRD	327	93	11	6 A	B4	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.4	
RESRD	327	93	12	4	B4	040-050	1/4	CLAY	MODIF	CERAM	EGG		3	5.0	
RESRD	327	93	13	1	B4	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	84	130.6	
RESRD	327	94	5	6 A	B4	050-060	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.7	
RESRD	327	94	6	4	B4	050-060	1/4	CLAY	MODIF	CERAM	EGG		1	1.0	
RESRD	327	94	7	1	B4	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	23	97.3	
RESRD	327	95	6	8 E	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.8	PRINT
RESRD	327	95	7	2	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	8.0	
RESRD	327	95	8	2	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.6	
RESRD	327	95	9	8 D	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.6	PLANT
RESRD	327	95	10	8 A	B4	060-070	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.4	
RESRD	327	95	11	1	B4	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	40	77.3	
RESRD	327	96	7	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.6	
RESRD	327	96	8	6 A	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.3	
RESRD	327	96	9	8 E	B4	070-080	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	4.3	PRINT
RESRD	327	96	10	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	96	11	8 C	B4	070-080	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.1	TEXTILE
RESRD	327	96	12	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.3	
RESRD	327	96	13	6 B	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.7	
RESRD	327	96	14	6 B	B4	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.4	
RESRD	327	96	15	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	
RESRD	327	96	16	10 A	B4	070-080	1/4	CLAY	MODIF	CERAM	LOAF		1	37.5	
RESRD	327	96	17	2	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	96	18	1	B4	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	157	141.0	
RESRD	327	96	22	4	B4	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	1.4	
RESRD	327	97	6	2	B4	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	97	7	8 B	B4	080-090	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	14.8	
RESRD	327	97	8	10 B	B4	080-090	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	14.0	
RESRD	327	97	9	4	B4	080-090	1/4	CLAY	MODIF	CERAM	EGG		1	2.6	
RESRD	327	97	10	8 E	B4	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	12.6	PRINT
RESRD	327	97	11	6 B	B4	080-090	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.3	
RESRD	327	97	12	1	B4	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	106	354.5	
RESRD	327	98	4	4	B4	090-100	1/4	CLAY	MODIF	CERAM	EGG		2	6.7	
RESRD	327	98	5	9	B4	090-100	1/4	CLAY	MODIF	CERAM	FIGURINE		1	0.7	
RESRD	327	98	6	1	B4	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	80.1	

RESRD	327	99	4	6 A	B5	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.0	
RESRD	327	99	5	6 A	B5	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.6	
RESRD	327	99	6	1	B5	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	41	101.4	
RESRD	327	100	3	6 B	B5	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	4.7	
RESRD	327	100	4	6 A	B5	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.1	
RESRD	327	100	5	4	B5	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	2.1	
RESRD	327	100	6	10 A	B5	010-020	1/4	CLAY	MODIF	CERAM	LOAF		1	58.3	
RESRD	327	101	4	4	B5	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	2.3	
RESRD	327	101	5	2	B5	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	101	6	1	B5	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	12	58.1	
RESRD	327	102	6	7	B5	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3	
RESRD	327	102	7	4	B5	040-050	1/4	CLAY	MODIF	CERAM	EGG		1	20.5	
RESRD	327	102	8	8 C	B5	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.0	TEXTILE
RESRD	327	102	9	8 A	B5	040-050	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	9.7	
RESRD	327	102	10	6 A	B5	040-050	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.7	
RESRD	327	102	11	8 C	B5	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.5	TEXTILE
RESRD	327	102	12	8 E	B5	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	8.3	PRINT
RESRD	327	102	13	4	B5	040-050	1/4	CLAY	MODIF	CERAM	EGG		3	9.0	
RESRD	327	102	14	8 B	B5	040-050	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	2	4.1	
RESRD	327	102	15	1	B5	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	56	129.2	
RESRD	327	103	4	4	B5	050-060	1/4	CLAY	MODIF	CERAM	EGG		1	19.6	
RESRD	327	103	5	4	B5	050-060	1/4	CLAY	MODIF	CERAM	EGG		4	14.3	
RESRD	327	103	6	8 E	B5	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.2	PRINT
RESRD	327	103	7	8 A	B5	050-060	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	1.6	
RESRD	327	103	8	8 B	B5	050-060	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	3.8	
RESRD	327	103	9	2	B5	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.0	
RESRD	327	103	10	1	B5	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	97	196.6	
RESRD	327	104	6	2	B5	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.3	
RESRD	327	104	7	11	B5	060-070	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	1	0.6	
RESRD	327	104	8	8 C	B5	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.2	TEXTILE
RESRD	327	104	9	4	B5	060-070	1/4	CLAY	MODIF	CERAM	EGG		1	19.7	
RESRD	327	104	10	10 A	B5	060-070	1/4	CLAY	MODIF	CERAM	LOAF		1	29.8	
RESRD	327	104	12	1	B5	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	39	141.8	
RESRD	327	105	3	7	B5	070-080	1/4	CLAY	MODIF	CERAM	BEAD		1	1.3	
RESRD	327	105	4	6 A	B5	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.4	
RESRD	327	105	5	2	B5	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.2	
RESRD	327	105	6	2	B5	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.5	
RESRD	327	105	7	8 B	B5	070-080	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	2.5	
RESRD	327	105	8	2	B5	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.4	
RESRD	327	105	9	1	B5	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	45	113.7	
RESRD	327	106	4	2	B5	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.2	
RESRD	327	106	5	8 A	B5	080-090	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.3	
RESRD	327	106	6	8 E	B5	080-090	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.1	PRINT
RESRD	327	106	7	2	B5	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	
RESRD	327	106	8	2	B5	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.2	
RESRD	327	106	9	1	B5	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	34	139.3	
RESRD	327	106	14	9	B5	080-090	1/4	CLAY	MODIF	CERAM	FIGURINE		1	4.7	
RESRD	327	107	7	11	B5	090-100	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	2	1.6	
RESRD	327	107	8	8 A	B5	090-100	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	6.8	
RESRD	327	107	9	8 C	B5	090-100	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.0	TEXTILE
RESRD	327	107	10	8 C	B5	090-100	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.8	TEXTILE
RESRD	327	107	11	1	B5	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	21	188.9	
RESRD	327	107	15	7	B5	090-100	1/4	CLAY	MODIF	CERAM	BEAD		1	0.6	
RESRD	327	108	5	6 B	B6	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	3.2	

RESRD	327	108	6	6 A	B6	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8	
RESRD	327	108	7	1	B6	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	10	20.6	
RESRD	327	109	5	9	B6	010-020	1/4	CLAY	MODIF	CERAM	FIGURINE		1	3.4	
RESRD	327	109	6	6 B	B6	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.9	
RESRD	327	109	7	10 B	B6	010-020	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	0.4	
RESRD	327	109	8	8 A	B6	010-020	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.6	Round shape.
RESRD	327	109	9	8 D	B6	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.5	PLANT
RESRD	327	109	10	2	B6	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.4	
RESRD	327	109	11	1	B6	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	36	59.2	
RESRD	327	110	4	8 B	B6	020-030	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	3.5	
RESRD	327	110	5	2	B6	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.9	
RESRD	327	110	6	8 E	B6	020-030	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.5	PRINT
RESRD	327	110	7	2	B6	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.8	
RESRD	327	110	8	1	B6	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	3	67.2	
RESRD	327	111	4	4	B6	020-040	1/4	CLAY	MODIF	CERAM	EGG		1	34.5	
RESRD	327	111	5	4	B6	020-040	1/4	CLAY	MODIF	CERAM	EGG		2	8.1	
RESRD	327	111	6	8 C	B6	020-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4	TEXTILE
RESRD	327	111	7	1	B6	020-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	19	93.5	
RESRD	327	112	7	7	B6	040-050	1/4	CLAY	MODIF	CERAM	BEAD		1	0.6	
RESRD	327	112	8	2	B6	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.3	
RESRD	327	112	9	4	B6	040-050	1/4	CLAY	MODIF	CERAM	EGG		5	20.3	
RESRD	327	112	10	8 C	B6	040-050	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.7	TEXTILE
RESRD	327	112	11	1	B6	040-050	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	44	105.4	
RESRD	327	113	4	8 C	B6	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.9	TEXTILE
RESRD	327	113	5	6 B	B6	050-060	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	3	5.9	
RESRD	327	113	6	8 C	B6	050-060	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.2	TEXTILE
RESRD	327	113	7	2	B6	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	9.2	
RESRD	327	113	8	2	B6	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	4	23.7	
RESRD	327	113	9	1	B6	050-060	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	44	96.7	
RESRD	327	114	5	9	B6	060-070	1/4	CLAY	MODIF	CERAM	FIGURINE	BIRD	1	1.7	
RESRD	327	114	6	8 E	B6	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	4.8	PRINT
RESRD	327	114	7	8 A	B6	060-070	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.3	Round shape.
RESRD	327	114	8	10 A	B6	060-070	1/4	CLAY	MODIF	CERAM	LOAF		1	116.4	
RESRD	327	114	9	8 C	B6	060-070	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	TEXTILE
RESRD	327	114	10	1	B6	060-070	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	14	31.5	
RESRD	327	115	9	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.4	
RESRD	327	115	10	6 B	B6	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.8	
RESRD	327	115	11	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.5	
RESRD	327	115	12	4	B6	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	4.2	
RESRD	327	115	13	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.3	
RESRD	327	115	14	4	B6	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	2.0	
RESRD	327	115	15	8 C	B6	070-080	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3	TEXTILE
RESRD	327	115	16	6 A	B6	070-080	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.5	
RESRD	327	115	17	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	
RESRD	327	115	18	4	B6	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	7.9	
RESRD	327	115	19	4	B6	070-080	1/4	CLAY	MODIF	CERAM	EGG		1	1.8	
RESRD	327	115	20	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.6	
RESRD	327	115	21	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.3	
RESRD	327	115	22	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.1	
RESRD	327	115	23	2	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.5	
RESRD	327	115	24	1	B6	070-080	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	132	205.9	
RESRD	327	116	4	4	B6	080-090	1/4	CLAY	MODIF	CERAM	EGG		2	4.4	
RESRD	327	116	5	1	B6	080-090	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	27	26.6	
RESRD	327	117	5	4	B6	090-100	1/4	CLAY	MODIF	CERAM	EGG		1	3.6	

RESRD	327	117	6	1	B6	090-100	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	11	38.6
RESRD	327	117	10	11	B6	090-100	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	1	0.7
RESRD	327	118	6	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	6.3
RESRD	327	118	7	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.8
RESRD	327	118	8	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.5
RESRD	327	118	9	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.5
RESRD	327	118	11	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.7 PUNCTATE DECORATION
RESRD	327	118	12	2	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.9
RESRD	327	118	13	1	B6	100-110	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	44	59.0
RESRD	327	119	4	10 A	A14	000-010	1/4	CLAY	MODIF	CERAM	LOAF		1	42.1
RESRD	327	119	5	8 B	A14	000-010	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	13.9
RESRD	327	119	6	8 E	A14	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	2	3.8 PRINT
RESRD	327	119	7	8 C	A14	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	10.0 TEXTILE
RESRD	327	119	8	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	7.1
RESRD	327	119	9	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.5
RESRD	327	119	10	8 A	A14	000-010	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.0
RESRD	327	119	11	6 A	A14	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8
RESRD	327	119	12	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	3	3.4
RESRD	327	119	13	1	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	8	118.2
RESRD	327	119	14	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.8
RESRD	327	119	15	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.6
RESRD	327	119	16	2	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.0
RESRD	327	119	17	1	A14	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	81	81.6
RESRD	327	120	5	8 A	A14	010-020	1/4	CLAY	MODIF	CERAM	BALL	SMALL	2	10.4
RESRD	327	120	6	6 B	A14	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.8
RESRD	327	120	7	6 B	A14	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	3.1
RESRD	327	120	8	1	A14	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	28	38.0
RESRD	327	120	13	4	A14	010-020	1/4	CLAY	MODIF	CERAM	EGG		2	5.0
RESRD	327	121	6	9	A14	020-030	1/4	CLAY	MODIF	CERAM	FIGURINE		1	8.5
RESRD	327	121	7	10 B	A14	020-030	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	36.1
RESRD	327	121	8	8 D	A14	020-030	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.1 PLANT
RESRD	327	121	9	5	A14	020-030	1/4	CLAY	MODIF	CERAM	DAUBER		1	3.1
RESRD	327	121	10	4	A14	020-030	1/4	CLAY	MODIF	CERAM	EGG		2	4.0
RESRD	327	121	11	8 D	A14	020-030	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.9 PLANT
RESRD	327	121	12	8 C	A14	020-030	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.6 TEXTILE
RESRD	327	121	13	7	A14	020-030	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3
RESRD	327	121	14	1	A14	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	47	145.7
RESRD	327	122	4	2	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.8
RESRD	327	122	5	6 B	A14	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.1
RESRD	327	122	6	2	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	6.0
RESRD	327	122	7	4	A14	030-040	1/4	CLAY	MODIF	CERAM	EGG		1	2.9
RESRD	327	122	8	2	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.6
RESRD	327	122	9	2	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.3
RESRD	327	122	10	6 A	A14	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.4
RESRD	327	122	11	8 C	A14	030-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.2 TEXTILE
RESRD	327	122	12	2	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.7 Formed clay with shell
RESRD	327	122	13	6 B	A14	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.6
RESRD	327	122	14	8 B	A14	030-040	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	3.3
RESRD	327	122	15	4	A14	030-040	1/4	CLAY	MODIF	CERAM	EGG		1	4.0
RESRD	327	122	16	4	A14	030-040	1/4	CLAY	MODIF	CERAM	EGG		1	5.5
RESRD	327	122	17	1	A14	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	42	65.1
RESRD	327	123	4	2	A15	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	8.5
RESRD	327	123	5	8 A	A15	000-010	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	3.0
RESRD	327	123	6	6 A	A15	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.6

RESRD	327	123	7	8 C	A15	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3 TEXTILE
RESRD	327	123	8	2	A15	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.8
RESRD	327	123	9	2	A15	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	0.2
RESRD	327	123	10	1	A15	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	13	22.0
RESRD	327	124	4	9	A15	010-020	1/4	CLAY	MODIF	CERAM	FIGURINE		1	3.9
RESRD	327	124	5	2	A15	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.5
RESRD	327	124	6	6 A	A15	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	2.3
RESRD	327	124	7	1	A15	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	1	9.1
RESRD	327	124	8	4	A15	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	3.0
RESRD	327	124	9	1	A15	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	24	61.0
RESRD	327	125	6	2	A15	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.1
RESRD	327	125	7	10 B	A15	020-030	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	1.0
RESRD	327	125	8	7	A15	020-030	1/4	CLAY	MODIF	CERAM	BEAD		1	0.2
RESRD	327	125	9	2	A15	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.9
RESRD	327	125	10	4	A15	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	1.6
RESRD	327	125	11	6 A	A15	020-030	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8
RESRD	327	125	12	1	A15	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	75	9.4
RESRD	327	126	4	8 C	A16	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3 TEXTILE
RESRD	327	126	5	1	A16	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	61	185.7
RESRD	327	127	4	7	A16	010-020	1/4	CLAY	MODIF	CERAM	BEAD		1	0.6
RESRD	327	127	5	8 C	A16	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.2 TEXTILE
RESRD	327	127	6	6 A	A16	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.4
RESRD	327	127	7	2	A16	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.1
RESRD	327	127	8	4	A16	010-020	1/4	CLAY	MODIF	CERAM	EGG		2	4.4
RESRD	327	127	9	1	A16	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	34	70.0
RESRD	327	128	4	2	A16	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	6.8
RESRD	327	128	5	2	A16	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.1
RESRD	327	128	6	1	A16	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	27	49.2
RESRD	327	129	7	8 B	A17	000-010	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	14.4
RESRD	327	129	8	8 C	A17	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.8 TEXTILE
RESRD	327	129	9	8 C	A17	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.1 TEXTILE
RESRD	327	129	10	8 C	A17	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4 TEXTILE
RESRD	327	129	11	1	A17	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	3	39.4
RESRD	327	129	12	2	A17	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.0 BURNISHED
RESRD	327	129	13	6 B	A17	000-010	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	2	3.8
RESRD	327	129	15	1	A17	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	65	112.8
RESRD	327	130	4	4	A17	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	155.1
RESRD	327	130	5	8 B	A17	010-020	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.5
RESRD	327	130	6	4	A17	010-020	1/4	CLAY	MODIF	CERAM	EGG		3	8.7
RESRD	327	130	7	4	A17	010-020	1/4	CLAY	MODIF	CERAM	EGG		1	4.7
RESRD	327	130	8	6 A	A17	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.8
RESRD	327	130	9	2	A17	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	0.6
RESRD	327	130	10	11	A17	010-020	1/4	CLAY	MODIF	CERAM	IMPRESSED	ACORN	3	5.4
RESRD	327	130	11	1	A17	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	63	94.3
RESRD	327	131	7	7	A17	020-030	1/4	CLAY	MODIF	CERAM	BEAD		1	0.4
RESRD	327	131	8	8 C	A17	020-030	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.1 TEXTILE
RESRD	327	131	9	2	A17	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.3
RESRD	327	131	10	8 B	A17	020-030	1/4	CLAY	MODIF	CERAM	BALL	PINCHED	1	5.3
RESRD	327	131	11	2	A17	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	5.8
RESRD	327	131	12	4	A17	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	15.3
RESRD	327	131	13	1	A17	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	1	8.5
RESRD	327	131	14	1	A17	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	4	32.8
RESRD	327	131	15	1	A17	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	20	46.0
RESRD	327	132	4	4	A17	030-040	1/4	CLAY	MODIF	CERAM	EGG		7	24.4 FRAGMENTARY

RESRD	327	132	5	8	A	A17	030-040	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	4.2	
RESRD	327	132	6	8	E	A17	030-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	4.3	PRINT
RESRD	327	132	7	2		A17	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	7.8	
RESRD	327	132	8	10	B	A17	030-040	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	3.5	
RESRD	327	132	9	6	A	A17	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.2	
RESRD	327	132	10	8	E	A17	030-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4	PRINT
RESRD	327	132	11	6	A	A17	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	SMALL	2	0.9	
RESRD	327	132	12	8	A	A17	030-040	1/4	CLAY	MODIF	CERAM	BALL	SMALL	1	2.4	Formed ball
RESRD	327	132	13	2		A17	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.2	
RESRD	327	132	14	1		A17	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	48	76.6	
RESRD	327	133	5	8	C	A18	000-010	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.7	TEXTILE
RESRD	327	133	6	10	B	A18	000-010	1/4	CLAY	MODIF	CERAM	LOAF	TEXTILE	1	5.8	
RESRD	327	133	7	2		A18	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.7	
RESRD	327	133	8	5		A18	000-010	1/4	CLAY	MODIF	CERAM	DAUBER		1	2.0	
RESRD	327	133	9	4		A18	000-010	1/4	CLAY	MODIF	CERAM	EGG		2	7.2	
RESRD	327	133	10	2		A18	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.2	
RESRD	327	133	11	2		A18	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.4	
RESRD	327	133	12	1		A18	000-010	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	53	80.9	
RESRD	327	134	5	8	E	A18	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.2	PRINT
RESRD	327	134	6	8	E	A18	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	10.1	PRINT
RESRD	327	134	7	8	E	A18	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	7.1	PRINT
RESRD	327	134	8	8	E	A18	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	6.0	PRINT
RESRD	327	134	9	6	B	A18	010-020	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	8.9	
RESRD	327	134	10	4		A18	010-020	1/4	CLAY	MODIF	CERAM	EGG		5	11.7	
RESRD	327	134	11	7		A18	010-020	1/4	CLAY	MODIF	CERAM	BEAD		2	2.5	
RESRD	327	134	12	8	D	A18	010-020	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	2.0	PLANT
RESRD	327	134	13	1		A18	010-020	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	44	53.3	
RESRD	327	135	7	4		A18	020-030	1/4	CLAY	MODIF	CERAM	EGG		1	27.2	
RESRD	327	135	8	7		A18	020-030	1/4	CLAY	MODIF	CERAM	BEAD		1	0.3	
RESRD	327	135	9	10	A	A18	020-030	1/4	CLAY	MODIF	CERAM	LOAF		1	127.5	
RESRD	327	135	10	2		A18	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	3.9	
RESRD	327	135	11	4		A18	020-030	1/4	CLAY	MODIF	CERAM	EGG		2	7.2	
RESRD	327	135	12	1		A18	020-030	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	61	124.5	
RESRD	327	136	3	10	A	A18	030-040	1/4	CLAY	MODIF	CERAM	LOAF		1	38.6	
RESRD	327	136	4	2		A18	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	3	30.2	
RESRD	327	136	5	6	B	A18	030-040	1/4	CLAY	MODIF	CERAM	ROLLED	LARGE	1	1.6	
RESRD	327	136	6	8	C	A18	030-040	1/4	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.4	TEXTILE
RESRD	327	136	7	1		A18	030-040	1/4	CLAY	MODIF	CERAM	SHAPED	MISC	35	51.4	
RESRD	327	137	5	8	C	A1	040-050	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.4	TEXTILE
RESRD	327	137	6	8	E	A1	040-050	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	1.7	PRINT
RESRD	327	137	8	1		A1	040-050	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	40	23.6	
RESRD	327	138	5	4		A1	050-060	1/8	CLAY	MODIF	CERAM	EGG		1	30.0	
RESRD	327	138	6	2		A1	050-060	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	4	19.4	
RESRD	327	139	8	4		A1	060-070	1/8	CLAY	MODIF	CERAM	EGG		5	7.7	
RESRD	327	139	9	2		A1	060-070	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	1.1	
RESRD	327	139	10	6	A	A1	060-070	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.3	
RESRD	327	139	11	1		A1	060-070	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	26	16.8	
RESRD	327	140	3	9		A1	070-080	1/8	CLAY	MODIF	CERAM	FIGURINE		1	0.2	
RESRD	327	140	4	2		A1	070-080	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	6	7.4	
RESRD	327	140	7	8	E	A1	070-080	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.3	PRINT
RESRD	327	140	8	8	C	A1	070-080	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4	TEXTILE
RESRD	327	141	4	7		A1	080-090	1/8	CLAY	MODIF	CERAM	BEAD		1	0.6	
RESRD	327	141	5	1		A1	080-090	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	6	6.6	
RESRD	327	142	4	1		A1	090-100	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	13	24.8	

RESRD	327	142	5	6 B	A1	090-100	1/8	CLAY	MODIF	CERAM	ROLLED	LARGE	1	2.6	
RESRD	327	143	4	7	A1	100-110	1/8	CLAY	MODIF	CERAM	BEAD		1	0.3	
RESRD	327	143	5	6 A	A1	100-110	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	3	0.7	
RESRD	327	143	6	2	A1	100-110	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	4.0	
RESRD	327	144	5	6 A	A1	110-120	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	3	0.7	
RESRD	327	144	6	7	A1	110-120	1/8	CLAY	MODIF	CERAM	BEAD		1	0.1	
RESRD	327	144	7	8 C	A1	110-120	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.4	TEXTILE
RESRD	327	144	8	8 C	A1	110-120	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	3.6	TEXTILE
RESRD	327	144	9	1	A1	110-120	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	10	12.2	
RESRD	327	145	4	6 A	A1	120-130	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	2	0.2	
RESRD	327	145	5	1	A1	120-130	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	12	8.4	
RESRD	327	146	3	2	A1	130-140	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	10.3	
RESRD	327	146	4	6 A	A1	130-140	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	2	0.3	
RESRD	327	146	5	1	A1	130-140	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	7	2.1	
RESRD	327	147	3	1	A1	140-150	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	6	4.7	
RESRD	327	148	4	2	A1	150-160	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	2	0.3	
RESRD	327	149	4	2	B1	000-010	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	1	2.5	
RESRD	327	149	5	6 A	B1	000-100	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	1	1.2	
RESRD	327	149	6	1	B1	000-010	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	10	19.9	
RESRD	327	150	5	6 A	B1	010-020	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	1	0.3	grass or reed impression
RESRD	327	150	6	2	B1	010-020	1/8	CLAY	MODIF	CERAM	SHAPED	SPECIFIC	13	39.7	
RESRD	327	151	4	4	B1	020-030	1/8	CLAY	MODIF	CERAM	EGG		1	5.3	
RESRD	327	151	5	1	B1	020-030	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	8	22.2	
RESRD	327	152	4	6 A	B1	030-040	1/8	CLAY	MODIF	CERAM	ROLLED	SMALL	5	0.8	
RESRD	327	152	5	8 E	B1	030-040	1/8	CLAY	MODIF	CERAM	BALL	IMPRESSED	1	0.4	PRINT
RESRD	327	152	6	1	B1	030-040	1/8	CLAY	MODIF	CERAM	SHAPED	MISC	12	10.2	
STEGE	328	3	3	8 E	A1	020-030	1x2	1/8	CLAY	CERAM	BALL	IMPRESSED	1	0.3	PRINT
STEGE	328	5	10	6 A	A1	040-050	1x2	1/8	CLAY	CERAM	ROLLED	SMALL	1	0,7	
STEGE	328	8	2	2	A2	000-010	1x2	-	CLAY	CERAM	SHAPED	SPECIFIC	1	0.1	
STEGE	328	25	3	2	B1	090-100	0.5x2	1/4	CLAY	CERAM	SHAPED	SPECIFIC	1	6.9	
STEGE	328	27	5	8 E	B1	120-130	0.5x2	1/4	CLAY	CERAM	BALL	IMPRESSED	1	0.1	PRINT
STEGE	328	32	3	2	B2	020-030	1x2	1/4	CLAY	CERAM	SHAPED	SPECIFIC	1	6.9	
STEGE	328	37	5	3	B2	070-085	1x2	-	CLAY	CERAM	POTTERY		1	37.3	
STEGE	328	37	6	2	B2	070-085	1x2	1/4	CLAY	CERAM	SHAPED	SPECIFIC	1	31.7	
STEGE	328	38	5	2	B2	085-090	.5x1	1/4	CLAY	CERAM	SHAPED	SPECIFIC	8	28.1	
STEGE	328	41	5	2	B2	110-120	.5x1	1/4	CLAY	CERAM	SHAPED	SPECIFIC	1	3.7	SMALL CUP
STEGE	328	44	1	2	C1	010-020	1x2	1/4	CLAY	CERAM	SHAPED	SPECIFIC	3	16.0	
STEGE	328	45	3	2	C1	020-030	1x2	1/4	CLAY	CERAM	SHAPED	SPECIFIC	1	0.9	
STEGE	328	48	9	6 A	D1	163-183	1x2	1/8	CLAY	CERAM	ROLLED	SMALL	3	1.6	
STEGE	328	48	10	5	D1	163-183	1x2	1/8	CLAY	CERAM	DAUBER		1	12.8	
STEGE	328	48	11	8 A	D1	163-183	1/8	CLAY	MODIF	CERAM	BALL	SMALL	1	13.5	
STEGE	328	48	12	3	D1	163-183	1x2	1/8	CLAY	CERAM	POTTERY		1	11.3	
STEGE	328	48	13	2	D1	163-183	1x2	1/8	CLAY	CERAM	SHAPED	SPECIFIC	2	15.9	
													8	55.1	

SITE	ACC	LOT	CAT	TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	PART	N	WGT	REMARKS
RESRD	327	7	9		A2	040-060	1/4	SNDSTN	MODIF	MILLING TOOLS			FRAG	1		
RESRD	327	96	4		B4	070-080	1/4	SNDSTN	MODIF	MILLING TOOLS			FRAG	1	21	

SITE	ACC	LOT	CAT TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	PART	N	WGT	REMARKS
RESRD	327	47	4	A5	090-100	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	CMP	1	1207.2	ART #1
RESRD	327	71	3	B2	060-070	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	126.7	ROUNDED SHOULDER; ONE SIDE PLANAR WEAR, OPPOSITE SIDE SLIGHTLY ERRATIC
RESRD	327	72	4	B2	070-080	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	35.2	BURNED; ROUNDED SIDES; BOTH SIDES HIGH POLISH, ONE FACE PLANAR, OPPOSITE ROUNDED WEAR
RESRD	327	74	6	B2	090-100	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	124.7	BURNED; SLIGHTLY ROUNDED SHOULER; FACE ROUNDED, PLANAR
RESRD	327	131	4	A17	020-030	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	39.6	RED PIGMENT;ABRUPT SHOULDER; PLANAR WEAR
RESRD	327	139	17	A1	060-070	1/8	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	62.5	BURNED; SLIGHTLYROUNDED SHOULDERS; BOTH SIDES PLANAR WEAR
RESRD	327	162	4	BUR 5	MATRIX	1/4	GRNIT	MODIF	MILLING TOOLS	MANO	DISC	FRAG	1	118.3	PESTLE-LIKE USE ON SIDE; BOTH FACES PLANAR WEAR, HIGH POLISH; SLIUGHTLY ROUNDED SHOULDERS
RESRD	327	13	4	A2	120-130	1/4	MTSED	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	192.8	UNIFACIAL; ABRUPT SHOULDER
RESRD	327	23	7	A3	100-110	1/4	DACIT	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	102.5	BIFACIAL; NO SHOULDER
RESRD	327	59	4	B1	050-060	1/4	DACIT	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	42.8	UNIFACIAL
RESRD	327	63	13	B1	090-100	1/4	DACIT	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	85.0	BIFACIAL; CORNER FRAG; ONE FACE HARD SHOULDER, OPPOSITE FACE HIGH POLISH, ROUNDED SHOULDER; POLISHED SIDE
RESRD	327	105	13	B5	070-080	1/4	DACIT	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	41.6	UNIFACIAL; LIGHT SHOULDER
RESRD	327	139	18	A1	060-070	1/8	DACIT	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	159.4	BIFACIAL; SQUARED SIDES
RESRD	327	170	2	BUR 9	MATRIX	1/8	MTSED	MODIF	MILLING TOOLS	MANO	WEDGE	FRAG	1	425.2	UNIFACIAL
RESRD	327	103	14	B5	050-060	1/4	BIOTIT	MODIF	MILLING TOOLS	MANO	UNK	FRAG	1	61.1	MARGIN FRAG;CYLINDRICAL WEAR
RESRD	327	117	11	B6	090-100	1/4	MICSCH	MODIF	MILLING TOOLS	MANO	UNK	FRAG	1	86.5	CORNER FRAGMENT
RESRD	327	60	4	B1	060-070	1/4	LMSTN	MODIF	MILLING TOOLS	MANO	UNK	FRAG	1	46.6	FACE FRAG; HIGH POLISH, LIGHT STRIATIONS
RESRD	327	130	15	A17	010-020	1/4	DACIT	MODIF	MILLING TOOLS	MANO	UNK	FRAG	1	36.3	BIFACIAL; SIDE FRAG, ONE SIDE HARD SHOULDER, OPPOSITEPOLISHED, ROUNDED
RESRD	327	118	4	B6	100-110	1/4	DACIT	MODIF	MILLING TOOLS	MANO	UNK	FRAG	1	27.5	FACE FRAG; HIGH POLISH, HEAVY PECKING

SITE	ACC	LOT	CAT	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	N	WGT	REMARKS
STEGE	328	4	1	A1	030-040	1/8	METSED	MODIF	MILLING TOOLS	PESTLE	FRAG	1	357.9	
STEGE	328	83	1	A	SURF	-	METSED	MODIF	MILLING TOOLS	PESTLE	FRAG	1	111.7	
RESRD	327	129	20	EXP A	SURF	1/4	METSED	MODIF	MILLING TOOLS	PESTLE	CMP	1	1,207.20	
RESRD	327	133	3	A18	000-010	1/4	METSED	MODIF	MILLING TOOLS	PESTLE	FRAG	1	68.99	
RESRD	327	54	4	B1	000-010	1/4	METSED	MODIF	MILLING TOOLS	PESTLE	FRAG	1	47.4	spall
RESRD	327	117	12	B6	090-100	1/4	METSED	MODIF	MILLING TOOLS	PESTLE	FRAG	1	24.7	spall

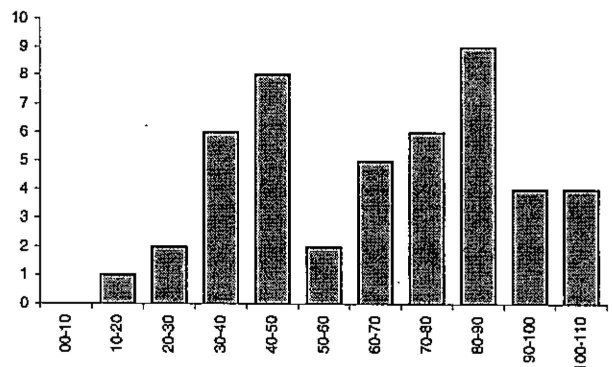
SITE	ACC	LOT	CAT	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3		N	WGT	REMARKS
STEGE	328	1	1	A1	000-010	1/4	GRANIT	MODIF	PEBBLE	HAMMER			1	446.6	
RESRD	327	104	16	B5	060-070	1/4		MODIF	PEBBLE	HAMMER			1		
RESRD	327	106	3	B5	080-090	1/4		MODIF	PEBBLE	HAMMER			1	108.5	
RESRD	327	83	5	B3	050-060	1/4		MODIF	PEBBLE	HAMMER			1	30.9	
RESRD	327	80	3	B3	020-030	1/4		MODIF	PEBBLE	HAMMER			1	30.8	
Col -247	327	104	18	B5	060-070	1/4	DACITE	MODIF	PEBBLE	HAMMER		FRAG	1	135.5	
Col -247	327	95	15	B4	060-070	1/4	SAND	MODIF	PEBBLE	HAMMER			1	113.0	
Col -247	327	70	6	B2	050-060	1/4	CHERT	MODIF	PEBBLE	HAMMER			1	199.1	
Col -247	327	27	10	A3	140-150	1/4	GRANITE	MODIF	PEBBLE	HAMMER			1	195.5	

SITE	ACC	LOT	CAT	TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	PART	N	WGT	REMARKS
STEGE	328	27	4		B1	120-130	1/4	MTSED	MODIF	PEBBLE	SINKER	NOTCHED	CMP	1	107.0	
RESRD	327	139	4		A1	060-070	1/8	MTSED	MODIF	PEBBLE	SINKER	NOTCHED	CMP	1	109.6	

SITE	ACC	LOT	CAT	TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3		N	WGT	REMARKS
RESRD	327	116	3		B6	080-090	1/4	Limestone	MODIF	PEBBLE	PLUMMET	SHAPED	Margin	1	161.7	Spinner plummet?
RESRD	327	117	4		B6	090-100	1/4	Basalt	MODIF	PEBBLE	PLUMMET	SHAPED	Tip	1	1.7	Plummet
RESRD	327	158	5		BUR 3	EXPOS	1/8	Basalt	MODIF	PEBBLE	PLUMMET	SHAPED	Tip	1		Perforation at tip.
RESRD	327	22	3		A3	90-100	1/4	Metasedim	MODIF	PEBBLE	PLUMMET	SHAPED	Margin	1	80.5	Nearly complete plummet
RESRD	327	31	2		A4	040-050	1/4	Basalt	MODIF	PEBBLE	PLUMMET	SHAPED		1	5.2	Slate plummet
RESRD	327	12	4		A2	110-120	1/4	Granite	MODIF	PEBBLE	PLUMMET	SHAPED	Tip	1	7.7	Stone plummet
RESRD	327	25	7		A3	120-130	1/4	Basalt	MODIF	PEBBLE	PLUMMET	SHAPED	Tip	1	4.9	Plummet
RESRD	327	26	4		A3	130-140	1/4	Granite	MODIF	PEBBLE	PLUMMET	SHAPED	Tip	1	0.6	Possible plummet
RESRD	327	118	5		B6	100-110	1/4	Metasedim	MODIF	PEBBLE	PLUMMET	SHAPED	Fragment	1	4.59	Plummet shaped sandstone with red clay coating of some kind.
RESRD	327	97	4		B4	080-090	1/4	Basalt	MODIF	COBBLE/	PLUMMET	SHAPED		1	157	Almost complete plummet. Artifact #1.

SITE	ACC	LOT	CAT	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	N	WGT	REMARKS
RESRD	327	83	17	B3	050-060	1/4	OCHER	MODIF	WORKED	SHAPED		1	0.6	
RESRD	327	59	6	B1	050-060	1/4	OCHER	MODIF	WORKED	SHAPED		1	2.4	
STEGE	328	74	1	T33		N/A	SPSTN	MODIF	WORKED	BOWL		1	41.3	
RESRD	327	115	26	B6	070-080	1/4	SLATE	MODIF	WORKED	TABLET		1	0.4	
Col -247	327	135	5	A18/I	020-030	1/4	SLATE	MODIF	WORKED	ROD		1	3	

SITE	ACC	LOT	CAT	TYPE	UNIT	LEVEL	SCN	MAT	CAT	DESC1	DESC2	DESC3	N	WGT	REMARKS		
RESRD	327				B1	010-020	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1			00-10	0
RESRD	327	67	3		B2	020-030	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1	29.0		10-20	1
RESRD	327				B6	020-030	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1			20-30	2
RESRD	327	68	6		B2	020-040	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		6	161.6		30-40	6
RESRD	327				B2	040-050	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1			40-50	8
RESRD	327				B2	040-050	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1			50-60	2
RESRD	327				B3	040-050	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1			60-70	5
RESRD	327	102	5		B5	040-050	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2	69.3		70-80	6
RESRD	327				B5	040-050	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		3			80-90	9
RESRD	327				B6	050-060	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2			90-100	4
RESRD	327	84	5		B3	060-070	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1	35.9		100-11(	4
RESRD	327				B3	060-070	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1				47
RESRD	327				B4	060-070	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1				
RESRD	327	104	5		B5	060-070	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2	62.8			
RESRD	327	61	4		B1	070-080	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1	45.9			
RESRD	327	96	5		B4	070-080	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1	29.1			
RESRD	327				B6	070-080	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		4				
RESRD	327	73	3		B2	080-090	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		3	153.5			
RESRD	327				B5	080-090	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2				
RESRD	327				B6	080-090	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		4				
RESRD	327	74	7		B2	090-100	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		3	111.0			
RESRD	327				B6	090-100	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		1				
RESRD	327	76	4		B2	100-110	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2	102.9			
RESRD	327				B3	100-110	1/4	MTSED	UNMOD	PEBBLE	SLINGSTONE		2				



Appendix C: Obsidian Hydration and Geochemical Sourcing Results

X-Ray Fluorescence Analysis and Obsidian Hydration Measurement of Artifact Obsidian from CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

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One-hundred and fifty-nine obsidian and basalt artifacts from CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California, were submitted for energy dispersive X-ray fluorescence trace element provenience analysis (Table 1). All of these obsidian artifacts, plus an additional 20 specimens from CA-COL-158 (N=10) and CA-COL-247 (N=10) that were not geochemically characterized, were also processed for obsidian hydration measurements. The samples were prepared and analyzed at the Northwest Research Obsidian Studies Laboratory under the accession number 2001-46.

Table 1. Artifacts selected for X-ray fluorescence (XRF) trace element and obsidian hydration (OH) analysis.

	XRF (N=)		
Site Number	**Obsidian**	**Basalt**	**OH (N=)**
CA-COL-158	43	20	53
CA-COL-245/H	38	–	38
CA-COL-246/H	15	–	15
CA-COL-247	43	–	53
Total	**139**	**20**	**159**

Analytical Methods

X-Ray Fluorescence Analysis. Nondestructive trace element analysis of the samples was completed using a Spectrace 5000 energy dispersive X-ray fluorescence spectrometer. The system is equipped with a Si(Li) detector with a resolution of 155 eV FHWM for 5.9 keV X-rays (at 1000 counts per second) in an area 30 mm^2. Signals from the spectrometer are amplified and filtered by a time variant pulse processor and sent to a 100 MHZ Wilkinson type analog-to-digital converter. The X-ray tube employed is a Bremsstrahlung type, with a rhodium target, and 5 mil Be window. The tube is driven by a 50 kV 1 mA high voltage power supply, providing a voltage range of 4 to 50 kV.

The diagnostic trace element values used to characterize the samples are compared directly to those for known obsidian and basalt sources reported in the literature and with unpublished trace element data collected through analysis of geologic source samples (Northwest Research 2003). Artifacts are correlated to a parent obsidian source or chemical source group if diagnostic trace element values fall within about two standard deviations of the analytical uncertainty of the known upper and lower limits of chemical variability recorded for the source. Occasionally, visual attributes are used to corroborate the source assignments although sources are never assigned solely on the basis of megascopic characteristics.

Obsidian Hydration Analysis. An appropriate section of each artifact is selected for hydration slide preparation. Two parallel cuts are made into the edge of the artifact using a lapidary saw equipped with 4-inch diameter diamond-impregnated .004" thick blades. The resultant cross-section of the artifact (approximately one millimeter thick) is removed and mounted on a petrographic microscope slide with Lakeside thermoplastic cement and is then ground to a final thickness of 30-50 microns.

The prepared slide is measured using an Olympus BHT petrographic microscope fitted with a filar screw micrometer eyepiece. When a clearly defined hydration layer is identified, the section is centered in the field of view to minimize parallax effects. Four rim measurements are typically recorded for each artifact or examined surface. Hydration rinds smaller than one micron often cannot be resolved by optical microscopy. Hydration thicknesses are reported to the nearest 0.1 μm and represent the mean value for all readings. Standard deviation values for each measured surface indicate the variability for hydration thickness measurements recorded for each specimen. It is important to note that these values reflect only the reading uncertainty of the rim values and do not take into account the resolution limitations of the microscope or other sources of uncertainty that enter into the formation of hydration rims.

Additional details about specific analytical methods and procedures used for the analysis of the elements reported in Table A-1 and the preparation and measurement of hydration rims are available at the Northwest Research Obsidian Studies Laboratory World Wide Web site at *www.obsidianlab.com.*

Results

X-Ray Fluorescence Analysis. Eight geochemical source groups, all of which were correlated with known geologic sources, were identified among the 139 obsidian artifacts that were characterized by X-ray fluorescence analysis. Eleven different potential sources, two of which were from known basalt sources, were found among the 20 characterized basalt artifacts from CA-COL-158. The locations of the sites and the identified obsidian sources are shown in Figure 1. Analytical results are presented in Table A-1 in the Appendix and are summarized in tables 2 and 3 and in figures 2 and 3. Descriptive information about all identified obsidian and basalt sources is presented in tables 4 and 5.

Table 2. Summary of results of trace element analysis of obsidian artifacts.

	Archaeological Sites (CA-COL-)				
Geologic Source	**158**	**245/H**	**246/H**	**247**	**Total**
Bodie Hills	–	–	–	1	**1**
Borax Lake	31	14	14	5	**64**
GF/LIW/RS	1	–	–	–	**1**
Grasshopper Group	–	–	1	–	**1**
Mt. Konocti	–	–	–	4	**4**
Napa Valley	8	24	–	22	**54**
Tuscan (Cow Creek)	3	–	–	10	**13**
Unknown 1	–	–	–	1	**1**
Total	**43**	**38**	**15**	**43**	**139**

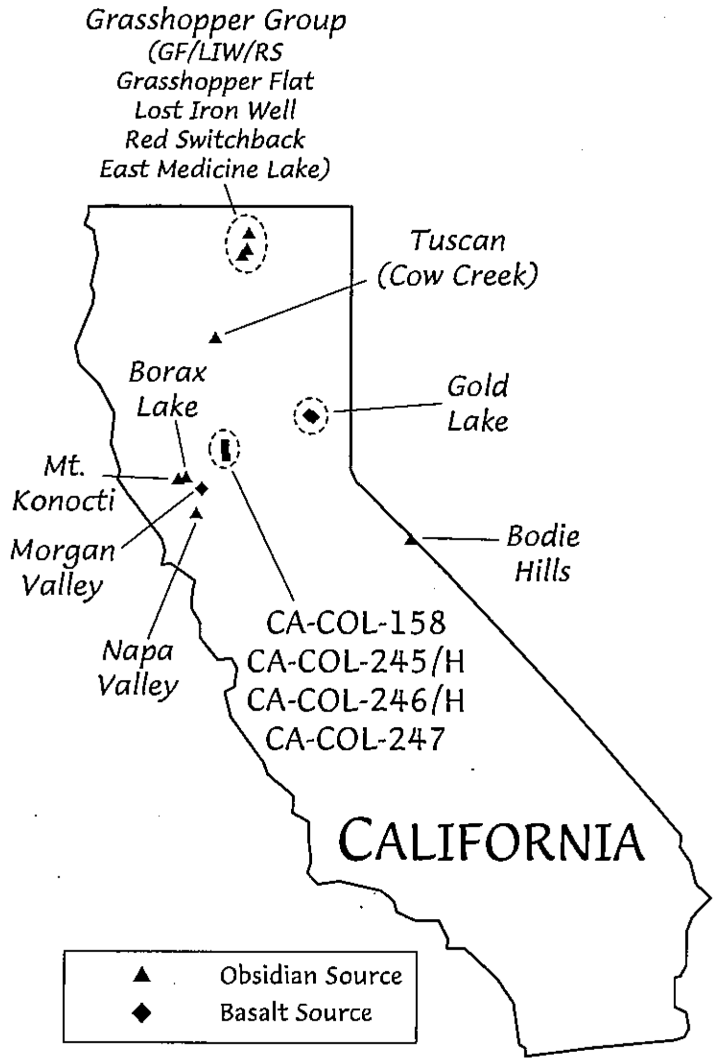

Figure 1. Locations of archaeological sites and obsidian and basalt sources identified by trace element analysis of artifacts.

Table 3. Summary of results of trace element analysis of basalt artifacts from CA-COL-158.

Geologic Source	N=	Percentage
Gold Lake	7	35.0
Morgan Valley	2	10.0
Unknown Basalt Sources	11	55.0
Total	20	100.0

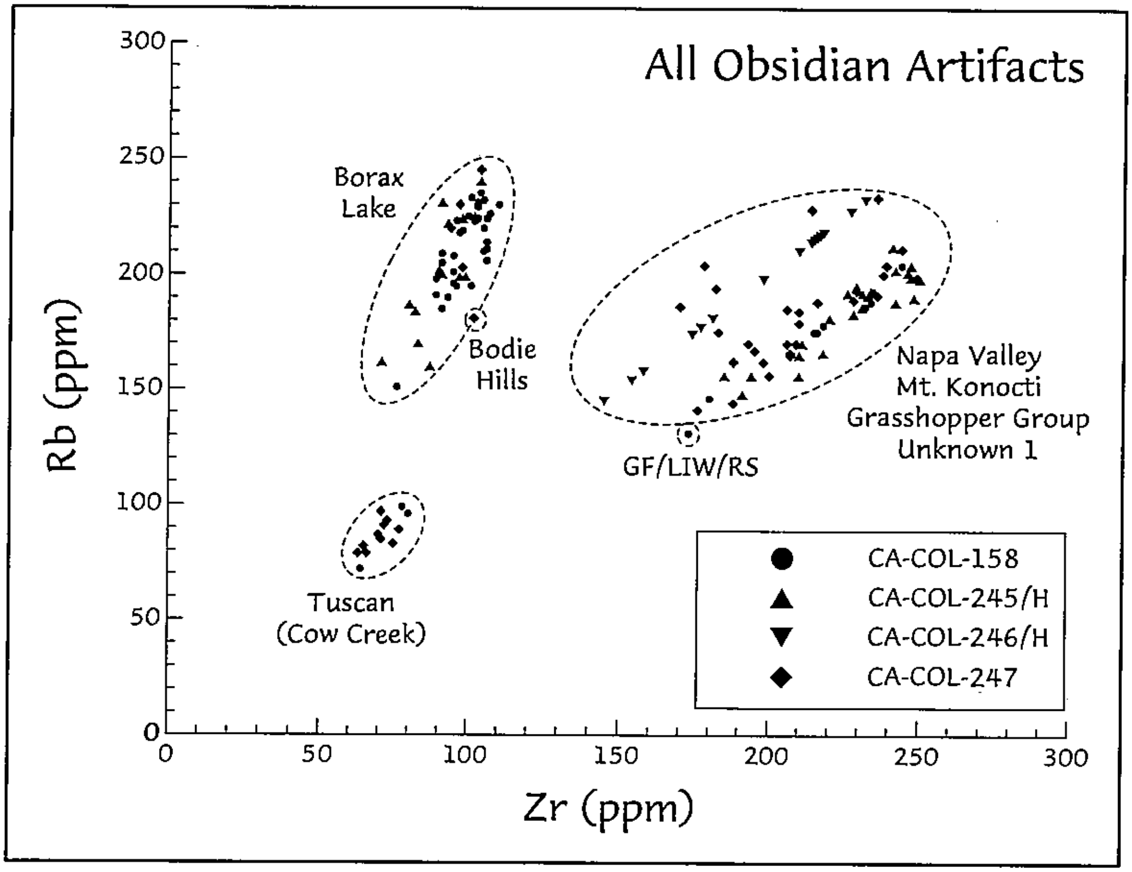

Figure 2. Scatterplot of rubidium (Rb) plotted versus zirconium (Zr) for all analyzed obsidian artifacts. All sources are clearly distinguishable when additional trace elements are considered.

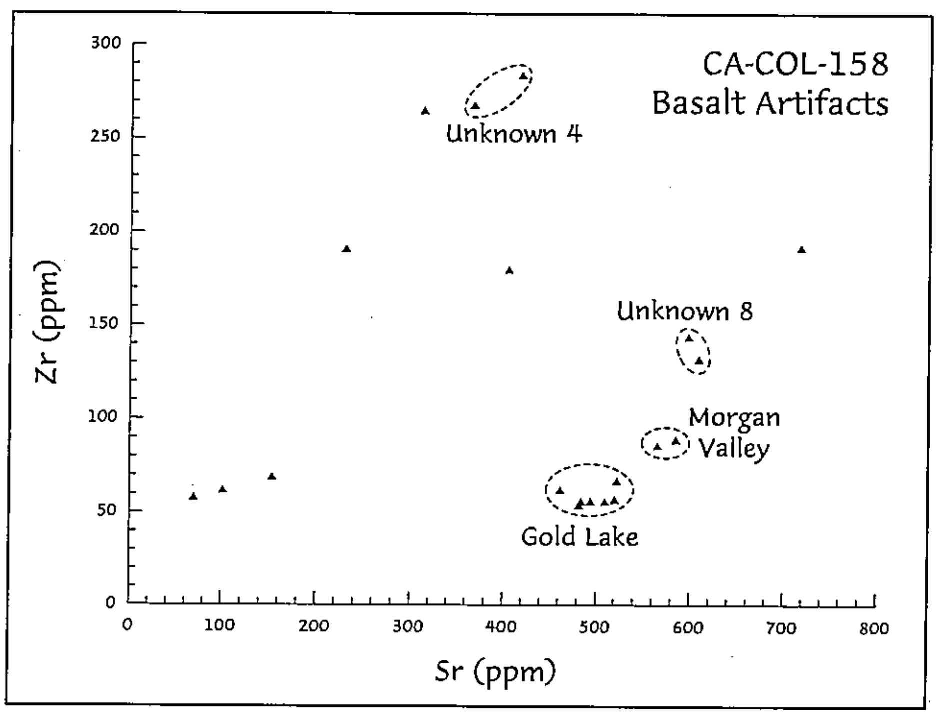

Figure 3. Scatterplot of strontium (Sr) plotted versus zirconium (Zr) for all analyzed basalt artifacts.

Table 4. Descriptions of obsidian sources identified in the current investigation. Summaries include results of unpublished field and geochemical source research conducted by Northwest Research. Table is continued on following page.

Geologic Source	Location	Description	References
Bodie Hills	Mono County, eastern California	This extensive source of high-quality obsidian is located north of Mono Lake and east of Bridgeport on the eastern side of the Sierra Nevada Mountains. Worked obsidian is reported to cover a total area of at least 8 km^2 and artifacts from the source are found in large quantities throughout east-central California. Evidence of the trans-Sierran procurement and exchange of large quantities of glass from Bodie Hills is well-documented at many archaeological sites in the west-central Sierra Nevada Mountains, the Central Valley, and the central coast of California. A rate of 650 - 670 years/µm has been proposed by Ericson although the validity of this linear rate has been questioned by Jackson (1984). Induced hydration studies suggest a similar hydration rate as obsidian from nearby Casa Diablo source. The existence of two different rates of hydration for geochemically identical but texturally different source areas has also been suggested	Basgall 1989 Bieling 1992 Ericson 1981, 1982 Ericson et al. 1976 Fredrickson 1991 Goldberg et al. 1990 Jackson 1984 Jackson and Ericson 1994 Singer and Ericson 1977
Borax Lake	Clear Lake Volcanics, North Coast Ranges, Lake County, California	This well-known prehistoric quarry source of obsidian is located near the southern end of Clear Lake about one mile south of Borax Lake. The chemically-variable Borax Lake flow is one of several obsidian sources associated with the Clear Lake Volcanics and has yielded a K-Ar date of approximately 90,000 years. The glass is of rather variable quality for artifact manufacture and ranges in appearance from a translucent gray-black to a pumiceous gray. This obsidian source is one of the most well-known in California but much of the quarry area has now been obliterated by recent vacation home developments. Intensive use of the source is evidenced by large quantities of manufacturing debris associated with the flow. The presence of fluted points at the source has also been used to suggest long-term use of this toolstone resource. Obsidian from the Borax Lake source has been identified at many sites in the North Coast Ranges, in central California's Great Valley, and the foothills of the Sierra Nevada Mountains.	Anderson 1936 Bowman et al. 1973a, 1973b Donnelly-Nolan et al. 1981 Ericson 1981 Ericson et al. 1976 Frederickson 1989 Frederickson and White 1988 Harrington 1948 Hearn et al. 1995 Heizer and Treganza 1944 Jackson 1974, 1986, 1989 Kaufman 1980 Meighan and Haynes 1970 Rick and Jackson 1992
GF/LIW/RS	Medicine Lake Highlands, Modoc County, California	This composite chemical source consists of three separate sources situated on the flanks of Medicine Lake Volcano -- the Grasshopper Flat, Lost Iron Well, and Red Switchback sources. Obsidian from this source group was intensively used during the prehistoric period and has been identified at many archaeological sites throughout northcentral and northwestern California and is also widely distributed in southwestern Oregon.	Ericson 1981 Hughes 1982, 1986 Skinner 1995a, 1995b
Grasshopper Group	Medicine Lake Highlands, Modoc County, California	The Grassbopper Group is a combined Medicine Lake Volcano geochemical group consisting of the Grasshopper Flat, Lost Iron Well, Red Switchback (GF/LIW/RS) *and* East Medicine Lake obsidian source localities. Trace element studies of source material by Northwest Research indicate that the GF/LIW/RS and East Medicine Lake groups are geochemically very similar, although zirconium abundances can often be used to distinguish between the two groups. When analytical and other sources of uncertainties for X-ray fluorescence analyses are considered, however, there is some potential for overlap in zirconium values between the two groups. Based on our analytical studies of geologic source material, we have set the geochemical source limits for the Grasshopper Group at greater than 190 ppm and less than 205 ppm for zirconium.	Ericson 1981 Hughes 1986 Skinner 1995a

Table 4 (continued). Descriptions of obsidian sources identified in the current investigation.

Geologic Source	Location	Description	References
Mt. Konocti	Clear Lake Volcanics, North Coast Ranges, Lake County, California	This source of rhyolitic obsidian, situated at the western edge of Clear Lake, covers an area of approximately 12 square miles on the south slopes of Mt. Konocti. The quality of the glass is generally inferior to obsidian from other North Coast Ranges sources and tends to be brittle with phenocrysts and other inclusions. Colors may vary from black to brown-black to gray to red-brown and banding is also common. Although the artifact manufacturing quality of the glass is somewhat marginal, trace element studies verify the prehistoric use of obsidian from the source. Utilization of the glass appears to have been largely confined to the local Mt. Konocti and Clear Lake region and characterized artifacts correlated with the source are almost entirely from Mendocino County sites.	Anderson 1936 Bowman et al. 1973a, 1973b Ericson 1981 Ericson et al. 1976 Fredrickson 1989 Gary and McClear-Gary 1990 Hearn et al. 1995 Heizer and Treganza 1944 Jackson 1974, 1986, 1989
Napa Valley	Napa County, North Coast Ranges, central western California	One of the most well-known prehistoric obsidian sources in central California, the Napa Valley source is located near the town of St. Helena. Also known as the Napa or Napa Glass Mountain source, the dark and often opaque glass from the this source was widely used during the prehistoric period. Obsidian artifacts from the Napa Valley source are found throughout central California's Great Valley and are commonly identified in the western Sierra Nevada Mountains and along the central California coast. Artifacts from this source have been identified as far north as Modoc County, California. Several different hydration rates have been proposed. Hydrates at a slower rate than the nearby Borax Lake obsidian.	Boucy and Basgall 1984 Ericson et al. 1976 Ericson 1981 Frederickson 1989 Heizer and Treganza 1944 Jackson 1974, 1986, 1989 Jackson and Ericson 1994 Meighan 1983 Origer 1987 Pastron and Walsh 1989 Psota 1994 Tremaine 1989, 1993
Tuscan	Shasta and Tehama Counties, California	Until relatively recently, obsidian from numerous scattered collection localities east of Redding, California, were all considered to be outcrops of a single Tuscan chemical source group. Hamusek, however, has recently identified at least three different distinct Tuscan chemical source groups: (1) Backbone Ridge/Cow Creek; (2) Paynes Creek-Inks Creek, and (3) Paradise Ridge. The Backbone Ridge/Cow Creek is referred to in the current investigation as the Tuscan (Cow Creek) source. Obsidian artifacts originating from the Tuscan source groups, particularly from the Cow Creek variety, are commonly found throughout northcentral California and often co-occur with artifacts originating from sources in the Medicine Lake Highlands.	Anderson 1933 Hamusek 1993, 1995 Hughes 1986 Lydon 1967, 1968 Skinner 1995a

Table 5. Description of basalt source identified in the current investigation. Summaries include results of unpublished field and geochemical source research conducted by Northwest Research.

Chemical Source	Location	Description	References
Gold Lake	Taboe National Forest, Downieville Ranger District, and Plumas National Forest, Beckwourth Ranger District, Sierra County, California	This chemical source is known from several High Sierran Gold Lake vicinity outcrops in the located near the boundary between the Tahoe and Plumas national forests. Known source locales include those found at Gold Lake, Oakland Pond, and Church Meadows (see Figure 4). Source material is also likely widely distributed in glacial deposits including those found adjacent to the primary source area in Mohawk Valley. Trace element investigations of artifacts from the Lake Tahoe region indicate that this source was intensively utilized during the prebistoric period. Artifacts correlated with the Gold Lake chemical source have been identified at many sites in the Taboe and Plumas national forests and are occasionally found to the west in the Sacramento Valley. Designated as unit Qv^b in Saucedo and Wagner (1992).	Saucedo and Wagner 1992
Morgan Valley	Eastern Lake County, California	This basalt source is known from only a few geologic samples collected along Morgan Valley Road near Grizzly Peak. The source is located approximately 10 mi (16 km) ESE from Clear Lake. Little is known about the prehistoric use of this source – the only known artifacts correlated with the Morgan Valley source come from the current investigation.	–

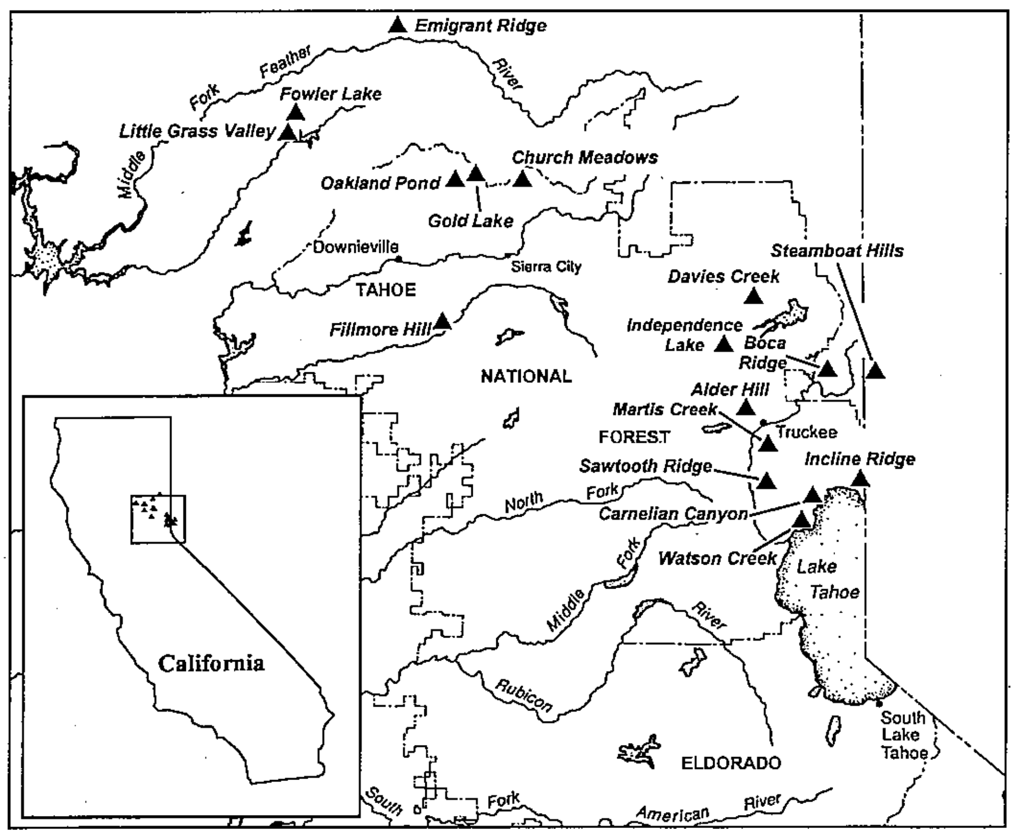

Figure 4. Location of major geologic sources of basalt in the Tahoe National Forest region.

Table 6. Summary of obsidian hydration measurements. Hydration rim values are recorded in microns.

Geologic Source	Archaeological Sites: CA-COL-158	CA-COL-245/H	CA-COL-246/H	CA-COL-247	Total
Bodie Hills	–	–	–	5.3	**1**
Borax Lake	1.3, 1.3, 1.3, 1.4, 1.5, 1.6, 2.2, 2.4, 2.4, 2.6, 2.7, 2.8, 2.9, 3.0, 3.2, 3.5, 3.5, 3.7, 3.7, 3.7, 3.7, 3.7, 3.9, 4.1, 4.5, 4.6, 5.1, 5.8, 5.9, 6.0, 6.1, 6.2, 6.6, 8.1, 9.9	1.8, 2.3, 2.3, 2.5, 2.6, 2.7, 2.8, 2.8, 2.8, 2.9, 3.0, 3.3, 3.7, 7.8, 8.9, 8.9, 10.4, 12.2	1.5, 1.7, 2.3, 2.6, 2.8, 3.0, 3.0, 3.3, 3.5, 3.6, 3.7, 4.2, 4.6, 5.2, 5.3, 6.1, 7.0	0.9, 4.6, 4.7, 5.3, 6.3	**75**
GF/LIW/RS	3.0	–	–	–	**1**
Grasshopper Group	–	–	3.7	–	**1**
Mt. Konocti	–	–	–	1.2, 4.4, 4.5	**3**
Napa Valley	1.4, 1.4, 1.5, 1.5, 1.5, 1.5, 2.6, 3.0	1.4, 1.4, 1.4, 1.5, 1.5, 1.5, 1.5, 1.5, 1.6, 1.6, 1.6, 1.6, 1.6, 1.7, 1.9, 1.9, 1.9, 1.9, 2.0, 2.1, 2.1, 2.3, 2.6, 3.1, 3.7, 4.6, 7.1, 7.3	–	1.2, 1.3, 1.4, 1.5, 1.5, 1.9, 2.4, 3.0, 3.3, 3.3, 4.0, 4.1, 4.2, 4.5, 4.5, 4.5, 4.6, 5.2	**54**
Tuscan (Cow Creek)	1.3, 2.1, 3.5	–	–	1.5, 2.8, 3.5, 3.5, 3.6, 3.7, 5.3	**10**
Unknown 1	–	–	–	NA	**0**
Source Not Determined	1.7, 3.5, 3.6, 3.7, 3.8, 4.4, 5.4, 6.1, 6.3	–	–	1.3, 2.4, 3.6, 3.7, 4.4, 4.4, 5.1, 5.2, 11.9	**18**
Total	**56**	**46**	**18**	**43**	**163**

Obsidian Hydration Analysis. One-hundred and fifty-nine artifacts, including the 139 samples characterized by X-ray fluorescence analysis, were prepared for obsidian hydration analysis. The samples yielded 163 measurable hydration rims, including double rims on 19 of the artifacts. The specimen slides are curated at the Northwest Research Obsidian Studies Laboratory under accession number 2001-46. The results are reported in Table B-1 in the Appendix and are summarized in Table 6.

GF/LIW/RS and Grasshopper Group Hydration Rates. Preliminary obsidian hydration rates have been proposed for obsidian sources located in the Medicine Lake Highlands, the GF/LIW/RS and East Medicine Lake geochemical groups. Johnson (1969) established a regional obsidian hydration rate for the Klamath Basin at the nearby Nightfire Island Site, northern California, of $3.5\mu^2/1000$ ^{14}C years, although he made no attempt to control for the chemical composition of the glass. As later trace element studies of Nightfire Island obsidian by Hughes (1985, 1986:123–179) suggest, Johnson's collection likely included obsidian from the sources identified in the current study. Assuming a similar rate of hydration for the Spodue Mountain, Silver Lake/Sycan Marsh, and GF/LIW/RS sources, a proposition originally advanced by Pettigrew and Lebow (1987), Connolly et al. (1994) proposed a "project vicinity" (Medicine Lake Volcano, Spodue Mountain, and Silver Lake/Sycan Marsh sources) hydration rate of $4.1\ \mu m^2/1000$ years.

Separate hydration rates for two different geographic localities are also reported by Basgall and Hildebrant (1989) for obsidian from the GF/LIS/RS chemical group. The hydration rate for these sources has also been discussed by Skinner (1995b) and Ozbun et al. (1996). It must be noted, however, that in all cases these provisional obsidian hydration rates are constructed from relatively young radiocarbon dates. Because of this, it should be expected that the potential error associated with age estimates for artifacts with larger rims will be greater than for smaller hydration rims.

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Appendix

Results of X-Ray Fluorescence and Obsidian Hydration Analysis

Northwest Research Obsidian Studies Laboratory

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

Site	Specimen No.	Catalog No.		Trace Element Concentrations											Ratios		Artifact Source
				Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe_2O_3^T$	Fe:Mn	Fe:Ti	
CA-COL-247	1	A-1		82	18	85	101	15	71	5	492	325	NM	0.48	16.5	34.8	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	2	A-2		88	28	93	100	20	73	7	382	335	NM	0.38	13.0	36.6	Tuscan (Cow Creek)
			±	8	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	3	A-3		45	36	162	10	36	188	11	NM	NM	NM	NM	87.6	93.0	Napa Valley *
			±	9	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	4	A-4		97	38	191	11	48	236	13	320	102	NM	0.49	76.2	54.6	Napa Valley
			±	8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	5	A-5		49	15	82	92	18	65	9	323	354	NM	0.48	14.9	53.1	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	6	A-6		71	27	184	13	38	210	9	244	115	NM	0.53	67.0	76.4	Napa Valley
			±	8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	7	A-7		90	42	193	20	48	229	13	NM	NM	NM	NM	68.7	76.7	Napa Valley *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	8	A-8		35	19	194	71	30	182	10	NM	NM	NM	NM	87.3	28.0	Mt. Konocti *
			±	7	4	4	6	2	6	2	NM	NM	NM	NM			
CA-COL-247	9	A-9		66	25	167	9	36	195	4	NM	NM	NM	NM	84.5	63.9	Napa Valley *
			±	9	4	4	6	3	6	3	NM	NM	NM	NM			
CA-COL-247	10	A-10		65	32	156	10	36	200	6	NM	NM	NM	NM	78.3	65.3	Napa Valley *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	11	A-11		81	32	179	10	44	210	10	277	110	NM	0.69	90.9	85.4	Napa Valley
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	12	A-12		165	38	233	45	45	236	10	409	186	NM	0.64	40.9	53.4	Unknown 1
			±	8	4	4	6	2	6	2	78	45	NM	0.11			
CA-COL-247	13	A-13		80	30	162	11	40	198	11	NM	NM	NM	NM	63.6	89.5	Napa Valley *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	14	A-14		75	24	203	10	40	98	12	NM	NM	NM	NM	72.0	69.5	Borax Lake *
			±	9	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	15	A-15		152	38	170	13	38	193	9	NM	NM	NM	NM	84.2	46.0	Napa Valley *
			±	9	4	4	6	3	6	2	NM	NM	NM	NM			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Northwest Research Obsidian Studies Laboratory

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

Site	Specimen No.	Catalog No.		Trace Element Concentrations										Ratios		Artifact Source
				Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	
CA-COL-247	16	A-16		89	31	175	12	41	183	7	NM	NM	NM	NM	72.9	63.8	Napa Valley *
			±	10	5	4	6	3	5	3	NM	NM	NM	NM			
CA-COL-247	17	A-17		34	16	79	75	15	63	5	235	359	NM	0.38	12.2	60.8	Tuscan (Cow Creek)
			±	8	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	18	A-18		40	25	220	12	43	94	11	211	95	NM	0.45	79.9	77.9	Borax Lake
			±	8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-247	19	A-19		60	29	189	7	44	228	7	352	131	NM	0.86	85.1	80.7	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	20	A-20		31	16	79	84	18	66	10	240	358	NM	0.41	13.0	63.3	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	21	A-21		69	8	97	85	15	71	5	NM	NM	NM	NM	13.4	50.8	Tuscan (Cow Creek) *
			±	8	5	3	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	22	A-22		63	36	188	10	49	216	11	NM	NM	NM	NM	111.6	73.2	Napa Valley *
			±	9	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	23	A-23		60	35	228	85	37	214	14	1001	146	529	0.79	68.0	26.3	Mt. Konocti
			±	8	4	4	6	3	5	2	79	45	28	0.11			
CA-COL-247	24	A-24		53	30	165	9	43	207	8	NM	NM	NM	NM	100.2	37.8	Napa Valley *
			±	9	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	25	A-25		62	32	170	9	39	206	9	NM	NM	NM	NM	87.4	61.5	Napa Valley *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	26	A-26		44	32	181	100	12	102	16	380	248	NM	0.32	16.1	32.2	Bodie Hills
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	27	A-27		105	33	204	17	47	239	9	658	242	NM	0.93	41.5	46.2	Napa Valley
			±	7	3	3	6	2	6	2	78	45	NM	0.11			
CA-COL-247	28	A-28		76	44	211	12	46	244	14	241	115	NM	0.70	86.6	99.6	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	29	A-29		69	31	230	12	46	97	14	227	110	NM	0.58	77.8	89.2	Borax Lake
			±	7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-247	30	A-30		63	27	204	69	35	178	14	NM	NM	453	NM	55.0	33.4	Mt. Konocti? *
			±	8	4	4	6	3	6	2	NM	NM	29	NM			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Northwest Research Obsidian Studies Laboratory

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

Site	Specimen No.	Catalog No.		Trace Element Concentrations Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe_2O_3^T$	Ratios Fe:Mn	Fe:Ti	Artifact Source
CA-COL-247	31	A-31		58	27	186	58	31	170	8	NM	NM	NM	NM	74.3	33.5	Mt. Konocti *
			±	8	4	4	6	2	6	2	NM	NM	NM	NM			
CA-COL-247	32	A-32		74	23	185	9	42	206	16	NM	NM	NM	NM	80.7	68.6	Napa Valley *
			±	10	6	4	6	3	5	3	NM	NM	NM	NM			
CA-COL-247	33	A-33		57	16	89	98	21	77	9	314	456	NM	0.56	12.8	62.1	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	79	45	NM	0.11			
CA-COL-247	34	A-34		64	24	245	16	45	104	12	NM	NM	NM	NM	75.0	74.0	Borax Lake *
			±	9	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	35	A-35		85	35	166	13	45	207	6	NM	NM	NM	NM	74.7	87.8	Napa Valley *
			±	9	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	36	A-36		59	24	141	9	33	176	9	NM	NM	NM	NM	78.5	89.2	Napa Valley *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-247	37	A-37		69	35	170	10	43	209	13	242	110	NM	0.64	84.9	91.5	Napa Valley
			±	8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-247	38	A-38		70	28	200	9	34	90	7	181	92	NM	0.37	70.8	76.7	Borax Lake
			±	7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-247	39	A-39		45	17	91	84	15	72	8	347	546	NM	0.69	12.7	67.6	Tuscan (Cow Creek)
			±	6	3	3	6	3	5	2	79	45	NM	0.11			
CA-COL-247	40	A-40		52	19	83	94	18	75	8	288	388	NM	0.46	12.9	57.2	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-247	41	A-41		77	35	200	9	44	238	14	175	83	NM	0.44	99.8	92.9	Napa Valley
			±	9	5	4	6	3	5	2	77	45	NM	0.11			
CA-COL-247	42	A-42		55	19	87	92	17	70	8	273	339	NM	0.40	13.5	54.5	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	43	B-1A		45	36	183	7	44	228	11	272	104	NM	0.66	95.9	83.5	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	44	B-1B		69	38	190	10	46	248	10	288	112	NM	0.71	90.5	83.7	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	45	B-1C		62	42	201	9	50	246	16	340	120	NM	0.86	96.9	84.0	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen		Trace Element Concentrations											Ratios		
Site	No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe_2O_3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-245/H	46	B-1D	58	27	165	9	48	210	10	NM	NM	NM	NM	87.9	87.1	Napa Valley *
			± 10	5	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	47	B-1E	43	26	181	9	40	220	13	NM	NM	NM	NM	97.4	97.9	Napa Valley *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	48	B-1F	65	31	193	10	45	234	9	NM	NM	NM	NM	92.7	78.9	Napa Valley *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	49	B-1G	77	38	195	11	50	229	6	NM	NM	NM	NM	97.7	72.1	Napa Valley *
			± 10	5	4	6	3	5	3	NM	NM	NM	NM			
CA-COL-245/H	50	B-1H	61	27	148	9	42	191	8	237	96	NM	0.57	94.4	84.1	Napa Valley
			± 8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	51	B-1I	67	36	186	7	47	231	13	219	94	NM	0.59	102.3	94.9	Napa Valley
			± 8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	52	B-1J	73	40	199	8	49	247	9	352	133	NM	0.97	92.9	90.8	Napa Valley
			± 7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	53	B-1K	55	35	156	8	37	194	6	282	108	NM	0.78	103.6	93.3	Napa Valley
			± 7	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	54	B-1L	37	28	170	8	44	211	10	173	92	NM	0.47	85.9	98.2	Napa Valley
			± 8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	55	B-1M	50	30	156	6	33	185	9	205	98	NM	0.58	93.8	98.5	Napa Valley
			± 7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	56	B-1N	81	37	202	10	48	242	12	310	115	NM	0.79	96.1	85.8	Napa Valley
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	57	B-1O	74	39	212	15	50	241	12	365	139	NM	0.94	85.7	85.3	Napa Valley
			± 7	3	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	58	B-2A	75	24	199	30	38	97	11	573	163	NM	0.91	66.6	52.0	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	59	B-2B	52	32	240	12	47	104	11	300	125	NM	0.75	81.0	84.4	Borax Lake
			± 6	3	4	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	60	B-2C	44	26	202	10	41	90	10	252	127	NM	0.62	66.3	85.2	Borax Lake
			± 6	3	3	6	3	5	2	77	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Northwest Research Obsidian Studies Laboratory

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen			Trace Element Concentrations											Ratios		
Site	No.	Catalog No.		Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-245/H	61	B-2D		48	23	170	11	34	83	8	224	92	NM	0.44	81.3	71.2	Borax Lake
			±	7	4	3	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	62	B-2E		55	25	199	35	37	99	10	528	129	NM	0.81	81.8	50.8	Borax Lake
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	63	B-2F		58	26	222	12	43	93	10	274	116	NM	0.59	72.5	74.8	Borax Lake
			±	7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	64	B-2G		46	32	231	12	38	91	13	NM	NM	NM	NM	73.2	63.8	Borax Lake *
			±	9	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	65	B-2H		44	18	160	32	35	87	9	NM	NM	NM	NM	77.6	41.6	Borax Lake *
			±	8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	66	B-3A		66	31	193	8	45	235	6	284	116	NM	0.70	84.1	83.8	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	67	B-3B		67	37	198	9	45	250	14	374	143	NM	1.06	91.1	92.5	Napa Valley
			±	6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	68	B-3C		54	39	191	8	44	233	11	300	116	NM	0.86	101.4	95.4	Napa Valley
			±	7	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	69	B-3D		57	39	188	10	47	242	14	358	136	NM	1.02	94.0	93.0	Napa Valley
			±	6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	70	B-3E		45	34	166	8	41	218	12	282	106	NM	0.78	108.1	93.4	Napa Valley
			±	7	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	71	B-3F		62	33	192	7	40	231	10	215	108	NM	0.60	81.9	97.5	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	72	B-3G		68	39	192	8	48	226	13	288	99	NM	0.54	85.9	65.9	Napa Valley
			±	7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	73	B-3H		78	38	156	12	41	210	8	176	92	NM	0.43	80.8	89.7	Napa Valley
			±	8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	74	B-3I		60	31	204	9	46	247	13	250	90	NM	0.47	89.9	67.2	Napa Valley
			±	8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	75	B-4A		42	26	224	15	46	98	14	433	160	NM	0.97	72.4	73.4	Borax Lake
			±	6	3	3	6	3	5	2	78	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Northwest Research Obsidian Studies Laboratory

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen		Trace Element Concentrations											Ratios		
Site	No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-245/H	76	B-4B	51	27	225	14	42	102	10	437	142	NM	0.77	68.8	59.1	Borax Lake
			± 7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-245/H	77	B-4C	37	28	162	12	30	71	7	NM	NM	NM	NM	75.6	61.0	Borax Lake *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	78	B-4D	40	29	184	12	33	82	9	NM	NM	NM	NM	76.4	74.6	Borax Lake *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-245/H	79	B-4E	47	22	187	11	34	80	11	249	108	NM	0.49	69.3	70.4	Borax Lake
			± 6	4	3	6	3	5	2	77	45	NM	0.11			
CA-COL-245/H	80	B-4F	48	25	200	18	41	91	16	NM	NM	NM	NM	77.3	54.4	Borax Lake *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-246/H	81	C-1A	102	34	210	29	40	101	9	601	138	NM	0.71	66.3	39.5	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	82	C-1B	53	31	227	12	47	101	15	421	171	NM	0.98	66.7	76.0	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	83	C-1C	73	27	214	34	44	101	11	863	169	NM	1.10	75.7	41.2	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	84	C-1D	61	26	218	21	43	100	13	509	132	NM	0.82	81.4	53.6	Borax Lake
			± 6	3	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	85	C-1E	43	25	215	13	45	94	8	358	133	NM	0.67	66.1	63.4	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	86	C-1F	83	33	232	16	44	102	9	530	187	NM	0.69	43.5	44.0	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	87	C-1G	43	27	181	22	39	90	14	686	163	NM	1.01	73.4	48.0	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	88	C-1H	41	28	216	37	45	108	16	676	136	NM	0.84	79.5	41.0	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	89	C-1I	49	25	217	13	45	98	10	327	131	NM	0.69	69.6	71.3	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	90	C-1J	57	23	174	38	38	91	6	804	152	NM	1.00	79.1	40.3	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

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Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen		Trace Element Concentrations											Ratios		
Site	No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-246/H	91	C-1K	38	27	177	10	39	82	10	219	98	NM	0.45	75.1	74.8	Borax Lake
			± 8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-246/H	92	C-1L	60	33	198	27	41	91	6	573	139	NM	0.82	75.1	47.5	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	93	C-1M	45	20	158	34	28	83	8	NM	NM	NM	NM	86.1	41.4	Borax Lake *
			± 8	4	3	6	3	5	2	NM	NM	NM	NM			
CA-COL-246/H	94	C-1N	56	18	154	26	31	81	10	419	98	NM	0.51	84.1	43.0	Borax Lake
			± 8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-246/H	95	C-2	74	21	145	74	30	192	12	913	284	NM	0.86	32.0	31.0	Grasshopper Group
			± 7	4	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	96	D-1	57	30	219	11	47	98	11	NM	NM	NM	NM	77.3	62.2	Borax Lake *
			± 7	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	97	D-2	43	30	225	12	49	100	11	324	132	NM	0.72	72.2	75.5	Borax Lake
			± 7	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	98	D-3	48	38	235	12	48	104	15	290	105	NM	0.61	88.5	73.2	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	99	E-1A	49	25	218	10	44	97	15	268	114	NM	0.56	71.3	73.5	Borax Lake
			± 6	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	100	E-1B	41	22	190	21	41	93	8	417	120	NM	0.69	79.1	55.8	Borax Lake
			± 7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	101	E-1C	45	23	191	11	42	89	7	240	112	NM	0.51	67.9	75.8	Borax Lake
			± 7	4	3	6	3	5	2	77	45	NM	0.11			
CA-COL-158	102	E-2	48	25	195	32	43	96	13	NM	NM	NM	NM	75.6	45.1	Borax Lake *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	103	E-3	75	32	229	20	46	103	13	492	205	NM	0.80	44.3	54.0	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	104	E-4A	38	25	131	68	28	173	12	670	160	NM	0.66	51.3	33.4	GF/LIW/RS
			± 8	4	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	105	E-4B	29	17	72	76	15	64	4	208	284	NM	0.32	13.8	59.7	Tuscan (Cow Creek)
			± 8	4	3	6	3	5	2	78	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen		Trace Element Concentrations											Ratios		
Site	No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-158	106	E-5A	57	25	195	31	44	101	11	NM	NM	NM	NM	84.0	43.2	Borax Lake *
			± 7	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	107	E-5B	45	22	185	18	41	91	13	403	122	NM	0.69	77.6	58.1	Borax Lake
			± 7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	108	E-5C	36	27	201	18	42	95	13	306	101	NM	0.46	73.0	54.4	Borax Lake
			± 8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	109	E-6	43	29	208	15	45	95	14	265	105	NM	0.53	77.3	70.1	Borax Lake
			± 7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	110	E-7	38	28	232	16	42	105	13	291	125	NM	0.67	72.9	79.2	Borax Lake
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	111	F-1	83	22	55	231	34	191	6	NM	NM	788	NM	74.3	30.2	Unknown Basalt 1 *
			± 10	5	3	7	3	6	3	NM	NM	32	NM			
CA-COL-158	112	F-2	87	23	45	494	14	56	3	2057	653	987	3.22	44.7	47.8	Gold Lake
			± 6	4	3	7	3	5	2	81	46	29	0.11			
CA-COL-158	113	F-3	105	15	48	523	9	67	6	1116	413	851	1.97	45.7	55.1	Gold Lake
			± 6	3	3	7	3	5	2	79	45	28	0.11			
CA-COL-158	114	F-4	231	15	49	462	6	62	7	NM	NM	842	NM	43.6	60.5	Gold Lake *
			± 8	4	3	7	3	5	2	NM	NM	29	NM			
CA-COL-158	115	F-5	56	5	20	102	14	62	6	NM	NM	288	NM	26.2	62.5	Unknown Basalt 2 *
			± 8	5	3	6	3	5	2	NM	NM	29	NM			
CA-COL-158	116	F-6	131	23	49	482	12	54	7	1439	503	1049	2.10	39.0	45.2	Gold Lake
			± 8	4	3	7	3	5	2	80	45	29	0.11			
CA-COL-158	117	F-7	92	27	48	484	14	56	7	1222	390	1117	1.72	42.6	44.0	Gold Lake
			± 8	4	3	7	3	5	2	79	45	30	0.11			
CA-COL-158	118	F-8	123	7	23	154	17	69	5	2202	591	444	3.05	47.2	42.5	Unknown Basalt 3
			± 7	4	3	6	3	5	2	81	46	28	0.11			
CA-COL-158	119	F-9	119	35	81	418	44	284	11	2441	443	953	2.60	55.2	32.8	Unknown Basalt 4
			± 8	4	3	7	3	5	2	81	45	29	0.11			
CA-COL-158	120	F-10	107	17	81	718	17	192	14	4111	498	1473	3.59	66.6	26.6	Unknown Basalt 5
			± 7	4	3	7	3	5	2	84	45	29	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

			Trace Element Concentrations											Ratios		
Site	Specimen No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-158	121	F-11	129	9	28	70	11	58	5	1576	1176	319	3.29	24.6	63.8	Unknown Basalt 6
			± 7	4	3	6	3	5	2	80	46	28	0.11			
CA-COL-158	122	F-12	132	11	46	405	37	180	3	4764	585	671	5.17	79.9	32.8	Unknown Basalt 7
			± 8	5	3	7	3	5	2	85	46	28	0.11			
CA-COL-158	123	F-13	103	34	100	585	11	89	4	1388	359	905	2.09	56.4	46.7	Morgan Valley
			± 7	3	3	7	3	5	2	80	45	28	0.11			
CA-COL-158	124	F-14	64	40	101	565	7	86	6	1317	364	895	2.02	53.8	47.7	Morgan Valley
			± 6	3	3	7	3	5	2	80	45	28	0.11			
CA-COL-158	125	F-15	142	23	49	521	14	57	3	1748	641	1027	2.52	35.9	44.4	Gold Lake
			± 7	4	3	7	3	5	2	80	45	29	0.11			
CA-COL-158	126	F-16	148	10	35	609	17	132	6	2431	686	648	4.28	56.1	53.5	Unknown Basalt 8
			± 7	4	3	7	3	5	2	81	46	28	0.11			
CA-COL-158	127	F-17	138	25	76	313	44	265	9	5217	771	951	5.14	59.3	29.8	Unknown Basalt 9
			± 7	4	3	6	3	5	2	86	46	28	0.11			
CA-COL-158	128	F-18	170	28	81	367	49	268	5	3878	583	959	3.88	60.6	30.4	Unknown Basalt 4
			± 9	4	3	7	3	5	2	84	46	29	0.11			
CA-COL-158	129	F-19	106	5	38	598	15	144	5	2437	797	694	4.90	54.7	61.0	Unknown Basalt 8
			± 7	5	3	7	3	5	2	81	46	28	0.11			
CA-COL-158	130	F-20	127	24	48	510	14	56	10	2158	809	1044	3.19	35.3	45.2	Gold Lake
			± 7	3	3	7	3	5	2	81	46	28	0.11			
CA-COL-158	131	G-1	77	28	226	45	46	107	16	896	250	NM	1.23	51.8	43.9	Borax Lake
			± 7	3	4	6	3	5	2	79	45	NM	0.11			
CA-COL-158	132	G-2	55	27	230	27	46	110	13	596	158	NM	0.94	71.5	51.8	Borax Lake
			± 6	3	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	133	G-3	74	26	220	17	43	105	11	511	238	NM	0.80	37.0	52.3	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	134	G-4	53	18	96	104	22	80	6	467	472	NM	0.70	15.1	50.8	Tuscan (Cow Creek)
			± 6	3	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	135	G-5	57	34	231	16	47	103	15	398	146	NM	0.83	70.8	69.2	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

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Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

	Specimen		Trace Element Concentrations											Ratios		
Site	No.	Catalog No.	Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe_2O_3^T$	Fe:Mn	Fe:Ti	Artifact Source
CA-COL-158	136	G-6	80	27	214	42	46	106	14	784	410	NM	1.23	29.5	50.3	Borax Lake
			± 7	3	3	6	2	6	2	78	45	NM	0.11			
CA-COL-158	137	G-7	71	28	223	21	45	102	15	603	232	NM	1.11	51.3	59.5	Borax Lake
			± 6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	138	G-8	96	27	211	38	41	106	11	970	242	NM	1.33	57.8	43.6	Borax Lake
			± 6	3	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	139	G-9	46	26	224	13	48	106	12	219	107	NM	0.41	60.6	69.4	Borax Lake
			± 8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	140	G-10	41	27	233	14	46	101	14	416	136	NM	0.79	75.1	63.7	Borax Lake
			± 6	3	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	141	H-1	87	28	175	10	42	216	13	586	105	NM	0.47	70.5	28.6	Napa Valley
			± 7	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	142	H-2	79	38	204	8	48	244	12	342	145	NM	0.98	83.6	94.1	Napa Valley
			± 6	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	143	H-3	35	33	223	12	47	96	13	258	113	NM	0.58	73.6	78.0	Borax Lake
			± 7	3	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	144	H-4	45	23	224	14	43	103	7	278	104	NM	0.50	74.8	63.8	Borax Lake
			± 7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	145	H-5	40	26	205	14	41	91	13	NM	NM	NM	NM	83.6	59.9	Borax Lake *
			± 8	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	146	H-6	119	37	199	9	48	249	13	392	152	NM	0.55	46.7	49.1	Napa Valley
			± 8	4	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	147	H-7	38	27	210	40	45	105	13	1219	220	NM	1.61	77.9	41.5	Borax Lake
			± 6	3	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	148	H-8	66	29	206	45	43	106	13	1189	205	NM	1.47	77.8	39.0	Borax Lake
			± 6	3	3	6	3	5	2	79	45	NM	0.11			
CA-COL-158	149	H-9	45	25	209	11	42	91	10	277	105	NM	0.53	77.9	67.6	Borax Lake
			± 7	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	150	H-10	51	32	198	17	41	89	12	NM	NM	NM	NM	66.0	56.1	Borax Lake *
			± 7	4	4	6	3	5	2	NM	NM	NM	NM			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

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Table A-1. Results of XRF Studies: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247, Colusa County, California

Site	Specimen No.	Catalog No.		Trace Element Concentrations											Ratios		Artifact Source
				Zn	Pb	Rb	Sr	Y	Zr	Nb	Ti	Mn	Ba	$Fe2O3^T$	Fe:Mn	Fe:Ti	
CA-COL-158	151	H-11		106	32	188	9	48	234	10	311	114	NM	0.62	77.5	68.2	Napa Valley
			±	8	5	4	6	3	5	2	78	45	NM	0.11			
CA-COL-158	152	H-12		34	30	151	7	30	76	9	NM	NM	NM	NM	68.2	67.5	Borax Lake *
			±	7	4	3	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	153	H-13		57	29	178	8	42	218	9	384	146	NM	1.10	91.8	93.3	Napa Valley
			±	6	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	154	H-14		48	30	146	7	34	180	9	152	87	NM	0.39	82.2	97.5	Napa Valley
			±	8	4	4	6	3	5	2	77	45	NM	0.11			
CA-COL-158	155	H-15		62	23	196	19	40	95	16	NM	NM	NM	NM	77.5	60.9	Borax Lake *
			±	7	4	4	6	3	5	2	NM	NM	NM	NM			
CA-COL-158	156	H-16		59	36	186	12	44	232	11	285	118	NM	0.74	86.6	88.0	Napa Valley
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	157	H-17		58	33	175	9	41	215	8	343	113	NM	0.89	108.7	86.1	Napa Valley
			±	7	3	3	6	3	5	2	78	45	NM	0.11			
CA-COL-158	158	H-18		99	19	99	106	19	78	11	344	492	NM	0.54	11.4	54.6	Tuscan (Cow Creek)
			±	7	4	3	6	3	5	2	79	45	NM	0.11			
CA-COL-247	179	H-19		54	32	144	7	39	188	9	245	99	NM	0.57	90.6	81.9	Napa Valley
			±	7	4	3	6	3	5	2	78	45	NM	0.11			
NA	RGM-1	RGM-1		70	22	160	106	27	228	10	1562	367	758	1.84	48.8	36.8	RGM-1 Reference Standard
			±	6	3	3	6	3	5	2	80	45	28	0.11			

All trace element values reported in parts per million; ± = analytical uncertainty estimate (in ppm). Iron content reported as weight percent oxide.
NA = Not available; ND = Not detected; NM = Not measured.; * = Small sample.

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-247	1	A-1	B2	20-40	NOD	Tuscan (Cow Creek)	5.3 ± 0.1	NM ± NM	--
CA-COL-247	2	A-2	B2	40-50	DEB	Tuscan (Cow Creek)	NA ± NA	NM ± NM	NVH
CA-COL-247	3	A-3	B2	40-50	DEB	Napa Valley *	NA ± NA	NM ± NM	NVH
CA-COL-247	4	A-4	B2	90-100	DEB	Napa Valley	1.3 ± 0.1	NM ± NM	--
CA-COL-247	5	A-5	B2	90-100	DEB	Tuscan (Cow Creek)	1.5 ± 0.1	NM ± NM	--
CA-COL-247	6	A-6	B2	100-110	NOD	Napa Valley	NA ± NA	NM ± NM	OPA
CA-COL-247	7	A-7	B3	20-30	DEB	Napa Valley *	3.3 ± 0.1	NM ± NM	--
CA-COL-247	8	A-8	B3	60-70	DEB	Mt. Konocti *	4.5 ± 0.1	NM ± NM	--
CA-COL-247	9	A-9	B3	80-90	DEB	Napa Valley *	4.0 ± 0.0	NM ± NM	--
CA-COL-247	10	A-10	B3	100-110	DEB	Napa Valley *	3.3 ± 0.1	NM ± NM	--
CA-COL-247	11	A-11	B4	0-10	DEB	Napa Valley	1.2 ± 0.1	NM ± NM	--
CA-COL-247	12	A-12	B4	10-20	DEB	Unknown 1	NA ± NA	NM ± NM	UNR
CA-COL-247	13	A-13	B4	20-30	DEB	Napa Valley *	1.9 ± 0.1	NM ± NM	REC; WEA
CA-COL-247	14	A-14	B4	60-70	DEB	Borax Lake *	5.3 ± 0.1	NM ± NM	--
CA-COL-247	15	A-15	B4	60-70	DEB	Napa Valley *	NA ± NA	NM ± NM	REC; UNR
CA-COL-247	16	A-16	B4	80-90	DEB	Napa Valley *	2.4 ± 0.1	NM ± NM	NVH on dorsal (?)
CA-COL-247	17	A-17	B4	90-100	DEB	Tuscan (Cow Creek)	3.7 ± 0.1	NM ± NM	DFV
CA-COL-247	18	A-18	B4	90-100	DEB	Borax Lake	6.3 ± 0.1	NM ± NM	--
CA-COL-247	19	A-19	B4	90-100	DEB	Napa Valley	1.5 ± 0.1	NM ± NM	--
CA-COL-247	20	A-20	B5	0-10	NOD	Tuscan (Cow Creek)	3.5 ± 0.1	NM ± NM	Cortex is UNR
CA-COL-247	21	A-21	B5	50-60	NOD	Tuscan (Cow Creek) *	NA ± NA	NM ± NM	UNR (crystalline)
CA-COL-247	22	A-22	B5	80-90	DEB	Napa Valley *	4.5 ± 0.1	NM ± NM	--
CA-COL-247	23	A-23	B5	80-90	DEB	Mt. Konocti	4.4 ± 0.1	NM ± NM	--
CA-COL-247	24	A-24	B5	90-100	DEB	Napa Valley *	4.5 ± 0.1	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-247	25	A-25	B5	90-100	DEB	Napa Valley *	4.5 ± 0.1	NM ± NM	--
CA-COL-247	26	A-26	B5	90-100	DEB	Bodie Hills	5.3 ± 0.1	NM ± NM	--
CA-COL-247	27	A-27	B6	10-20	DEB	Napa Valley	NA ± NA	NM ± NM	UNR; WEA
CA-COL-247	28	A-28	B6	70-80	DEB	Napa Valley	4.6 ± 0.1	NM ± NM	--
CA-COL-247	29	A-29	B6	80-90	DEB	Borax Lake	0.9 ± 0.0	NM ± NM	DFV
CA-COL-247	30	A-30	B6	90-100	DEB	Mt. Konocti? *	1.2 ± 0.1	NM ± NM	--
CA-COL-247	31	A-31	B6	90-100	DEB	Mt. Konocti *	NA ± NA	NM ± NM	REC; UNR
CA-COL-247	32	A-32	B6	100-110	DEB	Napa Valley *	5.2 ± 0.1	NM ± NM	--
CA-COL-247	33	A-33	B6	100-110	DEB	Tuscan (Cow Creek)	2.8 ± 0.1	NM ± NM	Cortex is UNR
CA-COL-247	34	A-34	B2	10-20	DEB	Borax Lake *	4.7 ± 0.1	NM ± NM	--
CA-COL-247	35	A-35	B2	20-30	NOD	Napa Valley *	1.5 ± 0.1	NM ± NM	REC
CA-COL-247	36	A-36	A2	120-130	DEB	Napa Valley *	3.0 ± 0.1	NM ± NM	--
CA-COL-247	37	A-37	A2	120-130	DEB	Napa Valley	4.2 ± 0.1	NM ± NM	--
CA-COL-247	38	A-38	A3	100-110	DEB	Borax Lake	4.6 ± 0.1	NM ± NM	DFV
CA-COL-247	39	A-39	A3	120-130	NOD	Tuscan (Cow Creek)	NA ± NA	NM ± NM	UNR (crystalline)
CA-COL-247	40	A-40	A3	120-130	NOD	Tuscan (Cow Creek)	3.6 ± 0.0	NM ± NM	Cortex is UNR
CA-COL-247	41	A-41	A3	120-130	DEB	Napa Valley	4.1 ± 0.1	NM ± NM	--
CA-COL-247	42	A-42	A3	140-150	NOD	Tuscan (Cow Creek)	3.5 ± 0.1	NM ± NM	--
CA-COL-245/H	43	B-1A	Backfill	--	NOD	Napa Valley	3.1 ± 0.1	NM ± NM	--
CA-COL-245/H	44	B-1B	Backfill	--	NOD	Napa Valley	1.4 ± 0.1	NM ± NM	--
CA-COL-245/H	45	B-1C	Backfill	--	NOD	Napa Valley	1.9 ± 0.1	NM ± NM	--
CA-COL-245/H	46	B-1D	Backfill	--	NOD	Napa Valley *	1.5 ± 0.1	NM ± NM	--
CA-COL-245/H	47	B-1E	Backfill	--	NOD	Napa Valley *	2.1 ± 0.1	7.1 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	48	B-1F	Backfill	--	NOD	Napa Valley *	1.5 ± 0.1	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-245/H	49	B-1G	Backfill	--	NOD	Napa Valley *	1.6± 0.1	NM ± NM	--
CA-COL-245/H	50	B-1H	Backfill	--	NOD	Napa Valley	2.3± 0.0	NM ± NM	Cortex is UNR
CA-COL-245/H	51	B-1I	Backfill	--	NOD	Napa Valley	1.6± 0.1	NM ± NM	--
CA-COL-245/H	52	B-1J	Backfill	--	NOD	Napa Valley	1.6± 0.1	NM ± NM	--
CA-COL-245/H	53	B-1K	Backfill	--	NOD	Napa Valley	1.9± 0.1	NM ± NM	--
CA-COL-245/H	54	B-1L	Backfill	--	NOD	Napa Valley	1.7± 0.1	NM ± NM	--
CA-COL-245/H	55	B-1M	Backfill	--	NOD	Napa Valley	1.4± 0.1	NM ± NM	--
CA-COL-245/H	56	B-1N	Backfill	--	NOD	Napa Valley	2.6± 0.1	NM ± NM	--
CA-COL-245/H	57	B-1O	Backfill	--	NOD	Napa Valley	1.6± 0.1	NM ± NM	REC
CA-COL-245/H	58	B-2A	Backfill	--	DEB	Borax Lake	NA± NA	NM ± NM	UNR (crystalline)
CA-COL-245/H	59	B-2B	Backfill	--	DEB	Borax Lake	2.6± 0.1	NM ± NM	--
CA-COL-245/H	60	B-2C	Backfill	--	DEB	Borax Lake	7.8± 0.1	NM ± NM	--
CA-COL-245/H	61	B-2D	Backfill	--	DEB	Borax Lake	2.3± 0.0	8.9 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	62	B-2E	Backfill	--	DEB	Borax Lake	3.0± 0.1	NM ± NM	--
CA-COL-245/H	63	B-2F	Backfill	--	DEB	Borax Lake	1.8± 0.1	8.9 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	64	B-2G	Backfill	--	DEB	Borax Lake *	2.5± 0.1	NM ± NM	REC
CA-COL-245/H	65	B-2H	Backfill	--	DEB	Borax Lake *	2.9± 0.1	3.7 ± 0.1	Small rim on BRE
CA-COL-245/H	66	B-3A	Stratum 3	--	NOD	Napa Valley	1.9± 0.1	NM ± NM	--
CA-COL-245/H	67	B-3B	Stratum 3	--	NOD	Napa Valley	1.4± 0.1	2.1 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	68	B-3C	Stratum 3	--	NOD	Napa Valley	2.0± 0.1	3.7 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	69	B-3D	Stratum 3	--	NOD	Napa Valley	1.6± 0.1	NM ± NM	--
CA-COL-245/H	70	B-3E	Stratum 3	--	NOD	Napa Valley	NA± NA	NM ± NM	OPA
CA-COL-245/H	71	B-3F	Stratum 3	--	NOD	Napa Valley	1.5± 0.1	NM ± NM	--
CA-COL-245/H	72	B-3G	Stratum 3	--	NOD	Napa Valley	1.5± 0.1	4.6 ± 0.1	Large rim on dorsal surface

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-245/H	73	B-3H	Stratum 3	--	NOD	Napa Valley	1.5 ± 0.1	NM ± NM	--
CA-COL-245/H	74	B-3I	Stratum 3	--	NOD	Napa Valley	1.9 ± 0.1	7.3 ± 0.1	Large rim on dorsal surface
CA-COL-245/H	75	B-4A	Stratum 3	--	DEB	Borax Lake	2.8 ± 0.1	NM ± NM	DFV
CA-COL-245/H	76	B-4B	Stratum 3	--	DEB	Borax Lake	2.8 ± 0.1	12.2 ± 0.1	Large rim = cortex?
CA-COL-245/H	77	B-4C	Stratum 3	--	DEB	Borax Lake *	3.3 ± 0.1	NM ± NM	--
CA-COL-245/H	78	B-4D	Stratum 3	--	DEB	Borax Lake *	2.3 ± 0.0	NM ± NM	--
CA-COL-245/H	79	B-4E	Stratum 3	--	DEB	Borax Lake	2.7 ± 0.0	10.4 ± 0.1	Small rim on BRE
CA-COL-245/H	80	B-4F	Stratum 3	--	DEB	Borax Lake *	2.8 ± 0.1	NM ± NM	--
CA-COL-246/H	81	C-1A	Lower Midden	--	DEB	Borax Lake	7.0 ± 0.1	NM ± NM	--
CA-COL-246/H	82	C-1B	Lower Midden	--	DEB	Borax Lake	3.6 ± 0.0	6.1 ± 0.1	Small rim on BRE
CA-COL-246/H	83	C-1C	Lower Midden	--	DEB	Borax Lake	3.0 ± 0.1	NM ± NM	DFV
CA-COL-246/H	84	C-1D	Lower Midden	--	DEB	Borax Lake	5.2 ± 0.1	NM ± NM	--
CA-COL-246/H	85	C-1E	Lower Midden	--	DEB	Borax Lake	1.5 ± 0.1	NM ± NM	--
CA-COL-246/H	86	C-1F	Lower Midden	--	DEB	Borax Lake	5.3 ± 0.1	NM ± NM	--
CA-COL-246/H	87	C-1G	Lower Midden	--	DEB	Borax Lake	3.5 ± 0.1	NM ± NM	Cortex approx. 18 microns
CA-COL-246/H	88	C-1H	Lower Midden	--	DEB	Borax Lake	2.8 ± 0.1	NM ± NM	--
CA-COL-246/H	89	C-1I	Lower Midden	--	DEB	Borax Lake	4.2 ± 0.1	NM ± NM	--
CA-COL-246/H	90	C-1J	Lower Midden	--	DEB	Borax Lake	2.3 ± 0.1	NM ± NM	--
CA-COL-246/H	91	C-1K	Lower Midden	--	DEB	Borax Lake	2.6 ± 0.1	NM ± NM	--
CA-COL-246/H	92	C-1L	Lower Midden	--	DEB	Borax Lake	3.0 ± 0.1	NM ± NM	Cortex approx. 18 microns
CA-COL-246/H	93	C-1M	Lower Midden	--	DEB	Borax Lake *	1.7 ± 0.1	NM ± NM	--
CA-COL-246/H	94	C-1N	Lower Midden	--	DEB	Borax Lake	3.3 ± 0.1	4.6 ± 0.1	Small rim on BRE
CA-COL-246/H	95	C-2	Lower Midden	--	DEB	Grasshopper Group	3.7 ± 0.1	NM ± NM	--
CA-COL-158	96	D-1	Lower Midden	--	DEB	Borax Lake *	3.7 ± 0.1	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-158	97	D-2	Lower Midden	--	DEB	Borax Lake	3.5 ± 0.1	9.9 ± 0.0	Large rim on dorsal surface
CA-COL-158	98	D-3	Lower Midden	--	DEB	Borax Lake	3.7 ± 0.1	6.6 ± 0.1	Large rim on dorsal surface
CA-COL-158	99	E-1A	Stege B; Unit B 1	10-20	DEB	Borax Lake	2.4 ± 0.1	NM ± NM	Cortex is UNR
CA-COL-158	100	E-1B	Stege B; Unit B 1	10-20	DEB	Borax Lake	2.7 ± 0.1	NM ± NM	--
CA-COL-158	101	E-1C	Stege B; Unit B 1	10-20	DEB	Borax Lake	4.1 ± 0.1	5.8 ± 0.1	Small rim on modified edge
CA-COL-158	102	E-2	Stege B; Unit B 1	20-30	DEB	Borax Lake *	2.9 ± 0.1	NM ± NM	--
CA-COL-158	103	E-3	Stege B; Unit B 1	40-50	DEB	Borax Lake	3.9 ± 0.1	6.0 ± 0.0	Large rim on dorsal surface
CA-COL-158	104	E-4A	Stege B; Unit B 2	85-90	DEB	GF/LIW/RS	3.0 ± 0.1	NM ± NM	--
CA-COL-158	105	E-4B	Stege B; Unit B 2	85-90	DEB	Tuscan (Cow Creek)	2.1 ± 0.1	NM ± NM	--
CA-COL-158	106	E-5A	Stege B; Unit B 2	10-20	DEB	Borax Lake *	2.2 ± 0.1	NM ± NM	--
CA-COL-158	107	E-5B	Stege B; Unit B 2	10-20	DEB	Borax Lake	5.1 ± 0.1	NM ± NM	--
CA-COL-158	108	E-5C	Stege B; Unit B 2	10-20	DEB	Borax Lake	3.7 ± 0.1	NM ± NM	--
CA-COL-158	109	E-6	Stege B; Unit B 2	20-30	DEB	Borax Lake	1.3 ± 0.1	3.7 ± 0.1	Large rim on dorsal surface(?)
CA-COL-158	110	E-7	Stege B; Unit B 2	70-85	DEB	Borax Lake	3.7 ± 0.1	6.2 ± 0.1	Large rim on dorsal surface(?)
CA-COL-158	111	F-1	A2	20-30	BIF	Unknown Basalt 1 *	NM ± NM	NM ± NM	--
CA-COL-158	112	F-2	A1	40-50	BIF	Gold Lake	NM ± NM	NM ± NM	--
CA-COL-158	113	F-3	Stege Trench 37	--	BIF	Gold Lake	NM ± NM	NM ± NM	--
CA-COL-158	114	F-4	B4	60-70	BIF	Gold Lake *	NM ± NM	NM ± NM	--
CA-COL-158	115	F-5	A3	100-110	BIF	Unknown Basalt 2 *	NM ± NM	NM ± NM	--
CA-COL-158	116	F-6	A6	20-30	BIF	Gold Lake	NM ± NM	NM ± NM	--
CA-COL-158	117	F-7	Stege B; B2	70-85	PPT	Gold Lake	NM ± NM	NM ± NM	--
CA-COL-158	118	F-8	A1	40-50	PPT	Unknown Basalt 3	NM ± NM	NM ± NM	--
CA-COL-158	119	F-9	B3	100-110	PPT	Unknown Basalt 4	NM ± NM	NM ± NM	--
CA-COL-158	120	F-10	A2	40-60	PPT	Unknown Basalt 5	NM ± NM	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-158	121	F-11	A2	140-150	PPT	Unknown Basalt 6	NM± NM	NM ± NM	--
CA-COL-158	122	F-12	A3	50-70	PPT	Unknown Basalt 7	NM± NM	NM ± NM	--
CA-COL-158	123	F-13	B3	50-60	PPT	Morgan Valley	NM± NM	NM ± NM	--
CA-COL-158	124	F-14	B1	100-110	PPT	Morgan Valley	NM± NM	NM ± NM	--
CA-COL-158	125	F-15	A3	100-110	PPT	Gold Lake	NM± NM	NM ± NM	--
CA-COL-158	126	F-16	A1	20-40	PPT	Unknown Basalt 8	NM± NM	NM ± NM	--
CA-COL-158	127	F-17	B5	40-50	PPT	Unknown Basalt 9	NM± NM	NM ± NM	--
CA-COL-158	128	F-18	B6	0-10	PPT	Unknown Basalt 4	NM± NM	NM ± NM	--
CA-COL-158	129	F-19	B6	20-40	PPT	Unknown Basalt 8	NM± NM	NM ± NM	--
CA-COL-158	130	F-20	A1	110-120	PPT	Gold Lake	NM± NM	NM ± NM	--
CA-COL-158	131	G-1	B1	50-60	PPT	Borax Lake	NA± NA	NM ± NM	REC; NVH
CA-COL-158	132	G-2	B2	50-60	PPT	Borax Lake	5.9± 0.1	NM ± NM	--
CA-COL-158	133	G-3	B4	90-100	PPT	Borax Lake	NA± NA	NM ± NM	NHV
CA-COL-158	134	G-4	B6	90-100	PPT	Tuscan (Cow Creek)	1.3± 0.1	NM ± NM	--
CA-COL-158	135	G-5	A2	90-100	PPT	Borax Lake	1.3± 0.0	NM ± NM	--
CA-COL-158	136	G-6	A3	0-10	PPT	Borax Lake	NA± NA	NM ± NM	NVH
CA-COL-158	137	G-7	A17	30-40	PPT	Borax Lake	4.6± 0.1	NM ± NM	--
CA-COL-158	138	G-8	B3	60-70	PPT	Borax Lake	4.5± 0.1	NM ± NM	--
CA-COL-158	139	G-9	B2	50-60	PPT	Borax Lake	3.5± 0.1	8.1 ± 0.0	Small rim on modified edge
CA-COL-158	140	G-10	B1	100-110	PPT	Borax Lake	6.1± 0.1	NM ± NM	--
CA-COL-158	141	H-1	Backdirt	--	PPT	Napa Valley	1.5± 0.1	NM ± NM	--
CA-COL-158	142	H-2	Stege B; B2	100-110	PPT	Napa Valley	1.5± 0.1	NM ± NM	--
CA-COL-158	143	H-3	Stege B; B1	60-70	PPT	Borax Lake	1.6± 0.0	NM ± NM	DFV
CA-COL-158	144	H-4	StegeB; B2	10-20	PPT	Borax Lake	1.5± 0.1	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-158	145	H-5	Stege A A1	40-50	PPT	Borax Lake *	2.4 ± 0.1	NM ± NM	REC; DFV
CA-COL-158	146	H-6	M-7 Mixed	--	PPT	Napa Valley	2.6 ± 0.1	NM ± NM	--
CA-COL-158	147	H-7	M-7 Mixed	--	PPT	Borax Lake	2.6 ± 0.1	NM ± NM	--
CA-COL-158	148	H-8	M-7 Upper Midden	--	PPT	Borax Lake	1.3 ± 0.1	NM ± NM	--
CA-COL-158	149	H-9	M-7 Lower Midden	--	PPT	Borax Lake	2.8 ± 0.1	NM ± NM	Same rim on BRE
CA-COL-158	150	H-10	M-7 Lower Midden	--	PPT	Borax Lake *	3.0 ± 0.1	NM ± NM	--
CA-COL-158	151	H-11	M-7 Mixed	--	PPT	Napa Valley	3.0 ± 0.1	NM ± NM	--
CA-COL-158	152	H-12	Backdirt	--	PPT	Borax Lake *	1.4 ± 0.1	NM ± NM	Same rim on BRE
CA-COL-158	153	H-13	Backdirt	--	PPT	Napa Valley	1.4 ± 0.0	NM ± NM	--
CA-COL-158	154	H-14	CCCH	--	PPT	Napa Valley	1.4 ± 0.0	NM ± NM	Same rim on BRE
CA-COL-158	155	H-15	CCCH	--	PPT	Borax Lake *	3.2 ± 0.1	NM ± NM	--
CA-COL-158	156	H-16	CCCH	--	PPT	Napa Valley	1.5 ± 0.1	NM ± NM	REC
CA-COL-158	157	H-17	Backdirt	--	PPT	Napa Valley	1.5 ± 0.0	NM ± NM	Same rim on BRE
CA-COL-158	158	H-18	ResRd Unit A	40-50	PPT	Tuscan (Cow Creek)	3.5 ± 0.1	NM ± NM	DFV; crystalline
CA-COL-158	159	I-1	--	--	DEB	No Source Determined	1.7 ± 0.1	NM ± NM	DFV
CA-COL-158	160	I-2	--	--	DEB	No Source Determined	6.1 ± 0.1	NM ± NM	--
CA-COL-158	161	I-3	--	--	DEB	No Source Determined	4.4 ± 0.1	NM ± NM	REC; DFV
CA-COL-158	162	I-4	--	--	DEB	No Source Determined	3.6 ± 0.0	NM ± NM	--
CA-COL-158	163	I-5	--	--	DEB	No Source Determined	5.4 ± 0.1	NM ± NM	--
CA-COL-158	164	I-6	--	--	DEB	No Source Determined	3.5 ± 0.1	NM ± NM	--
CA-COL-158	165	I-7	--	--	DEB	No Source Determined	NA ± NA	NM ± NM	NVH
CA-COL-158	166	I-8	--	--	DEB	No Source Determined	6.3 ± 0.1	NM ± NM	--
CA-COL-158	167	I-9	--	--	DEB	No Source Determined	3.7 ± 0.1	NM ± NM	--
CA-COL-158	168	I-10	--	--	DEB	No Source Determined	3.8 ± 0.1	NM ± NM	--

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Table B-1. Obsidian Hydration Results and Sample Provenience: CA-COL-158, CA-COL-245/H, CA-COL-246/H, and CA-COL-247

Site	Specimen No.	Catalog No.	Unit	Depth (cm)	Artifact Type[A]	Artifact Source	Hydration Rims Rim 1	Hydration Rims Rim 2	Comments[B]
CA-COL-247	169	J-1A	--	--	DEB	No Source Determined	NA ± NA	NM ± NM	REC; UNR
CA-COL-247	170	J-1B	--	--	DEB	No Source Determined	5.2 ± 0.1	NM ± NM	--
CA-COL-247	171	J-1C	--	--	DEB	No Source Determined	5.1 ± 0.1	NM ± NM	--
CA-COL-247	172	J-1D	--	--	DEB	No Source Determined	2.4 ± 0.1	NM ± NM	--
CA-COL-247	173	J-1E	--	--	DEB	No Source Determined	11.9 ± 0.0	NM ± NM	--
CA-COL-247	174	J-2A	--	--	DEB	No Source Determined	1.3 ± 0.1	NM ± NM	--
CA-COL-247	175	J-2B	--	--	DEB	No Source Determined	4.4 ± 0.1	NM ± NM	--
CA-COL-247	176	J-2C	--	--	DEB	No Source Determined	3.7 ± 0.1	NM ± NM	--
CA-COL-247	177	J-2D	--	--	DEB	No Source Determined	3.6 ± 0.0	NM ± NM	REC; cortex is UNR
CA-COL-247	178	J-2E	--	--	DEB	No Source Determined	4.4 ± 0.1	NM ± NM	--
CA-COL-247	179	H-19	--	--	PPT	Napa Valley	1.4 ± 0.1	NM ± NM	--

[A] BIF = Biface; DEB = Debitage; NOD = Nodule; PPT = Projectile Point
[B] See text for explanation of comment abbreviations
NA = Not Available; NM = Not Measured; * = Small sample

Abbreviations and Definitions Used in the Comments Column

All rim measurements are reported in microns (μm).

BEV - (Beveled). Artifact morphology or cut configuration resulted in a beveled thin section edge.

BRE - (BREak). The thin section cut was made across a broken edge of the artifact. Resulting hydration measurements may reveal when the artifact was broken, relative to its time of manufacture.

DES - (DEStroyed). The artifact or flake was destroyed in the process of thin section preparation. This sometimes occurs during the preparation of extremely small items, such as pressure flakes.

DFV - (Diffusion Front Vague). The diffusion front, or the visual boundary between hydrated and unhydrated portions of the specimen, are poorly defined. This can result in less precise measurements than can be obtained from sharply demarcated diffusion fronts. The technician must often estimate the hydration boundary because a vague diffusion front often appears as a relatively thick, dark line or a gradation in color or brightness between hydrated and unhydrated layers.

DIS - (DIScontinuous). A discontinuous or interrupted hydration rind was observed on the thin section.

HV - (Highly Variable). The hydration rind exhibits variable thickness along continuous surfaces. This variability can occur with very well- defined bands as well as those with irregular or vague diffusion fronts.

IRR - (IRRegular). The surfaces of the thin section (the outer surfaces of the artifact) are uneven and measurement is difficult.

1SO - (1 Surface Only). Hydration was observed on only one surface or side of the thin section.

NOT - (NOT obsidian). Petrographic characteristics of the artifact or obsidian specimen indicate that the specimen is not obsidian.

NVH - (No Visible Hydration). No hydration rind was observed on one or more surfaces of the specimen. This does not mean that hydration is absent, only that hydration was not observed. Hydration rinds smaller than one micron often are not birefringent and thus cannot be seen by optical microscopy. "NVH" may be reported for the manufacture surface of a tool while a hydration measurement is reported for another surface, e.g. a remnant ventral flake surface.

OPA - (OPAque). The specimen is too opaque for measurement and cannot be further reduced in thickness.

PAT - (PATinated). This description is usually noted when there is a problem in measuring the thickness of the hydration rind, and refers to the unmagnified surface characteristics of the artifact, possibly indicating the source of the measurement problem. Only extreme patination is normally noted.

REC - (RECut). More than one thin section was prepared from an archaeological specimen. Multiple thin sections are made if preparation quality on the initial specimen is suspect or obviously poor. Additional thin sections may also be prepared if it is perceived that more information concerning an artifact's manufacture or use can be obtained.

UNR - (UNReadable). The optical quality of the hydration rind is so poor that accurate measurement is not possible. Poor thin section preparation is not a cause.

WEA - (WEAthered). The artifact surface appears to be damaged by wind erosion or other mechanical action.

APPENDIX D:
RADIOCARBON DATING RESULTS

BETA

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MR. DARDEN HOOD
Director

Mr. Ronald Hatfield
Laboratory Manager

Mr. Christopher Patrick
Ms Teresa Zilko-Miller
Associate Managers

April 11, 2000

Mr. Greg White
California State University
Department of Anthropology
400 W 1st
Chico, CA 95926

Dear Mr. White:

Please find enclosed the radiocarbon dating result for one organic sediment sample (HWY45 #01) which was received for radiometric analysis on March 31. It provided plenty of carbon for accurate analysis and all analytical steps went normally. We analyzed the bulk organic carbon after removing any carbonates or rootlets. The accuracy of the results depends upon this material being of primary origin to the deposition of the sediment.

The two sigma calibrated range is Cal BC 2585 to 2285 (Cal BP 4535 to 4235). The hard copy print out is enclosed.

Our invoice is enclosed. Please, forward it to the appropriate office or send VISA charge authorization. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

BETA

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DR. M.A. TAMERS and MR. D.G. HOOD

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E-MAIL: beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Mr. Greg White

California State University

Report Date: April 11, 2000

Material Received: March 31, 2000

Sample Data	Measured Radiocarbon Age	^{13}C / ^{12}C Ratio	Conventional Radiocarbon Age (*)
Beta-142092	3950 +/- 60 BP	-25.4 o/oo	3950 +/- 60 BP

SAMPLE #: HWY45 #01
ANALYSIS: Radiometric-Priority delivery (bulk low carbon analysis on sediment)
MATERIAL/PRETREATMENT:(organic sediment): acid washes

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.4:lab. mult=1)

Laboratory number: **Beta-142092**

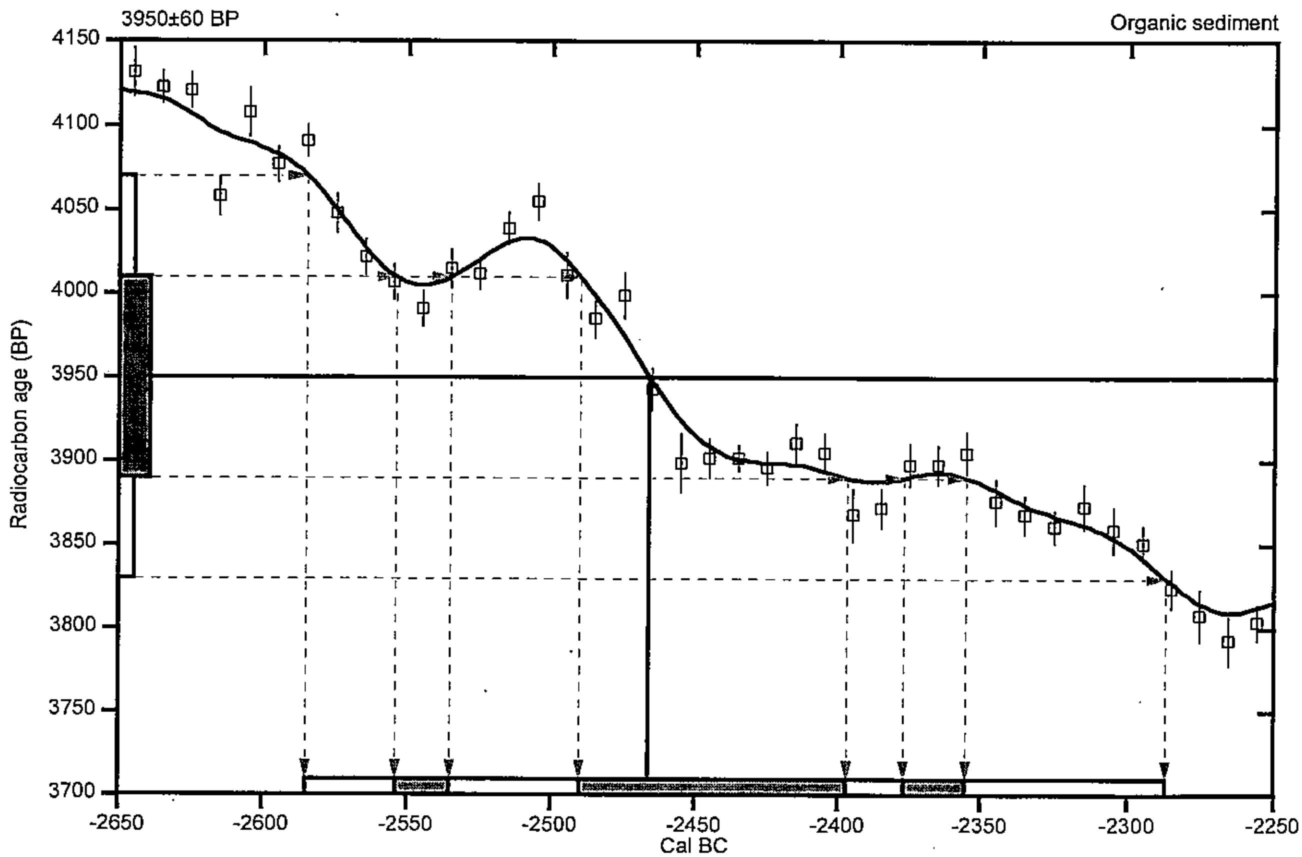
Conventional radiocarbon age: **3950±60 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 2585 to 2285 (Cal BP 4535 to 4235)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 2465 (Cal BP 4415)

1 Sigma calibrated results: (68% probability) Cal BC 2555 to 2535 (Cal BP 4505 to 4485) and
Cal BC 2490 to 2395 (Cal BP 4440 to 4345) and
Cal BC 2375 to 2355 (Cal BP 4325 to 4305)



References:
Database used
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Calibration Database
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Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
Mathematics
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RADIOCARBON DATING SERVICES

Mr. DARDEN G. HOOD
Director

RONALD E. HATFIELD
Laboratory Manager

CHRISTOPHER PATRICK
TERESA A. ZILKO-MILLER
Associate Managers

February 7, 2001

Mr. Greg White
California State University
Dept. of Anthropology
400 W 1st Street
Chico, CA 95929
USA

RE: Radiocarbon Dating Results For Samples HWY45-#02, HWY45-#03, HWY45-#04, HWY45-#05, HWY45-#06, HWY45-#7, HWY45-#08, HWY45-#09, HWY45-#011, HWY45-#12, HWY45-#013

Dear Greg:

Enclosed are the radiocarbon dating results for nine samples recently sent to us. They each provided plenty of carbon for accurate measurements and all the analyses went normally. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analyses. We analyzed them with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

Our invoice is enclosed. Please, forward it to the appropriate officer or send VISA change authorization. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Greg White — Report Date: 2/7/01

California State University — Material Received: 1/2/01

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150817	1290 +/- 60 BP	-27.1 o/oo	1260 +/- 60 BP

SAMPLE : HWY45-#02
ANALYSIS : Radiometric-Standard delivery (with extended counting)
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 660 to 900 (Cal BP 1290 to 1060)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150818	1100 +/- 80 BP	-25.9 o/oo	1080 +/- 80 BP

SAMPLE : HWY45-#03
ANALYSIS : Radiometric-Standard delivery (with extended counting)
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 780 to 1060 (Cal BP 1170 to 890) AND Cal AD 1080 to 1150 (Cal BP 860 to 800)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150819	860 +/- 70 BP	-26.3 o/oo	840 +/- 70 BP

SAMPLE : HWY45-#04
ANALYSIS : Radiometric-Standard delivery (with extended counting)
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 1030 to 1290 (Cal BP 920 to 660)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150820	980 +/- 60 BP	-27.5 o/oo	940 +/- 60 BP

SAMPLE : HWY45-#05
ANALYSIS : Radiometric-Standard delivery (with extended counting)
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 990 to 1230 (Cal BP 960 to 720)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150821	880 +/- 40 BP	-25.4 o/oo	870 +/- 40 BP

SAMPLE : HWY45-#06
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 1040 to 1260 (Cal BP 910 to 690)

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Greg White

Report Date: 2/7/01

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150822	1180 +/- 40 BP	-26.9 o/oo	1150 +/- 40 BP

SAMPLE : HWY45-#7
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 780 to 990 (Cal BP 1170 to 960)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150823	3250 +/- 40 BP	-26.3 o/oo	3230 +/- 40 BP

SAMPLE : HWY45-#08
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 1600 to 1420 (Cal BP 3550 to 3370)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150824	3390 +/- 40 BP	-27.3 o/oo	3350 +/- 40 BP

SAMPLE : HWY45-#09
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 1730 to 1520 (Cal BP 3680 to 3470)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150826	3030 +/- 40 BP	-26.3 o/oo	3010 +/- 40 BP

SAMPLE : HWY45-#011
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 1390 to 1120 (Cal BP 3340 to 3070)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150827	1670 +/- 40 BP	-25.5 o/oo	1660 +/- 40 BP

SAMPLE : HWY45-#12
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 260 to 290 (Cal BP 1690 to 1660) AND Cal AD 320 to 450 (Cal BP 1630 to 1500)

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Greg White

Report Date: 2/7/01

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 150828	2650 +/- 40 BP	-26.5 o/oo	2630 +/- 40 BP

SAMPLE : HWY45-#013
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 830 to 780 (Cal BP 2780 to 2730)

NOTE: Sample HWY45 #10 was cancelled (as instructed).

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-27.1:lab. mult=1)

Laboratory number: **Beta-150817**

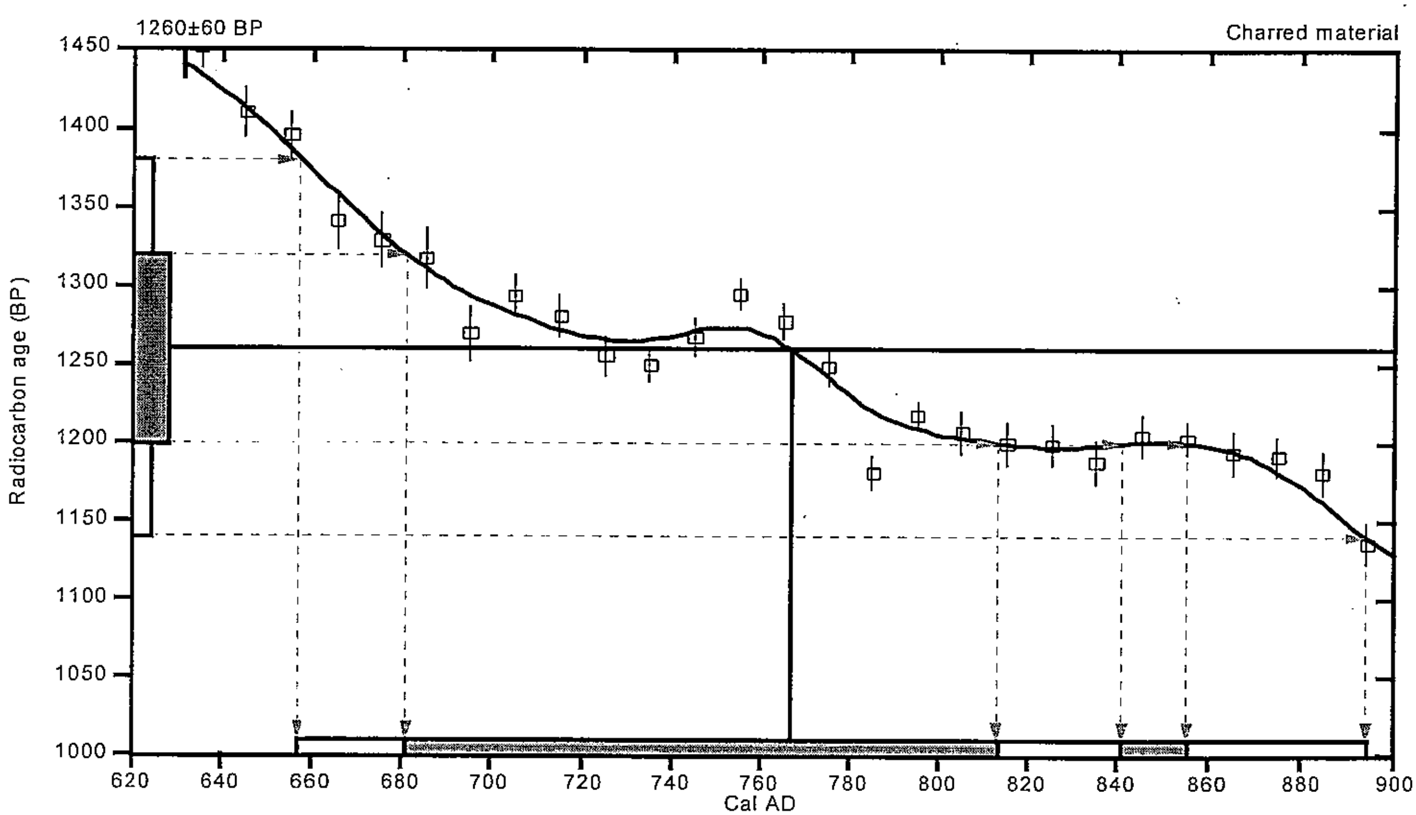
Conventional radiocarbon age: **1260±60 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 660 to 900 (Cal BP 1290 to 1060)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 770 (Cal BP 1180)

1 Sigma calibrated results: (68% probability) Cal AD 680 to 810 (Cal BP 1270 to 1140) and Cal AD 840 to 860 (Cal BP 1110 to 1100)



References:
Database used

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.9:lab. mult=1)

Laboratory number: **Beta-150818**

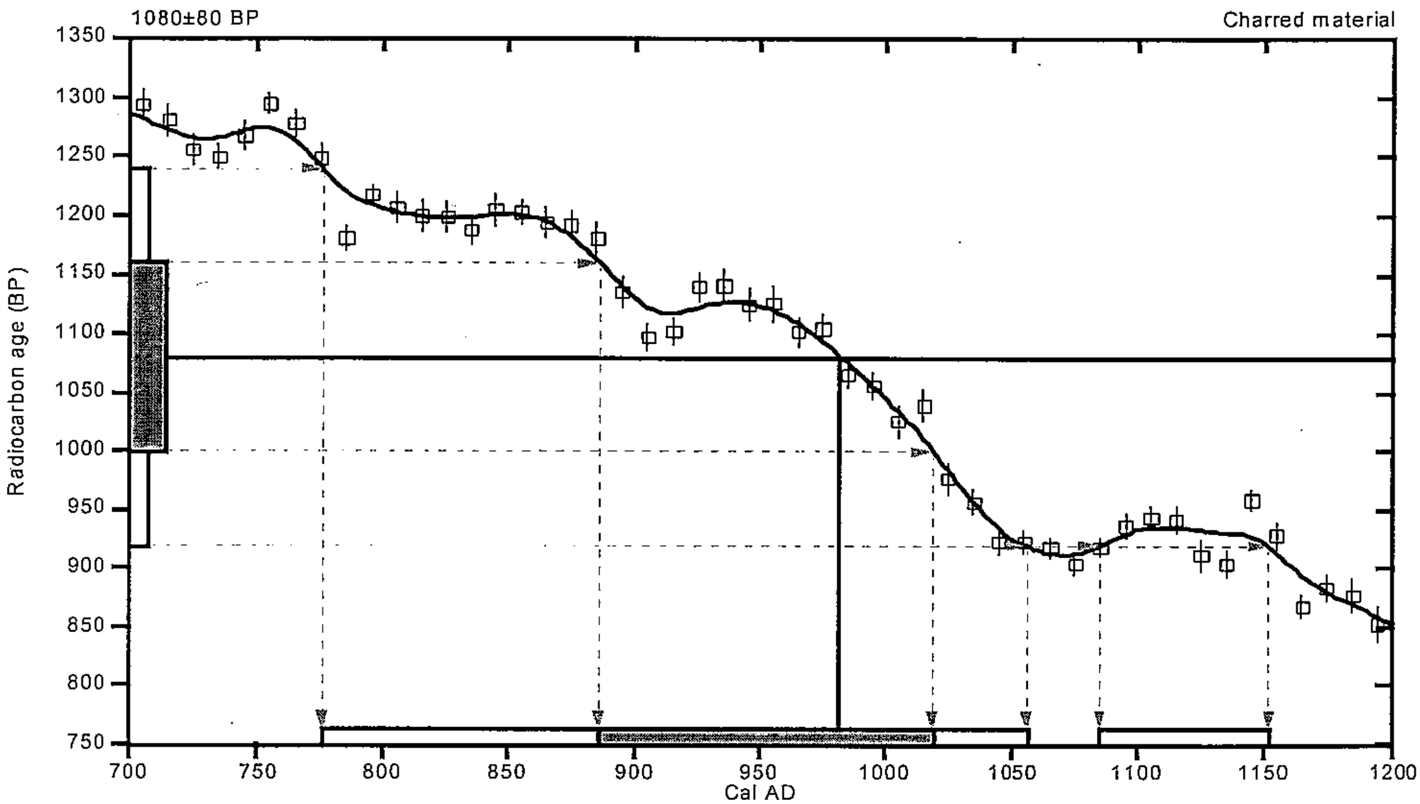
Conventional radiocarbon age: **1080±80 BP**

2 Sigma calibrated results: (95% probability) **Cal AD 780 to 1060 (Cal BP 1170 to 890) and Cal AD 1080 to 1150 (Cal BP 860 to 800)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 980 (Cal BP 970)

1 Sigma calibrated result: (68% probability) Cal AD 890 to 1020 (Cal BP 1060 to 930)



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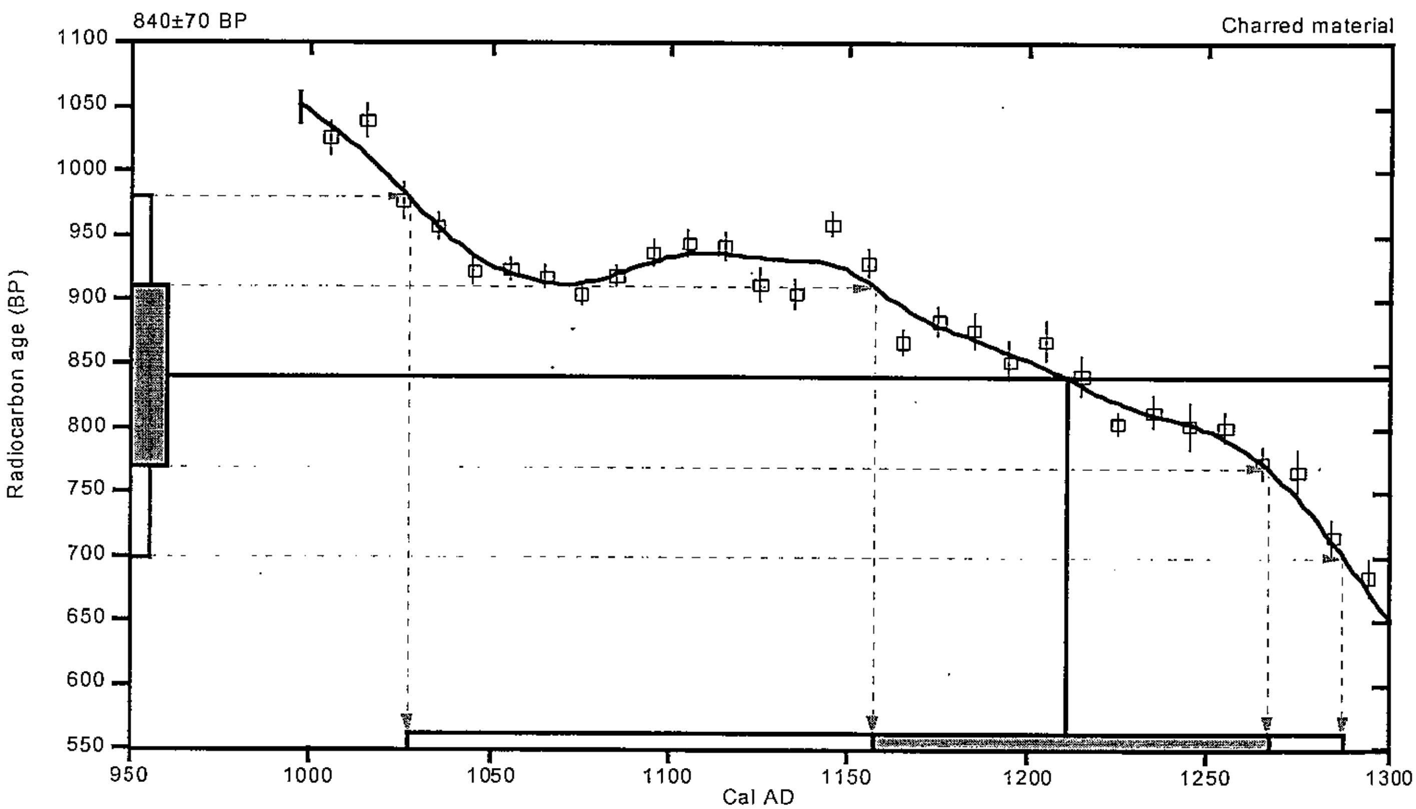
CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.3:lab. mult=1)

Laboratory number:	**Beta-150819**
Conventional radiocarbon age:	**840±70 BP**
2 Sigma calibrated result: (95% probability)	**Cal AD 1030 to 1290 (Cal BP 920 to 660)**

Intercept data

Intercept of radiocarbon age with calibration curve:	Cal AD 1210 (Cal BP 740)
1 Sigma calibrated result: (68% probability)	Cal AD 1160 to 1270 (Cal BP 790 to 680)



References:

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-27.5:lab. mult=1)

Laboratory number: **Beta-150820**

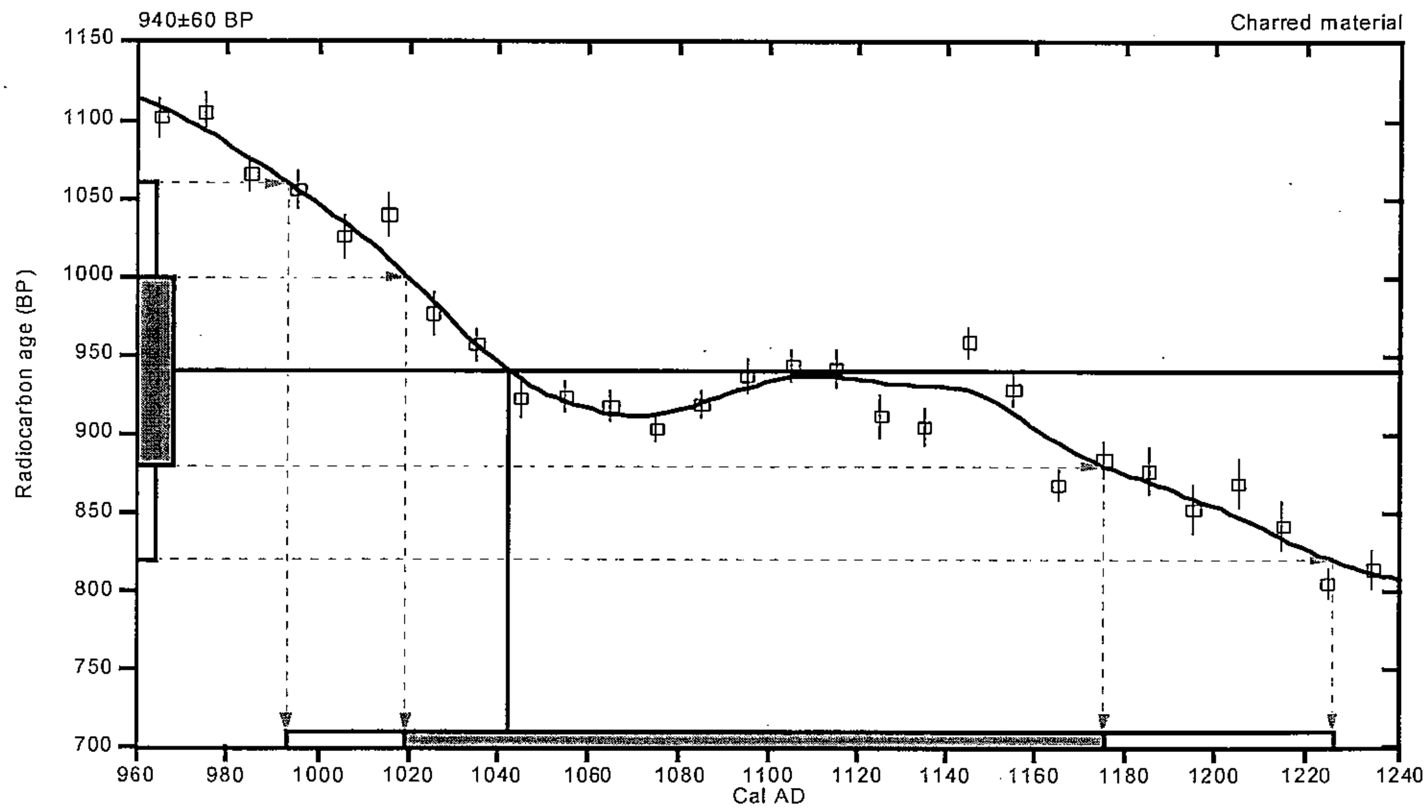
Conventional radiocarbon age: **940±60 BP**

2 Sigma calibrated result: (95% probability) **Cal AD 990 to 1230 (Cal BP 960 to 720)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 1040 (Cal BP 910)

1 Sigma calibrated result: (68% probability) Cal AD 1020 to 1180 (Cal BP 930 to 780)



References:

Database used

Calibration Database

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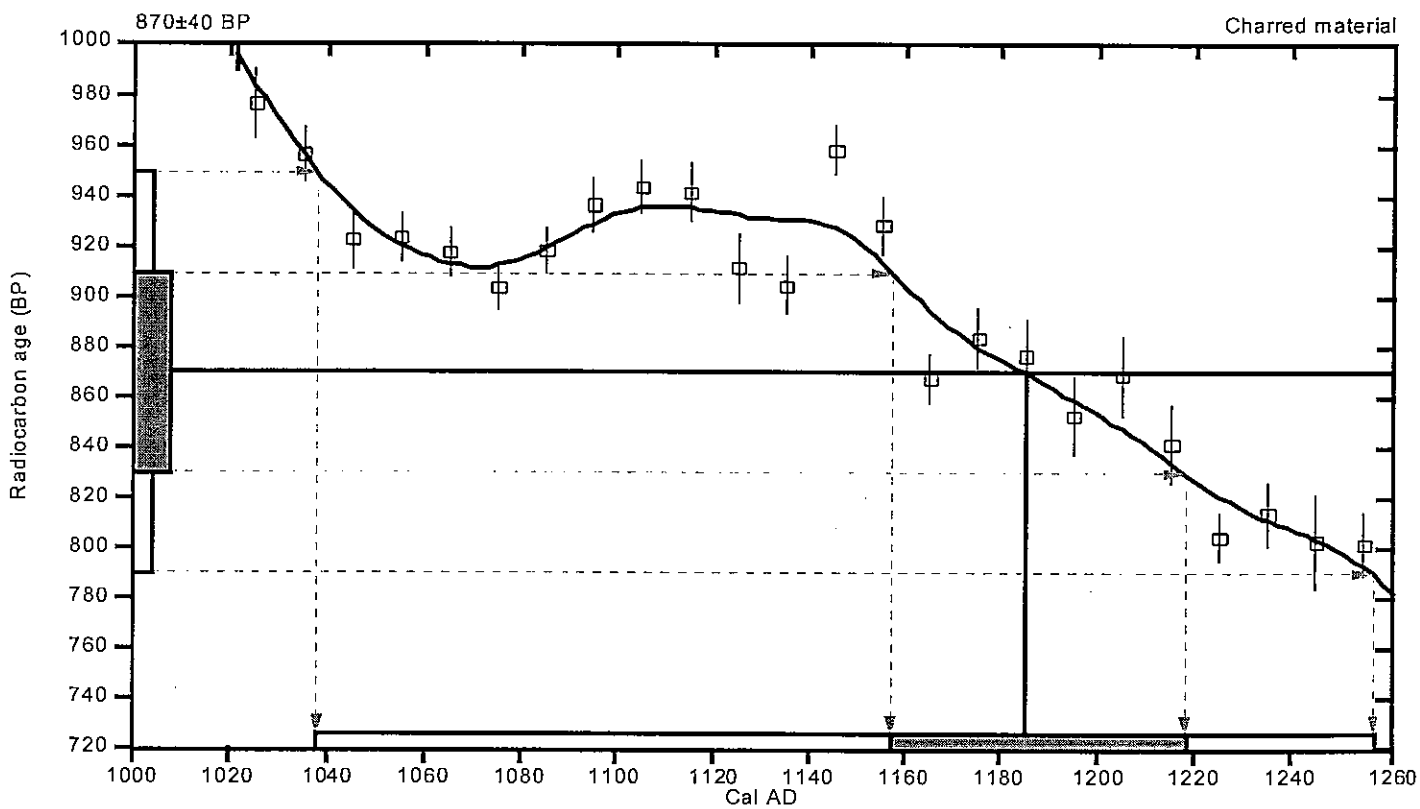
CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.4:lab. mult=1)

Laboratory number:	**Beta-150821**
Conventional radiocarbon age:	**870±40 BP**
2 Sigma calibrated result: (95% probability)	**Cal AD 1040 to 1260 (Cal BP 910 to 690)**

Intercept data

Intercept of radiocarbon age with calibration curve:	Cal AD 1180 (Cal BP 760)
1 Sigma calibrated result: (68% probability)	Cal AD 1160 to 1220 (Cal BP 790 to 730)



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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.9:lab. mult=1)

Laboratory number: **Beta-150822**

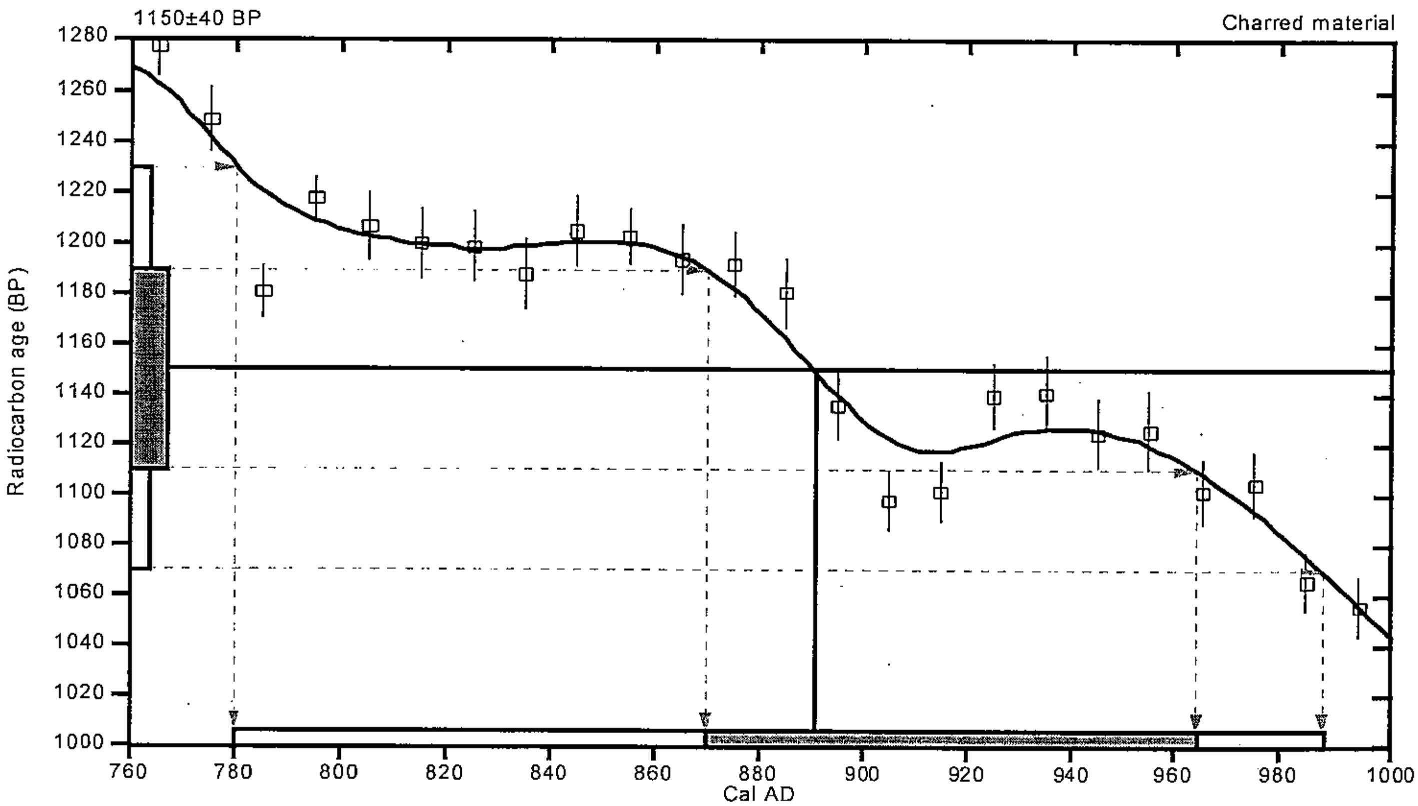
Conventional radiocarbon age: **1150±40 BP**

2 Sigma calibrated result: **Cal AD 780 to 990 (Cal BP 1170 to 960)**
(95% probability)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 890 (Cal BP 1060)

1 Sigma calibrated result: Cal AD 870 to 960 (Cal BP 1080 to 990)
(68% probability)



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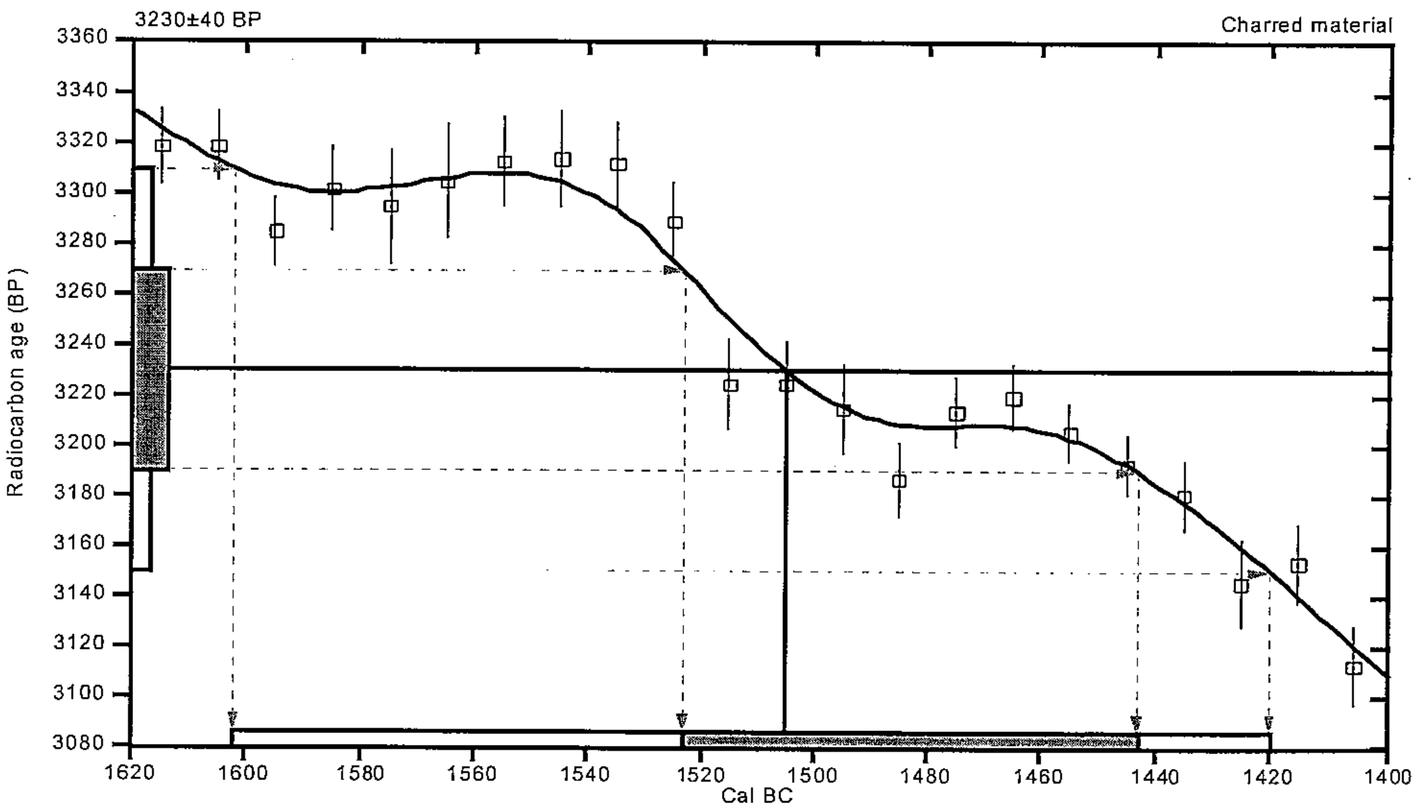
CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.3:lab. mult=1)

Laboratory number:	**Beta-150823**
Conventional radiocarbon age:	**3230±40 BP**
2 Sigma calibrated result: **(95% probability)**	**Cal BC 1600 to 1420 (Cal BP 3550 to 3370)**

Intercept data

Intercept of radiocarbon age with calibration curve:	Cal BC 1500 (Cal BP 3460)
1 Sigma calibrated result: (68% probability)	Cal BC 1520 to 1440 (Cal BP 3470 to 3390)



References:

Database used

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INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
Mathematics
A Simplified Approach to Calibrating C14 Dates
Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-27.3:lab. mult=1)

Laboratory number: **Beta-150824**

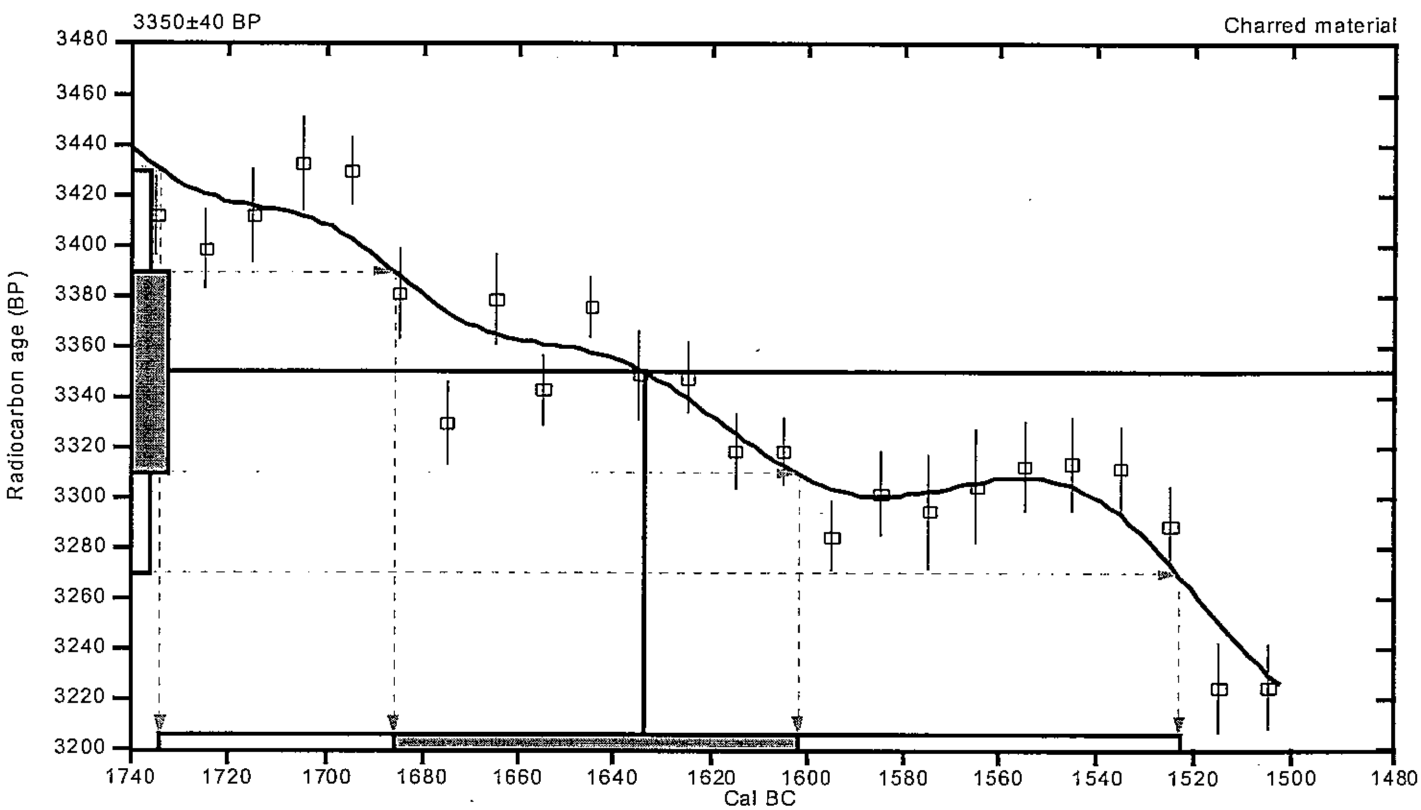
Conventional radiocarbon age: **3350±40 BP**

2 Sigma calibrated result: **Cal BC 1730 to 1520 (Cal BP 3680 to 3470)**
(95% probability)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 1630 (Cal BP 3580)

1 Sigma calibrated result: Cal BC 1690 to 1600 (Cal BP 3640 to 3550)
(68% probability)



References:
Database used

Calibration Database
Editorial Comment
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INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
Mathematics
A Simplified Approach to Calibrating C14 Dates
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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.3:lab. mult=1)

Laboratory number: **Beta-150826**

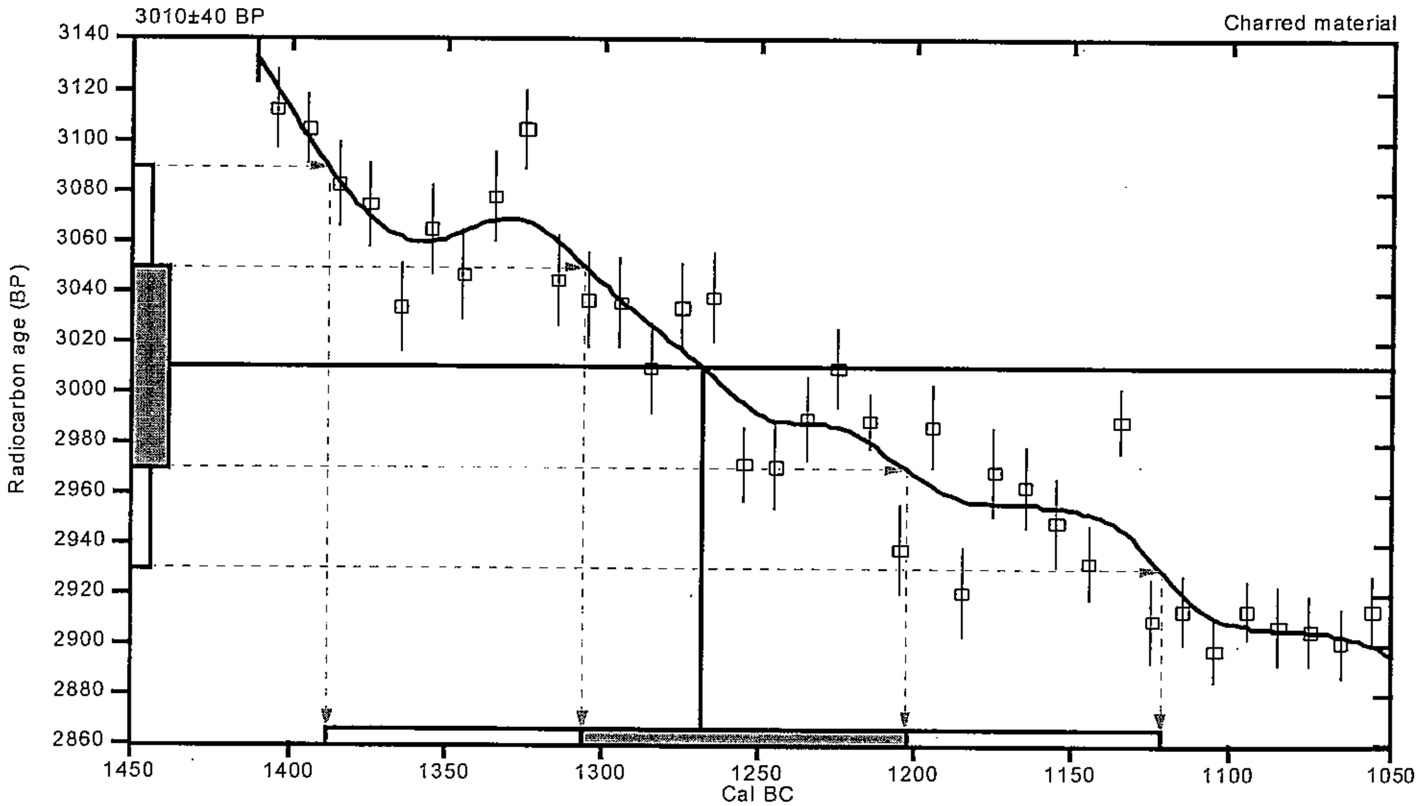
Conventional radiocarbon age: **3010±40 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 1390 to 1120 (Cal BP 3340 to 3070)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 1270 (Cal BP 3220)

1 Sigma calibrated result: (68% probability) Cal BC 1310 to 1200 (Cal BP 3260 to 3150)



References:
Database used

Calibration Database
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Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(3), pxii-xiii
INTCAL98 Radiocarbon Age Calibration
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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.5:lab. mult=1)

Laboratory number: Beta-150827

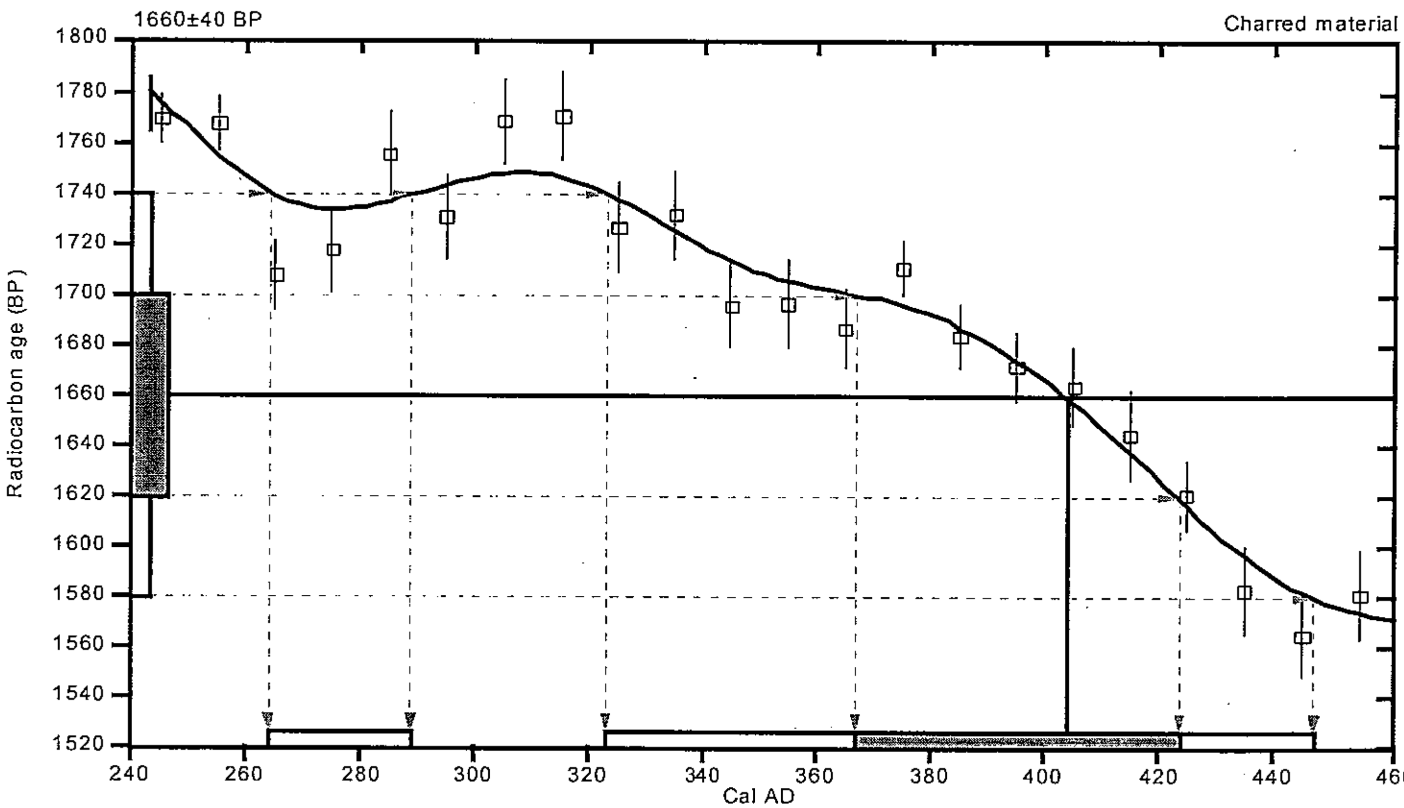
Conventional radiocarbon age: 1660±40 BP

2 Sigma calibrated results: Cal AD 260 to 290 (Cal BP 1690 to 1660) and
(95% probability) Cal AD 320 to 450 (Cal BP 1630 to 1500)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal AD 400 (Cal BP 1550)

1 Sigma calibrated result: Cal AD 370 to 420 (Cal BP 1580 to 1530)
(68% probability)



References:

Database used

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INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
Mathematics
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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-26.5:lab. mult=1)

Laboratory number: Beta-150828

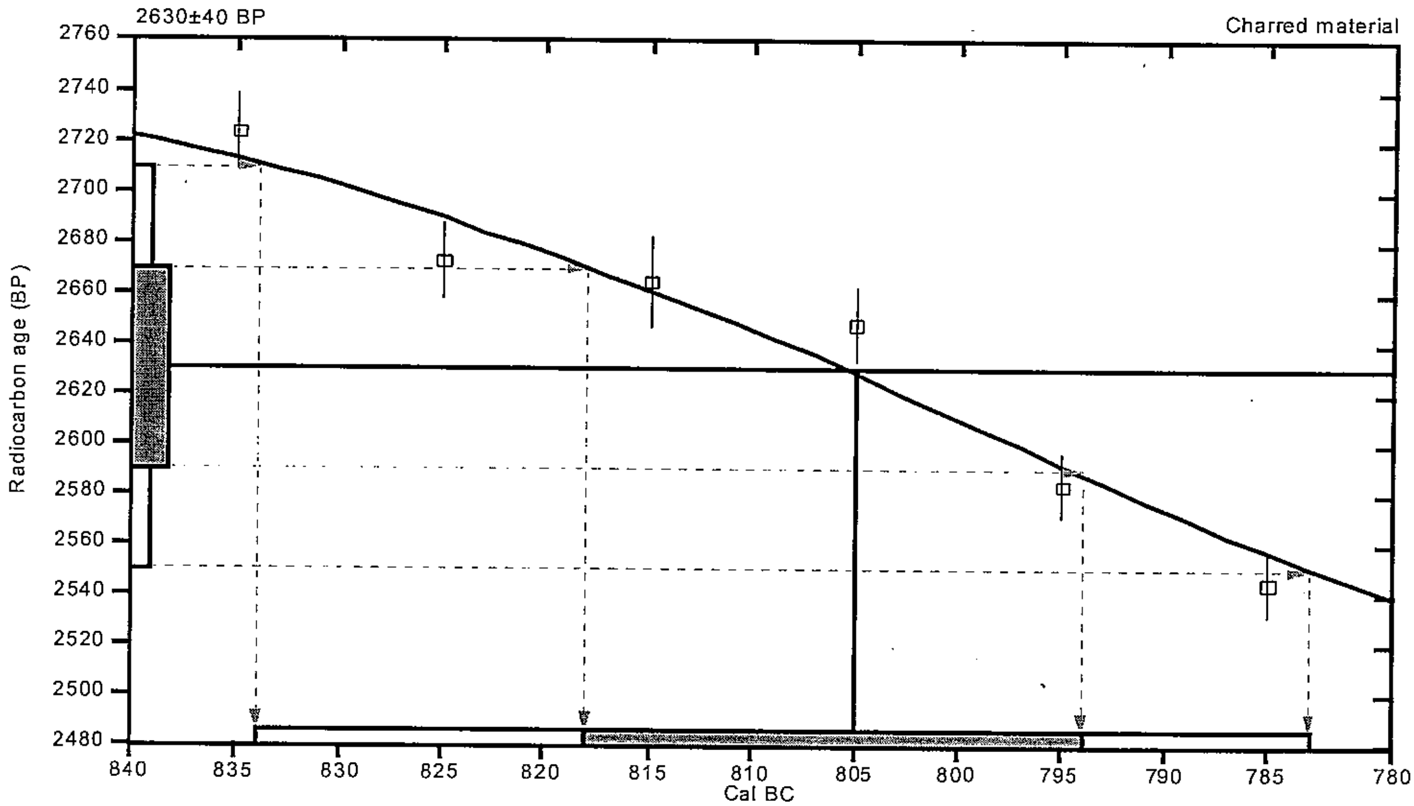
Conventional radiocarbon age: 2630±40 BP

2 Sigma calibrated result: (95% probability) Cal BC 830 to 780 (Cal BP 2780 to 2730)

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 800 (Cal BP 2760)

1 Sigma calibrated result: (68% probability) Cal BC 820 to 790 (Cal BP 2770 to 2740)



References:

Database used

Calibration Database

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Stuiver, M., van der Plicht, H., 1998, Radiocarbon 40(3), pxii-xiii

INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083

Mathematics

A Simplified Approach to Calibrating C14 Dates

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BETA ANALYTIC INC.

RADIOCARBON DATING SERVICES

Mr. DARDEN G. HOOD
Director

RONALD E. HATFIELD
Laboratory Manager

CHRISTOPHER PATRICK
TERESA A. ZILKO-MILLER
Associate Managers

February 22, 2001

Mr. Greg White
California State University
Dept. of Anthropology
400 W 1st Street
Chico, CA 95929
USA

RE: Radiocarbon Dating Result For Sample 3-16-B

Dear Greg:

Enclosed is the radiocarbon dating result for one sample recently sent to us. It provided plenty of carbon for an accurate measurement and the analysis went normally. As usual, the method of analysis is listed on the report sheet and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analysis. It was analyzed with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

Our invoice is enclosed. Please, forward it to the appropriate officer or send VISA change authorization. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

4985 S.W. 74 COURT, MIAMI, FL 33155 U.S.A.
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WEB SITE: http://www.radiocarbon.com

BETA ANALYTIC INC.
DR. M.A. TAMERS and MR. D.G. HOOD

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PH: 305/667-5167 FAX: 305/663-0964
E-MAIL: beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Mr. Greg White

California State University

Report Date: 2/22/01

Material Received: 1/15/01

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 151594	5230 +/- 60 BP	-25.0* o/oo	5230 +/- 60* BP

SAMPLE : 3-16-B
ANALYSIS : Radiometric-Standard delivery (bulk low carbon analysis on sediment)
MATERIAL/PRETREATMENT : (organic sediment): acid washes
2 SIGMA CALIBRATION : Cal BC 4230 to 3950 (Cal BP 6180 to 5900)

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: est. C13/C12=-25:lab. mult=1)

Laboratory number: **Beta-151594**

Conventional radiocarbon age[1]: **5230±60 BP**

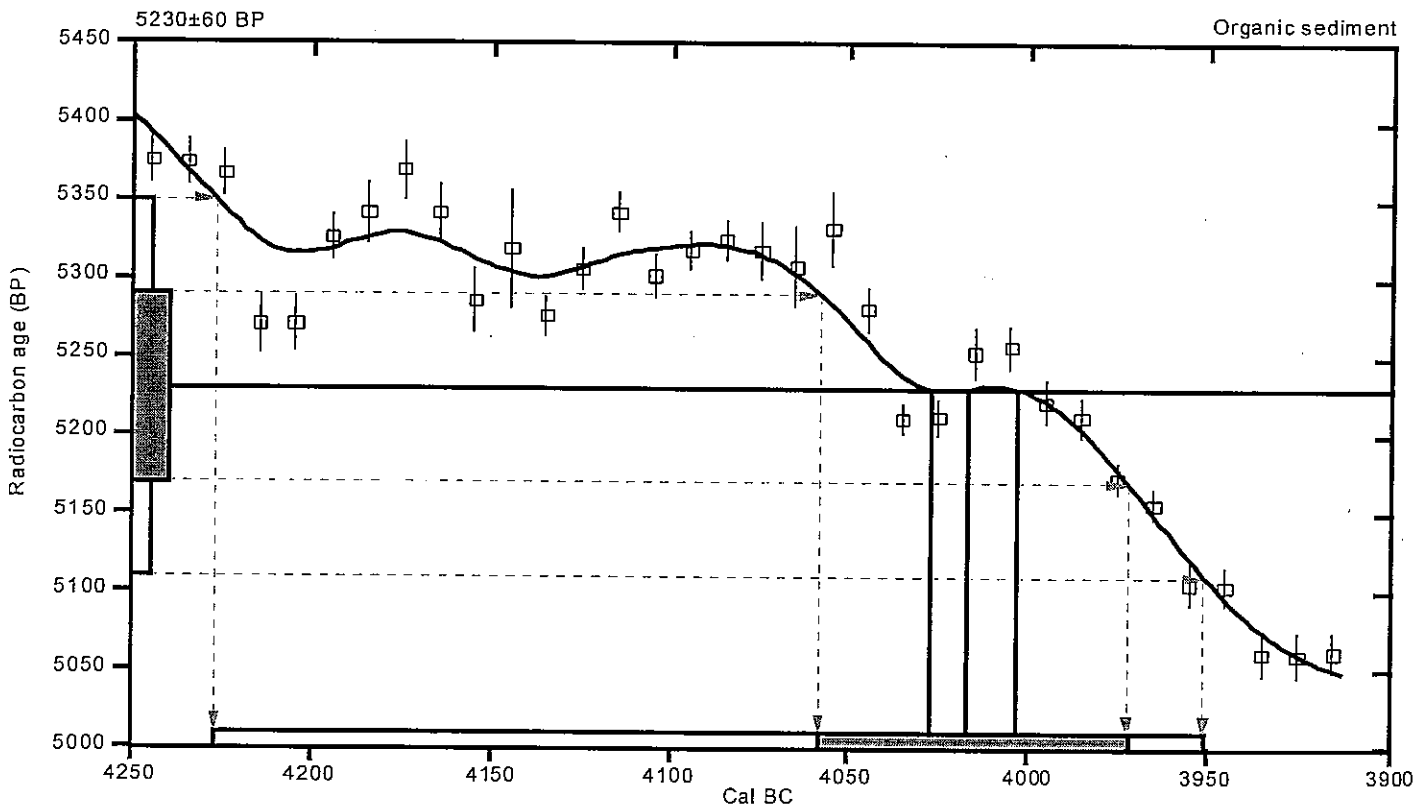
2 Sigma calibrated result: (95% probability) **Cal BC 4230 to 3950 (Cal BP 6180 to 5900)**

[1] C13/C12 ratio estimated

Intercept data

Intercepts of radiocarbon age with calibration curve: Cal BC 4030 (Cal BP 5980) and Cal BC 4020 (Cal BP 5970) and Cal BC 4000 (Cal BP 5950)

1 Sigma calibrated result: (68% probability) Cal BC 4060 to 3970 (Cal BP 6010 to 5920)



References:

Database used

Calibration Database
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INTCAL98 Radiocarbon Age Calibration
Stuiver, M., et. al., 1998, Radiocarbon 40(3), p1041-1083
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APPENDIX E:
HUMAN BONE ISOLATES

Site Name	Unit	Level	Element	Portion	Age	Side	N	Bag#	Comments
Res. Rd.	A15	000-010	clavicle	frag.	infant		1	57	
Res. Rd.	A1	000-010	cranial	vault frag.	adult		1	13	
Res. Rd.	B1	000-010	femur	shaft frag.	adult		1	64	mineralized
Res. Rd.	B4	000-010	Longbone (humerus?)	fragment	infant		1	83	calcined
Res. Rd.	A15	000-010	mandible	frag.	infant	L	1	57	
Res. Rd.	A18	000-010	middle hand phalange	complete	adult		1	60	
Res. Rd.	B6	000-010	terminal hand phal.	complete	adult		1	108	
Res. Rd.	B4	000-010	vertebrae	centrum	infant	M	1	83	
Res. Rd.	B4	010-020	5th metacarpal	complete	adult	R	1	84	
Res. Rd.	A15	010-020	clavicle	frag.	infant		1	56	
Res. Rd.	A18	010-020	femur	distal frag.	child	R	1	63	
Res. Rd.	A14	010-020	longbone	shaft frag.	adult		1	53	
Res. Rd.	B4	010-020	lunate	complete	adult	L	1	84	
Res. Rd.	A5	010-020	proximal hand phal.	proximal end	adult		1	47	
Res. Rd.	A5	010-020	scapula	frag.	child	L	1	46	
Res. Rd.	A17	010-020	triquetral	complete	adult	L	1	59	
Res. Rd.	B5	010-020	ulna	proximal frag.	fetal	R	1	97	
Res. Rd.	A15	010-020	vertebrae	1/2 arch	infant		1	56	
Res. Rd.	A18	010-020	rib	frag.	infant	L	2	61	
Res. Rd.	A18	010-020	vertebrae	1/2 arch	infant		2	61	
Res. Rd.	A1-A2	010-020	vertebrae	vert. 1/2 arch	infant		2	1	
Res. Rd.	B4	020-030	2nd metacarpal	complete	adult	R	1	85	artifact #2
Res. Rd.	A6	020-030	cranial	vault frag.	infant		1	52	
Res. Rd.	B3	020-030	epiphysis	frag	infant		1	78	
Res. Rd.	A4	020-030	humerus	frag.	child	R	1	45	artifact #5
Res. Rd.	B3	020-030	iliac crest	frag.	adult		1	79	
Res. Rd.	A6	020-030	metacarpal/tarsal	complete	infant		1	52	
Res. Rd.	B1	020-030	petrous	complete	infant		1	65	
Res. Rd.	A18	020-030	scapula	75% complete	infant	L	1	62	
Res. Rd.	A15	020-030	tibial	proximal epip.	sub-adult		1	58	
Res. Rd.	A14	020-030	rib	frag.	adult		2	54	
Res. Rd.	B1	020-040	3rd metacarpal	complete	adult	L	1	66	artifact #2
Res. Rd.	A2	020-040	cranial	vault frag.	adult		1	18	
Res. Rd.	B4	020-040	cranial	vault frag.	adult		1	86	
Res. Rd.	B4	020-040	distal hand phalange	complete	adult		1	86	
Res. Rd.	A5	020-040	femur	shaft frag.	sub-adult	L	1	48	

Site Name	Unit	Level	Element	Portion	Age	Side	N	Bag#	Comments
Res. Rd.	B5	020-040	proximal foot phal.	distal	adult		1	98	
Res. Rd.	B4	020-040	radius	shaft frag.	adult		1	86	
Res. Rd.	B5	020-040	radius	proximal 1/2	infant		1	99	
Res. Rd.	B4	020-040	ulna	proximal frag.	infant	R	1	87	
Res. Rd.	B5	020-040	cranial	vault frag.	infant		6	99	
Res. Rd.	B1	030-040	humerus	complete	infant		1	67	
Res. Rd.	A14	030-040	rib	dorsal frag	adult	R	1	55	
Res. Rd.	A5	040-050	cervical vert.	1/2 arch	infant		1	49	
Res. Rd.	B4	040-050	cranial	vault frag.	adult		1	88	
Res. Rd.	B5	040-050	indet	frag	infant		1	101	
Res. Rd.	B3	040-050	indet.	frag.			1	80	cranial or vert centrum
Res. Rd.	B4	040-050	lunate	complete	adult	R	1	88	
Res. Rd.	B5	040-050	metacarpal/tarsal	complete	infant		1	101	
Res. Rd.	B5	040-050	middle foot phalange	complete	adult		1	100	
Res. Rd.	A5	040-050	rib	shaft frag.	infant	R	1	49	
Res. Rd.	B5	040-050	tarsal	complete	infant		1	101	
Res. Rd.	B5	040-050	thoracic vertebrae	complete	adult	M	1	100	
Res. Rd.	B5	040-050	thoracic vertebrae	transverse process	infant		1	101	
							63		
Res. Rd.	A3	040-060	3rd cuneiform	complete	adult	R	1	31	
Res. Rd.	A3	040-060	cervical vert.	centrum	sub-adult	M	1	38	
Res. Rd.	A3	040-060	cranium	basio-occipital	infant	M	1	38	
Res. Rd.	A2	040-060	femur	complete (frags)	sub-adult	R	1	19	<3yrs
Res. Rd.	A3	040-060	foot phalange	distal	adult		1	31	
Res. Rd.	A3	040-060	hand phalange	distal	adult		1	31	
Res. Rd.	A2	040-060	innominate	acetabulum	adult		1	20	burned
Res. Rd.	A3	040-060	longbone	epiphysis	sub-adult		1	38	
Res. Rd.	A3	040-060	tibia	shaft frag.	infant	R	1	38	62.61mm
Res. Rd.	A2	040-060	cranium	vault frag.	adult		2	29	
Res. Rd.	B4	050-060	1st metatarsal	complete	adult	L	1	89	
Res. Rd.	B2	050-060	indet. longbone	shaft frag.	sub-adult		1	73	human (?)
Res. Rd.	B4	050-060	maxilla premolar	complete	adult	R	1	89	
Res. Rd.	B5	050-060	premolar or canine	root	adult		1	102	
Res. Rd.	B2	050-060	radius (?)	shaft frag.	infant		1	72	
Res. Rd.	A2	050-070	5th metatarsal	complete	adult	R	1	28	kneeling facet
Res. Rd.	A3	050-070	hand phalange	proximal	adult		1	32	

Site Name	Unit	Level	Element	Portion	Age	Side	N	Bag#	Comments
Res. Rd.	A5	050-070	hand phalange	complete	infant		1	50	
Res. Rd.	B2	060-070	1st metarsal	complete	adult	L	1	74	
Res. Rd.	B3	060-070	distal foot phalange	complete	adult		1	81	
Res. Rd.	B1	060-070	fibula	shaft frag.	sub-adult		1	68	
Res. Rd.	B2	060-070	middle hand phalange	complete	adult		1	74	
Res. Rd.	B4	060-070	middle hand phalange	complete	adult		1	90	
Res. Rd.	A1	060-070	rib	shaft frag.	adult		1	14	
Res. Rd.	B6	060-070	vert.	centrum	infant	m	1	109	
Res. Rd.	A1	060-070	vertebrae	lumbar arch	infant		1	15	
Res. Rd.	B4	060-070	vertebrae	arch 1/2	infant		1	91	
Res. Rd.	B4	070-080	cranial	vault frag.	adult		1	92	
Res. Rd.	B3	070-080	cuboid	frag.	adult	R	1	82	
Res. Rd.	B5	070-080	indet	shaft frag.	infant		1	103	
Res. Rd.	B6	070-080	lumbar vertebrae	frag	sub-adult		1	110	vert. Rim incomplete
Res. Rd.	B4	070-080	metatarsal	prox. 1/2	adult	L	1	92	charred
Res. Rd.	B6	070-080	rib	frag.	adult		1	111	
Res. Rd.	B5	070-080	tibia	prox. Epip.	sub-adult		1	104	
Res. Rd.	A2	070-090	4th metatarsal	complete	adult	R	1	29	
Res. Rd.	A2	070-090	5th metatarsal	complet	adult	R	1	29	
Res. Rd.	A2	070-090	longbone	shaft frag.	adult		1	29	
Res. Rd.	A2	070-090	rib	shaft frag.	adult		1	29	
Res. Rd.	B2	080-090	1st cuneiform	complete	adult	R	1	75	
Res. Rd.	B2	080-090	1st cuneiform	complete	adult	R	1	76	
Res. Rd.	B5	080-090	2nd metatarsal	complete	adult	R	1	105	artifact #1
Res. Rd.	A1	080-090	hand phalange	distal frag.	child		1	16	
Res. Rd.	B4	080-090	rib	shaft frag.	adult		1	95	charred/polished, human?
Res. Rd.	B4	080-090	thoracic vertebrae	arch	child	M	1	94	
Res. Rd.	B1	080-090	ribs	fragment	sub-adult		2	69	
Res. Rd.	B4	080-090	epiphysis	complete	infant		5	93	
Res. Rd.	B5	090-100	1st metacarpal	complete	adult	L	1	106	
Res. Rd.	B5	090-100	3rd cuneiform	complete	adult	R	1	106	
Res. Rd.	B4	090-100	capitate	complte	adult	L	1	96	
Res. Rd.	B2	090-100	cranial	vault frag.	infant		1	77	
Res. Rd.	A3	090-100	hand phalange	proximal	adult		1	33	
Res. Rd.	B4	090-100	hand phalange	distal 1/2	adult		1	96	charred
Res. Rd.	B6	090-100	indet.	frag.	sub-adult		1	112	human (?)

Site Name	Unit	Level	Element	Portion	Age	Side	N	Bag#	Comments
Res. Rd.	B4	090-100	longbone indet.	shaft frag.	adult		1	96	
Res. Rd.	B5	090-100	lumbar vertebrae	arch 1/2	infant		1	107	
Res. Rd.	A5	090-100	mandible	frag.	infant	R	1	51	<0.5yrs
Res. Rd.	B4	090-100	middle hand phalange	complete	adult		1	96	
Res. Rd.	B1	090-100	ribs	head and shaft	adult	L	1	70	
Res. Rd.	A3	090-100	ulna	distal diaphysis	adult		1	33	
Res. Rd.	B4	090-100	proximal hand phal.	complete	adult		2	96	
							67		
Res. Rd.	B1	100-110	12th rib	complete	child	L	1	71	
Res. Rd.	A3	100-110	4th metatarsal	complete	adult	R	1	34	
Res. Rd.	A2	100-110	calcaneus	complete	adult	R	1	21	
Res. Rd.	A2	100-110	cuboid	complete	adult	R	1	21	
Res. Rd.	A2	100-110	indet	frag.	adult		1	22	
Res. Rd.	B6	100-110	indet.	fragment	adult		1	113	
Res. Rd.	B6	100-110	metatarsal/carpal	complete	infant		1	114	
Res. Rd.	B6	100-110	middle hand phalange	complete	adult		1	113	
Res. Rd.	A3	100-110	middle phalange	complete	adult		1	41	
Res. Rd.	B6	100-110	navicular (foot)	fragment	adult	R	1	113	
Res. Rd.	B6	100-110	proximal hand phal.	complete	adult		1	113	
Res. Rd.	A2	100-110	rib	shaft frag.	adult		1	23	
Res. Rd.	B1	100-110	thoracic vertebrae	arch	child	M	1	71	
Res. Rd.	B6	100-110	terminal hand phal.	complete	adult		4	113	
Res. Rd.	A2	110-120	1st metacarpal	complete	adult	L	1	24	
Res. Rd.	A3	110-120	cranial	vault frag.	adult		1	36	
Res. Rd.	A3	110-120	foot phalange	proximal	adult		1	35	
Res. Rd.	A3	110-120	foot phalange	distal	adult		1	35	
Res. Rd.	A3	120-130	epiphysis or sternum	complete	sub-adult		1	42	
Res. Rd.	A3	120-130	ex-occipital	complete	child	L	1	43	
Res. Rd.	A2	120-130	humerus	shaft frag.	fetal	R	1	25	52.93mm
Res. Rd.	A2	120-130	metatarsal	complete	child		1	44	
Res. Rd.	A2	120-130	thoracic vert.	arch	child	M	1	44	
Res. Rd.	A3	120-130	scapula (?)	frag.	child		2	43	
Res. Rd.	A3	120-130	vertebrae	centrum	child	M	2	43	
Res. Rd.	A3	130-140	foot phalange	distal	adult		1	37	
Res. Rd.	A3	130-140	foot phalange	proximal	adult		1	37	
Res. Rd.	A3	130-140	indet.	frag.	sub-adult		1	40	

Site Name	Unit	Level	Element	Portion	Age	Side	N	Bag#	Comments
Res. Rd.	A2	130-140	metatarsal	shaft frag.	sub-adult		1	26	
Res. Rd.	A2	130-140	cranial	vault frag.	adult		2	27	
Res. Rd.	A3	140-150	3rd cuneiform	complete	adult	R	1	39	
Res. Rd.	A1	140-150	cranial	vault frag.	adult		1	17	
Res. Rd.	A1	140-150	incisor	lateral maxillary	adult	L	1	17	
							39		
Res. Rd.	Burial 1	Exposure	humerus	complete	infant	R	1		
Res. Rd.	Burial 2	Exposure	longbone	fragment	adult		1		
Res. Rd.	Burial 3	Exposure	middle/distal foot phala	complete	adult		1		fused phalanges
Res. Rd.	Burial 3	Exposure	molar	fragment	adult		1		worn
Res. Rd.	Burial 3	Exposure	rib shaft	fragment	infant		1		
Res. Rd.	Burial 3	Exposure	vertebral arch	complete	infant		1		
Res. Rd.	Burial 3	Exposure	vertebral centrum	complete	infant		1		
							7		
Res. Rd.	Burial 4	Exposure	cranium	fragment	adult		1		probably parietal
Res. Rd.	Burial 5	Exposure	middle hand phalange	complete	adult		1		
Res. Rd.	Burial 5	Exposure	premolar	complete	adult		1		
Res. Rd.	Burial 5	Exposure	vertebral arch	fragment	adult		1		
Res. Rd.	Burial 7	Exposure	illium	fragment	infant		1		poss. Displaced from Burial
Res. Rd.	Burial 7	Exposure	rib	fragment	infant		1		poss. Displaced from Burial
Res. Rd.	Burial 8	Exposure	distal hand phalange	complete	infant		1		poss. Displaced from Burial
Res. Rd.	Burial 8	Exposure	rib	fragment	infant		1		poss. Displaced from Burial
Res. Rd.	Burial 8	Exposure	sternal element	complete	infant		1		poss. Displaced from Burial
Res. Rd.	Burial 9	Exposure	vertebral arch	complete	sub-adult		1		poss. Displaced from Burial
							10		
Res. Rd.	Surface		femur	shaft frag.	adult		2	2	
Res. Rd.	Surface		longbone	diaphysis frag.	infant		1	2	
Res. Rd.	Surface	Exp. 2 B/D	rib	head	adult	R	1	3	
Res. Rd.	Trench		cranial	frag.	adult	-	1	116	
Res. Rd.	Trench		femur	shaft frag.	adult	-	1	116	

APPENDIX F: ZOOARCHAEOLOGICAL DATA

Hwy. 45 Avifauna Results

* Note an innacuarte tally was maintained for several units' numbers of UnIDable longbone shaft fragments that are avian. These tallies are available on the sorted bags.

Reservation Road

Floatation Sample #17
Stratum 2, 40-50cm

Screen Size	Identifications	NISP
¼"	Tribe: Anatini, large dabbling duck	2
1/8"	Class: Aves	3
	Total:	5

Unit B1
Stratum 2, 0-50cm

Screen Size	Identifications	NISP
¼"	Species: Anser rossi, Ross' Goose	1
	Tribe: Anserini, large goose	2
	Sub-Family: Anatinae, large duck	1
	Class: Aves	7
	Total:	11

Flotation Sample #7
Stratum 3, 80-90cm
¼" Aves=0
1/8" Aves=1
1/16" Aves=0

Flotation Sample #20
Stratum 3, 90-100cm
¼" Aves=1
1/8" Aves=1
1/16" Aves=0

Unit B1
Stratum 3, 50-100cm

Screen Size	Identifications	NISP
¼"	Species: Anser caerulescens, Snow Goose	3
	Species: Branta canadensis, Canada Goose	2
	Species: Colaptes auratus, Northern Redshafted Flicker	1
	Species: Corvus brachyrhynchos, American Crow	1
	Species: Callipepla californica, California Quail	1
	Genus: Anser sp., large goose	5
	Tribe: Anserini, geese	11
	Sub-Family: Anatinae, large duck	4
	Family: Anatidae	2

Class: Aves	16
	Total: 46

- Note Longbone shaft fragments, Aves numbers are not available for unit B!, Level 20-30cm
-

Flotation Sample #4
Stratum 4, 160-180cm
¼" Aves, large bird=1
1/8" Aves=1
1/16" Aves=0

Flotation Sample #28
Stratum 4, 130-140cm
¼" Aves=0
1/8" Aves=2
1/16" Aves=0

Unit A3
Stratum 4, 100-150cm

Screen Size	Identifications	NISP
¼"	Species: Anser rossi, Ross' Goose	3
	Species: Tyto alba, Barn Owl	1
	Genus: Anser sp., large goose	1
	Genus: Phalacrocorax spp, cormorant.	1
	Tribe: Anatini, large dabbling duck	3
	Tribe: Anserini, geese	8
	Sub-Family: Anatinae, duck	3
	Family: Accipetridae, eagle	1
	Class: Aves	30
		Total: 51

*Note Unit A3, 110-120 number of longbone shaft fragments, Aves was not in my notes.

Colusa: 7th and Market
Lower Midden

Screen Size	Identifications	NISP
1/8"	Species: Anser rossi, Ross' Goose	1
	Species: Callipepla californica, California Quail	1
	Tribe: Anatini, large dabbling duck	2
	Aves:	10
		Total: 14
¼"	Species: Anser albifrons, Greater White Fronted Goose	1
	Species: Anser caerulescens, Snow Goose	2
	Species: Anser rossi, Ross' Goose	1
	Species: Branta canadensis, Canada Goose	4
	Species: Podilymbus podiceps, Pied Billed Grebe	1
	Species: Ardea herodias, Great Blue Heron	1

Species: Corvus brachyryhchos, American Crow	1
Species: Callipepla californica, California Quail	1
Genus: Anser sp, large goose	6
Tribe: Anserini, geese	9
Sub-Family: Anatinae, large duck	2
Family: Anatidae	6
Family: Corvidae	1
Class: Aves	19
	Total: 55

Flotation Sample #2
Lower Midden ,110-120cm
¼" Aves=0
1/8" Aves=1
1/16" Aves=0

Flotation Samaple #28
Lower Midden, 120-150cm
¼" Aves=0
1/8" Aves=0
1/16" Aves=1

Stegeman Locus A

No Flotation Sample

Unit 1, Levels 40-70cm, ¼"
Unit 1, Levels 20-30cm, 40-60cm, 1/8"

Identifications	NISP
Species: Aphelocoma coerulescens, Scrub Jay	1
Tribe: Anserini, large goose	5
Tribe: Anatini, large, dabbling duck	2
Sub-Family: Anserinae, geese	2
Family: Anatidae	1
Order: Passeriformes, small perching bird	3
Class: Aves	55
	Total: 69

Stegeman Locus B

No Flotation Sample

Unit 1, Levels 50-100cm ¼"
Unit 1, Levels 80-100cm 1/8"

Identifications	NISP
Genus: Anas, large.dabbling duck	1
Tribe: Anserini, Geese	6
Subfamily: Anatinae, ducks	3
Order: Passeriformes, small perching bird	1
Class: Aves	32

* note not all Longbone shafts frag. Numbers are complete - only those that made it to my complete

6.Tiles are complete in

C:\SPSSfiles\Hwy45fauna.sav

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
1	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Phalanx II	Indetermin	Complete	90.00
2	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Radius	Left	Proximal	20.00
3	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Ulna	Right	Proximal	.
4	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Ulna	Right	Proximal	.
5	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Tibiotarsus	Left	Complete	.
6	Stegeman	Locus A	Unit 1	1/4 "	50-60cm	328.06	Coracoid	Indetermin	Indetermin	.
7	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Coracoid	Indetermin	Indetermin	.
8	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Cuneiform	Indetermin	Complete	90.00
9	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Radius	Indetermin	Proximal	.
10	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Cranial	Axial	Indetermin	.
11	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Sternum	Axial	Complete	90.00
12	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
13	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
14	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
15	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
16	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
17	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
18	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
19	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
20	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.

Distal II

Longbone fragment

	class	order	family	subfam	tribe	genus	genspec	common	age
1	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goose	adult
2	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goose	adult
3	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
4	Aves	Passerifor	Corvidae	.	.	Aphelocom	Aphelocom	Scrub Jay	adult
5	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
6	Aves	.	.	.	.	.	.	.	adult
7	Aves	.	.	.	.	.	.	.	adult
8	Aves	Anseriform	Anatidae	Anserinae	Anatini	.	.	Large Goo	adult
9	Aves	Anseriform	Anatidae	Anserinae	Anatini	.	.	Medium Go	adult
10	Aves	Passerifor	.	.	.	.	.	Small Perc	adult
11	Aves	Passerifor	.	.	.	.	.	Small Perching Bird	adult
12	Aves	.	.	.	.	.	.	.	adult
13	Aves	.	.	.	.	.	.	.	adult
14	Aves	.	.	.	.	.	.	.	adult
15	Aves	.	.	.	.	.	.	.	adult
16	Aves	.	.	.	.	.	.	.	adult
17	Aves	.	.	.	.	.	.	.	adult
18	Aves	.	.	.	.	.	.	.	adult
19	Aves	.	.	.	.	.	.	.	adult
20	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
21	Stegeman	Locus A	Unit 1	1/4 "	60-70cm	328.07	Longbone	.	.	.
22	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Cevical Ver	Axial	Complete	90.00
23	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Carpometa	Left	Shaft/Diaph	.
24	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
25	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
26	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
27	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
28	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
29	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
30	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
31	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
32	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
33	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
34	Stegeman	Locus A	Unit 1	1/8 "	50-60cm	328.06	Longbone	.	.	.
35	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Tarsometat	Indetermin	Shaft/Diaph	.
36	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Tarsometat	Right	Complete	.
37	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Tarsometat	Indetermin	Shaft/Diaph	.
38	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Radius	Left	Distal	.
39	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Synsacral	Axial	Complete	.
40	Stegeman	Locus A	Unit 1	1/4 "	40-50cm	328.05	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
21	Aves	.	.	.	.	.	.	.	adult
22	Aves	Passerifor	.	.	.	.	.	Small Perc	adult
23	Aves	.	.	.	.	.	.	.	adult
24	Aves	.	.	.	.	.	.	.	adult
25	Aves	.	.	.	.	.	.	.	adult
26	Aves	.	.	.	.	.	.	.	adult
27	Aves	.	.	.	.	.	.	.	adult
28	Aves	.	.	.	.	.	.	.	adult
29	Aves	.	.	.	.	.	.	.	adult
30	Aves	.	.	.	.	.	.	.	adult
31	Aves	.	.	.	.	.	.	.	adult
32	Aves	.	.	.	.	.	.	.	adult
33	Aves	.	.	.	.	.	.	.	adult
34	Aves	.	.	.	.	.	.	.	adult
35	Aves	.	.	.	.	.	.	.	adult
36	Aves	.	.	.	.	.	.	.	juvenile
37	Aves	.	.	.	.	.	.	.	juvenile
38	Aves	.	.	.	.	.	.	.	adult
39	Aves	.	.	.	.	.	.	.	adult
40	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
41	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Cevical Ver	Axial	Indetermin	.
42	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Ulna	Indetermin	Distal	.
43	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Indetermin	Axial	Indetermin	.
44	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
45	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
46	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
47	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
48	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
49	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
50	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
51	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
52	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
53	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
54	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
55	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
56	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
57	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
58	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
59	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
60	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
41	Aves	.	.	.	.	.	.	Small Bird	adult
42	Aves	.	.	.	.	.	.	.	adult
43	Aves	.	.	.	.	.	.	.	adult
44	Aves	.	.	.	.	.	.	.	adult
45	Aves	.	.	.	.	.	.	.	adult
46	Aves	.	.	.	.	.	.	.	adult
47	Aves	.	.	.	.	.	.	.	adult
48	Aves	.	.	.	.	.	.	.	adult
49	Aves	.	.	.	.	.	.	.	adult
50	Aves	.	.	.	.	.	.	.	adult
51	Aves	.	.	.	.	.	.	.	adult
52	Aves	.	.	.	.	.	.	.	adult
53	Aves	.	.	.	.	.	.	.	adult
54	Aves	.	.	.	.	.	.	.	adult
55	Aves	.	.	.	.	.	.	.	adult
56	Aves	.	.	.	.	.	.	.	adult
57	Aves	.	.	.	.	.	.	.	adult
58	Aves	.	.	.	.	.	.	.	adult
59	Aves	.	.	.	.	.	.	.	adult
60	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
61	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
62	Stegeman	Locus A	Unit 1	1/8 "	20-30cm	328.03	Longbone	.	.	.
63	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Radius	Right	Proximal	.
64	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Cuneiform	Indetermin	Complete	90.00
65	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Tarsometat	Indetermin	Proximal	.
66	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Ulna	Indetermin	Distal	.
67	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Rib	Indetermin	Shaft/Diaph	.
68	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Carpometa	Indetermin	Indetermin	.
69	Stegeman	Locus A	Unit 1	1/8 "	40-50cm	328.05	Longbone	Indetermin	Indetermin	.
70	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Humerus	Left	Complete	90.00
71	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Ulna	Left	Distal	.
72	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Femur	Right	Proximal	.
73	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Carpometa	Right	.	.
74	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Ischium	Right	Indetermin	.
75	Stegeman	Locus B	Unit 1	1/4 "	50-60cm	328.20	Longbone	.	.	.
76	Stegeman	Locus B	Unit 1	1/4 "	60-70cm	328.21	Ulna	Left	.	.
77	Stegeman	Locus B	Unit 1	1/4 "	60-70cm	328.21	Longbone	.	.	.
78	Stegeman	Locus B	Unit 1	1/4 "	60-70cm	328.21	Longbone	.	.	.
79	Stegeman	Locus B	Unit 1	1/4 "	60-70cm	328.21	Longbone	.	.	.
80	Stegeman	Locus B	Unit 1	1/4 "	70-80cm	328.22	Humerus	Right	Proximal	.

	class	order	family	subfam	tribe	genus	genspec	common	age
61	Aves	.	.	.	.	.	.	.	adult
62	Aves	.	.	.	.	.	.	.	adult
63	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
64	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
65	Aves	.	.	.	.	.	.	.	adult
66	Aves	.	.	.	.	.	.	.	adult
67	Aves	.	.	.	.	.	.	.	adult
68	Aves	.	.	.	.	.	.	.	adult
69	Aves	.	.	.	.	.	.	.	adult
70	Aves	Anseriform	Anatidae	Anatinae	Anatini	Anas	.	Large Duck	adult
71	Aves	.	.	.	.	.	.	Large Bird	adult
72	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
73	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
74	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Small Duck	adult
75	Aves	.	.	.	.	.	.	.	adult
76	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Small Duck	adult
77	Aves	.	.	.	.	.	.	.	adult
78	Aves	.	.	.	.	.	.	.	adult
79	Aves	.	.	.	.	.	.	.	adult
80	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
81	Stegeman	Locus B	Unit 1	1/4 "	70-80cm	328.22	Cuneiform	Indetermin	Indetermin	.
82	Stegeman	Locus B	Unit 1	1/4 "	70-80cm	328.22	Cevical Ver	Axial	Complete	.
83	Stegeman	Locus B	Unit 1	1/4 "	70-80cm	328.22	Longbone	.	.	.
84	Stegeman	Locus B	Unit 1	1/4 "	70-80cm	328.22	Longbone	.	.	.
85	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Humerus	Left	Proximal	.
86	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Rib	.	.	.
87	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Rib	.	.	.
88	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
89	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
90	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
91	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
92	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
93	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
94	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
95	Stegeman	Locus B	Unit 1	1/8 "	80-90cm	328.23	Longbone	.	.	.
96	Stegeman	Locus B	Unit 1	1/4 "	80-90cm	328.23	Mandible	.	.	.
97	Stegeman	Locus B	Unit 1	1/4 "	80-90cm	328.23	Tarsometat	.	Distal	.
98	Stegeman	Locus B	Unit 1	1/4 "	80-90cm	328.23	Longbone	.	.	.
99	Stegeman	Locus B	Unit 1	1/4 "	80-90cm	328.23	Longbone	.	.	.
100	Stegeman	Locus B	Unit 1	1/4 "	80-90cm	328.23	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
81	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
82	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
83	Aves	.	.	.	.	.	.	.	adult
84	Aves	.	.	.	.	.	.	.	adult
85	Aves	Passerifor	.	.	.	.	.	Small Perc	adult
86	Aves	.	.	.	.	.	.	.	adult
87	Aves	.	.	.	.	.	.	.	adult
88	Aves	.	.	.	.	.	.	.	adult
89	Aves	.	.	.	.	.	.	.	adult
90	Aves	.	.	.	.	.	.	.	adult
91	Aves	.	.	.	.	.	.	.	adult
92	Aves	.	.	.	.	.	.	.	adult
93	Aves	.	.	.	.	.	.	.	adult
94	Aves	.	.	.	.	.	.	.	adult
95	Aves	.	.	.	.	.	.	.	adult
96	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
97	Aves	.	.	.	.	.	.	Large Bird	juvenile
98	Aves	.	.	.	.	.	.	.	adult
99	Aves	.	.	.	.	.	.	.	adult
100	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
101	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Indetermin	.	.	.
102	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Indetermin	.	.	.
103	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
104	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
105	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
106	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
107	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
108	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
109	Stegeman	Locus B	Unit 1	1/8 "	90-100cm	328.25	Longbone	.	.	.
110	Stegeman	Locus B	Unit 1	1/4 "	90-100cm	328.25	Mandible	Indetermin	Distal	.
111	Stegeman	Locus B	Unit 1	1/4 "	90-100cm	328.25	Humerus	Right	Proximal	.
112	Stegeman	Locus B	Unit 1	1/4 "	90-100cm	328.25	Longbone	.	.	.
113	Reservatio	Not Applica	Unit A3	1/4 "	140-150cm	327.27	Coracoid	Right	Proximal	.
114	Reservatio	Not Applica	Unit A3	1/4 "	140-150cm	327.27	Carpometa	Right	Shaft/Diaph	.
115	Reservatio	Not Applica	Unit A3	1/4 "	140-150cm	327.27	Carpometa	Indetermin	Shaft/Diaph	.
116	Reservatio	Not Applica	Unit A3	1/4 "	140-150cm	327.27	Sternum	Axial	Indetermin	.
117	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Humerus	Left	Proximal	.
118	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Humerus	Left	Proximal	.
119	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Scapula	Left	Proximal	.
120	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Coracoid	Indetermin	Proximal	.

	class	order	family	subfam	tribe	genus	genspec	common	age
101	Aves	.	.	.	.	.	.	.	adult
102	Aves	.	.	.	.	.	.	.	adult
103	Aves	.	.	.	.	.	.	.	adult
104	Aves	.	.	.	.	.	.	.	adult
105	Aves	.	.	.	.	.	.	.	adult
106	Aves	.	.	.	.	.	.	.	adult
107	Aves	.	.	.	.	.	.	.	adult
108	Aves	.	.	.	.	.	.	.	adult
109	Aves	.	.	.	.	.	.	.	adult
110	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
111	Aves	.	.	.	.	.	.	.	adult
112	Aves	.	.	.	.	.	.	.	adult
113	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
114	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
115	Aves	.	.	.	.	.	.	.	adult
116	Aves	.	.	.	.	.	.	.	adult
117	Aves	Falconifor	Accipetrida	.	.	.	.	Large Bird	adult
118	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
119	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
120	Aves	.	.	.	.	.	.	Medium Bir	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
121	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Furculum	Right	Proximal	.
122	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Furculum	Right	Shaft/Diaph	.
123	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Humerus	Indetermin	Proximal	.
124	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Synsacral	.	.	.
125	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Synsacral	.	.	.
126	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Radius	Left	Distal	.
127	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Longbone	.	.	.
128	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Longbone	.	.	.
129	Reservatio	Not Applica	Unit A3	1/4 "	120-130cm	327.25	Longbone	.	.	.
130	Reservatio	Not Applica	Unit A3	1/4 "	110-120cm	327.24	Humerus	Left	Distal	.
131	Reservatio	Not Applica	Unit A3	1/4 "	110-120cm	327.24	Scapholun	Indetermin	Complete	.
132	Reservatio	Not Applica	Unit A3	1/4 "	110-120cm	327.24	Tarsometat	Left	Shaft/Diaph	.
133	Reservatio	Not Applica	Unit A3	1/4 "	110-120cm	327.24	Synsacral	Axial	.	.
134	Reservatio	Not Applica	Unit A3	1/4 "	110-120cm	327.24	Longbone	.	.	.
135	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Humerus	Left	Complete	.
136	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Ulna	Left	Complete	.
137	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Coracoid	Right	Shaft/Diaph	.
138	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Humerus	Right	Proximal	.
139	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Carpometa	Indetermin	Proximal	.
140	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Ulna	Indetermin	Shaft/Diaph	.

	class	order	family	subfam	tribe	genus	genspec	common	age
121	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
122	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
123	Aves	.	.	.	.	.	.	.	adult
124	Aves	.	.	.	.	.	.	Medium Bir	adult
125	Aves	.	.	.	.	.	.	Medium Bir	adult
126	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
127	Aves	.	.	.	.	.	.	.	adult
128	Aves	.	.	.	.	.	.	.	adult
129	Aves	.	.	.	.	.	.	.	adult
130	Aves	.	Phalacroco	.	.	Phalcrocor	.	Cormorant	adult
131	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
132	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
133	Aves	.	.	.	.	.	.	Medium Bir	adult
134	Aves	.	.	.	.	.	.	.	adult
135	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
136	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
137	Aves	.	.	.	.	.	.	Medium Bir	adult
138	Aves	.	.	.	.	.	.	Medium Bir	adult
139	Aves	.	.	.	.	.	.	.	adult
140	Aves	.	.	.	.	.	.	Medium Bir	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
141	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Femur	Indetermin	Shaft/Diaph	.
142	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
143	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
144	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
145	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
146	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
147	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
148	Reservatio	Not Applica	Unit A3	1/4 "	100-110cm	327.23	Longbone	.	.	.
149	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Carpometa	Left	Distal	.
150	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Ulna	Right	Proximal	.
151	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Tarsometat	Right	Complete	.
152	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Coracoid	.	Distal	.
153	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Tibiotarsus	Right	Complete	.
154	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Coracoid	.	Proximal	.
155	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Sternum	Axial	.	.
156	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Sternum	Axial	.	.
157	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Scapula	.	Complete	.
158	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.
159	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.
160	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
141	Aves	.	.	.	.	.	.	.	adult
142	Aves	.	.	.	.	.	.	.	adult
143	Aves	.	.	.	.	.	.	.	adult
144	Aves	.	.	.	.	.	.	.	adult
145	Aves	.	.	.	.	.	.	.	adult
146	Aves	.	.	.	.	.	.	.	adult
147	Aves	.	.	.	.	.	.	.	adult
148	Aves	.	.	.	.	.	.	.	adult
149	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
150	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
151	Aves	Strigiforme	Tytonidae	.	.	Tyto	Tyto alba	Barn Owl	adult
152	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
153	Aves	Anseriform	Anatidae	Anatinae	Anatini	.	.	Large Duck	adult
154	Aves	Anseriform	Anatidae	Anatinae	Anatini	.	.	Large Duck	adult
155	Aves	Anseriform	Anatidae	Anatinae	Anatini	.	.	Large Duck	adult
156	Aves	.	.	.	.	.	.	.	adult
157	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
158	Aves	.	.	.	.	.	.	.	adult
159	Aves	.	.	.	.	.	.	.	adult
160	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
161	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.
162	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.
163	Reservatio	Not Applica	Unit A3	1/4 "	130-140cm	327.26	Longbone	.	.	.
164	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Ulna	Right	Distal	.
165	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Humerus	Left	Complete	.
166	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Cevical Ver	Axial	Complete	.
167	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Cranial	.	Complete	.
168	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Tarsometat	Right	.	.
169	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Cuneiform	Indetermin	.	.
170	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
171	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
172	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
173	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
174	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
175	Reservatio	Not Applica	Unit B1	1/4 "	90-100cm	327.63	Longbone	.	.	.
176	Reservatio	Not Applica	Unit B1	1/4 "	80-90cm	327.62	Ulna	.	.	.
177	Reservatio	Not Applica	Unit B1	1/4 "	80-90cm	327.62	Ulna	Left	.	.
178	Reservatio	Not Applica	Unit B1	1/4 "	80-90cm	327.62	Radius	Indetermin	Shaft/Diaph	.
179	Reservatio	Not Applica	Unit B1	1/4 "	80-90cm	327.62	Mandible	.	.	.
180	Reservatio	Not Applica	Unit B1	1/4 "	80-90cm	327.62	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
161	Aves	.	.	.	.	.	.	.	adult
162	Aves	.	.	.	.	.	.	.	adult
163	Aves	.	.	.	.	.	.	.	adult
164	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser caer	Snow Goos	adult
165	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
166	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
167	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
168	Aves	.	.	.	.	.	.	Large Bird	adult
169	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
170	Aves	.	.	.	.	.	.	.	adult
171	Aves	.	.	.	.	.	.	.	adult
172	Aves	.	.	.	.	.	.	.	adult
173	Aves	.	.	.	.	.	.	.	adult
174	Aves	.	.	.	.	.	.	.	adult
175	Aves	.	.	.	.	.	.	.	adult
176	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
177	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser caer	Snow Goos	adult
178	Aves	.	.	.	.	.	.	Large Bird	adult
179	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
180	Aves	.	.	.	.	.	.	.	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
181	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Carpometa	Left	Proximal	.
182	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Ulna	Left	Distal	.
183	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Ulna	Left	Distal	.
184	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Radius	Left	.	.
185	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Radius	Left	.	.
186	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Coracoid	Right	.	.
187	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Mandible	Right	.	.
188	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Phalanx I D	.	.	.
189	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Longbone	.	.	.
190	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Longbone	.	.	.
191	Reservatio	Not Applica	Unit B1	1/4 "	70-80cm	327.61	Longbone	.	.	.
192	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Ulna	Left	Proximal	.
193	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Cuneiform	Indetermin	Complete	.
194	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Cuneiform	Indetermin	Complete	.
195	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Scapholun	Indetermin	Complete	.
196	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Sternum	Axial	Complete	.
197	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Cranial	Axial	.	.
198	Reservatio	Not Applica	Unit B1	1/4 "	60-70cm	327.60	Ulna	Indetermin	Shaft/Diaph	.
199	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Ulna	Left	Proximal	.
200	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Humerus	Right	Distal	.

	class	order	family	subfam	tribe	genus	genspec	common	age
181	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
182	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
183	Aves	.	.	.	.	.	.	Small Bird	adult
184	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
185	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
186	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
187	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
188	Aves	.	.	.	.	.	.	Large Bird	adult
189	Aves	.	.	.	.	.	.	.	adult
190	Aves	.	.	.	.	.	.	.	adult
191	Aves	.	.	.	.	.	.	.	adult
192	Aves	Anseriform	Corvidae	.	.	Corvus	Corvus bra	American C	adult
193	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
194	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
195	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
196	Aves	Galliformes	Phasianida	Phasianina	.	Callipepla	Callipepla c	California	adult
197	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
198	Aves	Piciformes	Picidae	.	.	Colaptes	Colaptes a	Northern R	adult
199	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
200	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
201	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Humerus	Left	Distal	.
202	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Cuneiform	Indetermin	Complete	.
203	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Sternum	Axial	.	.
204	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Humerus	.	Distal	.
205	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Coracoid	Right	Proximal	.
206	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Furculum	Indetermin	Shaft/Diaph	.
207	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Humerus	Indetermin	Shaft/Diaph	.
208	Reservatio	Not Applica	Unit B1	1/4 "	50-60cm	327.59	Coracoid	Right	.	.
209	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Humerus	Right	Complete	.
210	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Humerus	Right	Proximal	.
211	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Ulna	Indetermin	Shaft/Diaph	.
212	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Cuneiform	Indetermin	Complete	.
213	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Longbone	.	.	.
214	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Longbone	.	.	.
215	Reservatio	Not Applica	Unit B1	1/4 "	40-50cm	327.58	Longbone	.	.	.
216	Reservatio	Not Applica	Unit B1	1/4 "	30-40cm	327.55	Longbone	.	.	.
217	Reservatio	Not Applica	Unit B1	1/4 "	20-30cm	327.56	Carpometa	Right	Proximal	.
218	Reservatio	Not Applica	Unit B1	1/4 "	20-30cm	327.56	Scapula	Left	.	.
219	Reservatio	Not Applica	Unit B1	1/4 "	20-30cm	327.56	Longbone	.	.	.
220	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Humerus	Left	Complete	.

	class	order	family	subfam	tribe	genus	genspec	common	age
201	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser caer	Snow Goos	adult
202	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
203	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
204	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
205	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
206	Aves	.	.	.	.	.	.	Large Bird	adult
207	Aves	.	.	.	.	.	.	.	adult
208	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
209	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
210	Aves	.	.	.	.	.	.	Large Bird	adult
211	Aves	.	.	.	.	.	.	Medium Bir	adult
212	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
213	Aves	.	.	.	.	.	.	.	adult
214	Aves	.	.	.	.	.	.	.	adult
215	Aves	.	.	.	.	.	.	.	adult
216	Aves	.	.	.	.	.	.	.	adult
217	Aves	.	.	.	.	.	.	Large Bird	adult
218	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
219	Aves	.	.	.	.	.	.	.	adult
220	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser caer	Snow Goos	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
221	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Humerus	Left	Distal	.
222	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Humerus	Left	Distal	.
223	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Carpometa	Left	Proximal	.
224	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Furculum	Left	Proximal	.
225	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Carpometa	.	.	.
226	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Phalanx I D	Left	Shaft/Diaph	.
227	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Humerus	Right	Proximal	.
228	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Coracoid	Left	Proximal	.
229	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Coracoid	Left	Distal	.
230	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Coracoid	Right	Distal	.
231	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Furculum	Right	Shaft/Diaph	.
232	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Scapholun	Indetermin	Complete	.
233	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cuneiform	Indetermin	Complete	.
234	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cuneiform	Indetermin	Complete	.
235	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Phalanx II	Left	Complete	.
236	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Radius	Right	Proximal	.
237	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Sternum	Left	.	.
238	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Mandible	Left	Proximal	.
239	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Phalanx II	.	Distal	.
240	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Sternum	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
221	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
222	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
223	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
224	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
225	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
226	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
227	Aves	Galliformes	Phasianida	Phasianina	.	Callipepla	Callipepla c	California	adult
228	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
229	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
230	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
231	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
232	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
233	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
234	Aves	Ciconiiform	Ardeidae	.	.	Ardea	Ardea hero	Great Blue	adult
235	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
236	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
237	Aves	Anseriform	Anatidae	Anserinae	Anserini	Branta	Branta can	Canada Go	adult
238	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser albifr	Greater Wh	adult
239	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
240	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
241	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Ulna	Right	Proximal	.
242	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cranial	.	.	.
243	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Ulna	Left	Shaft/Diaph	.
244	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cranial	.	.	.
245	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Tarsometat	Left	Complete	.
246	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Coracoid	Right	Proximal	.
247	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Mandible	.	.	.
248	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Coracoid	.	.	.
249	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cranial	.	.	.
250	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Thorasic V	Axial	Complete	.
251	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Femur	.	Shaft/Diaph	.
252	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Carpometa	Indetermin	Shaft/Diaph	.
253	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Femur	Indetermin	Shaft/Diaph	.
254	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Tibiotarsus	Left	Complete	.
255	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Tibiotarsus	Left	.	.
256	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Tibiotarsus	Right	.	.
257	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
258	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
259	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
260	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.

	class	order	family	subfam	tribe	genus	genspec	common	age
241	Aves	Passerifor	Corvidae	.	.	Corvus	Corvus bra	American C	adult
242	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
243	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	.	Large Goo	adult
244	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
245	Aves	.	.	.	.	.	.	.	juvenile
246	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
247	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
248	Aves	Anseriform	Anatidae	Anatinae	.	.	.	Large Duck	adult
249	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Small Goos	adult
250	Aves	Passerifor	Corvidae	.	.	.	.	Small Bird	adult
251	Aves	.	.	.	.	.	.	.	adult
252	Aves	.	.	.	.	.	.	.	adult
253	Aves	.	.	.	.	.	.	.	adult
254	Aves	Podicepedif	Podicepedi	.	.	Podilymbus	Podilymbus	Pie-Billed G	adult
255	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser caer	Snow Goos	adult
256	Aves	Anseriform	Anatidae	Anserinae	Anserini	.	.	Large Goo	adult
257	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
258	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
259	Aves	Anseriform	Anatidae	.	.	.	.	Large Bird	adult
260	Aves	.	.	.	.	.	.	Medium Bir	juvenile

	site	locus	unitflot	screen	level	accessno	element	side	portion	percent
261	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
262	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
263	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Cevical Ver	Axial	Complete	.
264	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Thorasic V	Axial	Complete	.
265	M7	Not Applica	Not Applica	1/4 "	Lower Mldd	326.05	Thorasic V	Axial	Complete	.
266	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Femur	Left	Complete	.
267	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Indetermin	Axial	.	.
268	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Rib	Indetermin	.	.
269	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Pollex	Right	Complete	.
270	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Furculum	Indetermin	.	.
271	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Femur	Left	Distal	.
272	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Tarsometat	Indetermin	Shaft/Diaph	.
273	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Longbone	.	.	.
274	M7	Not Applica	Not Applica	1/8 "	Lower Mldd	.	Longbone	.	.	.
275	Reservatio	Not Applica	Flotation 17	1/4 "	.	.	Coracoid	Right	Complete	.
276	Reservatio	Not Applica	Flotation 17	1/4 "	.	.	Coracoid	Right	Distal	.
277	Reservatio	Not Applica	Flotation 17	1/8 "	.	.	Longbone	.	.	.
278	Reservatio	Not Applica	Flotation 17	1/8 "	.	.	Longbone	.	.	.
279	Reservatio	Not Applica	Flotation 17	1/8 "	.	.	Longbone	.	.	.

	class	order	family	subfam	tribe	genus	genspec	common	age
261	Aves	.	.	.	.	.	.	Medium Bir	juvenile
262	Aves	.	.	.	.	.	.	Medium Bir	juvenile
263	Aves	.	.	.	.	.	.	Medium Bir	juvenile
264	Aves	.	.	.	.	.	.	Medium Bir	juvenile
265	Aves	.	.	.	.	.	.	Medium Bir	juvenile
266	Aves	Galliformes	Phasianida	Phasianina	.	Callipepla	Callipepla c	California	adult
267	Aves	.	.	.	.	.	.	.	adult
268	Aves	.	.	.	.	.	.	Medium Bir	adult
269	Aves	Anseriform	Anatidae	Anserinae	Anserini	Anser	Anser rossi	Ross Goos	adult
270	Aves	.	.	.	.	.	.	Medium Bir	adult
271	Aves	.	.	.	.	.	.	Large Bird	adult
272	Aves	.	.	.	.	.	.	.	adult
273	Aves	.	.	.	.	.	.	.	adult
274	Aves	.	.	.	.	.	.	.	adult
275	Aves	Anseriform	Anatidae	Anatinae	Anatini	.	.	Large Duck	adult
276	Aves	Anseriform	Anatidae	Anatinae	Anatini	.	.	Large Duck	adult
277	Aves	.	.	.	.	.	.	.	adult
278	Aves	.	.	.	.	.	.	.	adult
279	Aves	.	.	.	.	.	.	.	adult

Locus	Comp		Vol	Float #	Screen	UB/B	Count	Wt. g.	Common name	Scientific name	Element	CFG	SIDE	Comments	Relative size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	California Roach	Hesperoleucus symmetricu	Basipterygium	prx	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	California Roach	Hesperoleucus symmetricu	Basipterygium	NCO	right		
245/H	E2	LM	16.0	2	*1/16	B	13	0.06	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	7	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	1	0.01	Hardhead	Mylopharodon conocephalu	Basipterygium	prx	right	Hardhead c.f.	small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hardhead	Mylopharodon conocephalu	Basipterygium	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Hardhead	Mylopharodon conocephalu	Tooth	fragment	Indet.		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Articular	NCO	left	hitch c.f.	small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Basioccipital	near complete		Hitch c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Basioccipital	near complete		Hitch c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Ceratohyal	near complete	left	Hitch c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Ceratohyal	near complete	left	Hitch c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left	digested	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left	digested; c.f. Hitch	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Basioccipital	fragment		Hitch c.f.	
							11								
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Articular	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	NCO			micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	NCO			micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	NCO			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Minnows	Cyprinidae	Basipterygium	prx	right	G. crassiacauda?	small
245/H	E2	LM	16.0	2	*1/16	UB	1	0.01	Minnows	Cyprinidae	Basipterygium	prx	right	G.crassicuada; compareds with Tui Chub	
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Minnows	Cyprinidae	Basipterygium	prx	left	G.crassicuada; compareds with Tui Chub	average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	left	digested	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	fragment	indet		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Ceratohyal	prx	left		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Ceratohyal	prx	Indet		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	prx	left		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Coracoid	prx	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Coracoid	prx	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	nco	right	G.crassicuada?; compareds with Tui Chub	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	w	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	NCO	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	NCO	?	H. symetricus?	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	NCO	right		micro
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Hyomandibular	medial fragment	right		micro
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Hyomandibular	medial fragment	right		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hypohyal, Lower	NCO	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Hypohyal, Upper	NCO	Indet	upper	
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Hypohyal, Upper	NCO	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hypohyal, Upper	NCO	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Palatine	W	Indet	2PCS	
245/H	E2	LM	16.0	2	*1/16	UB	7	0.03	Minnows	Cyprinidae	Pharyngeal	fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	4	0.03	Minnows	Cyprinidae	Pharyngeal	fragment	right		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	Indet		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	PRX	Indet		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	DST	right		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	right		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	Indet		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	Indet.		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	Indet.		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	Indet.		
245/H	E2	LM	16.0	2	*1/16	UB	1	0.1	Minnows	Cyprinidae	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	0.1	Minnows	Cyprinidae	Scapular	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	NCO	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	NCO	right		small

245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	fragment	Indet		
245/H	E2	LM	16.0	2	*1/16	UB	1	0.02	Minnows	Cyprinidae	Tooth	fragment	Indet.		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Vertebra 1	NCO			small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	NCO			small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Vertebra 1	NCO			small
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Vertebra 1	MRG			small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	NCO			small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Cranial	fragment		Maxillary?	
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Minnows/sucker	Cypriniformes	Dorsal spine	MED			
245/H	E2	LM	16.0	2	*1/16	Indet.	3	0.03	Minnows/sucker	Cypriniformes	Pectoral Ray 1	prx			
245/H	E2	LM	16.0	2	*1/16	UB	3	0.01	Minnows/sucker	Cypriniformes	Pectoral Ray 1	prx			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Pectoral Ray 1	prx			
245/H	E2	LM	16.0	2	*1/16	Indet.	4	0.07	Minnows/sucker	Cypriniformes	Pterygiophore	prx			
245/H	E2	LM	16.0	2	*1/16	B	6	0.04	Minnows/sucker	Cypriniformes	Pterygiophore	prx			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Minnows/sucker	Cypriniformes	Quadrate	prx			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Rib	prx			
245/H	E2	LM	16.0	2	*1/16	UB	5	0.01	Minnows/sucker	Cypriniformes	Webarian Complex	fragment			small
							95	0.5							
245/H	E2	LM	16.0	2	*1/16	B	2	0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	B	2	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	NCO			
245/H	E2	LM	16.0	2	*1/16	Indet.	14	0.06	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
245/H	E2	LM	16.0	2	*1/16	B	25	0.14	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
245/H	E2	LM	16.0	2	*1/16	Indet.	3	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	nco			
							47	0.23							
245/H	E2	LM	16.0	2	*1/16	Indet.	2	0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.0	2	*1/16	UB	5	0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Cleithrum	MED	right		small
245/H	E2	LM	16.0	2	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			micro
245/H	E2	LM	16.0	2	*1/16	UB	3	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	5	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	4	0.01	Ray-finned fish	Actinopterygii	Heamal Spine	prx			
245/H	E2	LM	16.0	2	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Hyplural	prx			
245/H	E2	LM	16.0	2	*1/16	UB	885	2.67	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	455	1.77	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	B	255	1.08	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Maxillary	medial fragment	Indet		small
245/H	E2	LM	16.0	2	*1/16	UB	3	>0.01	Ray-finned fish	Actinopterygii	Opercle	prx			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Preopercle	medial fragment			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	NCO			
245/H	E2	LM	16.0	2	*1/16	UB	36	0.15	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
245/H	E2	LM	16.0	2	*1/16	UB	4	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	nco			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	Indet.	5	0.03	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.0	2	*1/16	UB	18	0.07	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.0	2	*1/16	UB	5	>0.01	Ray-finned fish	Actinopterygii	Scapular	prx			
245/H	E2	LM	16.0	2	*1/16	Indet.	4	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.0	2	*1/16	B	4	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
245/H	E2	LM	16.0	2	*1/16	UB	25	0.11	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.0	2	*1/16	UB	11	0.03	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.0	2	*1/16	UB	5	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
245/H	E2	LM	16.0	2	*1/16	B	42	0.19	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.0	2	*1/16	UB	191	0.54	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.0	2	*1/16	Indet.	78	0.3	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.0	2	*1/16	B	81	0.31	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	35	0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	30	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Vomer	fragment		perch or sculpin	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Vomer	prx			small
245/H	E2	LM	16.0	2	*1/16	UB	5	0.01	Ray-finned fish	Actinopterygii	Webarian Complex	prx			

							2213	7.5							
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlopidotus	Basioccipital	fragment		digested	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	medial fragment			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	NCO			micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	NCO			micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Ceratohyal	dst	left	blackfish c.f.	small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Ceratohyal	dst	left	blackfish c.f.	small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Hypohyal, Upper	NCO	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	right	digested	
245/H	E2	LM	16.0	2	*1/16	UB	2	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	left		
245/H	E2	LM	10.0	2	*1/16	B	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	right		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	fragment			average size
							14								
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Basioccipital	NCO			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Basioccipital	NCO			
245/H	E2	LM	16.0	2	*1/16	UB	1	0.01	Sacramento perch	Archoplites interruptus	Basipterygium	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Ceratohyal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Caratohyal	fragment	left		
245/H	E2	LM	10.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Ceratohyal	near complete	left		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			
245/H	E2	LM	10.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		micro
245/H	E2	LM	10.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	left		small
245/H	E2	LM	10.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	right		small
245/H	E2	LM	10.0	2	*1/16	UB	1	0.1	Sacramento perch	Archoplites interruptus	Hyomandibular	w	right		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Metapterygoid	prx	right		average size
245/H	E2	LM	10.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Otolith	fragment	right		
245/H	E2	LM	10.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Palatine	prx	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Posttemporal	prx	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	prx	right		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	0.01	Sacramento perch	Archoplites interruptus	Premaxillary	NCO	left		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	prx	right		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	prx	right		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Preopercle	NCO	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	0.1	Sacramento perch	Archoplites interruptus	Quadrate	NCO	right		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	0.1	Sacramento perch	Archoplites interruptus	Quadrate	NCO	left		micro
245/H	E2	LM	16.0	2	*1/16	B	1	0.1	Sacramento perch	Archoplites interruptus	Quadrate	prx	left		small
245/H	E2	LM	16.0	2	*1/16	B	1	0.1	Sacramento perch	Archoplites interruptus	Quadrate	prx	right		small
245/H	E2	LM	16.0	2	*1/16	B	1	0.1	Sacramento perch	Archoplites interruptus	Quadrate	prx	right		small
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	NCO			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	WHL			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra, penultimant	NCO			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vomer	dst			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vomer	prx			
							41	0.62							
245/H	E2	LM	10.0	2	*1/16	Indet.	1	>0.01	Sacramento pike minnow	Ptychocheilus grandis	Pharyngeal	medial fragment	left		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Sacramento pike minnow	Ptychocheilus grandis	Pharyngeal	medial fragment	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento pike minnow	Ptychocheilus grandis	Pharyngeal	prx	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento pike minnow	Ptychocheilus grandis	Tooth	fragment	Indet.		
							4								
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	near complete	left	digested; c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	medial fragment	right	c.f.	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento sucker	Archoplites interruptus	Hypohyal, Upper	w	left		small
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Maxillary	NCO	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Pharyngeal	fragment	left		micro
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Pharyngeal	medial fragment	Indet.		micro
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Sacramento sucker	Catostomus occidentalis	Quadrate	prx	right		small
							7								

245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Steelhead/Salmon	Salmonidae	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	3	0.01	Steelhead/Salmon	Salmonidae	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	12	0.05	Steelhead/Salmon	Salmonidae	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/16	B	28	0.14	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	Indet.	15	0.11	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	UB	4	>0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Steelhead/Salmon	Samonidae	Vertebra, misc.	fragment			
							64	0.31							
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.0.1	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.0.1	Thicktail chub	Gila crassicauda	Pharyngeal	prx	right		
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right	digested	
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.0.1	Thicktail chub	Gila crassicauda	Pharyngeal	prx	right	digested	
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	left		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.0.1	Thicktail chub	Gila crassicauda	Pharyngeal	medial fragment	right		
245/H	E2	LM	16.0	2	*1/16	B	1	0.03	Thicktail chub	Gila crassicauda	Pharyngeal	prx	right	digested	
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Thicktailed chub	Gila crassicauda	Basioccipital	WHL			
							10	0.03							
245/H	E2	LM	16.0	2	*1/16	UB	17	0.02	Threespine Stickleback	Gasterosteus aculeatus	Basipterygium	NCO		pelvic spinious attachment	
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Basipterygium	NCO		pelvic spinious attachment	
245/H	E2	LM	16.0	2	*1/16	UB	4	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Cranial	NCO			
245/H	E2	LM	16.0	2	*1/16	UB	10	0.01	Threespine Stickleback	Gasterosteus aculeatus	Dorsal spine attachment	w		dorsal and pelvic attachments for spines	
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Dorsal spine attachment	w			
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Dorsal spine attachment	w			
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Threespine Stickleback	Gasterosteus aculeatus	indet.	fragment			small
245/H	E2	LM	16.0	2	*1/16	UB	3	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Spine	w			
							36	0.03							
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Articular	prx	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Articular	w	left		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Basipterygium	prx	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Basipterygium	prx	?	c.f. tule perch	
245/H	E2	LM	16.0	2	*1/16	Indet.	1	>0.01	Tule perch	Hysterocarpus traski	Ceratohyal	W	right		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Ceratohyal	W	left		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Epihyal	w	left		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Hyomandibular	prx	left		average size
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Hypohyal, Lower	W	left		
245/H	E2	LM	16.0	2	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Maxillary	PRX	right		
245/H	E2	LM	16.0	2	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Vertebra 1	near complete			
							11								
247 M1		A3; 160-180	14.1	4	*1/16	UB	2	0.2	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	2	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	UB	3	0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	1	>0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	6	0.03	Perch, Tule or Sacramento	Perciformes	Pterygiophore	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	2	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	UB	2	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	PRX			
							14	0.08							
247 M1		A3; 160-180	14.1	4	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Epibranchial	nco			
247 M1		A3; 160-180	14.1	4	*1/16	UB	15	0.08	Ray-finned fish	Actinopterygii	Indet.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	35	0.15	Ray-finned fish	Actinopterygii	indet.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	19	0.06	Ray-finned fish	Actinopterygii	indet.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	2	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	B	4	0.03	Ray-finned fish	Actinopterygii	Rib	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Rib	PRX			
247 M1		A3; 160-180	14.1	4	*1/16	UB	8	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	7	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1		A3; 160-180	14.1	4	*1/16	B	12	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1		A3; 160-180	14.1	4	*1/16	UB	3	0.3	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	Indet.	6	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	5	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							117	0.78							
247 M1		A3; 160-180	14.1	4	*1/16	UB	1	0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	fragment		teeth	
247 M1		A3; 160-180	14.1	4	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
247 M1		A3; 160-180	14.1	4	*1/16	UB	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	7	0.05	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1		A3; 160-180	14.1	4	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Vertebra 1	whole			

			5	*1/16	UB	2	0.03	Green or White sturgeon	Acipenser sp.	Scute	fragment				
			5	*1/16	B	6	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment				
			5	*1/16	B	1	>0.01	Minnows	Cyprinidae	Otolith	whole	right		Splittail or G. crassicauda	
			5	*1/16	Indet.	1	0.01	Minnows	Cyprinidae	Pharyngeal	distal	right			
			5	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Pterosphenoid	medial fragment				
			5	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Tooth	fragment				
			5	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete				
						5	0.01								
			5	*1/16	UB	3	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
			5	*1/16	Indet.	2	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
			5	*1/16	B	6	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
						11	0.04								
			5	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	PRX				
			5	*1/16	Indet.	1	0.02	Ray-finned fish	Actinopterygii	Articular	prx	right			
			5	*1/16	UB	3	0.02	Ray-finned fish	Actinopterygii	Indet.	fragment				
			5	*1/16	Indet.	2	0.1	Ray-finned fish	Actinopterygii	Indet.	fragment				
			5	*1/16	B	20	0.08	Ray-finned fish	Actinopterygii	Indet.	fragment				
			5	*1/16	Indet.	3	0.01	Ray-finned fish	Actinopterygii	Rib	prx				
			5	*1/16	Indet.	2	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	PRX				
			5	*1/16	UB	6	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco			Family level distinctions not done	
			5	*1/16	B	14	0.07	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco			Family level distinctions not done	
			5	*1/16	Indet.	18	0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco			Family level distinctions not done	
			5	*1/16	B	15	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment				
			5	*1/16	Indet.	19	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment				
						104	0.62								
			5	*1/16	Indet.	1	0.02	Sacramento perch	Archoplites interruptus	Premaxillary	prx	left			small
			5	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	?			
			5	*1/16	Indet.	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			c.f.	
						3	0.03								
			5	*1/16	B	4	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment				
			5	*1/16	UB	3	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment				
			5	*1/16	B	12	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment				
						19	0.06								
			5	*1/16	B	1	>0.01	Tule perch	Archoplites interruptus	Vertebra 2	near complete				
247 M2	B3; 80-90	8.5	7	*1/16	UB	3	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Quadrate	prx	left			
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	1	0.02	Minnows	Cyprinidae	Vertebra 1	near complete				
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	1	0.02	Minnows	Cyprinidae	Vertebra 2	near complete				
247 M2	B3; 80-90	6.5	7	*1/16	B	1	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	2	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
247 M2	B3; 80-90	6.5	7	*1/16	UB	2	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx				
247 M2	B3; 80-90	6.5	7	*1/16	UB	11	0.04	Ray-finned fish	Actinopterygii	Indet.	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	15	0.06	Ray-finned fish	Actinopterygii	Indet.	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	B	6	0.03	Ray-finned fish	Actinopterygii	Indet.	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco			Family level distinctions not done	
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	6	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco			Family level distinctions not done	
247 M2	B3; 80-90	6.5	7	*1/16	B	9	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	8	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment				
						45	0.22								
247 M2	B3; 80-90	6.5	7	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment				
247 M2	B3; 80-90	6.5	7	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left			
247 M2	B3; 80-90	6.5	7	*1/16	B	1	0.01	Sacramento perch	Archoplites interruptus	Premaxillary	distal	right			
247 U1	B1:30-40	14.0	14	*1/16	B	4	0.06	Green or White sturgeon	Acipenser sp.	Scute	fragment				
247 U1	B1:30-40	14.0	14	*1/16	UB	3	0.03	Green or White sturgeon	Acipenser sp.	Scute	fragment				
247 U1	B1:30-40	14.0	14	*1/16	B	1	0.01	Minnows	Cyprinidae	Otolith	whole	right			
247 U1	B1:30-40	14.0	14	*1/16	UB	1	0.02	Minnows	Cyprinidae	Vertebra 1	near complete				
247 U1	B1:30-40	14.0	14	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Basipterygium	medial fragment	Indet.			
247 U1	B1:30-40	14.0	14	*1/16	UB	3	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		3		
247 U1	B1:30-40	14.0	14	*1/16	Indet.	3	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		3		
247 U1	B1:30-40	14.0	14	*1/16	B	4	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		4		
						10							10		
247 U1	B1:30-40	14.0	14	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Hyplural	prx				
247 U1	B1:30-40	14.0	14	*1/16	B	21	0.09	Ray-finned fish	Actinopterygii	indeterminate	fragment				
247 U1	B1:30-40	14.0	14	*1/16	Indet.	45	0.18	Ray-finned fish	Actinopterygii	indeterminate	fragment				

247 U1	B1;30-40	14.0	14	*1/16	UB	8	0.04	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	B1;30-40	14.0	14	*1/16	Indet.	20	0.1	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	B1;30-40	14.0	14	*1/16	B	16	0.02	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	B1;30-40	14.0	14	*1/16	B	1	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 U1	B1;30-40	14.0	14	*1/16	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 U1	B1;30-40	14.0	14	*1/16	UB	3	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 U1	B1;30-40	14.0	14	*1/16	Indet.	9	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 U1	B1;30-40	14.0	14	*1/16	B	9	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not dono	
247 U1	B1;30-40	14.0	14	*1/16	Indet.	22	0.08	Ray-finned fish	Actinopterygii	Vertebra, Misc.	fragment			
247 U1	B1;30-40	14.0	14	*1/16	B	16	0.08	Ray-finned fish	Actinopterygii	Vertebra, Misc.	fragment			
						172	0.7							
247 U1	B1;30-40	14.0	14	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			
247 U1	B1;30-40	14.0	14	*1/16	B	3	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	B	14	0.12	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	UB	5	0.06	Green or White sturgeon	Acipenser sp.	Scute	fragmont			
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	0.04	Hardhead	Mylopharodon conocephalu	Articular	prx	right		average size
247 U1	A1; 40-50	13.5	17	*1/16	B	1	>0.01	Minnows	Cyprinidae	Basipterygium	prx	right	Hitch?	
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	0.02	Minnows	Cyprinidae	Dentary	prx	right		average size
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	0.01	Minnows	Cyprinidae	Pharyngeal	fragment	left		
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	2	0.02	Minnows/sucker	Cypriniformes	Pectorial Ray 1	prx			
						8	0.09							
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	6	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247 U1	A1; 40-50	13.5	17	*1/16	B	5	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
						12	0.09							
247 U1	A1; 40-50	13.5	17	*1/16	UB	19	0.06	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	41	0.25	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	B	15	0.06	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	UB	4	0.02	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	3	0.02	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	A1; 40-50	13.5	17	*1/16	B	2	0.02	Ray-finned fish	Actinopterygii	Rib	prx			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	2	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	21	0.14	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 U1	A1; 40-50	13.5	17	*1/16	B	9	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 U1	A1; 40-50	13.5	17	*1/16	Indet.	19	0.12	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	B	25	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
						160	0.88							
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Ceratohyal	near complete	left	digested	
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Otolith	whole	left		
247 U1	A1; 40-50	13.5	17	*1/16	B	1	0.01	Sacramento sucker	Catostomus occidentalis	Articular	prx	right	c.f. Sacramento sucker	average size
247 U1	A1; 40-50	13.5	17	*1/16	B	1	0.01	Sacramento sucker	Catostomus occidentalis	Basipterygium	prx	left		average size
247 U1	A1; 40-50	13.5	17	*1/16	B	4	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	UB	3	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 U1	A1; 40-50	13.5	17	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Maxillary	prx	left		average size
247 M2	A1; 90-100	10.5	20	*1/16	Indet.	4	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M2	A1; 90-100	10.5	20	*1/16	B	4	0.09	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M2	A1; 90-100	10.5	20	*1/16	B	1	0.03	Hardhead	Mylopharodon conocephalu	Tooth	fragment	indet.		
247 M2	A1; 90-100	10.5	20	*1/16	UB	1	0.01	Hardhead	Mylopharodon conocephalu	Tooth	fragment	indet.		
247 M2	A1; 90-100	10.5	20	*1/16	B	1	0.01	Minnows	Cyprinidae	Otolith	near complete	right	G. crassicauda?	
247 M2	A1; 90-100	10.5	20	*1/16	B	1	>0.01	Minnows	Cyprinidae	Palatine	nco			
247 M2	A1; 90-100	10.5	20	*1/16	B	1	>0.01	Minnows	Cyprinidae	Vertebra 1	near complete			
247 M2	A1; 90-100	10.5	20	*1/16	B	1	>0.01	Minnows	Cyprinidae	Vertebra 1				
247 M2	A1; 90-100	10.5	20	*1/16	Indet.	3	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247 M2	A1; 90-100	10.5	20	*1/16	B	11	0.05	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247 M2	A1; 90-100	10.5	20	*1/16	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
						15	0.09							
247 M2	A1; 90-100	10.5	20	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Hypiural	prx			
247 M2	A1; 90-100	10.5	20	*1/16	B	50	0.19	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 M2	A1; 90-100	10.5	20	*1/16	UB	20	0.07	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 M2	A1; 90-100	10.5	20	*1/16	Indet.	118	0.42	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
247 M2	A1; 90-100	10.5	20	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Pectorial Ray 1	prx			
247 M2	A1; 90-100	10.5	20	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Pectorial Ray 1	prx			
247 M2	A1; 90-100	10.5	20	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
247 M2	A1; 90-100	10.5	20	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Quadrate	prx	right		

247	M2	A1; 90-100	10.5	20	*1/16	UB	4	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
247	M2	A1; 90-100	10.5	20	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247	M2	A1; 90-100	10.5	20	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247	M2	A1; 90-100	10.5	20	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	nco			
247	M2	A1; 90-100	10.5	20	*1/16	UB	4	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M2	A1; 90-100	10.5	20	*1/16	Indet.	10	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M2	A1; 90-100	10.5	20	*1/16	B	7	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M2	A1; 90-100	10.5	20	*1/16	B	11	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247	M2	A1; 90-100	10.5	20	*1/16	Indet.	22	0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							255	0.93							
247	M2	A1; 90-100	10.5	20	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			
247	M2	A1; 90-100	10.5	20	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
247	M2	A1; 90-100	10.5	20	*1/16	Indet.	1	>0.01	Sacramento sucker	Catostomus occidentalis	Maxillary	nco	right		
247	M2	A1; 90-100	10.5	20	*1/16	B	2	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247	M2	A1; 90-100	10.5	20	*1/16	UB	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247	M2	A1; 90-100	10.5	20	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Vertebra 1	whole			
				23	*1/16	B	5	0.05	Green or White sturgeon	Acipenser sp.	Scute	fragment			
				23	*1/16	UB	1	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
				23	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Basioccipital	fragment			
				23	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Ceratohyal	fragment	Indet.	digested	
				23	*1/16	B	1	>0.01	Minnows	Cyprinidae	Otolith	near complete	left	2 pieces	
				23	*1/16	B	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	nco			
				23	*1/16	B	2	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	nco			
				23	*1/16	UB	2	0.03	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
				23	*1/16	B	1	0.02	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
				23	*1/16	UB	1	0.02	Ray-finned fish	Actinopterygii	Hypural	prx			
				23	*1/16	UB	11	0.05	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
				23	*1/16	Indet.	12	0.06	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
				23	*1/16	B	2	0.01	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
				23	*1/16	Indet.	2	0.02	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
				23	*1/16	UB	2	0.01	Ray-finned fish	Actinopterygii	Rib	prx			
				23	*1/16	Indet.	2	0.01	Ray-finned fish	Actinopterygii	Rib	prx			
				23	*1/16	UB	1	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
				23	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
				23	*1/16	Indet.	4	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
				23	*1/16	UB	6	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
				23	*1/16	B	3	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
				23	*1/16	Indet.	10	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
				23	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
				23	*1/16	Indet.	17	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
				23	*1/16	B	3	>0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							79	0.4							
				23	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			
				23	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Ceratohyal	whole	left		
				23	*1/16	B	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
				23	*1/16	UB	3	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/16	B	1	0.02	Chinook salmon	Oncorhynchus tshawytscha	Tooth	fragment			
158B	E1	U2	12.3	25	*1/16	B	10	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U2	12.3	25	*1/16	UB	6	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U2	12.3	25	*1/16	Indet.	1	0.01	Hardhead	Mylopharodon conocephalu	Hyomandibular	prx	?	In 2 pieces	
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left	Hitch c.f.	
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left	Hitch c.f.; digested	
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	prx			
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Minnows	Cyprinidae	Coracoid	prx	left		micro
158B	E1	U2	12.3	25	*1/16	B	1	0.01	Minnows	Cyprinidae	Otolith	whole	right		
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Minnows	Cyprinidae	Scapular	prx	left		micro
158B	E1	U2	12.3	25	*1/16	B	2	>0.01	Minnows	Cyprinidae	Tooth	fragment	Indet.		
158B	E1	U2	12.3	25	*1/16	UB	2	0.01	Minnows	Cyprinidae	Vertebra 1	near complete			
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
							12	0.02							
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Perch, Tule or Sacramento	Perciformes	Hypural	prx			
158B	E1	U2	12.3	25	*1/16	UB	5	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158B	E1	U2	12.3	25	*1/16	B	4	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
							11	0.02							
158B	E1	U2	12.3	25	*1/16	UB	4	0.02	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
158B	E1	U2	12.3	25	*1/16	UB	182	0.62	Ray-finned fish	Actinopterygii	Indeterminate	fragment			

158B	E1	U2	12.3	25	*1/16	Indet.	30	0.2	Ray-finned fish	Actinopterygii	indeterminate	fragment			
158B	E1	U2	12.3	25	*1/16	B	59	0.24	Ray-finned fish	Actinopterygii	indeterminate	fragment			
158B	E1	U2	12.3	25	*1/16	UB	4	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158B	E1	U2	12.3	25	*1/16	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158B	E1	U2	12.3	25	*1/16	UB	13	0.05	Ray-finned fish	Actinopterygii	Rib	prx			
158B	E1	U2	12.3	25	*1/16	Indet.	2	0.03	Ray-finned fish	Actinopterygii	Rib	prx			
158B	E1	U2	12.3	25	*1/16	UB	5	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
158B	E1	U2	12.3	25	*1/16	UB	32	0.11	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/16	B	6	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/16	Indet.	11	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/16	UB	19	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/16	B	11	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/16	Indet.	16	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							397	1.47							
158B	E1	U2	12.3	25	*1/16	UB	3	>0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	fragment	indet.		
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Sacramento blackfish	Pogonichthys macrolepidot	Tooth	fragment	indet.		
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Basipterygium	nco	right		micro
158B	E1	U2	12.3	25	*1/16	UB	2	>0.01	Sacramento perch	Archoplites interruptus	Lacrymal	fragment	right		
158B	E1	U2	12.3	25	*1/16	B	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
158B	E1	U2	12.3	25	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra, Penultimate	near complete			
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Otolith	whole	left	Sacramento perch c.f.	
							6	0.01							
158B	E1	U2	12.3	25	*1/16	B	1	>0.01	Sacramento sucker	Catostomus occidentalis	Ceratohyal	prx	right		
158B	E1	U2	12.3	25	*1/16	B	10	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/16	UB	21	0.05	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	medial fragment	left	Thicktail chub c.f.; digested	
245/H	E2	LM	16.5	28	*1/16	B	8	0.06	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.5	28	*1/16	UB	3	0.03	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.5	28	*1/16	UB	2	0.01	Green or White sturgeon	Acipenser sp.	Scute	whole			micro
							13	0.1							
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	fragment	left		
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	nco	right		small
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	prx			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	left		
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	right	larger than all others	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	medial fragment	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	medial fragment	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	prx	?		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Maxillary	nco	left	G. crassicauda?	small
245/H	E2	LM	16.5	28	*1/16	UB	7	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	left		
245/H	E2	LM	16.5	28	*1/16	UB	5	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	right		
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	left		
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	right		
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	prx	right		small
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	prx	right		small
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Scapular	prx	left		small
245/H	E2	LM	16.5	28	*1/16	UB	4	>0.01	Minnows	Cyprinidae	Tooth	fragment	Indet.		
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	near complete		2 pieces	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	near complete		digested	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	minnows	Cyprinidae	Vertebra 2	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Basipterygium	prx	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Basipterygium	prx	left		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Basipterygium	prx	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Cleithrum	medial fragment	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Hypural	near complete			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Opercle	prx	indet.		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Minnows/sucker	Cypriniformes	Scapular	prx	right		average size
							44								
245/H	E2	LM	16.5	28	*1/16	UB	2	>0.01	Perch, Tule or Sacramento	Perciformes	Indet.	nco	Indet.		
245/H	E2	LM	16.5	28	*1/16	UB	18	0.07	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
245/H	E2	LM	16.5	28	*1/16	Indet.	3	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
245/H	E2	LM	16.5	28	*1/16	B	15	0.07	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
							38	0.15							

245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Fish Indeterminate	Actinopterygii	Otolith	whole	indet.	water worn	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Fish indeterminate	Actinopterygii	Otolith	near complete	indet.	water worn	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Fish indeterminate	Actinopterygii	Otolith	near complete	indet.	water worn	
245/H	E2	LM	16.5	28	*1/16	UB	6	0.05	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.5	28	*1/16	Indet.	2	0.04	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.5	28	*1/16	UB	3	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.5	28	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Dentary	medial fragment	?		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Hyplural	nco			
245/H	E2	LM	16.5	28	*1/16	UB	1	0.01	Ray-finned fish	Actinopterygii	Hyplural	dst			
245/H	E2	LM	16.5	28	*1/16	UB	453	1.05	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.5	28	*1/16	Indet.	142	0.51	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.5	28	*1/16	B	147	0.57	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Otolith	near complete	indet.	water worn	
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Rey-finned fish	Actinopterygii	Pectoral Ray 1	prx			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Posttemporal	medial fragment			micro
245/H	E2	LM	16.5	28	*1/16	UB	12	0.03	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
245/H	E2	LM	16.5	28	*1/16	Indet.	5	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
245/H	E2	LM	16.5	28	*1/16	UB	17	0.03	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.5	28	*1/16	B	3	0.01	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.5	28	*1/16	UB	13	0.03	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.5	28	*1/16	UB	3	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
245/H	E2	LM	16.5	28	*1/16	UB	159	0.44	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/16	Indet.	17	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/16	B	31	0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/16	UB	18	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.5	28	*1/16	Indet.	21	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.5	28	*1/16	B	69	0.23	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							1130	3.3							
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	fragment			1 micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	left		1 small
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	fragment	indet.		1 small
							3								3
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Basioccipital	near complete			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Basipterygium	prx	left		
245/H	E2	LM	16.5	28	*1/16	UB	2	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	nco	left		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	dst	right		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	dst	right		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	dst	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	dst	right		micro
245/H	E2	LM	16.5	28	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	dst	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Palatine	prx	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Posttemporal	prx	right		small
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra, Penultimate	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Ceratohyal	near complete	left		
							15	0.01							
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Articular	prx	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	1	0.01	Steelhead/Salmon	Salmonidae	Hyplural	prx			micro
245/H	E2	LM	16.5	28	*1/16	UB	4	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			micro
245/H	E2	LM	16.5	28	*1/16	B	11	0.07	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			micro
							16	0.1							
245/H	E2	LM	16.5	28	*1/16	UB	2	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	left		
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right		
245/H	E2	LM	16.5	28	*1/16	UB	3	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Basipterygium	prx	left		micro
245/H	E2	LM	16.5	28	*1/16	UB	2	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Basipterygium	near complete	right		micro
245/H	E2	LM	16.5	28	*1/16	UB	2	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Indet.	fragment		ID=pelvic armor plate?	micro
245/H	E2	LM	16.5	28	*1/16	UB	5	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Pelvic spine attachment	nco			micro
245/H	E2	LM	16.5	28	*1/16	UB	3	>0.01	Threespine Stickleback	Gasterosteus aculeatus	Spine	nco			micro
							15								
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Basioccipital	whole			
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Basipterygium	prx	left		average size
245/H	E2	LM	16.5	28	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Pterosphenoid	medial fragment	indet.		micro
158B	E1	U1	17.0	31	*1/16	B	4	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U1	17.0	31	*1/16	UB	8	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	prx	?		micro

158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	fragment			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basipterygium	medial fragment	?		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	left		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	right		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	fragment	right	Sacramento pike minnow?	
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	right	digested	
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	left		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	prx	right		
158B	E1	U1	17.0	31	*1/16	B	1	>0.01	Minnows	Cyprinidae	Scapular	fragment	left		small
158B	E1	U1	17.0	31	*1/16	UB	2	>0.01	Minnows	Cyprinidae	Tooth	fragment			
158B	E1	U1	17.0	31	*1/18	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 1	nco			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Hypohyal, Upper	nco	right		
							14								
158B	E1	U1	17.0	31	*1/16	B	4	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158B	E1	U1	17.0	31	*1/16	Indet.	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158B	E1	U1	17.0	31	*1/18	UB	1	0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
158B	E1	U1	17.0	31	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Basipterygium	prx	right		
158B	E1	U1	17.0	31	*1/16	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Hyplural	whole			
158B	E1	U1	17.0	31	*1/16	UB	259	0.86	Ray-finned fish	Actinopterygii	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	Indet.	48	0.18	Ray-finned fish	Actinopterygii	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	B	50	0.21	Ray-finned fish	Actinopterygii	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	UB	3	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158B	E1	U1	17.0	31	*1/16	UB	4	0.02	Ray-finned fish	Actinopterygii	Rib	prx			
158B	E1	U1	17.0	31	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
158B	E1	U1	17.0	31	*1/16	UB	5	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158B	E1	U1	17.0	31	*1/16	B	2	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158B	E1	U1	17.0	31	*1/16	Indet.	5	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
158B	E1	U1	17.0	31	*1/16	B	14	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U1	17.0	31	*1/16	Indet.	7	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U1	17.0	31	*1/16	UB	11	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U1	17.0	31	*1/16	B	6	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U1	17.0	31	*1/16	Indet.	14	0.07	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U1	17.0	31	*1/16	UB	18	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
							451	1.58							
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Articular	prx	left	c.f. sac perch	micro
158B	E1	U1	17.0	31	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Basioccipital	nco			
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Basipterygium	prx	left		micro
158B	E1	U1	17.0	31	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Hypohyal, Lower	nco	right		
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Maxillary	fragment	right		
158B	E1	U1	17.0	31	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Maxillary	prx	right		small
							7								
158B	E1	U1	17.0	31	*1/16	UB	9	0.03	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	B	4	0.02	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	Indet.	2	0.01	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158B	E1	U1	17.0	31	*1/16	UB	14	0.06	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U1	17.0	31	*1/16	Indet.	4	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U1	17.0	31	*1/16	B	6	0.04	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
							39	0.19							
158B	E1	U1	17.0	31	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Ceratohyal	whole	right		
247	M1	A1;140-150	12.5	35	*1/16	B	5	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	3	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247	M1	A1;140-150	12.5	35	*1/16	B	1	>0.01	Minnows	Cyprinidae	Dentary	fragment	?		
247	M1	A1;140-150	12.5	35	*1/16	Indet.	1	0.04	Minnows	Cyprinidae	Pharyngeal	medial fragment	right		
247	M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
247	M1	A1;140-150	12.5	35	*1/16	B	5	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	3	0.03	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Hyplural	prx			
247	M1	A1;140-150	12.5	35	*1/16	UB	7	>0.01	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	14	0.04	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1;140-150	12.5	35	*1/16	B	2	0.03	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	2	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
247	M1	A1;140-150	12.5	35	*1/16	B	2	0.03	Ray-finned fish	Actinopterygii	Rib	prx			
247	M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
247	M1	A1;140-150	12.5	35	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			

247 M1	A1;140-150	12.5	35	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 M1	A1;140-150	12.5	35	*1/16	B	2	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247 M1	A1;140-150	12.5	35	*1/16	UB	12	0.11	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1	A1;140-150	12.5	35	*1/16	B	16	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1	A1;140-150	12.5	35	*1/16	Indet.	16	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1	A1;140-150	12.5	35	*1/16	B	8	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	9	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247 M1	A1;140-150	12.5	35	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Webarian Complex	prx			
						97	0.49							
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento blackfish	Orthedon microlepidotus	Tooth	fragment			
247 M1	A1;140-150	12.5	35	*1/16	UB	1	>0.01	Sacramento perch	Archoplites Interruptus	Basioccipital	near complete			
247 M1	A1;140-150	12.5	35	*1/16	UB	1	>0.01	Sacramento perch	Archoplites Interruptus	Basioccipital	near complete			
247 M1	A1;140-150	12.5	35	*1/16	UB	1	>0.01	Sacramento perch	Archoplites Interruptus	Basioccipital	near complete			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	0.01	Sacramento perch	Archoplites interruptus	Basipterygium	prx	left		micro
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	right	Sacramento perch c.f.	micro
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	left	Sacramento perch c.f.	micro
247 M1	A1;140-150	12.5	35	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
247 M1	A1;140-150	12.5	35	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra, Penultimate	near complete			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra, Penultimate	near complete			
						11								
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	>0.01	Sacramento pike minnow	Ptychocheilus grandis	Tooth	fragment			
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	0.01	Sacramento sucker	Catostomus occidentalis	Anguler	nco	left		
247 M1	A1;140-150	12.5	35	*1/16	Indet.	1	0.01	Sacramento sucker	Catostomus occidentalis	Quadrate	prx	left		
247 M1	A1;140-150	12.5	35	*1/16	B	1	>0.01	Steelhead/Salmon	Salmonidae	Tooth	fragment			
247 M1	A1;140-150	12.5	35	*1/16	B	2	>0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1	A1; 130-140	15.5	36	*1/16	B	4	0.05	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M1	A1; 130-140	15.5	38	*1/16	UB	3	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	left		
247 M1	A1; 130-140	15.5	36	*1/16	B	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	right		
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Minnows	Cyprinidae	Otolith	fragment	left		
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Minnows	Cyprinidae	Otolith	fragment	indet.	Bleckfish??	
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	left		
247 M1	A1; 130-140	15.5	36	*1/16	B	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	left	TOT attachments	
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	10	0.07	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	8	0.05	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Hyplural	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Hyplural	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	84	0.14	Ray-finned fish	Actinopterygii	indet.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	78	0.2	Ray-finned fish	Actinopterygii	indet.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	222	0.6	Ray-finned fish	Actinopterygii	indet.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	1	0.02	Ray-finned fish	Actinopterygii	Opercle	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	4	0.02	Ray-finned fish	Actinopterygii	Pterygiophore	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	8	0.01	Ray-finned fish	Actinopterygii	Rib	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	3	0.03	Ray-finned fish	Actinopterygii	Rib	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	2	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	4	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	3	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			micro
247 M1	A1; 130-140	15.5	38	*1/16	B	9	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	13	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	4	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	17	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1	A1; 130-140	15.5	38	*1/16	Indet.	17	0.07	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247 M1	A1; 130-140	15.5	38	*1/16	B	10	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
						483	1.31							
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	whole			
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Otolith	near complete	left		
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	right		micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Basioccipital	nco			micro
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Sacramento sucker	Catostomus occidentalis	Ceratohyal	near complete	right	digested?	
247 M1	A1; 130-140	15.5	38	*1/16	UB	1	>0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1	A1; 130-140	15.5	38	*1/16	Indet..	4	0.05	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1	A1; 130-140	15.5	38	*1/16	B	10	0.07	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247 M1	A1; 130-140	15.5	38	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Ceratohyal	nco	left	match with Davis spec. 5367 for size sl=111mi average size	

247	M1	A1; 130-140	15.5	38	*1/16	Indet.	1	>0.01	Tule perch	Hysterocarpus traski	Quadrate	prx	left	match with Davis spec. 5387 for size sl=111mı average size	
247	M1	A1; 130-140	15.5	38	*1/16	Indet.	1	>0.01	Tule perch	Hysterocarpus traski	Vertebra, penultimant	nco			
247	M1	A1; 150-160	14.0	44	*1/16	B	10	0.07	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	UB	2	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basipterygium	prx	right	fragment	
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basipterygium	fragment	right		
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	near complete	left	hitch?	
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	right		
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	B	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
							7								
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	B	2	>0.01	Perch, Tule or Sacramento	Perciformes	Cranial	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	B	12	0.05	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247	M1	A1; 150-160	14.0	44	*1/16	UB	2	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	6	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
							23	0.11							
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	1	0.02	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
247	M1	A1; 150-160	14.0	44	*1/16	B	1	0.02	Ray-finned fish	Actinopterygii	Hyplural	prx			
247	M1	A1; 150-160	14.0	44	*1/16	UB	84	0.17	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	83	0.21	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	B	51	0.13	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	UB	2	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	3	0.02	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
247	M1	A1; 150-160	14.0	44	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	3	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
247	M1	A1; 150-160	14.0	44	*1/16	UB	4	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	4	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247	M1	A1; 150-160	14.0	44	*1/16	B	2	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
247	M1	A1; 150-160	14.0	44	*1/16	UB	3	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	17	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	B	21	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
247	M1	A1; 150-160	14.0	44	*1/16	UB	19	0.07	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	5	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M1	A1; 150-160	14.0	44	*1/16	B	8	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
							314	0.89							
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Articular	nco	right		
247	M1	A1; 150-160	14.0	44	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	right		average size
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Palatine	nco	left		micro
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Posttemporal	nco	left		micro
247	M1	A1; 150-160	14.0	44	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
							5								
247	M1	A1; 150-160	14.0	44	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Articular	nco	left	c.f. tule perch	micro
247	M1	A1; 150-160	14.0	44	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Articular	nco	right	c.f. tule perch	micro
158D	E1	LM	10.2	54	*1/16	Indet.	1	>0.01	Chinook salmon	Oncorhynchus tshawytscha	Vertebra, misc.	fragment			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158D	E1	LM	10.2	54	*1/16	B	13	0.07	Green or White sturgeon	Acipenser sp.	Scute	fragment		2 pieces are micro	micro
158D	E1	LM	10.2	54	*1/16	B	1	>0.01	Hitch	Lavinia exilicauda	Pharyngeal	near complete	right	c.f. Hitch	
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Basioccipital	nco		H. symetricus?;	micro
158D	E1	LM	10.2	54	*1/16	B	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158D	E1	LM	10.2	54	*1/16	UB	17	0.12	Ray-finned fish	Actinopterygii	Indet.	fragment			
158D	E1	LM	10.2	54	*1/16	Indet.	14	0.05	Ray-finned fish	Actinopterygii	Indet.	fragment			
158D	E1	LM	10.2	54	*1/16	B	19	0.12	Ray-finned fish	Actinopterygii	Indet.	fragment			
158D	E1	LM	10.2	54	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158D	E1	LM	10.2	54	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
158D	E1	LM	10.2	54	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
158D	E1	LM	10.2	54	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Rib	prx			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158D	E1	LM	10.2	54	*1/16	Indet.	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158D	E1	LM	10.2	54	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158D	E1	LM	10.2	54	*1/16	UB	3	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158D	E1	LM	10.2	54	*1/16	Indet.	4	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158D	E1	LM	10.2	54	*1/16	B	8	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			

158D	E1	LM	10.2	54	*1/16	UB	10	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158D	E1	LM	10.2	54	*1/16	Indet.	5	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158D	E1	LM	10.2	54	*1/16	B	6	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
							94	0.39							
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	fragment			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Posttemporal	fragment	?		micro
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Threespine stickleback	Gasterosteus aculeatus	Pelvic spine attachment	nco			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Threespine stickleback	Gasterosteus aculeatus	Spine	whole			
158D	E1	LM	10.2	54	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Epihyal	whole	left	LARGE<139mm TL by 10%	large
158A	E2	T34	10.0	57	*1/16	UB	2	>0.01	Chinook salmon	Oncorhynchus tshawytscha	Tooth	whole			
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Chinook salmon	Oncorhynchus tshawytscha	Tooth	fragment		c.f. chinook salmon	
158A	E2	T34	10.0	57	*1/16	UB	2	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158A	E2	T34	10.0	57	*1/16	B	5	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Hitch	Lavinia exilicauda	Articular	nco	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Hitch	Lavinia exilicauda	Dentary	nco	left	c.f. Hitch	micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	nco	left		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Articular	nco	right		average size
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	left		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	near complete	left		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Ceratohyal	fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Coracoid	prx	left		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Epihyal	nco		Hitch?	micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	right		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Pharyngeal	fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Pharyngeal	medial fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Minnows	Cyprinidae	Scapular	prx	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Tooth	fragment			micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	near complete			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows	Cyprinidae	Vertebra 2	nco			micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Basioccipital	dst			micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Basioccipital	dst			micro
158A	E2	T34	10.0	57	*1/16	UB	2	>0.01	Minnows/sucker	Cypriniformes	Basioccipital	nco			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Minnows/sucker	Cypriniformes	Hypohyal, Upper	whole			micro
							24								
158A	E2	T34	10.0	57	*1/16	UB	11	0.03	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158A	E2	T34	10.0	57	*1/16	Indet.	2	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
158A	E2	T34	10.0	57	*1/16	B	6	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
							19	0.06							
158A	E2	T34	10.0	57	*1/16	UB	3	0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
158A	E2	T34	10.0	57	*1/16	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Hypural	prx			
158A	E2	T34	10.0	57	*1/16	UB	501	1.13	Ray-finned fish	Actinopterygii	indet.	fragment			
158A	E2	T34	10.0	57	*1/16	Indet.	109	0.39	Ray-finned fish	Actinopterygii	indet.	fragment			
158A	E2	T34	10.0	57	*1/16	B	122	0.43	Ray-finned fish	Actinopterygii	indet.	fragment			
158A	E2	T34	10.0	57	*1/16	UB	8	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	nco			
158A	E2	T34	10.0	57	*1/16	B	4	0.01	Ray-finned fish	Actinopterygii	Pterygiophore	prx			
158A	E2	T34	10.0	57	*1/16	B	2	>0.01	Ray-finned fish	Actinopterygii	Quadrate	prx	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Ray-finned fish	Actinopterygii	Quadrate	prx	left		micro
158A	E2	T34	10.0	57	*1/16	UB	7	0.01	Ray-finned fish	Actinopterygii	Rib	prx			
158A	E2	T34	10.0	57	*1/16	UB	22	0.06	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158A	E2	T34	10.0	57	*1/16	UB	2	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	dst			
158A	E2	T34	10.0	57	*1/16	Indet.	5	0.05	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158A	E2	T34	10.0	57	*1/16	UB	43	0.17	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158A	E2	T34	10.0	57	*1/16	Indet.	8	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158A	E2	T34	10.0	57	*1/16	B	23	0.08	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158A	E2	T34	10.0	57	*1/16	UB	72	0.16	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158A	E2	T34	10.0	57	*1/16	Indet.	4	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158A	E2	T34	10.0	57	*1/16	B	14	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158A	E2	T34	10.0	57	*1/16	UB	4	>0.01	Ray-finned fish	Actinopterygii	Webarian Complex	NCO			micro
							956	2.6							
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Hyomandibular	nco	right	c.f. blackfish	micro
158A	E2	T34	10.0	57	*1/16	UB	2	>0.01	Sacramento blackfish	Orthodon microlepidotus	Tooth	fragment			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Articular	prx	right		micro

158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Basioccipital	NCO			micro
158A	E2	T34	10.0	57	*1/16	B	2	>0.01	Sacramento perch	Archoplites interruptus	Cranial	fragment	indet.		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		micro
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		micro
158A	E2	T34	10.0	57	*1/16	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Epihyal	prx	left		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Otolith	whole	?		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Palatine	dst	right		micro
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	prx	left		micro
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Vertebra, penultimant	NCO			micro
							17								
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	whole	left		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	whole	right		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	whole	left		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	near complete	left		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	near complete	right		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Sacramento Splittail	Pogonichthys macrolepidot	Pharyngeal	near complete	left		
							6								
158A	E2	T34	10.0	57	*1/16	UB	35	0.08	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158A	E2	T34	10.0	57	*1/16	Indet.	10	0.04	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158A	E2	T34	10.0	57	*1/16	B	11	0.04	Steelhead/Salmon	Salmonidae	Indet.	fragment			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Steelhead/Salmon	Salmonidae	Nural spine	fragment			
158A	E2	T34	10.0	57	*1/16	UB	29	0.17	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158A	E2	T34	10.0	57	*1/16	Indet.	16	0.07	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158A	E2	T34	10.0	57	*1/16	B	22	0.09	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
							124	0.49							
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Basioccipital	near complete			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Basioccipital	near complete			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Basioccipital	fragment			
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right		
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Threespine stickleback	Gasterosteus aculeatus	Pelvic spine attachment	nco	left		average size
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Threespine stickleback	Gasterosteus aculeatus	Spine	nco			average size
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Threespine stickleback	Gasterosteus aculeatus	Urostyal	nco			average size
158A	E2	T34	10.0	57	*1/16	UB	1	>0.01	Tule perch	Hysterocarpus traski	Coratohyal	medial fragment	right		
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Mesopterygoid	prx	left		micro
158A	E2	T34	10.0	57	*1/16	B	1	>0.01	Tule perch	Hysterocarpus traski	Mesopterygoid	prx	right		average size
245/H	E2	LM	16.0	2	*1/4	Indet.	1	0.08	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.0	2	*1/4	UB	2	0.1	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/4	Indet.	1	0.09	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.0	2	*1/4	UB	3	>0.01	Ray-finned fish	Actinopterygii	Scapular	nco			
245/H	E2	LM	16.0	2	*1/4	UB	1	0.32	Steelhead/Salmon	Salmonidae	Exoccipital	nco	left		
245/H	E2	LM	16.0	2	*1/4	B	3	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
247	M1	A3; 160-180	14.1	4	*1/4	Indet.	1	0.25	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A3; 160-180	14.1	4	*1/4	UB	2	>0.01	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A3; 160-180	14.1	4	*1/4	UB	2	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	NCO			
				5	*1/4	B	1	0.31	Green or White sturgeon	Acipenser sp.	Scute	fragment			
				5	*1/4	Indet.	1	1.59	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
247	M2	B3; 80-90	6.5	7	*1/4		0							NO FISH REMAINS	
247	U1	B1:30-40	14.0	14	*1/4		0							NO FISH REMAINS	
247	U1	A1; 40-50	13.5	17	*1/4	UB	1	0.38	Green or White sturgeon	Acipenser sp.	Dorsal Scute	fragment			
247	U1	A1; 40-50	13.5	17	*1/4	UB	5	0.32	Green or White sturgeon	Acipenser sp.	Scute	fragment		one is a lateral Scute	
247	M2	A1; 90-100	10.5	20	*1/4	B	1	0.16	Green or White sturgeon	Acipenser sp.	Scute	fragment			
247	M2	A1; 90-100	10.5	20	*1/4	UB	1	0.36	Ray-finned fish	Actinopterygii	Cranial	fragment			
247	M2	A1; 90-100	10.5	20	*1/4	B	1	0.15	Sacramento sucker	Catostomus occidentalis	Pharyngeal	medial fragment	left		
				23	*1/4		0							NO FISH REMAINS	
158B	E1	U2	12.3	25	*1/4	UB	1	0.17	Green or White sturgeon	Acipenser sp.	Scute	fragment		NO ELEMENTS	
158B	E1	U2	12.3	25	*1/4	UB	1	0.07	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/4	B	1	0.29	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.5	28	*1/4	UB	1	0.06	Minnows	Cyprinidae	Coracoid	nco	right	G. crassicauda?	average size
245/H	E2	LM	16.5	28	*1/4	UB	1	0.22	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.5	28	*1/4	UB	4	0.15	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
245/H	E2	LM	16.5	28	*1/4	UB	1	0.13	Sacramento perch	Archoplites interruptus	Articular	prx	right	in 2 pieces	average size

245/H	E2	LM	16.5	28	*1/4	UB	1	0.16	Sacramento perch	Archoplites interruptus	Vertebra, Caudal 1	nco			average size
158B	E1	U1	17.0	31	*1/4	UB	1	0.1	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U1	17.0	31	*1/4	UB	1	0.02	Ray-finned fish	Actinopterygii	indet.	fragment			
158B	E1	U1	17.0	31	*1/4	UB	1	0.11	Sacramento perch	Archoplites interruptus	Vertebra, Caudal 1	near complete		caudal vert.	
247	M1	A1;140-150	12.5	35	*1/4		0							NO FISH REMAINS	
247	M1	A1; 130-140	15.5	38	*1/4	UB	1	0.09	Green or White sturgeon	Acipenser sp.	Scute	fragment		caudal vert	
247	M1	A1; 130-140	15.5	38	*1/4	Indet.	2	0.45	Ray-finned fish	Actinopterygii	indet.	fragment			
247	M1	A1; 130-140	15.5	38	*1/4	B	1	0.12	Ray-finned fish	Actinopterygii	Indet.	fragment			
247	M1	A1; 130-140	15.5	38	*1/4	B	1	0.2	Sacramento perch	Archoplites interruptus	Vertebra, Caudal 1	nco			
247	M1	A1; 150-160	14.0	44	*1/4	B	1	0.07	Minnows	Cyprinidae	Basipterygium	prx	right	weird, G. crassicauda?	
247	M1	A1; 150-160	14.0	44	*1/4	UB	1	0.14	Ray-finned fish	Actinopterygii	indet.	fragment			
158D	E1	LM	10.2	54	*1/4	B	1	0.2	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158A	E2	T34	10.0	57	*1/4	UB	1	0.49	Chinook salmon	Oncorhynchus tshawytscha	Cranial	fragment			
158A	E2	T34	10.0	57	*1/4	UB	1	0.06	Chinook salmon	Oncorhynchus tshawytscha	Pterygiophore	nco			
158A	E2	T34	10.0	57	*1/4	UB	2	0.25	Ray-finned fish	Actinopterygii	indet.	fragment			
158A	E2	T34	10.0	57	*1/4	B	1	0.05	Ray-finned fish	Actinopterygii	Spinious shaft fragments	fragment			
158A	E2	T34	10.0	57	*1/4	UB	1	0.1	Sacramento sucker	Catostomus Occidentalis	Epihyal	whole	?		
245/H	E2	LM	16.0	2	*1/8	Indet.	3	0.14	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.08	Green or White sturgeon	Acipenser sp.	Scute	fragment			
							4	0.22							
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Minnows	Cyprinidae	Basioccipital	fragment			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Minnows	Cyprinidae	Basipterygium	fragment	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Minnows	Cyprinidae	Basipterygium	prx	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Minnows	Cyprinidae	Ceratohyal	near complete	right		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.04	Minnows	Cyprinidae	Epihyal	whole	left	c.f. g. bicolor; poss. G. crassicauda	
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Minnows	Cyprinidae	Hyomandibular	prx	Indet.		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Minnows	Cyprinidae	Hyomandibular	prx	left	G. crassicauda?	
245/H	E2	LM	16.0	2	*1/8	Indet.	1	0.01	Minnows	Cyprinidae	Scapular	nco	left	G. crassicauda?	
245/H	E2	LM	16.0	2	*1/8	UB	1	0.03	Minnows	Cyprinidae	Vertebra 2	near complete			
245/H	E2	LM	16.0	2	*1/8	B	1	0.02	Minnows/sucker	Cypriniformes	Basipterygium	prx	Indet.		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Minnows/sucker	Cypriniformes	Hyomandibular	nco	?		
							11	0.15							
245/H	E2	LM	16.0	2	*1/8	UB	2	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	whole			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.02	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx			
							3	0.04							
245/H	E2	LM	16.0	2	*1/8	UB	1	0.04	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Cleithrum	prx	right		
245/H	E2	LM	16.0	2	*1/8	UB	11	0.4	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/8	Indet.	7	0.35	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.0	2	*1/8	UB	65	0.96	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.0	2	*1/8	Indet.	7	0.33	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.0	2	*1/8	B	10	0.22	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Opercle	prx	Indet.		
245/H	E2	LM	16.0	2	*1/8	UB	2	0.04	Ray-finned fish	Actinopterygii	Rib	prx			
245/H	E2	LM	16.0	2	*1/8	Indet.	1	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.0	2	*1/8	B	13	0.37	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.0	2	*1/8	UB	24	0.62	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
							143	3.35							
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	near complete			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.05	Sacramento blackfish	Orthodon microlepidotus	Basioccipital	fragment		4 pieces	
245/H	E2	LM	16.0	2	*1/8	B	1	0.03	Sacramento blackfish	Orthodon microlepidotus	Hyomandibular	prx	right	c.f.	
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	near complete	right		
							4	0.1							
245/H	E2	LM	16.0	2	*1/8	B	1	0.02	Sacramento perch	Archoplites interruptus	Basioccipital	near complete			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.02	Sacramento perch	Archoplites interruptus	Basioccipital	near complete			
245/H	E2	LM	16.0	2	*1/8	B	1	0.03	Sacramento perch	Archoplites interruptus	Basioccipital	near complete			
245/H	E2	LM	16.0	2	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Ceratohyal	prx	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.04	Sacramento perch	Archoplites interruptus	Ceratohyal	prx	right		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Coracoid	near complete	right		
245/H	E2	LM	16.0	2	*1/8	Indet.	1	0.02	Sacramento perch	Archoplites interruptus	Dentary	prx	right		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.03	Sacramento perch	Archoplites interruptus	Epihyal	prx	right		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Lacrymal	prx	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.03	Sacramento perch	Archoplites interruptus	Otolith	near complete	left	c.f.	
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Parasphenoid	medial fragment			
245/H	E2	LM	16.0	2	*1/8	Indet.	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	medial fragment	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Preopercle	fragment	left		
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Scapular	near complete	right		small
245/H	E2	LM	16.0	2	*1/8	B	1	0.04	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			
245/H	E2	LM	16.0	2	*1/8	B	1	0.02	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete			

245/H	E2	LM	16.0	2	*1/8	B	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete		
245/H	E2	LM	18.0	2	*1/8	B	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra, misc.	whole		
245/H	E2	LM	16.0	2	*1/8	Indet.	1	0.01	Sacramento perch	Archoplites interruptus	Vomer	fragment		
							20	0.29						
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Steelhead/Salmon	Salmonidae	Abdominal nural process	prx		
245/H	E2	LM	16.0	2	*1/8	UB	2	>0.01	Steelhead/Salmon	Salmonidae	indet.	fragment		
245/H	E2	LM	18.0	2	*1/8	B	2	>0.01	Steelhead/Salmon	Salmonidae	Indet.	fragment		
245/H	E2	LM	16.0	2	*1/8	Indet.	1	0.02	Steelhead/Salmon	Salmonidae	Pteryglophore	prx		
245/H	E2	LM	16.0	2	*1/8	Indet.	2	0.04	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
							8	0.06						
245/H	E2	LM	16.0	2	*1/8	UB	1	0.04	Thicktail chub	Gila crassicauda	Basioccipital	fragment		
245/H	E2	LM	16.0	2	*1/8	UB	1	0.04	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	left	
245/H	E2	LM	16.0	2	*1/8	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	left	
245/H	E2	LM	18.0	2	*1/8	UB	1	>0.01	Thicktail chub	Gila crassicauda	Pharyngeal	medial fragment	right	
							4	0.08						
247	M1	A3; 160-180	14.1	4	*1/8	B	2	0.05	Green or White Sturgeon	Acipenser sp.	Scute	fragment		
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.08	Hardhead	Mylopharodon conocephalu	Pharyngeal	fragment	right	
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.03	Minnows	Cyprinidae	Vertebra 1	near complete		
247	M1	A3; 160-180	14.1	4	*1/8	UB	5	0.11	Ray-finned fish	Actinopterygii	indet.	fragment		
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	indet.	fragment		
247	M1	A3; 160-180	14.1	4	*1/8	Indet.	2	0.05	Ray-finned fish	Actinopterygii	Indet.	fragment		
247	M1	A3; 160-180	14.1	4	*1/8	UB	2	0.12	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	M1	A3; 160-180	14.1	4	*1/8	Indet.	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							12	0.37						
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.03	Sacramento perch	Archoplites interruptus	Otolith	whole	right	
247	M1	A3; 160-180	14.1	4	*1/8	B	1	0.05	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247	M1	A3; 160-180	14.1	4	*1/8	Indet.	1	0.04	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
							2	0.09						
				5	*1/8	Indet.	1	0.04	Minnows/sucker	Cypriniformes	Abdominal nural process	fragment		
				5	*1/8	Indet.	7	0.23	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	M2	B3; 80-90	6.5	7	*1/8	B	1	0.01	Minnows	Cyprinidae	Vertebra 2	near complete		
247	M2	B3; 80-90	6.5	7	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Hyomandibular	fragment		
247	M2	B3; 80-90	6.5	7	*1/8	Indet.	2	0.05	Ray-finned fish	Actinopterygii	Pteryglophore	prx		
247	M2	B3; 80-90	6.5	7	*1/8	Indet.	2	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	M2	B3; 80-90	6.5	7	*1/8	Indet.	1	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
							6	0.19						
247	U1	B1:30-40	14.0	14	*1/8	B	3	0.08	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247	U1	B1:30-40	14.0	14	*1/8	UB	1	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247	U1	B1:30-40	14.0	14	*1/8	UB	1	0.01	Minnows	Cyprinidae	Basioccipital	fragment		
247	U1	B1:30-40	14.0	14	*1/8	B	1	0.01	Minnows	Cyprinidae	Vertebra 1	near complete		calcine
247	U1	B1:30-40	14.0	14	*1/8	Indet.	2	0.05	Ray-finned fish	Actinopterygii	indet.	fragment		
247	U1	B1:30-40	14.0	14	*1/8	UB	1	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	U1	B1:30-40	14.0	14	*1/8	Indet.	4	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
247	U1	B1:30-40	14.0	14	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
							8	0.19						
247	U1	B1:30-40	14.0	14	*1/8	B	1	0.02	Sacramento perch	Archoplites interruptus	Vertebra, misc.	nco		
247	U1	B1:30-40	14.0	14	*1/8	Indet.	1	0.04	Sacramento pike minnow	Ptychocheilus grandis	Vertebra 1	near complete		digetsed
247	U1	B1:30-40	14.0	14	*1/8	Indet.	1	0.02	Sacramento sucker	Catostomus occidentalis	Articular	nco	right	
247	U1	B1:30-40	14.0	14	*1/8	B	1	0.07	Sacramento sucker	Catostomus occidentalis	Maxillary	nco	right	
247	U1	B1:30-40	14.0	14	*1/8	B	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247	U1	B1:30-40	14.0	14	*1/8	UB	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247	U1	A1; 40-50	13.5	17	*1/8	B	2	0.1	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247	U1	A1; 40-50	13.5	17	*1/8	UB	2	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247	U1	A1; 40-50	13.5	17	*1/8	UB	1	0.06	Minnows	Cyprinidae	Vertebra 1	nco		
247	U1	A1; 40-50	13.5	17	*1/8	UB	3	0.15	Ray-finned fish	Actinopterygii	indeterminate	fragment		
247	U1	A1; 40-50	13.5	17	*1/8	Indet.	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	U1	A1; 40-50	13.5	17	*1/8	B	1	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		NO ELEMENTS
247	M2	A1; 90-100	10.5	20	*1/8	B	1	0.07	Green or White sturgeon	Acipenser sp.	Scute	fragment		NO ELEMENTS
247	M2	A1; 90-100	10.5	20	*1/8	Indet.	8	0.26	Ray-finned fish	Actinopterygii	indeterminate	fragment		
247	M2	A1; 90-100	10.5	20	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247	M2	A1; 90-100	10.5	20	*1/8	Indet.	8	0.2	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							17	0.49						
247	M2	A1; 90-100	10.5	20	*1/8	B	1	0.04	Salmon/ Steelhead	Salmonidae	Vertebra, misc.	fragment		NO ELEMENTS
				23	*1/8	B	2	0.15	Green or White sturgeon	Acipenser sp.	Scute	fragment		
				23	*1/8	UB	2	0.02	Ray-finned fish	Actinopterygii	indeterminate	fragment		

				23	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Rib	fragment			
				23	*1/8	Indet.	4	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
				23	*1/8	Indet.	2	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							9	0.18							
				23	*1/8	B	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
				23	*1/8	B	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	whole			
				23	*1/8	UB	1	0.01	Sacramento sucker	Catostomus occidentalis	Articular	nco	left		
				23	*1/8	UB	3	0.11	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
				23	*1/8	UB	1	0.05	Thicktail chub	Gila crassicauda	Pharyngeal	fragment	Indet.		
158B	E1	U2	12.3	25	*1/8	UB	5	0.13	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U2	12.3	25	*1/8	B	2	0.07	Green or White sturgeon	Acipenser sp.	Scute	fragment			
158B	E1	U2	12.3	25	*1/8	UB	1	0.04	Hitch	Lavinia exilicauda	Pharyngeal	NCO	left		
158B	E1	U2	12.3	25	*1/8	UB	1	0.03	Perch, Tule or Sacramento	Perciformes	Pteryglophore	prx			
158B	E1	U2	12.3	25	*1/8	UB	1	0.02	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
158B	E1	U2	12.3	25	*1/8	UB	1	0.07	Ray-finned fish	Actinopterygii	Hypural	prx			
158B	E1	U2	12.3	25	*1/8	UB	15	0.19	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
158B	E1	U2	12.3	25	*1/8	B	2	0.01	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
158B	E1	U2	12.3	25	*1/8	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Indeterminate	fragment			
158B	E1	U2	12.3	25	*1/8	UB	2	0.04	Ray-finned fish	Actinopterygii	Pteryglophore	prx			
158B	E1	U2	12.3	25	*1/8	UB	2	0.03	Ray-finned fish	Actinopterygii	Rib	prx			
158B	E1	U2	12.3	25	*1/8	UB	1	0.06	Ray-finned fish	Actinopterygii	Spinious shaft fragments	DST			
158B	E1	U2	12.3	25	*1/8	UB	1	0.2	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
158B	E1	U2	12.3	25	*1/8	B	2	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/8	Indet.	3	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/8	UB	20	0.38	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
158B	E1	U2	12.3	25	*1/8	UB	1	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/8	B	1	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/8	Indet.	1	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
							54	1.12							
158B	E1	U2	12.3	25	*1/8	UB	1	0.03	Sacramento blackfish	Orthodon microlepidotus	Basipterygium	prx	right		average size
158B	E1	U2	12.3	25	*1/8	UB	1	0.03	Sacramento blackfish	Orthodon microlepidotus	Basipterygium	prx	right	Blackfish c.f.	average size
158B	E1	U2	12.3	25	*1/8	UB	1	0.1	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	NCO	left		
158B	E1	U2	12.3	25	*1/8	UB	1	0.02	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	medial fragment	left		
							4	0.18							
158B	E1	U2	12.3	25	*1/8	UB	1	0.06	Sacramento perch	Archoplites interruptus	Basioccipital	NCO			
158B	E1	U2	12.3	25	*1/8	UB	5	0.1	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
158B	E1	U2	12.3	25	*1/8	B	1	0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment			
245/H	E2	LM	16.5	28	*1/8	UB	3	0.12	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.5	28	*1/8	Indet.	1	0.02	Green or White sturgeon	Acipenser sp.	Scute	fragment			
245/H	E2	LM	16.5	28	*1/8	B	1	0.01	Minnows	Cyprinidae	Articular	prx	left	G. crassicauda?	
245/H	E2	LM	16.5	28	*1/8	B	1	0.07	Minnows	Cyprinidae	Basipterygium	prx	right	G. crassicauda?	
245/H	E2	LM	16.5	28	*1/8	UB	1	0.01	Minnows	Cyprinidae	Ceratohyal	fragment	right	G. crassicauda?	
245/H	E2	LM	16.5	28	*1/8	B	1	0.03	Minnows	Cyprinidae	Ceratohyal	prx	indet.		
245/H	E2	LM	16.5	28	*1/8	B	1	0.02	Minnows	Cyprinidae	Vertebra 1	near complete			
245/H	E2	LM	16.5	28	*1/8	UB	1	0.02	Minnows	Cyprinidae	Vertebra 1	near complete			
245/H	E2	LM	16.5	28	*1/8	B	1	0.01	Minnows/sucker	Cypriniformes	Hyomandibular	prx	indet.		
							7	0.17							
245/H	E2	LM	16.5	28	*1/8	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pteryglophore	prx			
245/H	E2	LM	16.5	28	*1/8	UB	3	0.08	Ray-finned fish	Actinopterygii	Abdominal nural process	prx			
245/H	E2	LM	16.5	28	*1/8	UB	4	0.05	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.5	28	*1/8	Indet.	1	0.04	Ray-finned fish	Actinopterygii	Cranial	fragment			
245/H	E2	LM	16.5	28	*1/8	B	1	0.01	Ray-finned fish	Actinopterygii	Cranial	fragment		perch?	
245/H	E2	LM	16.5	28	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Hypural	prx			
245/H	E2	LM	16.5	28	*1/8	B	3	0.04	Ray-finned fish	Actinopterygii	indet.	fragment			
245/H	E2	LM	16.5	28	*1/8	UB	28	0.3	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.5	28	*1/8	Indet.	12	0.04	Ray-finned fish	Actinopterygii	Indet.	fragment			
245/H	E2	LM	16.5	28	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx			
245/H	E2	LM	16.5	28	*1/8	B	1	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.5	28	*1/8	Indet.	1	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment			
245/H	E2	LM	16.5	28	*1/8	UB	15	0.25	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/8	B	4	0.17	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
245/H	E2	LM	16.5	28	*1/8	Indet.	3	0.09	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done	
							78	1.14							
245/H	E2	LM	16.5	28	*1/8	Indet.	1	>0.01	Sacramento blackfish	Orthodon microlepidotus	Pharyngeal	MED	Indet.		
245/H	E2	LM	16.5	28	*1/8	B	1	0.03	Sacramento perch	Archoplites interruptus	Basioccipital	prx		c.f.	
245/H	E2	LM	16.5	28	*1/8	Indet.	4	0.11	Sacramento perch	Archoplites interruptus	Cranial	fragment			
245/H	E2	LM	16.5	28	*1/8	UB	1	0.02	Sacramento perch	Archoplites interruptus	Maxillary	dst	right		

245/H	E2	LM	16.5	28	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Opercle	prx	right	
245/H	E2	LM	16.5	28	*1/8	UB	1	0.03	Sacramento perch	Archoplites interruptus	Otolith	whole	right	
245/H	E2	LM	16.5	28	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	left	
245/H	E2	LM	16.5	28	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Vertebra 1	near complete		
245/H	E2	LM	16.5	28	*1/8	B	2	0.02	Sacramento perch	Archoplites interruptus	Vomer	near complete		
							12	0.24						
245/H	E2	LM	16.5	28	*1/8	UB	1	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
245/H	E2	LM	16.5	28	*1/8	B	1	0.02	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
245/H	E2	LM	16.5	28	*1/8	UB	1	0.02	Thicktail chub	Gila crassicauda	Pharyngeal	near complete	right	
158B	E1	U1	17.0	31	*1/8	Indet.	1	0.02	Chinook salmon	Oncorhynchus tshawytscha	Abdominal nural process	prx	right	
158B	E1	U1	17.0	31	*1/8	UB	2	0.13	Green or White sturgeon	Acipenser sp.	Scute	fragment		
158B	E1	U1	17.0	31	*1/8	B	1	0.04	Green or White sturgeon	Acipenser sp.	Scute	fragment		
158B	E1	U1	17.0	31	*1/8	UB	1	0.01	Hitch	Lavinia exilicauda	Pharyngeal	medial fragment	right	hitch c.f.
158B	E1	U1	17.0	31	*1/8	UB	1	0.02	Minnows/sucker	Cypriniformes	Opercle	prx		
158B	E1	U1	17.0	31	*1/8	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
158B	E1	U1	17.0	31	*1/8	UB	10	0.12	Ray-finned fish	Actinopterygii	Indet.	fragment		
158B	E1	U1	17.0	31	*1/8	Indet.	4	0.08	Ray-finned fish	Actinopterygii	indet.	fragment		
158B	E1	U1	17.0	31	*1/8	UB	2	0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx		
158B	E1	U1	17.0	31	*1/8	Indet.	2	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
158B	E1	U1	17.0	31	*1/8	B	1	>0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
158B	E1	U1	17.0	31	*1/8	UB	5	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
158B	E1	U1	17.0	31	*1/8	Indet.	2	0.1	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
158B	E1	U1	17.0	31	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							27	0.41						
158B	E1	U1	17.0	31	*1/8	UB	1	>0.01	Sacramento splittail	Pogonichthys macrolepidot	Dentary	near complete	right	splittail c.f.
158B	E1	U1	17.0	31	*1/8	UB	3	0.04	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
158B	E1	U1	17.0	31	*1/8	Indet.	2	0.03	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247 M1		A1;140-150	12.5	35	*1/8	Indet.	2	0.06	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247 M1		A1;140-150	12.5	35	*1/8	Indet.	1	0.04	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
247 M1		A1;140-150	12.5	35	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1;140-150	12.5	35	*1/8	B	2	>0.01	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1;140-150	12.5	35	*1/8	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx		
247 M1		A1;140-150	12.5	35	*1/8	Indet.	2	0.05	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
247 M1		A1;140-150	12.5	35	*1/8	Indet.	3	0.13	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247 M1		A1;140-150	12.5	35	*1/8	UB	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							10	0.21						
247 M1		A1;140-150	12.5	35	*1/8	Indet.	1	>0..01	Steelhead/Salmon	Salmonidae	Indet.	fragment		
247 M1		A1;140-150	12.5	35	*1/8	Indet.	1	0.08	Tule perch	Hysterocarpus traski	Vertebra 1	whole		
247 M1		A1; 130-140	15.5	38	*1/8	UB	1	0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247 M1		A1; 130-140	15.5	38	*1/8	UB	4	0.07	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1; 130-140	15.5	38	*1/8	Indet.	3	0.09	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1; 130-140	15.5	38	*1/8	Indet.	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
247 M1		A1; 130-140	15.5	38	*1/8	B	1	0.03	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
247 M1		A1; 130-140	15.5	38	*1/8	UB	1	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							10	0.26						
247 M1		A1; 130-140	15.5	38	*1/8	B	1	0.04	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	UB	1	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	B	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
247 M1		A1; 150-160	14.0	44	*1/8	UB	1	>0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
247 M1		A1; 150-160	14.0	44	*1/8	B	2	0.04	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	Indet.	3	0.04	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	UB	11	0.11	Ray-finned fish	Actinopterygii	Indet.	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	UB	1	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx		
247 M1		A1; 150-160	14.0	44	*1/8	B	1	>0.01	Ray-finned fish	Actinopterygii	Spinious shaft fragments	prx		
247 M1		A1; 150-160	14.0	44	*1/8	B	3	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247 M1		A1; 150-160	14.0	44	*1/8	Indet.	5	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
247 M1		A1; 150-160	14.0	44	*1/8	UB	8	0.19	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							34	0.5						
247 M1		A1; 150-160	14.0	44	*1/8	UB	1	>0.01	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		
247 M1		A1; 150-160	14.0	44	*1/8	UB	1	>0.01	Tule perch	Hysterocarpus traski	Preopercle	prx		
158D	E1	LM	10.2	54	*1/8	B	4	0.08	Green or White sturgeon	Acipenser sp.	Scute	fragment		
158D	E1	LM	10.2	54	*1/8	B	1	>0.01	Minnows	Cyprinidae	Vertebra 2	fragment		
158D	E1	LM	10.2	54	*1/8	B	1	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
158D	E1	LM	10.2	54	*1/8	UB	2	0.02	Ray-finned fish	Actinopterygii	Indet.	fragment		
158D	E1	LM	10.2	54	*1/8	B	1	0.02	Ray-finned fish	Actinopterygii	indet.	fragment		

158D	E1	LM	10.2	54	*1/8	UB	2	0.02	Ray-finned fish	Actinopterygii	Rib	prx		
158D	E1	LM	10.2	54	*1/8	UB	1	0.02	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
158D	E1	LM	10.2	54	*1/8	B	1	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
158D	E1	LM	10.2	54	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Webarian Complex	NCO		
							8	0.09						
158D	E1	LM	10.2	54	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Hypohyal, Lower	NCO		
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Chinook salmon	Oncorhynchus tshawytscha	Tooth	nco		
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment		
158A	E2	T34	10.0	57	*1/8	B	2	>0.01	Green or White sturgeon	Acipenser sp.	Scute	fragment		
158A	E2	T34	10.0	57	*1/8	UB	1	0.01	Hitch	Lavinia exilicauda	Basioccipital	fragment		
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Hitch	Lavinia exilicauda	Hyomandibular	prx	right	Hitch c.f.
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	minnows	Cyprinidae	Coracoid	nco	right	
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	minnows	Cyprinidae	Maxillary	nco	?	
158A	E2	T34	10.0	57	*1/8	UB	1	0.05	Minnows/sucker	Cypriniformes	Opercle	prx	?	
158A	E2	T34	10.0	57	*1/8	UB	2	0.01	Perch, Tule or Sacramento	Perciformes	Pterygiophore	prx		
158A	E2	T34	10.0	57	*1/8	UB	2	0.01	Ray-finned fish	Actinopterygii	Abdominal nural process	nco		
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Ray-finned fish	Actinopterygii	Cleithrum	medial fragment	Indet.	
158A	E2	T34	10.0	57	*1/8	UB	4	0.01	Ray-finned fish	Actinopterygii	Cranial	fragment		
158A	E2	T34	10.0	57	*1/8	Indet.	2	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment		
158A	E2	T34	10.0	57	*1/8	B	1	>0.01	Ray-finned fish	Actinopterygii	Cranial	fragment		
158A	E2	T34	10.0	57	*1/8	UB	17	0.4	Ray-finned fish	Actinopterygii	Indet.	fragment		
158A	E2	T34	10.0	57	*1/8	Indet.	2	0.03	Ray-finned fish	Actinopterygii	Indet.	fragment		
158A	E2	T34	10.0	57	*1/8	B	1	0.01	Ray-finned fish	Actinopterygii	Indet.	fragment		
158A	E2	T34	10.0	57	*1/8	UB	1	0.02	Ray-finned fish	Actinopterygii	Spinious shaft fragments	nco		
158A	E2	T34	10.0	57	*1/8	UB	2	0.04	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
158A	E2	T34	10.0	57	*1/8	B	9	0.06	Ray-finned fish	Actinopterygii	Vertebra, misc.	fragment		
158A	E2	T34	10.0	57	*1/8	UB	9	0.11	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
158A	E2	T34	10.0	57	*1/8	B	1	0.01	Ray-finned fish	Actinopterygii	Vertebra, misc.	nco		Family level distinctions not done
							52	0.7						
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Articular	prx	right	
158A	E2	T34	10.0	57	*1/8	B	1	0.04	Sacramento perch	Archoplites interruptus	Basioccipital	whole		
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Dentary	prx	right	
158A	E2	T34	10.0	57	*1/8	B	1	>0.01	Sacramento perch	Archoplites interruptus	Mesopterygoid	prx	left	
158A	E2	T34	10.0	57	*1/8	UB	1	0.02	Sacramento perch	Archoplites interruptus	Otolith	fragment	left	
158A	E2	T34	10.0	57	*1/8	UB	1	>0.01	Sacramento perch	Archoplites interruptus	Premaxillary	fragment	right	
158A	E2	T34	10.0	57	*1/8	UB	1	0.01	Sacramento perch	Archoplites interruptus	Quadrate	prx	left	
							7	0.07						
158A	E2	T34	10.0	57	*1/8	UB	5	0.01	Steelhead/Salmon	Salmonidae	Indet.	fragment		
158A	E2	T34	10.0	57	*1/8	UB	17	0.31	Steelhead/Salmon	Salmonidae	Vertebra, misc.	fragment		

Site	Acc #	Lot #	Cat #	Sub #	Taxon	Element	#	Wt	screen	Notes
M7	328	5	26	HH	acipenseridae	dermal scute				
M7	328	5	26	C	Antilocapra Americana	distal radius				right
M7	328	5	26	A	Antilocapra Americana	Phalange				complete
M7	328	5	26	D	Antilocapra Americana	Phalange				
M7	328	5	26	E	Antilocapra Americana	tarsal				navicular?
M7	328	5	26	V	artiodactyl sp.	astragalus				burned
M7	328	5	26	I	artiodactyl sp.	calcaneous				
M7	328	5	26	T	artiodactyl sp.	cunieform				
M7	328	5	26	S	artiodactyl sp.	distal metapodial				
M7	328	5	26	EE	artiodactyl sp.	distal metapodial				
M7	328	5	26	GG	artiodactyl sp.	internal cunieform				calcined
M7	328	5	26	AA	artiodactyl sp.	mandible				burned
M7	328	5	26	Y	artiodactyl sp.	manibrium				
M7	328	5	26	J	artiodactyl sp.	prox phalange				juvenile
M7	328	5	26	K	artiodactyl sp.	prox rib				
M7	328	5	26	L	artiodactyl sp.	prox rib				
M7	328	5	26	M	artiodactyl sp.	prox rib				
M7	328	5	26	Z	artiodactyl sp.	proximal metapodial				fresh break
M7	328	5	26	U	artiodactyl sp.	proximal phalange				juvenil
M7	328	5	26	II	artiodactyl sp.	proximal phalange				burned
M7	328	5	26	X	artiodactyl sp.	proximal radius				
M7	328	5	26	O	artiodactyl sp.	proximal tibia			right	juvenile
M7	328	5	26	DD	artiodactyl sp.	rib shaft				
M7	328	5	26	P	artiodactyl sp.	scapula frag				right
M7	328	5	26	Q	artiodactyl sp.	sesamoid				
M7	328	5	26	R	artiodactyl sp.	sesamoid				
M7	328	5	26	CC	artiodactyl sp.	tibia shaft				calcined
M7	328	5	26	W	Canis latrans	mandible				left
M7	328	5	26	BB	cervus	proximal metapodial				
M7	328	5	26	F	Elephus sp.	phalange				complete
M7	328	5	26	G	Odocoileus heminous	distal radius			right	juvenile
M7	328	5	26	H	Odocoileus heminous	lunate				
M7	328	5	26	B	Odocoileus heminous	Phalange				
M7	328	5	26	FF	Odocoileus heminous	thoracic vert				
M7	328	5	26	JJ	Procyon lotor	distal tibia				juvenile
M7	328	5	26	N	Procyon lotor	proximal tibia				

Site	Acc #	Lot #	Cat #	Sub #	Taxon	Element	#	Wt	screen	Notes
CCC	325	1	52		Accipitridae	vert				
CCC	325	1	52		Acipenseridae	dermal scute				
CCC	325	1	52		Acipenseridae	dermal scute				
CCC	325	1	52		Acipenseridae	dermal scute				
CCC	325	1	52		Acipenseridae	dermal scute				
CCC	325	1	52		Acipenseridae	dermal scute				
CCC	325	1	52		Acipenseriformes	dermal scute				
CCC	325	1	52		Acipenseriformes	dermal scute				
CCC	325	1	52		Acipenseriformes	dermal scute				
CCC	325	1	52		Acipenseriformes	dermal scute				
CCC	325	1	52		Anas sp.	femur				
CCC	325	1	52		Anas sp.	coracoid				
CCC	325	1	52		Anas sp.	tarsometatarsus				
CCC	325	1	52		Anas sp.	carpometacarpus				
CCC	325	1	52		Anas sp.	coracoid				
CCC	325	1	52		Anatidae	carpometacarpus				
CCC	325	1	52		Anatidae	cervical vert				
CCC	325	1	52		Anatidae	thoracic vert				
CCC	325	1	52		Anatidae	mandible				
CCC	325	1	52		Anatidae	scapula				
CCC	325	1	52		Anatidae	furculum				
CCC	325	1	52		Anatidae	mandible				
CCC	325	1	52		Anatidae	axis				
CCC	325	1	52		Anatidae	proximal humerus				
CCC	325	1	52		Anatidae	scapula				
CCC	325	1	52		Anatidae	furculum				
CCC	325	1	52		Anatidae	coracoid				
CCC	325	1	52		Anatidae	proximal humerus				
CCC	325	1	52		Anatidae	Sternum				
CCC	325	1	52		Anatidae	caudal vert				
CCC	325	1	52		Anatidae	scapula				
CCC	325	1	52		Anser sp.	scapula				
CCC	325	1	52		Anser sp.	ulna				
CCC	325	1	52		Anser sp.	coracoid				
CCC	325	1	52		Anser sp.	distal humerus				
CCC	325	1	52		Anser sp.	proximal humerus				
CCC	325	1	52		Antilocapra americana	distal humerus				
CCC	325	1	52		Antilocapra americana	carpal				
CCC	325	1	52		Artiodactyl	tibia				
CCC	325	1	52		Artiodactyl	astragalus				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	molar tooth				
CCC	325	1	52		Artiodactyl	1st phalange				
CCC	325	1	52		Artiodactyl	tarsal				
CCC	325	1	52		Artiodactyl	proximal radius				
CCC	325	1	52		Artiodactyl	rib				
CCC	325	1	52		Artiodactyl	rib				
CCC	325	1	52		Artiodactyl	rib				
CCC	325	1	52		Artiodactyl	thoracic vert				
CCC	325	1	52		Artiodactyl	thoracic vert				
CCC	325	1	52		Artiodactyl	phalange				
CCC	325	1	52		Artiodactyl	phalange				
CCC	325	1	52		Artiodactyl	3rd phalange				
CCC	325	1	52		Bovidae	carpal				
CCC	325	1	52		Bovidae	proximal femur				
CCC	325	1	52		Bovidae	3rd phalange				
CCC	325	1	52		Branta sp.	tarsal				
CCC	325	1	52		Branta sp.	rib				
CCC	325	1	52		Branta sp.	Sternum				
CCC	325	1	52		Branta sp.	carpometacarpus				
CCC	325	1	52		Branta sp.	proximal humerus				
CCC	325	1	52		Branta sp.	radius				
CCC	325	1	52		Branta sp.	ulna				
CCC	325	1	52		Branta sp.	humerus				

CCC	325	1	52	Canidae	proximal femur	
CCC	325	1	52	Catostomidae	opercle	
CCC	325	1	52	Catostomidae	opercle	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Centrachidae	caudal vert	
CCC	325	1	52	Cervid	proximal metapodial	
CCC	325	1	52	Cervid	molar tooth	
CCC	325	1	52	Cervus elephus	lumbar vert	
CCC	325	1	52	Cervus elephus	pelvis	
CCC	325	1	52	Cervus elephus	lumbar vert	
CCC	325	1	52	Cervus elephus	tarsal	
CCC	325	1	52	Cervus elephus	sesmoid	
CCC	325	1	52	Clemmys marmotata	dermal scute	western pond tutle
CCC	325	1	52	Clemmys marmotata	dermal scute	western pond tutle
CCC	325	1	52	Clupeidae	vert	
CCC	325	1	52	Clupeidae	vert	
CCC	325	1	52	Clupeidae	vert	
CCC	325	1	52	Clupeidae	vert	
CCC	325	1	52	Clupeidae	pharyngeal	
CCC	325	1	52	Clupeidae	thoracic vert	
CCC	325	1	52	Clupeidae	thoracic vert	
CCC	325	1	52	Clupeidae	thoracic vert	
CCC	325	1	52	Clupeidae	thoracic vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	caudal vert	
CCC	325	1	52	Clupeidae	cleithrum	
CCC	325	1	52	Clupeidae	cleithrum	
CCC	325	1	52	cyprinidae	vert	
CCC	325	1	52	Felis sp.	metacarpal	
CCC	325	1	52	Fulica sp.	tibiotarsus	coot
CCC	325	1	52	Gallus gallus	coracoid	
CCC	325	1	52	Geomyidae sp	proximal femur	pocket gophers
CCC	325	1	52	Gila bicolor	pharyngeal	
CCC	325	1	52	Gila bicolor	mandible	
CCC	325	1	52	Microtus californicus	femur	California vole
CCC	325	1	52	Mus musculus	mandible	house mouse
CCC	325	1	52	Odocoileus hemionus	3rd phalange	
CCC	325	1	52	Odocoileus hemionus	proximal ulna	
CCC	325	1	52	Odocoileus hemionus	distal metatarsal	
CCC	325	1	52	Odocoileus hemionus	distal radius	
CCC	325	1	52	Odocoileus hemionus	3rd phalange	
CCC	325	1	52	Odocoileus hemionus	3rd phalange	
CCC	325	1	52	Oncorhyncuc sp.	caudal vert	
CCC	325	1	52	Oncorhyncuc sp.	maxilla	
CCC	325	1	52	Oncorhyncuc sp.	atlas	
CCC	325	1	52	Oncorhyncuc sp.	caudal vert	
CCC	325	1	52	Oncorhyncuc sp.	caudal vert	
CCC	325	1	52	Oncorhyncuc sp.	maxilla	
CCC	325	1	52	Oncorhyncuc sp.	atlas	
CCC	325	1	52	Oncorhyncuc sp.	caudal vert	
CCC	325	1	52	Peromyscus maniculatus	femur	deer mouse
CCC	325	1	52	Peromyscus maniculatus	Innominate	deer mouse
CCC	325	1	52	Picidae	Sternum	woodpecker
CCC	325	1	52	salmonidae	vert	
CCC	325	1	52	salmonidae	vert	
CCC	325	1	52	salmonidae	thoracic vert	
CCC	325	1	52	salmonidae	thoracic vert	
CCC	325	1	52	salmonidae	thoracic vert	
CCC	325	1	52	salmonidae	vert	
CCC	325	1	52	salmonidae	vert	

CCC	325	1	52		salmonidae	vert	
CCC	325	1	52		salmonidae	vert	
CCC	325	1	52		salmonidae	vert	
CCC	325	1	52		salmonidae	caudal vert	
CCC	325	1	52		salmonidae	caudal vert	
CCC	325	1	52		salmonidae	caudal vert	
CCC	325	1	52		Sciurus griseus	molar tooth	western grey squirrel
CCC	325	1	52		Sus scrofa	incisor	
CCC	325	1	52		Thomomys bottei	maxilla	Botta pocket gopher
CCC	325	1	52		Thomomys bottei	premolar tooth	Botta pocket gopher
CCC	325	1	52		Thomomys bottei	mandible	Botta pocket gopher
CCC	325	1	52		Thomomys bottei	mandible	Botta pocket gopher
CCC	325	1	52		Thomomys bottei	cranium	Botta pocket gopher
CCC	325	1	52		Urocyon cinereoargenteus	phalange	grey fox
CCC	325	1	52		Ursus arctus	metapodial	
CCC	325	4	26		Anas sp.	furculum	
CCC	325	4	26		Anas sp.	proximal humerus	
CCC	325	4	26		Anas sp.	coracoid	
CCC	325	4	26		Anas sp.	coracoid	
CCC	325	4	26		Anser sp.	furculum	
CCC	325	4	26		Anser sp.	mandible	
CCC	325	4	26		Branta sp.	proximal humerus	
CCC	325	4	26		Branta sp.	coracoid	
CCC	325	4	26		Branta sp.	cranium	
CCC	325	4	26		Chen sp.	Sternum	
CCC	325	4	26		Chen sp.	proximal humerus	
CCC	325	4	26		Chen sp.	mandible	
CCC	325	4	26		Clemmys marmotata	carapace	western pond tutle
CCC	325	4	26		Lepus californicus	mandible	
CCC	325	4	26		Microtus californicus	cranium	California vole
CCC	325	4	26		Otus sp.	tibiotarsus	owls
CCC	325	4	26		salmonidae	thoracic vert	
CCC	325	5	17	e	Anatidae	Sternum	
CCC	325	5	17	a	Bos	Temporal	
CCC	325	5	17	b	Bos	Maxilla	
CCC	325	5	17	c	Bos	Maxilla	
CCC	325	5	17	d	Bos	Calcaneous	
CCC	325	7	15		Acipenseriformes	dermal scute	
CCC	325	7	15		Anas sp.	distal ulna	
CCC	325	7	15		Galliformes	furculum	
CCC	325	7	15		Oncorhyncuc tohawytscha	vert	
CCC	325	7	15		Oncorhyncuc tohawytscha	vert	
CCC	325	7	15		Oncorhyncuc tohawytscha	vert	
CCC	325	7	15		Oncorhyncuc tohawytscha	vert	
CCC	325	7	15		Sciurus griseus	distal radius	western grey squirrel
CCC	325	7	15		Thomomys bottei	mandible	Botta pocket gopher
CCC	325	7	15		Thomomys bottei	lumbar vert	Botta pocket gopher

Site	Acc #	Lot #	Cat #	Locus	Unit	Level	Sub #	Taxon	Element	#	Wt	screen	Notes
Stegman	328	6	12	A	A1	050-060	b	Antilocapra americana	proximal radius				
Stegman	328	6	12	A	A1	050-060	d	Canis latrans	metacarpal				
Stegman	328	5	14	A	A1	040-050	d	cervus	tooth frag				
Stegman	328	6	12	A	A1	050-060	a	Odocoileus hemionus	distal metapodial			0.25	
Stegman	328	5	14	A	A1	040-050	a	Odocoileus hemionus	distal radius			0.25	juvenile
Stegman	328	6	12	A	A1	050-060	b	Odocoileus hemionus	distal tibia				juvenile
Stegman	328	7	8	A	A1	060-070	b	Odocoileus hemionus	external cunieform				
Stegman	328	7	8	A	A1	060-070	a	Odocoileus hemionus	proximal phalange			0.125	
Stegman	328	5	14	A	A1	040-050	c	Procyon lotor	metacarpal				
Stegman	328	6	12	A	A1	050-060	e	Procyon lotor	metacarpal				
Stegman	328	5	14	A	A1	040-050	b	Sylvilagus sp.	distal femur				juvenile
Stegman	328	25	6	B	B1	090-100	a	Artiodactyl	cunieform			0.25	
Stegman	328	15	4	B	B1	000-010	a	artiodactyl	distal metapodial			.25?	
Stegman	328	19	10	B	B1	040-050	a	Artiodactyl	distal metapodial			0.25	
Stegman	328	20	11	B	B1	050-060	g	Artiodactyl	distal phalange				
Stegman	328	16	19	B	B1	010-020	a	Artiodactyla	distal metapodial			.125?	
Stegman	328	20	11	B	B1	050-060	f	Cans latrans	phalange				
Stegman	328	20	11	B	B1	050-060	d	Leporidae	maxilla				
Stegman	328	18	11	B	B1	030-040	d	Lepus californicus	calcaneous				
Stegamn	328	17	12	B	B1	020-030	c	Mephiti mephitis	cranial portion				
Stegamn	328	17	12	B	B1	020-030	b	Mephiti mephitis	m1				
Stegamn	328	17	12	B	B1	020-030	a	Mephiti mephitis	p3			0.25	
Stegamn	328	17	12	B	B1	020-030	d	Mephiti mephitis	scapula				
Stegamn	328	17	12	B	B1	020-030	e	Mephiti mephitis	scapula				
Stegman	328	18	11	B	B1	030-040	c	Mephitis mephitis	proximal femur				
Stegman	328	21	8	B	B1	060-070	a	Odocoileus heminous	cunieform			0.25	
Stegman	328	23	7	B	B1	080-090	b	Odocoileus heminous	cunieform				
Stegman	328	23	7	B	B1	080-090	a	Odocoileus heminous	distal metapodial			.25?	
Stegman	328	27	8	B	B1	120-130	a	Odocoileus heminous	distal metapodial			0.125	
Stegman	328	20	11	B	B1	050-060	c	Odocoileus hemionus	cervical vert				
Stegman	328	20	11	B	B1	050-060	b	Odocoileus hemionus	cunieform				
Stegman	328	18	11	B	B1	030-040	a	Odocoileus hemionus	distal metapodial			0.25	juvenile
Stegman	328	20	11	B	B1	050-060	a	Odocoileus hemionus	distal phalange			0.25	burned
Stegman	328	15	4	B	B1	000-010	b	Procyon lotor	distal humerus				
Stegman	328	18	11	B	B1	030-040	b	Procyon lotor	mandibular m3				dental lab
Stegman	328	16	19	B	B1	010-020		Procyon lotor	metacarpal/tarsal				
Stegman	328	20	11	B	B1	050-060	e	Procyon lotor	proximal radius				
Stegman	328	26	9	B	B1	100-120	a	Sylvilagus sp.	distal femur			0.25	
Stegman	328	21	8	B	B1	060-070	b	Sylvilagus sp.	proximal tibia				
Stegman	328	19	10	B	B1	040-050							

Site	Acc #	Lot #	Cat #	Locus	Unit	Level	Sub #	247 IDd Taxon	Element	screen	Notes
Res Rd	327	120	11	A	14	10-20.	a	Ovis sp.	2cd phalange		
Res Rd	327	121	16(b)	A	14	20-30	a	Anas sp.	carpometacarpus		
Res Rd	327	121	16(b)	A	14	20-30	b	Cyprinid	pharyngeal		
Res Rd	327	121	16(a)	A	14	20-30	n/a				
Res Rd	327	122	20	A	14	30-40	e	Anas sp.	distal tibotarsus		
Res Rd	327	122	20	A	14	30-40	f	Anatidae	distal humerus		
Res Rd	327	122	20	A	14	30-40	d	Odocoileus hemionus	proximal phalage		
Res Rd	327	122	20	A	14	30-40	b	sciuridae sp.	scapula		
Res Rd	327	122	20	A	14	30-40	c	Spermophilus beecheyi	maxilla		
Res Rd	327	122	20	A	14	30-40	a	Spermophilus beecheyi	proximal femur		
Res Rd	327	124	11	A	15	10-20.	b	Artiodactyl	distal metapodial		
Res Rd	327	124	11	A	15	10-20.	a	Artiodactyl	distal radius		
Res Rd	327	125	14(b)	A	15	20-30	b	Anas sp.	carpometacarpus		
Res Rd	327	125	14(a)	A	15	20-30	a	Thomomys bottei	maxilla		
Res Rd	327	125	14(a)	A	15	20-30	b	Thomomys bottei	maxilla		
Res Rd	327	125	14(a)	A	15	20-30	c	Thomomys bottei	maxilla		
Res Rd	327	125	14(b)	A	15	20-30	a	Tribe Anserini	coracoid		
Res Rd	327	127	11(a)	A	16	10-20.	n/a				
Res Rd	327	128	8	A	16	20-30	a	Procyon lotor	2cd phalange		
Res Rd	327	130	13	A	17	10-20.	a	Odocoileus heminous	distal femur		
Res Rd	327	130	13	A	17	10-20.	b	Tribe Anserini	coracoid		
Res Rd	327	131	17	A	17	20-30	a	Odocoileus heminous	2ch phalange		
Res Rd	327	131	17	A	17	20-30	b	Odocoileus heminous	carpal/tarsal		
Res Rd	327	132	16	A	17	30-40	a	Odocoileus heminous	proximal femur		
Res Rd	327	132	16	A	17	30-40	b	Odocoileus heminous	proximal phalange		
Res Rd	327	132	16	A	17	30-40	c	Thomomys botei	mandible		
Res Rd	327	132	16	A	17	30-40	d	Thomomys botei	mandible		
Res Rd	327	134	15	A	18	10-20.	b	Anas sp.	distal humerus		
Res Rd	327	134	15	A	18	10-20.	a	Anas sp.	proximal humerus		
Res Rd	327	135	14	A	18	20-30	a	Odocoileus heminous	carpal/tarsal		
Res Rd	327	135	14	A	18	20-30	b	Thomomys bottei	madible		
Res Rd	327	136	9	A	18	30-40	b	Anas sp.	coracoid		
Res Rd	327	136	9	A	18	30-40	c	Anser sp.	distal tarsometatarsus		
Res Rd	327	136	9	A	18	30-40	d	Artiodactyl	magnum		burned
Res Rd	327	136	9	A	18	30-40	e	Artiodactyl	pisiform		
Res Rd	327	136	9	A	18	30-40	a	Artiodactyl	proximal metatarsal		
Res Rd	327	136	9	A	18	30-40	h	Sylvilagus sp.	distal femur		
Res Rd	327	136	9	A	18	30-40	f	Thomomy sp.	mandible		
Res Rd	327	136	9	A	18	30-40	g	Thomomy sp.	mandible		
Res Rd	327	67	7	B	2	20-30	n/a				
Res Rd	327	68	7	B	2	30-40	d	Artiodactyl	cunieform		
Res Rd	327	68	7	B	2	30-40	c	Artiodactyl	proximal metatarsal		
Res Rd	327	68	7	B	2	30-40	a	Odocoileus heminous	phalange		
Res Rd	327	68	7	B	2	30-40	b	Odocoileus heminous	phalange		
Res Rd	327	68	7	B	2	30-40	e	Thomomys bottei	mandible		
Res Rd	327	68	7	B	2	30-40	f	Thomomys bottei	partial crania		
Res Rd	327	78	8	B	3	10-20.	d	Anser sp.	proximal radius		
Res Rd	327	78	8	B	3	10-20.	a	Artiodactyl	cunieform		
Res Rd	327	78	8	B	3	10-20.	b	Artiodactyl	cunieform		
Res Rd	327	78	8	B	3	10-20.	c	Procyon lotor	proximal ulna		
Res Rd	327	91	7	B	4	20-30	a	Tribe Anserini	distal humerus		
Res Rd	327	92	13	B	4	20-40	a	Antilocapra americana	3rd phalange		
Res Rd	327	100	8	B	5	10-20.	a	Thomomys bottei	femur		
Res Rd	327	101	8	B	5	20-40	a	Procyon lotor	?		
Res Rd	327	109	14	B	6	10-20.	c	Artiodactyl	proximal phalange		
Res Rd	327	109	14	B	6	10-20.	a	Canis latrans	mandible		
Res Rd	327	109	14	B	6	10-20.	b	Thomomys bottei	mandible		
Res Rd	327	110	11	B	6	20-30	a	Tribe Anserini	distal humerous		
Res Rd	327	111	9	B	6	30-40	n/a				
Res Rd	327	60	11	B	1	60-70	a	Thomomys bottei	mandible		
Res Rd	327	61	11	B	1	70-80	a	Antilocapra americana	2ch phalange		burned
Res Rd	327	61	11	B	1	70-80	b	Sylvilagus sp.	tibia		juvenile
Res Rd	327	61	11	B	1	70-80	c	Thomomys bottei	mandible		left
Res Rd	327	61	11	B	1	70-80	d	Thomomys bottei	mandible		left
Res Rd	327	61	11	B	1	70-80	e	Thomomys bottei	mandible		right
Res Rd	327	61	11	B	1	70-80	f	Thomomys bottei	mandible		right
Res Rd	327	62	13	B	1	80-90	b	Artiodactyl	pisiform		
Res Rd	327	62	13	B	1	80-90	a	Canis latrans	mandible		

Res Rd	327	71	8	B	2	60-70	e	247 IOCanis latrans	1st phalange	
Res Rd	327	71	8	B	2	60-70	b	Spermophilus beecheyi	pelvis	
Res Rd	327	71	8	B	2	60-70	a	Spermophilus beecheyi	proximal femur	
Res Rd	327	71	8	B	2	60-70	c	Thomomy bottei	mandible	
Res Rd	327	71	8	B	2	60-70	d	Thomomy bottei	mandible	
Res Rd	327	72	11	B	2	70-80	c	Family anatidae	coracoid	
Res Rd	327	72	11	B	2	70-80	b	Family anatidae	scapula	
Res Rd	327	72	11	B	2	70-80	a	Odocoileus heminous	1st phalange	
Res Rd	327	72	11	B	2	70-80	d	Spermophelus beecheyi	proximal ulna	
Res Rd	327	73	6	B	2	80-90	a	Family Anatidae	coracoid	
Res Rd	327	83	20	B	3	50-60	a	Accipitridae	talon	
Res Rd	327	83	20	B	3	50-60	c	Canis sp.	distal radius	
Res Rd	327	83	20	B	3	50-60	b	Canis sp.	vert	
Res Rd	327	20	4	A	3	50-70	n/a			
Res Rd	327	84	13	B	3	60-70	f	Anatidae	coracoid	
Res Rd	327	84	13	B	3	60-70	c	Artiodactyl	distal metapodial	juvenile
Res Rd	327	84	13	B	3	60-70	e	Artiodactyl	lateral malleolus	
Res Rd	327	84	13	B	3	60-70	b	Odocoileus heminous	metapodial shaft	
Res Rd	327	84	13	B	3	60-70	a	Odocoileus heminous	phalange	juvenile
Res Rd	327	84	13	B	3	60-70	d	Thomomy bottei	mandible	
Res Rd	327	85	12	B	3	70-80	a	Artiodactyl	magnum	
Res Rd	327	21	4	A	3	70-90	b	Antilocapra americana	3rd phalange	
Res Rd	327	21	4	A	3	70-90	a	Cervus elephantus	proximal rib	
Res Rd	327	86	16	B	3	80-90	b	Artiodactyl	distal phalange	juvenile
Res Rd	327	86	16	B	3	80-90	a	Artiodactyl	proximal raduis	juvenile
Res Rd	327	86	16	B	3	80-90	f	Spermphelus beecheyi	mandible	
Res Rd	327	86	16	B	3	80-90	c	Thomomys bottei	mandible	
Res Rd	327	86	16	B	3	80-90	d	Thomomys bottei	mandible	
Res Rd	327	86	16	B	3	80-90	e	Thomomys bottei	mandible	
Res Rd	327	95	13	B	4	60-70	a	Thomomys bottei	mandible	
Res Rd	327	96	20	B	4	70-80	a	Artiodactyl	distal metapdoial	
Res Rd	327	96	20	B	4	70-80	b	Artiodactyl	proximal phalange	
Res Rd	327	34	3	A	4	70-90	b	Thomomys bottei	femur	
Res Rd	327	34	3	A	4	70-90	c	Thomomys bottei	humerus	
Res Rd	327	34	3	A	4	70-90	a	Thomomys bottei	mandible	
Res Rd	327	97	14	B	4	80-90	a	Artiodatyl	sesamoid	
Res Rd	327	97	14	B	4	80-90	b	Spermohelus beecheyi	mandible	
Res Rd	327	97	14	B	4	80-90	c	Spermohelus beecheyi	mandible	
Res Rd	327	104	14	B	5	60-70	a	Thomomys bottei	mandible	
Res Rd	327	104	14	B	5	60-70	b	Thomomys bottei	mandible	
Res Rd	327	104	14	B	5	60-70	c	Thomomys bottei	mandible	
Res Rd	327	105	11	B	5	70-80	n/a			
Res Rd	327	106	12	B	5	80-90	e	Canis latrans	proximal radius	
Res Rd.	327	106	12	B	5	80-90	a	Odocoileus heminous	3rd phalange	
Res Rd	327	106	12	B	5	80-90	b	Odocoileus heminous	astragalus	
Res Rd	327	106	12	B	5	80-90	c	Tribe Anserini	Proximal carpometacarpus	
Res Rd	327	106	12	B	5	80-90	d	Tribe Anserini	Proximal carpometacarpus	
Res Rd	327	114	12	B	6	60-70	c	Canis latrans	tarsal	
Res Rd	327	114	12	B	6	60-70	b	Elephus roosevelti	proximal metatarsal	
Res Rd	327	114	12	B	6	60-70	a	Odocoileus heminous	distal metapodial	
Res Rd	327	114	12	B	6	60-70	d	Thomomys bottei	mandible	
Res Rd	327	115	27	B	6	70-80	a	Artiodactyl	scapula	
Res Rd	327	115	27	B	6	70-80	b	Canis latrans	proximal metacarpal	
Res Rd	327	116	7	B	6	80-90	a	Artiodactyl	pisiform	
Res Rd	327	116	7	B	6	80-90	b	Canis latrans	proximal metacarpal	
Res Rd	327	36	9	A	4&5	50-70	b	Antilocapra americana	2cd phalange	
Res Rd	327	36	9	A	4&5	50-70	e	Canis latrans	distal femur	
Res Rd	327	36	9	A	4&5	50-70	a	Odocoilus heminous	astragalus	
Res Rd	327	36	9	A	4&5	50-70	c	Thomomys bottei	mandible	
Res Rd	327	36	9	A	4&5	50-70	d	Thomomys bottei	mandible	
Res Rd	327	37	2	A	4&5	70-90	a	Artiodactyl	metapodial shaft	
Res Rd	327	37	2	A	4&5	70-90	c	Tribe Anserini	1st phalanx, 2cd digit	
Res Rd	327	37	2	A	4&5	70-90	b	Tribe Anserini	proximal humerus	
Res Rd	327	24	8	A	3	110-120	b	?	?	
Res Rd	327	26	11	A	3	130-140	d	?	?	
Res Rd	327	15	6	A	2	140-150	a	Anatidae	distal radius	
Res Rd	327	15	6	A	2	140-150	b	Anatidae	proximal ulna	
Res Rd	327	14	9	A	2	130-140	b	Artiodactyl	cunieform	
Res Rd	327	26	11	A	3	130-140	b	Artiodactyl	distal fibula	
Res Rd	327	26	11	A	3	130-140	c	Artiodactyl	distal fibula	

Res Rd	327	12	9	A	2	110-120	b	247 ID	Artiodactyl	distal metatarsal
Res Rd	327	11	8	A	2	100-110	a		Artiodactyl	Naviculo-cuboid
Res Rd	327	14	9	A	2	130-140	a		Artiodactyl	proximal fibula
Res Rd	327	12	9	A	2	110-120	a		Artiodactyl	proximal metatarsal
Res Rd	327	27	8	A	3	140-150	a		Canis latrans	scapula
Res Rd	327	13	12	A	2	120-13	a		Procyon lotor	calcaneous
Res Rd	327	26	11	A	3	130-140	a		Procyon lotor	distal radius
Res Rd	327	13	13	A	2	120-13	a		Sturgeon	scute
Res Rd	327	24	8	A	3	110-120	a		Sylvilagus sp	distal tibia
Res Rd	327	11	8	A	2	100-110	b		Thomomys bottei	mandible
Res Rd	327	11	8	A	2	100-110	c		Thomomys bottei	mandible
Res Rd	327	23	18	A	3	100-110	a		Thomomys bottei	mandible
Res Rd	327	25	12	A	3	120-130	a		Thomomys bottei	mandible

APPENDIX G: FLOTATION INVENTORY AND RAW RESULTS

PREHISTORIC FLOTATION CHECKSHEET

Job Title: Colusa

Job # 10-4

Site	Float num	Feature num	Provenience	Depth	Profile #/Other Description	Status F	Status H	Status L	Status A	Row Vol (L)	Remarks	Row WL (KG)	LIGHT FRACTION WEIGHTS #10	#16	#24	#35
M-7	1	2				BS	KB	HL KB		3.50	Ash					
M-7	2				Lower Midden	HL	KB	HL KB		16.00	Burnt Surface					
M-7	3	burn feature			Surface of Lower Midden	BS	KB	HL KB		16.75	[Old Sample]					
Res Road	4		A-3	160-180	Stratum 4	BS	KB	HL KB		14.10						
Res Road	5		A-1	60-70		HL	KB	HL KB		13.00						
Res Road	6		A-1	70-80		BS	KB	HL KB		13.25						
Res Road	7	7	B3	80-90		HL	KB	HL KB		6.50						
Res Road	8		B1	0-10		BS	KB	HL KB		15.25						
Res Road	9		B1	20-30	N Wall	HL	KB	HL KB		14.50						
Stegeman Locus D	10		unit 1		Sediment Below Midden	BS	KB	HL KB		17.00						
Stegeman Locus D	11		unit 1		Sediment Below Midden	HL	KB	HL KB		18.00	[Section 2]					
Res Road	12	7	B3	80-90		ET	KB	X		11.25		11.20				
Res Road	13				Burial 4 Matrix	HL	ET	X		23.00		23.40				
Res Road	14		B1	30-40	N Wall	KB	KB	X		14.00		13.60				
Res Road	15		B1	10-20		ET		X		13.00		12.00				
Res Road	16		A1	50-60		KB	KB	X		11.00		10.60				
Res Road	17		A1	40-50		HL	KB	X		13.50		14.20				
Res Road	18		A1	80-90		HL	KB	X		12.75		12.20				
M-7	19				Lower Midden	ET	KB	X		16.00	old sample 3	14.20				
Res Road	20		A1	90-100		HL	HL			10.50		23 lbs				
M-7	21				Clay at Base of Upper Silt	HL	HL			7.75		18 lbs				
Res Road	22			50-70		HL	HL			12.00		27 lbs				
Res Road	23		A1	120-130		HL	HL			13.00		30 lbs				
Res Road	24				Burn Layer					2.00		3 lbs				
Stegeman Locus D	25		unit 2	70-100	Locus B East Wall					12.25		29 lbs				
Res Road	26				Shell Fill					3.75		9 lbs				
Res Road	27				Burial 3 Matrix					9.50		21 lbs				
M-7	28		West Wall		Possible Pit or Floor					16.50		16.00				
M-7	29				Base of Upper Midden							20.60				
Stegeman Locus B	30		unit 1	70-90								14.60				
Stegeman Locus B	31		unit 1	00-110								15.60				

PREHISTORIC FLOTATION CHECKSHEET

Job Title: Colusa

Job # 10-4

Site	Float num	Feature num	Provenience	Depth	Profile #/Other Description	Status F	Status H	Status L	Status A	Row Vol (L)	Remarks	Row WL (KG)	LIGHT FRACTION WEIGHTS #10	#16	#24	#35
M-7	32				Burn at Surface of Intact Midden					6.00		5.80				
M-7	33			230-270	Silt Below Lower Midden							14.40				
M-7	34				Top of Upper Midden					9.00		10.80				
Res Road	35		A1	140-150						12.50		13.00				
Res Road	36		A1	100-110								13.60				
Res Road	37	14								10.00		10.00				
Res Road	38		A1	130-140								14.40				
Res Road	39				Burial 11					7.50						
Res Road	40				Burial 4					16.25		16.80				
Res Road	41				Burial 1					12.25		12.40				
Res Road	42		A2	90-100								13.60				
Res Road	43		A1	110-120								13.20				
Stegeman A	44		A1	150-160												
Res Road	45		?T33?	?	? House floor ?											
Res Road	46		A3	140-150								26.20				
Res Road	47	12	A14									13.00				
Res Road	48		A5	20-Oct								12.60				
Res Road	49	8A										8.40				
Res Road	50	11		50-70								14.00				
Res Road	51	7	Exposure									8.40				
Res Road	52	8B								17.60						
Stegeman Locus D	53		unit 1							10.60						
Stegeman Locus D	54		unit 1							10.20						
Stegeman Locus D	55		unit 1		Sediment Below Midden					21.60						
M-7	56	Burial 1			Pit Matrix					12.60						
Stegeman Locus A	57	Pit	T-34		Pit Contents					10.00						

Table xx. Ethnographic Use, Seasonal Availability, and Habitats of Charred Native Plant Taxa.

Taxon	Common Name	Growth Habit[1]	Habitats[1]	Ethnographic Use[2]	Seed Seasonal Availability[2]	Disturbance Follower?[3]
Achyrachaena mollis	Blow wives	Herb	Open dry flats	Seed eaten	Late spring	??
Aesculus californica	Buckeye	Shrub	Shaded slopes and canyons	Nut eaten	Fall	??
Amsinckia sp.	Fiddleneck	Herb	Open grasslands	None noted	Late spring	Yes
Arctostaphylos sp.	Manzanita	Shrub	Dry slopes and flats	Berry eaten	Summer (fall)[4]	??
Cf. *Aristida* sp.	Three awn grass	Grass	Dry slopes and flats	None noted	Late spring	??
Atriplex sp.	Saltbush	Shrub	Alkaline places	Seed, greens eaten	Late spring/early summer	??
Brodiaea sp.	Brodiaea	Geophyte	Varied	Bulb eaten	Winter/early spring	Yes
Bromus sp.	Brome grass	Grass	Varied	Seed eaten	Late spring	Yes
Calandrinia sp.	Red maids	Herb	Open, disturbed places	Seed eaten	Spring	Yes
Chenopodium sp.	Goosefoot	Herb	Dry slopes and plains	Leaves eaten	Spring or summer	Yes
Clarkia sp.	Farewell to spring	Herb	Varied, grasslands	Seed eaten	Late spring/early summer	Yes
Claytonia sp.	Miners lettuce	Herb	Shaded or open grasslands	Leaf eaten	Spring	Yes
Erodium sp.[5]	Filaree	Herb	Open grasslands	Leaf eaten	Late spring	Yes
Galium sp.	Bedstraw	Herb	Varied	Leaf used for medicine	Late spring/summer	No
Hemizonia sp.	Tarweed	Herb	Open, disturbed places	Seed eaten	Summer	Yes
Hordeum sp.	Wild barley	Grass	Varied; open grasslands	Seed eaten	Late spring	Yes
Lepidium sp.	Peppergrass	Herb	Grasslands	Whole plant eaten	Late spring	Yes
Madia sp.	Tarweed	Herb	Varied, grasslands	Seed eaten	Summer (fall)	Yes
Marah sp.	Wild cucumber	Vine	Varied, shaded places	Seed used for medicine, beads, sometimes eaten	Summer	??
Phacelia sp.	Phacelia	Herb	Varied	None noted	Late spring	Yes
Phalaris sp.	Maygrass	Grass	Moist places	None noted	Summer	No
Pinus sabiniana	Gray pine	Tree	Dry slopes and flats	Nut eaten	Summer (green), fall (ripe)	??
cf. *Plantago* sp.	Plantain	Herb	Varied	None noted	Late spring	??
Quercus sp.	Oak	Tree	Varied	Nut eaten	Fall	??
Ranunculus sp.	Buttercup	Herb	Varied, moist areas	Seed eaten	Late spring	No
Rosa sp.	Wild rose	Shrub	Riparian zones	Hip eaten	Summer/fall	??
Rubus sp.	Berry	Vine	Riparian zones	Berry eaten	Summer/fall	??
Rumex sp.	Dock	Herb	Varied; often disturbed areas	Herbage, seed eaten	Late spring	Yes
Salvia sp.	Sage	Herb, Shrub	Dry slopes and flats	Seed eaten	Late spring	Yes
Sambucus mexicana	Elderberry	Shrub	Riparian areas, canyon slopes	Berry eaten	Summer	??
Scirpus sp.	Tule	Herb	Marshes, wet areas	Seed eaten, important in weaving	Summer	??
Solanum sp.	Nightshade	Shrub	Shaded places	Berry eaten	Summer	??
Umbellularia californica	Bay	Tree	Moist canyons, riparian zones	Nut eaten	Fall	??
Vitis californica	Wild Grape	Vine	Riparian zones	Berry eaten	Fall	??
Vulpia/Festuca sp.	Fescue grass	Grass	Dry open places, grasslands	Seed eaten	Late spring	Yes

1 Munz 1968; Hickman 1993.
2 Barrett and Gifford 1933; Bocek 1984; Chesnut 1902; Dubois 1935; Duncan 1963.
3 Sources: Stebbins 1965; Timbrook, Johnson and Earle 1982; and personal communications, Michael Barbour, John Menke, Grady Webster, Jon E. Keeley, and Fred Hrusa.
4 Parentheses indicate secondary period past peak season.
5 Introduced taxon.

M-7 and Stegeman small seed density/liter of sedime

Site		M-7	M-7	M-7	M-7	M-7	M-7	Ste-A	Ste-B	Ste-B	Ste-B	Ste-D	Ste-D	Ste-D	Ste-D
Unit								T34	Unit 2	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1	
Volume (liters)		3.5	16	16.8	16.5	12.5	9	10	12.3	13	17	17	18	10.6	10.2
Sample Number		1	2	3	28	33	34	57	25	30	31	10	11	53	54
Centaurea*	Star Thistle	0	0	0	0	0	0	0	0	1.2	0	0	0	0	0
Triticum*	Wheat	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Achyrachaena mollis	Blow wives	0	0	0	0	0	0	0	0	0	0	0	0	0.38	0
Amsinckia sp.	Fiddleneck	0.57	0	0.48	0	0	0.11	2.8	2.3	1.1	0.24	0.06	0	0.75	0.1
cf. Aristida sp.	Three-awn grass	0	0.06	1.2	0	0	0	0	0	0	0.06	0	0	0	0
Atriplex sp.	Saltbush	2.9	3.8	5.9	0.73	0	0.89	2	0.41	0.08	0.06	0.06	0.11	1	0.98
Bromus sp.	Brome grass	0.57	1.1	4.8	0.97	0	0	1.2	1.3	0.15	0.65	0	0.11	0.38	0.69
Calandrinia sp.	Red maids	8.6	0	0	0	0	0	3	0.98	2	0.53	0	0.11	0	1.1
Chenopodium sp.	Goosefoot	19.4	24	23.8	17.5	0.08	5.3	15	6.5	8.6	3.1	0.12	1.8	17	21.9
Clarkia sp.	Farewell to spring	0	0	2.4	0.97	0	0	1	0	0	0	0.18	0.06	0	0
Claytonia sp.	Miners lettuce	0	0	0	0.24	0.08	0.89	0	0.41	0	0	0.06	0.11	0	0
Erodium* sp.	Filaree	0.29	1.3	0	0	0	19.7	0	0.41	0.77	0	0	0	0	0
Galium sp.	Bedstraw	0.29	0	0	0.24	0	0	0	0	0	0.06	0	0	0	0
Hemizonia sp.	Tarweed	0	2.5	0	0	0	0	0	0	0	0	0	0	0	0
Hordeum sp.	Wild barley	3.4	13.8	11.7	2.4	0	2.2	0.8	2.4	1.4	1.7	0.06	0	8.3	4.3
Lepidium sp.	Peppergrass	0	0	0	0	0	0	2	0	0	0	0	0	0	0
cf. Lagophylla sp.	none	0.57	0	0	0	0	0.89	0	0	0	0	0	0	0	0
Madia sp.	Tarweed	0	0	0	0	0	0	0	0	0	0.24	0	0	0	0
Phacelia sp.	none	0.57	0.94	0	0.24	0	1.8	0	0.16	0.77	0.47	0	0	0	0.1
Phalaris sp.	Maygrass	6.9	9.7	15.1	9.5	0	2	5.4	12.1	5.1	2.6	0.71	0.44	10.2	12.1
Plantago sp.	Plantain	0	0	0	0	0	0.89	0	0	0	0	0	0	0	0.1
Ranunculus sp.	Buttercup	0	0.31	0	0	0	0	0	0	0	0	0	0	0.38	1.1
Rosa sp.	Rose	0	0.31	0	0	0	0.11	0	0	0	0.06	0	0	0	0
Rubus sp.	Berry	0	0.31	0	0	0	0	0	0	0	0.06	0	0	0	0
Rumex/Polygonum sp.	Dock or Knotweed	0	1.7	5.7	0.3	0	0	0	0	0	0.12	0.06	0	0.38	0.39
Salvia sp.	Sage	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sambucus sp.	Elderberry	0	0.06	1.7	0	0	0	0.4	0	0.62	0	0.06	0	0.94	3.2
Scirpus sp.	Tule	0	0	0	0.97	0	0.89	0	0	0	0	0	0	0	0
Solanum sp.	Nightshade	0	0	0	0.97	0	0	0	0	1.8	1.7	0.06	0.06	2.3	5
Vulpia/Festuca sp.	Fescue grass	0.29	1.3	0	3.2	0	0	1	0.81	0	0.47	0	0	0	2
Asteraceae	sunflower	0	0	0	0.97	0	0	6.8	1.6	1.2	0.47	0	0.06	1.7	0.29
Cyperaceae	sedge	0	1.3	0	0	0	0	0	0	0	0	0	0	0	0
Fabaceae	bean	1.1	1.9	1	3.6	0.08	0.89	6.7	9.6	15.1	3.4	0.18	0.11	5.1	1.8
Poaceae	grass														
	seeds	0.57	0.94	2.9	0.24	0	0.22	0.4	0.41	0	0.47	0.18	0.06	0	0
	fragments	56.3	189.9	164.8	97	0.88	104	69.7	40.1	28.5	11.2	21.6	15.9	35.8	31.9
Unidentifiable seeds		1.7	6.9	2.3	3	0.08	0	1.5	0.41	1.2	0.94	0.06	0.22	1.1	0.1
Unidentifiable seed fragments		9.7	17	32.8	8.7	0.16	16.2	19	7.9	15.5	2.6	0.94	0.39	11	14.2
Total identified to genus		44.3	48.7	72.6	38.8	0.16	35.7	34.6	27.8	22.4	12.1	1.4	2.8	42	5.8
Total identified to family		102.3	242.7	241.4	140.7	1.1	140.8	118.2	79.5	67.2	27.6	23.4	18.9	94.1	92.8

Res Rd small seed density/liter of sediment

Component (depth range in cm.)		>100	>100	>100	>100	>100	>100	60-100	60-100	60-100	20-60	20-60	0-30	0-30	0-30	0-30	
Unit		A3	A1	B3	A1	A1	A3	B3	A1	A2	B1	A1	B1	A14	B17/18	B17/18	
Depth		160-180	140-150	100-110	130-140	150-160	140-150	80-90	90-100	50-70	30-40	40-50	10-20	10-20	0-10	0-10	
Context		Stratum 4		Feat. 14				Feat. 7		Feat. 11				Feat. 12	Feat. 8A	Feat. 8B	Feat. 3
Volume		14.1	12.5	10	15.5	14	23	6.5	10.5	12	14	13.5	15.3	15	8.8	17.6	2
Sample Number		4	35	37	38	44	46	7	20	22	14	17	8	47	49	52	24
Amsinckia sp.	Fiddleneck	0	0	0.1	0	0	0	0	0	0	0.07	0.07	0	0.07	0	0	0
Atriplex sp.	Saltbush	0	0.4	0	0.42	0.14	0.13	0	0.29	0.42	0	0	0	0	0	0	0
Bromus sp.	Brome grass	0.07	0.24	0.1	0.07	0.86	2	0	0	0	0	0	0	0	0	0	0.5
Calandrinia sp.	Red maids	0	0.96	0.2	0.69	1.5	1.3	0	0.38	0.75	0	0	0.07	0	0.11	0	1
Centaurea* sp.	Star Thistle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.57	0
Chenopodium sp.	Goosefoot	2.8	4.8	1.7	4.2	11.5	4.3	0.62	1.1	2.3	0.14	0.52	0.39	0	2.5	0	1
Clarkia sp.	Farewell to spring	0	0	0.3	0.35	0.71	0.43	0.15	0.19	0.25	0.07	0	0	0	0	0	0
Claytonia sp.	Miners lettuce	0	0	0	0	0	0	0	0	0.33	0	0	0	0	0	0	0
Erodium* sp.	Filaree	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidium sp.	Peppergrass	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Galium sp.	Bedstraw	0	0	0	0	0	0	0	0	0	0	0	0	0.93	0	0.17	0
Hordeum sp.	Wild barley	0.78	0.72	0.1	1.2	2.9	1.9	0	0	0.5	0	0.07	0	0.27	0.68	0.28	1
cf. Lagophylla sp.	none	0.14	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Malva* sp.	Cheeseweed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	0
Phacelia sp.	none	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0.06	0
Phalaris sp.	Maygrass	2.3	3.9	0.6	2.9	8.7	4.7	0.31	1	1.3	0.14	0.22	0.07	0.33	0.45	0.06	1
Rumex/Polygonum sp.	Dock or Knotweed	0.07	0	0	0.35	0	0	0	0	0	0	0	0.07	0.07	0	0	0
Salvia sp.	Sage	0	0.08	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Sambucus sp.	Elderberry	0	0.32	0	1.4	0	0	0	0	0	0	0	0	0	0	0	0
Triticum* sp.	Wheat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0
Vulpia/Festuca sp.	Fescue grass	0.21	0	0	0	1.4	0	0	0.1	0	0	0	0	0.13	0	0	0
Asteraceae	sunflower	0.28	0	0	0	0	0	0.15	0	0	0	0	0	0.27	0.11	0.06	0
Fabaceae	bean	1.4	1.1	0.3	2.9	4.6	1.7	0.15	0.38	0.92	0	0.07	0	0.2	1.3	0.28	0
Poaceae	grass																
	seeds	0	0.08	0	0.07	0	0	0	0	0	0	0	0	0.13	0	0.06	0
	fragments	5	14.6	0.9	9.4	15.4	9.8	0.77	0.67	0.92	0.07	0.89	0.13	4.4	4.1	2.5	3.5
Rosaceae	rose	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0	0
Unidentified seeds		0.35	0.56	0	0.69	0.14	0.87	0	0.19	0.17	0	0.07	0	0.67	0.23	0.06	0
Unidentifiable seed fragments		3.8	4.4	1	5.3	3.6	5.6	0.31	0.19	1.7	0.14	1.2	0.26	4.2	1.4	1.1	2
Total identified to genus		6.4	11.4	3.5	10.7	27.6	14.8	1.1	3.1	5.8	0.43	0.89	0.65	1.5	3.8	1.2	4.5
Total identified to family		13	27.3	4.7	22.2	47.6	26.3	2.2	4.2	7.6	0.5	1.9	0.78	6.5	9.3	4.1	8

M-7 and Stegeman large seed density/liter of sediment

Site		M-7	M-7	M-7	M-7	M-7	M-7	Ste-A	Ste-B	Ste-B	Ste-B	Ste-D	Ste-D	Ste-D	Ste-D
Unit								T34	Unit 2	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1
Volume (liters)		3.5	16	16.8	16.5	12.5	9	10	12.3	13	17	17	18	10.6	10.2
Sample Number		1	2	3	28	33	34	57	25	30	31	10	11	53	54
Aesculus sp.	Buckeye														
no.		0	0	0	0	0	0	0	0	0	0	0.29	0	0	0
mg		0	0	0	0	0	0	0	0	0	0	0.04	0	0	0
Arctostaphylos sp.	Manzanita														
no.		0.29	0.88	0	0.12	0	1.9	0	0	0	0.06	0	0.06	0	0.49
mg		1.5	6.2	0	1.1	0	1.6	0	0	0	0.27	0	0.06	0	4.7
Clarkia sp. capsule	Farewell to spring														
no.		0.29	1.3	1.2	0	0	0	0	0	0.15	0.12	0.12	0.06	0.94	0.1
mg		0.11	0.25	0.12	0	0	0	0	0	0.06	0.04	0.04	0.01	0.47	2.4
Corylus cornuta var. rostrata	Hazel														
no.		0.29	0	0	0.06	0	1.78	0	0.16	0	0.12	0	0.11	0.19	0
mg.		0.31	0	0	0.71	0	1.16	0	1.07	0	1.04	0	0.42	1.36	0
Marah sp.	Wild cucumber														
no.		2	1.8	4.9	2.8	0.08	0.11	4	3.1	3.7	2.1	0.35	0	1.2	2
mg		2.6	0.85	3.4	1.9	0.04	0.78	2.8	2.2	2.8	1.5	0.29	0	1.7	2.2
Pinus sabiniana	Gray pine														
no.		0	0	0	0	0	0	0	0	0	0	0	0	0.09	0
mg		0	0	0	0	0	0	0	0	0	0	0	0	0.38	0
Quercus sp.	Oak acorn														
no.		33.4	92	89.3	81.1	0.08	167.3	190.1	49.5	32.4	26.2	1.9	1.3	66.2	51.2
mg		12.1	25.9	35.7	27.9	0.02	51.5	52.6	21.9	9.7	9.9	1.5	0.59	24.4	19
Umbellularia californica	Bay														
no.		0	0	1.2	0	0	0	0	0	0	0	0	0	0	0
mg		0	0	0.36	0	0	0	0	0	0	0	0	0	0	0
Vitis californica	Wild grape														
no.		0	8.9	15.5	1.5	0	1.4	0.8	0	0.38	0.59	0.06	0.11	0.09	2.1
mg		0	23	25.9	0.78	0	1.6	1.6	0	0.58	0.34	0.07	0.02	0.19	9
Total large seeds															
no.		36.3	104.9	112.1	85.6	0.2	172.5	194.9	52.8	36.6	29.1	2.7	1.6	68.7	55.9
mg		16.6	56.2	65.5	32.4	0.1	56.6	57	25.2	13.1	13.1	1.9	1.1	28.5	37.3
Quercus acorn kernel fragments															
no.		0	0	0.12	0	0	0.11	0	0.49	0	0	0	0	0	0
Quercus acorn attachment disks															
no.		0	0.25	0.12	0.18	0	0.33	0.1	0.08	0.23	0.18	0	0	0.09	0.1
Non-grain pieces															
no.		0.57	4	4	2.2	0.16	1.2	2	3.1	0.85	0.64	0.59	0.17	1	0.98
Bulb fragments															
no.		1.4	0.25	0	0.3	0	0	0	0.33	0	0.06	0	0	0	0
Leaf fragments															
no.		0	0	0	0.48	0	0	0.8	0	0.77	0.47	0.12	0.22	0.94	1.1
Other bulbs															
no.		0	0.06	0.42	0	0	0	0.1	0.33	0	0	0.06	0	0.09	0

Res Ka large seed density/liter of sediment

Component (in cm)		>100	>100	>100	>100	>100	>100	60-100	60-100	60-100	20-60	20-60	0-30	0-30	0-30	0-30	
Unit		A3	A1	B3	A1	A1	A3	B3	A1	A2	B1	A1	B1	A14	B17/18	B17/18	
Depth		160-180	140-150	100-110	130-140	150-160	140-150	80-90	90-100	50-70	30-40	40-50	10-20	10-20	0-10	0-10	
Context		Stratum 4		Feat. 14				Feat. 7		Feat. 11				Feat. 12	Feat. 8A	Feat. 8B	Feat. 3
Volume		14.1	12.5	10	15.5	14	23	6.5	10.5	12	14	13.5	15.3	15	8.8	17.6	2
Sample Number		4	35	37	38	44	46	7	20	22	14	17	8	47	49	52	24
Aesculus sp.	Buckeye																
no		0	0	0	0.26	0	0	0	0	0	0	0.07	0	0	0.45	0	0
mg		0	0	0	0.13	0	0	0	0	0	0	0.07	0	0	0.09	0	0
Arctostaphylos sp.	Manzanita																
no.		0	0	0	0	0	0	0	0	0	0	0	0	0	0.45	0	0
mg		0	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0	0
Clarkia sp. capsule	Farewell to spring																
no.		0	0	0	0	1.7	0	0	0	1	0	0	0	0	0	0	0
mg		0	0	0	0	0.39	0	0	0	0.33	0	0	0	0	0	0	0
Corylus cornuta var. rostrata	Hazel																
no.		0.78	0	0	0.26	0.36	0.13	0	0	0.17	0	0	0	0	0	0.06	0
mg.		2.81	0	0	1.23	1.3	0.94	0	0	0.14	0	0	0	0	0	0.1	0
Marah sp.	Wild cucumber																
no.		2.8	3	1.3	1	4.1	4	1.4	1.2	2.3	0.36	1.3	0.2	2.9	3.9	0.51	2
mg		3.1	3.4	0.77	0.75	0.26	4.5	1.3	1.6	2.4	0.23	0.61	0.12	1.9	3.3	0.45	4.2
Pinus sabiniana	Gray pine																
no.		0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
mg		0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0	0
Pinus sp.	Thin pine																
no.		0	0	0	0	0	0	0	0	0.33	0	0	0.07	0	0	0	0
mg.		0	0	0	0	0	0	0	0	0.17	0	0	0.01	0	0	0	0
Quercus sp.	Oak acorn																
no.		40.6	46.4	3.2	31.5	80.1	64	9.4	7.5	22.8	1.7	7.3	1	14.9	39.9	4.3	16
mg		17.2	22.5	0.95	15.7	31.5	26.9	2.5	7.2	10	0.42	1.7	0.28	61.3	11.4	1.3	4.9
Umbellularia californica	Bay																
no.		0	0.08	0	0	0.29	0	0	0	0	0	0	0	0	0	0	0
mg		0	0.35	0	0	0.29	0	0	0	0	0	0	0	0	0	0	0
Vitis californica	Wild grape																
no.		2.1	0	0	0.19	1.6	1.4	0	0.29	0.41	0.21	0	0	0.2	1.3	0.06	0
mg		2.1	0	0	0.1	0.79	1.8	0	0.5	0.27	0.03	0	0	0.21	0.53	0.02	0
Total large seeds																	
no.		46.3	49.5	4.5	33.2	88.2	69.5	10.8	9	27	2.3	8.7	1.3	18.1	46	4.9	18
mg		25.2	26.3	1.7	17.9	34.5	34.1	3.8	9.3	13.3	0.7	2.4	0.4	63.5	15.5	1.9	9.1
Quercus acorn kernel fragments																	
no.		0	0	0	0	0.07	0	0	0	0.08	0	0	0	0	0.11	0	0
Quercus acorn attachment disks																	
no.		0.07	0.08	0	0.32	0.21	0.08	0	0	0	0	0	0	0.13	0	0.06	0
Non-grain pieces																	
no.		0.78	0.56	0	0.45	1	0.91	0.15	0.57	3	0.71	0.07	0.71	0.4	0.34	0.51	0.5
Brodiaea bulbs																	
no.		0.28	0.4	0.3	0.32	1.4	1.1	0.15	0.1	0	0.14	0.15	0	0.33	0.45	0.11	0
Leaf fragments																	
no.		0.43	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX H:
DISTRIBUTION OF CONSTITUENTS

247 MSD by #

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	33	14	2	3	16	12	11	13
010-020	21	33	23	19	58		100	47
020-030	1	17		16	13		27	18
030-040	2		5	37	17	17	36	27
040-050	32	65	16	12	10	13	47	27
050-060	60	7	34	3	22	32	25	28
060-070	6	47	33	3	28	9	12	30
070-080	97	7	17	24	2	24	11	19
080-090	38	23	10	57	7	143	44	55
090-100	72	8	11	21	90	68	11	40
								305
100-110	12	21	14	30			25	23
110-120	19		5	12				9
120-130	51		4	9				7
130-140	0		2	6				4
140-150	6		1	6				4
150-160	13							
Total								

247 FIRED CLAY by WGT

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	134.4	333.2	1006.1	470.1	461.0	914.8	460.5	607.6
010-020	141.7	615.4	1032.2	879.0	815.0	144.8	767.1	821.7
020-030	196.2	1082.5	1188.1	83.4	7.9		547.2	939.3
030-040	361.0	39.2	434.7	1177.7	1015.8	768.5	463.4	772.0
040-050	490.7	678.3	1105.1	704.4	1127.1	1439.3	1134.0	1031.4
050-060	532.4	1019.8	1291.3	675.8	1462.5	1054.1	1005.8	1084.9
060-070	367.1	757.5	743.8	1123.5	1442.3	1320.2	549.6	989.5
070-080	384.2	540.8	853.0	784.3	937.6	631.7	1007.3	792.5
080-090	100.6	930.5	1438.0	1214.4	1677.8	776.0	596.6	1105.6
090-100	334.5	1519.9	1111.3	302.1	980.8	938.0	539.4	1017.9
100-110	118.3		669.9	540.7			703.3	622.0
110-120	123.9		768.9	293.3				531.1
120-130	119.8		421.4	273.3				347.4
130-140	28.1		425.3	281.5				353.4
140-150	133.8		268.5	118.0				193.3
150-160	29.2							
Total	3495.9							

247 SHELL by WGT

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	34.5	35.7	119.0	90.3	104.6	104.6	52.3	84.4
010-020	80.1	0.1	148.0	136.1	79.5		128.2	123.0
020-030	77.8	289.9	304.0	265.5	128.3		152.7	228.1
030-040	134.1	35.1	102.2	160.6	205.0	280.1	121.6	173.9
040-050	155.8	238.7	315.1	267.6	321.3	407.0	251.3	300.2
050-060	183.3	332.3	413.2	86.5	459.2	293.1	261.0	307.6
060-070	274.7	362.7	18.4	167.8	391.0	472.9	404.7	359.8
070-080	105.6	345.5	431.5		466.7	352.2	604.4	440.1
080-090	189.2	348.0	44.0	730.3	634.0	512.2	337.5	512.4
090-100	128.9	345.5	167.2	159.2	563.4	447.2	335.0	336.3
100-110	114.4	417.0	242.6	260.0			398.0	329.4
110-120	94.2		198.6	160.9				179.8
120-130	57.0		220.7	159.6				190.2
130-140	66.8		142.8	344.2				243.5
140-150	70.3		139.6	135.1				137.4
150-160	35.7							

247 OBS by #

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	10	8	11	5	13	7	3	8
010-020	17	3	7	12	9	2	6	7
020-030	5	13	16	9	7		4	10
030-040	22	5	7	3	6	4	7	6
040-050	21	6	6	6	4	8	5	6
050-060	12	1	13	5	9	10	3	8
060-070	15	5		4	3	5	6	5
070-080	14	7	5		5	3	8	6
080-090	8	7	2	5	7	8	1	6
090-100	13	3	4	6	4	7	5	5
100-110	11	4	2	4			4	4
110-120	7		2	1				2
120-130	6		1	6				4
130-140	6		1	1				1
140-150	1		1	2				2
150-160	4							
Total								

247 BONE by #

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	180	13	70	42	57	39	51	45
010-020	277	35	87	73	61	4	64	64
020-030	128	112	46	94	54		31	67
030-040	310	5	116	34	121	79	30	76
040-050	253	75	74	59	63	133	52	76
050-060	360	160	[redacted]	109	135	74	102	116
060-070	510	86	64	84	47	134	147	94
070-080	503	100	67	70	93	56	110	83
080-090	264	92	21	230	144	125	70	132
090-100	469	97	48	46	146	221	74	105
100-110	434	122	98	103			67	98
110-120	292		72	46				59
120-130	173		63	82				73
130-140	119		65	15				40
140-150	74		55	170				113
150-160	114							

247 BONE by WGT

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	13.4	14.2	102.6	51.7	25.3	21.3	26.3	40.2
010-020	226.2	24.8	61.3	53.6	42.5	1.7	39.3	49.2
020-030	25.2	45.9	30.8	46.0	37.0		20.7	40.9
030-040	19.2	18.5	58.7	16.5	67.2	55.0	11.5	37.6
040-050	95.1	60.0	53.3	32.9	37.7	67.6	40.1	48.6
050-060	28.2	74.8	[redacted]	60.7	68.0	38.6	47.4	47.0
060-070	38.2	37.9	35.1	53.2	24.1	49.5	71.4	47.2
070-080	28.2	43.4	[redacted]	41.4	30.5	23.1	39.4	33.5
080-090	27.7	46.8	8.0	110.1	55.3	73.1	35.6	48.4
090-100	38.6	50.0	20.3	25	82.0	99.7	38.9	54.4
100-110	24.5	38.8	87.7	41.8			34.1	52.5
110-120	19.6		42.8	31.2				37.0
120-130	12.4		40.3	35.3				37.8
130-140	8.5		41.6	49.5				45.6
140-150	9.8		16.0	33.0				24.5
150-160	9.0							

247 CHT by #

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	0	0	0	1	4	1	0	1
010-020	2	2	0	0	3	0	3	1
020-030	1	6	0	0	1	0	1	1
030-040	0	0	1	0	2	0	0	1
040-050	0	0	0	1	1	2	4	1
050-060	3	0	2	3	3	5	2	2
060-070	3	6	1	1	1	1	0	2
070-080	0	0	3	2	3	0	2	2
080-090	0	6	0	7	0	0	0	2
090-100	1	5	1	2	0	10	0	3
100-110	3	3	1	1			1	2
110-120	2		0	0				0
120-130	2		1	3				2
130-140	1		4	2				3
140-150	3		0	3				2
150-160								

247 FAR by #

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	X			27				27
010-020	X	16	52	44	51			41
020-030	X	34	36	58	35			41
030-040	X	31	31	58	35			41
040-050	X	46	52	54	44			49
050-060	X	58	82	2	73			44
060-070	X	47	51	61	39			50
070-080	X	48	49	49	41			47
080-090	X	53	64	59	65			59
090-100	X	59	60	15	40			44
100-110	X	57	58	38				51
110-120	X		X	X				#DIV/0!
120-130	X		X	X				#DIV/0!
130-140	X		X	X				#DIV/0!
140-150	X		X	X				#DIV/0!
150-160	X							

247 FAR by WGT

	Column	B1	B2	B3	B4	B5	B6	Per.1M3
000-010	13.4	14.2	102.6	51.7	25.3	21.3	26.3	40.2
010-020	226.2	24.8	61.3	53.6	42.5	1.7	39.3	49.2
020-030	25.2	45.9	30.8	46.0	37.0		20.7	40.9
030-040	19.2	18.5	58.7	16.5	67.2	55.0	11.5	37.6
040-050	95.1	60.0	53.3	32.9	37.7	67.6	40.1	48.6
050-060	28.2	74.8	[redacted]	60.7	68.0	38.6	47.4	47.0
060-070	38.2	37.9	35.1	53.2	24.1	49.5	71.4	47.2
070-080	28.2	43.4	[redacted]	41.4	30.5	23.1	39.4	33.5
080-090	27.7	46.8	8.0	110.1	55.3	73.1	35.6	48.4
090-100	38.6	50.0	20.3	25	82.0	99.7	38.9	54.4
100-110	24.5	38.8	87.7	41.8			34.1	52.5
110-120	19.6		42.8	31.2				37.0
120-130	12.4		40.3	35.3				37.8
130-140	8.5		41.6	49.5				45.6
140-150	9.8		16.0	33.0				24.5
150-160	9.0							

STEGEMAN PROBLEM [redacted] 1/8: NEEDS 1/4 1.0 x 2.0 M UNIT

A1 Historic			**A1 Fired Clay**			**A1 BCOs**			**A1 SHELL**		**A1 BONE**			**A1 OBS**			**A1 MSD**			**A1 CHT**		
000-010	19	9.9	000-010	118	70.7	000-010	0	0.0	000-010	185.3	000-010	161	69.3	000-010	0	0.0	000-010	8	5.5	000-010	3	15.1
010-020			010-020	35	133.9	010-020	0	0.0	010-020		010-020	103	29.5	010-020	0	0.0	010-020	0	0.0	010-020	0	0.0
020-030	85	21.5	020-030	47	20.6	020-030	1	0.3	020-030	56.0	020-030	99	27.4	020-030	1	0.0	020-030	0	0.0	020-030	0	0.0
030-040	9	0.9	030-040	301	151.0	030-040	0	0.0	030-040	153.4	030-040	126	44.3	030-040	2	0.0	030-040	7	13.0	030-040	3	1.3
040-050	5	5.3	040-050	144	105.8	040-050	1	0.7	040-050	278.1	040-050	221	59.6	040-050	4	0.0	040-050	5	4.9	040-050	0	0.0
050-060	2	2.6	050-060	137	65.5	050-060	0	0.0	050-060	249.0	050-060	288	70.9	050-060	1	0.0	050-060	18	18.4	050-060	1	0.3
060-070	3	0.2	060-070	13	16.6	060-070	0	0.0	060-070	126.3	060-070	67	27.7	060-070	1	0.0	060-070	8	8.9	060-070	2	15.5
A2 Historic			**A2 Fired Clay**			**A2 BCOs**			**A2 SHELL**		**A2 BONE**			**A2 OBS**			**A2 MSD**			**A2 CHT**		
000-010	303	74.0	000-010	17	12.5	000-010	1	0.1	000-010	6.3	000-010	33	20.0	000-010	1	0.0	000-010	0	0.0	000-010	0	0.0
010-020	2	78.6	010-020	16	7.4	010-020	0	0.0	010-020	2.8	010-020	31	9.3	010-020	1	0.0	010-020	1	0.5	010-020	0	0.0
020-030	47	33.6	020-030	51	40.9	020-030	0	0.0	020-030	17.6	020-030	46	14.6	020-030	1	0.0	020-030	4	10.4	020-030	1	1.6
030-040	19	13.3	030-040	25	16.3	030-040	0	0.0	030-040	4.0	030-040	53	7.9	030-040	0	0.0	030-040	0	0.0	030-040	1	0.3
040-050	15	4.7	040-050	22	21.6	040-050	0	0.0	040-050	23.8	040-050	58	18.1	040-050	2	0.0	040-050	9	43.4	040-050	0	0.0
050-060	53	46.7	050-060	54	53.7	050-060	0	0.0	050-060	123.2	050-060	53	25.9	050-060	1	0.0	050-060	1	1.8	050-060	0	0.0
060-070			060-070	29	15.4	060-070	0	0.0	060-070	1.6	060-070	10	5.9	060-070	0	0.0	060-070	2	6.3	060-070	0	0.0
A1/A2 Historic			**A1/A2 Fired Clay**			**A1/A2 BCOs**			**A1/A2 SHELL**		**A1/A2 BONE**			**A1/A2 OBS**			**A1/A2 MSD**			**A1/A2 CHT**		
000-010	322	83.9	000-010	135	83.2	000-010	1	0.1	000-010	191.6	000-010	194	89.3	000-010	1	0	000-010	8	5.5	000-010	3	15.1
010-020	2	78.6	010-020	51	141.3	010-020	0	0	010-020	2.8	010-020	134	38.8	010-020	1	0	010-020	1	0.5	010-020	0	0
020-030	132	55.3	020-030	98	61.5	020-030	1	0.3	020-030	73.6	020-030	145	42	020-030	2	0	020-030	4	10.4	020-030	1	1.6
030-040	28	14.2	030-040	326	167.3	030-040	0	0	030-040	157.4	030-040	179	52.2	030-040	2	0	030-040	7	13	030-040	4	1.6
040-050	20	10	040-050	166	127.4	040-050	1	0.7	040-050	301.9	040-050	279	77.7	040-050	6	0	040-050	14	48.3	040-050	0	0
050-060	55	49.3	050-060	191	119.2	050-060	0	0	050-060	372.2	050-060	341	96.8	050-060	2	0	050-060	19	20.2	050-060	1	0.3
060-070	3	0.2	060-070	42	34	060-070	0	0	060-070	128.1	060-070	77	33.6	060-070	1	0	060-070	10	15.2	060-070	2	15.5
B1 Historic			**B1 Fired Clay**			**B1 BCOs**			**B1 SHELL**		**B1 BONE**			**B1 OBS**			**B1 MSD**			**B1 CHT**		
000-010			000-010	36	14.2	000-010	0	0.0	000-010	10.4	000-010	39	7.7	000-010	0	0.0	000-010	0	0.0	000-010	1	1.5
010-020	161	48.6	010-020	73	24.7	010-020	0	0.0	010-020	56.4	010-020	56	19.5	010-020	5	0.0	010-020	0	0.0	010-020	0	0.0
020-030	21	259.0	020-030	16	4.5	020-030	0	0.0	020-030	44.4	020-030	61	18.5	020-030	3	0.0	020-030	1	7.6	020-030	0	0.0
030-040	24	45.4	030-040	56	50.6	030-040	0	0.0	030-040	51.5	030-040	109	22.0	030-040	1	0.0	030-040	0	0.0	030-040	2	6.8
040-050	10	2.8	040-050	119	101.3	040-050	0	0.0	040-050	65.9	040-050	64	21.8	040-050	3	0.0	040-050	5	9.6	040-050	0	0.0
050-060	2	1.6	050-060	328	766.0	050-060	0	0.0	050-060	306.7	050-060	109	38.5	050-060	7	0.0	050-060	11	38.5	050-060	0	0.0
060-070	0	0.0	060-070	264	298.2	060-070	0	0.0	060-070	283.3	060-070	135	50.1	060-070	2	0.0	060-070	1	4.0	060-070	0	0.0
070-080	0	0.0	070-080	150	781.4	070-080	0	0.0	070-080	206.4	070-080	67	23.6	070-080	1	0.0	070-080	6	28.9	070-080	0	0.0
080-090	0	0.0	080-090	224	339.8	080-090	0	0.0	080-090	310.9	080-090	86	24.6	080-090	0	0.0	080-090	1	0.7	080-090	0	0.0
090-100	0	0.0	090-100	137	149.0	090-100	1	6.9	090-100	241.7	090-100	72	25.0	090-100	2	0.0	090-100	4	36.7	090-100	0	0.0
100-120	0	0.0	100-120	87.5	140.6	100-120	1	0.1	100-120	185.5	100-120	29	14.7	100-120	1.5	0.0	100-120	4	9.2	100-120	0.5	0.1
100-120	0	0.0	100-120	87.5	140.6	100-120	0	0.0	100-120	185.5	100-120	29	14.7	100-120	1.5	0.0	100-120	4	9.2	100-120	0.5	0.1
120-130	0	0.0	120-130	166	87.1	120-130	0	0.0	120-130	379.2	120-130	33	10.7	120-130	0	0.0	120-130	2	1.0	120-130	0	0.0
130-140	0	0.0	130-140	129	57.1	130-140	0	0.0	130-140	188.2	130-140	20	3.8	130-140	0	0.0	130-140	1	0.1	130-140	0	0.0
B2 Historic			**B2 Fired Clay**			**B2 BCOs**			**B2 SHELL**		**B2 BONE**			**B2 OBS**			**B2 MSD**			**B2 CHT**		
010-020			010-020	68	55.0	010-020	0	0.0	010-020	40.6	010-020	47	12.4	010-020	4	0.0	010-020	17	19.0	010-020	0	0.0
020-030	14	69.8	020-030	40	15.8	020-030	1	6.9	020-030	50.6	020-030	34	12.6	020-030	3	0.0	020-030	1	10.6	020-030	0	0.0
030-040	124	58.9	030-040	98	44.0	030-040	0	0.0	030-040	62.5	030-040	52	12.9	030-040	2	0.0	030-040	10	6.8	030-040	0	0.0
040-050	12	6.6	040-050	169	74.0	040-050	0	0.0	040-050	109.7	040-050	73	31.1	040-050	1	0.0	040-050	0	0.0	040-050	0	0.0
050-060	0	0.0	050-060	181	121.9	050-060	0	0.0	050-060	158.8	050-060	66	23.1	050-060	1	0.0	050-060	1	3.4	050-060	0	0.0
060-070	1	2.3	060-070	348	320.8	060-070	0	0.0	060-070	513.7	060-070	168	94.6	060-070	3	0.0	060-070	5	14.1	060-070	0	0.0
070-085	2	2.4	070-085	259	304.5	070-085	2	69.0	070-085	1267.8	070-085	208	126.4	070-085	4	0.0	070-085	9	94.5	070-085	0	0.0
085-090	0	0.0	085-090	272	185.6	085-090	8	28.1	085-090	428.5	085-090	131	40.5	085-090	8	0.0	085-090	3	1.2	085-090	0	0.0
090-100	3	3.6	090-100	224	262.6	090-100	0	0.0	090-100	544.1	090-100	51	23.3	090-100	1	0.0	090-100	1	6.5	090-100	0	0.0
110-110	0	0.0	110-110	290	259.2	110-110	1	3.7	110-110	327.6	110-110	78	20.3	110-110	0	0.0	110-110	2	0.4	110-110	0	0.0
110-120	0	0.0	110-120	56	108.8	110-120	0	0.0	110-120	307.7	110-120	75	20.5	110-120	1	0.0	110-120	1	2.6	110-120	0	0.0
B1/B2 Historic			**B1/B2 Fired Clay**			**B1/B2 BCOs**			**B1/B2 SHELL**		**B1/B2 BONE**			**B1/B2 OBS**			**B1/B2 MSD**			**B1/B2 CHT**		
000-010	0	0.0	000-010	104	69.2	000-010	0	0.0	000-010	51.0	000-010	86	20.1	000-010	4	0.0	000-010	17	19.0	000-010	1	1.5
010-020	175	118.4	010-020	113	40.5	010-020	1	6.9	010-020	107.0	010-020	92	32.1	010-020	8	0.0	010-020	1	10.6	010-020	0	0.0
020-030	145	317.9	020-030	116	48.5	020-030	0	0.0	020-030	106.9	020-030	113	31.4	020-030	5	0.0	020-030	11	14.4	020-030	0	0.0
030-040	38	52.0	030-040	225	124.6	030-040	0	0.0	030-040	161.2	030-040	182	53.1	030-040	2	0.0	030-040	0	0.0	030-040	2	6.8
040-050	10	2.8	040-050	300	223.2	040-050	0	0.0	040-050	224.7	040-050	130	44.9	040-050	4	0.0	040-050	8	13.0	040-050	0	0.0
050-060	3	3.9	050-060	674	1086.8	050-060	0	0.0	050-060	820.4	050-060	277	133.1	050-060	10	0.0	050-060	16	52.6	050-060	0	0.0
060-070	2	2.4	060-070	523	602.7	060-070	2	69.0	060-070	1551.1	060-070	343	176.5	060-070	6	0.0	060-070	10	98.5	060-070	0	0.0
070-080	0	0.0	070-080	422	967.0	070-080	8	28.1	070-080	634.9	070-080	198	64.1	070-080	9	0.0	070-080	9	30.1	070-080	0	0.0
080-090	3	3.6	080-090	448	602.6	080-090	0	0.0	080-090	855.0	080-090	137	48.1	080-090	1	0.0	080-090	2	7.2	080-090	0	0.0
090-100	0	0.0	090-100	427	408.2	090-100	2	10.6	090-100	569.3	090-100	150	45.3	090-100	2	0.0	090-100	6	37.1	090-100	0	0.0
100-120	0	0.0	100-120	143.5,	249.4	100-120	1	0.1	100-120	493.2	100-120	104	35.2	100-120	2.5	0.0	100-120	5	11.8	100-120	0.5	0.1
100-120	0	0.0	100-120	87.5	140.6	100-120	0	0.0	100-120	185.5	100-120	29	14.7	100-120	1.5	0.0	100-120	4	9.2	100-120	0.5	0.1
120-130	0	0.0	120-130	166	87.1	120-130	0	0.0	120-130	379.2	120-130	33	10.7	120-130	0	0.0	120-130	2	1.0	120-130	0	0.0
130-140	0	0.0	130-140	129	57.1	130-140	0	0.0	130-140	188.2	130-140	20	3.8	130-140	0	0.0	130-140	1	0.1	130-140	0	0.0
C1 Historic			**C1 Fired Clay**			**C1 BCOs**			**C1 SHELL**		**C1 BONE**			**C1 OBS**			**C1 MSD**			**C1 CHT**		
000-010	6	5.2	000-010	3	3.0	000-010	0	0.0	000-010	22.4	000-010	25	9.6	000-010	0	0.0	000-010	6	9.9	000-010	0	0.0
010-020	0	0.0	010-020	10	6.9	010-020	3	16.0	010-020	23.1	010-020	12	3.2	010-020	0	0.0	010-020	0	0.0	010-020	0	0.0
020-030	7	2.4	020-030	27	23.4	020-030	1	0.9	020-030	41.1	020-030	44	12.5	020-030	0	0.0	020-030	3	2.4	020-030	0	0.0
030-040	0	0.0	030-040	1	3.8	030-040	0	0.0	030-040	22.9	030-040	84	3.7	030-040	0	0.0	030-040	0	0.0	030-040	0	0.0
040-050	0	0.0	040-050	1	0.7	040-050	0	0.0	040-050	16.9	040-050	10	3.6	040-050	0	0.0	040-050	0	0.0	040-050	0	0.0
D1 Historic			**D1 Fired Clay**			**D1 BCOs**			**D1 SHELL**		**D1 BONE**			**D1 OBS**			**D1 MSD**			**D1 CHT**		
163-183	2	0.1	163-183	1030	2065.0	163-183	8	55.1	163-183	1869.7	163-183	193	52.0	163-183	3	0.0	163-183	49	66.3	163-183	2	4.1

APPENDIX I: GEOARCHAEOLOGY REPORT

A Geoarchaeological Study for the Level 3 Fiber Optic Alignment, Highway 45, Colusa County, California

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February 2001

The following report discusses the results of a geoarchaeological investigation as part of an archaeological study for the Level 3 Fiber Optic Alignment Project. The investigation took place along portions of Highway 45 between the towns of Princeton and Colusa, in Colusa County. The aims of the study included identifying and evaluating stratified landscapes at four archaeological sites, and determining the effects of large-scale geological processes on the configuration of the landscapes. In order to address these aims, the region's geomorphology was reviewed and archaeological data were correlated with geomorphological findings acquired during field visits to the project area.

Geoenvironmental Setting

This section provides a brief review of the geologic and paleoenvironmental setting of the study area. In particular, it focuses on factors that may have influenced human use and occupation and affected the preservation and visibility of archaeological deposits. Such factors include the Sacramento River system, topography, climate, geologic history, and time. When evaluated together, each contributes to an understanding of the present landscape and paleoenvironment. Additionally, each factor provides information concerning the development of soils and stratigraphy, which, in turn, helps to decipher the landscape evolution of archaeological sites.

The project area is situated in the west central Sacramento Valley in the eastern part of Colusa County. The county extends from the eastern Coast Ranges to the Sacramento River and can be divided into six topographic features that are useful for understanding the geomorphic setting of the project area. The features include (from west to east) the Coast Ranges and foothills, river terraces, old alluvial fans, young alluvial fans, a basin area, and the Sacramento River floodplain (see **Figure 1a**).

The eastern Coast Ranges are composed primarily of unaltered sandstone and shale incised by deep faults. Sedimentary in origin, these stones were first deposited during the Mississippian and Pennsylvanian periods when seas covered portions of North America. These periods were proceeded by volcanic activity during the Triassic to the Jurassic periods when mountains and igneous intrusions developed and seas advanced and receded (Harwood and Helley 1987). Materials that uplifted during this time consisted primarily of Cretaceous deposits as well as marine sedimentary formations and conglomerates. Following the Cretaceous period, massive uplifting, folding, and erosion took place, ultimately producing the Coast Ranges as they are known today. These geological processes caused extensive erosion of the mountains and foothills and deposition in the valley below.

Among the high elevation mountain ranges of North America's west coast, evidence of Holocene climatic warming has been identified as peaking between roughly 7500 and 5000 BP. (Knox 1983: 37) As glaciers melted, river systems were periodically inundated and sediments were transported into the lowlands and valleys. In the Sacramento Valley, Holocene alluvial activities were spurred by climatic events in the surrounding mountain ranges, particularly the Sierra Nevadas. Holocene climatic events that occurred along river systems west of the Rockies mirrored climatic events in nearby mountain ranges.

East of the Coast Ranges, the landscape descends into foothills and further into river terraces and alluvial fans. The terraces, which form bench-like deposits stepping down toward the valley, represent older sediments that lie parallel to the valley. The Coast Ranges are drained by a series of stream channels that have transported sediments downslope, creating vast alluvial fans at the base of the foothills. The upper 3 meters or so of the alluvial fans consist of recent sediments, below which lie thousands of feet of Tertiary sediments. Fossil remains of Pleistocene-age mammals have been found in portions of these alluvial fans.

Extending east from the alluvial fans lie the Colusa Basin and the Sacramento River floodplain. The project area is located along a segment of land where the basin and the floodplain converge (see **Figures 1a** and **1b**). The Colusa Basin is the lowest physical feature in Colusa County. It is composed of multiple smaller basins that are separated by streams and levees. During wet seasons, the area generally floods and slow-moving waters deposit thin layers of sediment across the basin. Stratigraphically, the deposits consist of fine layers of sediment composed largely of silt and clay. Due to the relatively small amount of sediment deposited annually, the age of the basin deposits increases rapidly with depth. Laterally, the deposits grade into the younger floodplain to the east and the younger alluvial fans to the west.

Geologic deposits in Colusa Basin are divided into groups based upon parent material, age, and location. Basin groups that fall specifically within the project area include the Marvin, Willow, and Grimes Soil Series (see **Figure 2**). These groups occupy the older and imperfectly drained portions of the floodplain or nearly flat basin areas nearest the Sacramento River (Harradine 1948). The basin deposits contend with both high ground water and flooding during wet seasons, causing poor drainage of minerals. As a result, alkali levels tend to be high depending on the location and depth of the soil, and cumulic A horizons and Bk horizons are common. Although the water table is high during wet months, the arid summer months in the Sacramento Valley cause the basin soils to dry. Annual saturation and drying out of the basin deposits causes shrinking and swelling among the clay-based soils. This action affects soil development processes by continually breaking down soil structure and creates difficulties in identifying and evaluating soils in their natural setting.

Sediments among the basin soil groups originated from transported alluvium and have a predominance of granitic material. Since the Coast Ranges are composed mainly of sedimentary and metamorphic rock, the granitic material in the Colusa Basin likely originated from the Sierra Nevadas. There are several possible explanations for this occurrence. Namely, Sierra Nevadan sediments may have deposited on the Sacramento Valley floor prior to the development of the river. It is also possible that the Sacramento River has meandered over time. At the very least, sediments transported by the river and distributed over the floodplain contain a mixture of geologic material from both sides of the Sacramento Valley.

The eastern end of the Colusa Basin rises toward a natural levee bordering the Sacramento River. Originating west of Mount Shasta, the river flows southward into the Sacramento Valley. The depth of the river deposits and the actual age of the river are unknown, although the oldest discernable meander loops of the river have been estimated to be a minimum of 1,000-2,000 years old based. This information is based upon an analysis of abandoned meander loops and intersections with younger loops. (Brice 1977:48) Presumably, however, the river is substantially older.

Annual river overflow has deposited layers of sediment over the riverbanks, thereby creating the Sacramento River floodplain. The floodplain deposits consist predominantly of well-sorted sand, gravel, and silt along the channels, flood zones, and natural levees. The floodplain is made up of numerous soil groups, two of which dominate the project area; the Sycamore and Columbia Soil Series. These groups comprise alluvial soils formed from transported materials that are dominantly granitic in character, much like the basin soil groups, only younger. They also contain some basic and sedimentary alluvium. Surface textures range from fine sandy loam to clay loams, with the loams and clay loams the dominant textures. The soils have recent profiles characterized by indefinite horizons and irregular stratifications in the subsoil. Geologic parent materials of the floodplain are generally noncalcareous except in the subsoils (Harradine 1948:6). Most of the alkaline content is believed to have originated from ground waters that reach the lower profile during the winter and early spring months of the wetter years.

Historically, the majority of sediments resulting from late 19th century and early 20th century hydraulic mining were deposited by the American, Feather, Yuba, and Bear Rivers, which join the

Sacramento River south of Colusa. As such, sediments derived from hydraulic mining activities are not a source of modern deposits within the project area. Over the past 150 years, deposition of river sediments across the floodplain has greatly changed with the construction of artificial levees, and today, deposition is confined to a narrow corridor.

The depth of sediment in the Sacramento Valley extends many hundreds of feet below the surface, and bedrock has been recorded in some areas as much as one mile deep. The valley is filled primarily with non-marine sediments of the late Tertiary and Quaternary Ages (Olmstead and Davis 1961:3). Subsurface deposits have been primarily studied with the use of well data, although these studies are few in number. One such study was conducted by Almgren (1978) who identified four buried Tertiary submarine canyon deposits in the central Sacramento Valley. One of these, known as the Princeton Canyon, lies directly beneath the project area. The southern end of this deep trough sits just west of the Sutter Buttes near the town of Colusa and extends north under the path of the Sacramento River floodplain to approximately Red Bluff. In a tectonic study of the Sacramento Valley, Harwood and Helley (1987) describe the Princeton Canyon as being 6,000 feet below sea level at it deepest. In and around the Level 3 project area, the canyon bottom sits roughly 3,300 feet below sea level and is filled primarily with Tertiary sediments.

Methods

As part of this investigation, four archaeological sites found within the project area were evaluated: the Stegeman Loci, the Reservation Road site, the Colusa M-7 site, and the Colusa County Courthouse site. Although time and equipment were limited for this investigation, sufficient field data were acquired with the resources at hand. Geoarchaeological field methods used at each site varied depending upon the tools and equipment available. Natural and cultural deposits at the Stegeman Loci were explored with the use of a backhoe. At the Reservation Road site, a large exposure was excavated by backhoe to reach buried archaeological deposits. The walls of the exposure provided adequate profiles in which to analyze deposits in their natural setting. Additionally, a hand auger was used to explore deposits beneath the site. The Colusa M-7 site was identified in a fiber optic cable installation trench during Level 3 construction activities. The trench walls provided a 1.5 m vertical profile suitable for stratigraphic analysis. At the Colusa County Courthouse site, archaeological materials were located primarily at the surface. While a profile of deposits was not available at the time the site was visited, surface exposures provided adequate information.

Stratigraphic units (strata) at the four sites were identified on the basis of physical composition, superposition, relative soil development, and textural transitions. Each stratum was sequentially assigned a Roman numeral (I, II, III, etc.) beginning with the oldest or lowermost stratum. Master soil horizons were designated by upper case letters (A, B, or C) and followed by Arabic numerals (2, 3, etc.) indicating that the horizon is associated with a different parent material (number 1 is understood but not shown). Subordinate soil horizons were designated by lower case letters as follows: "p" is a zone of artificial fill or disturbance; "b" is a buried horizon at the location where it was described (not used with C horizons); "t" is a subsurface (illuvial) accumulation of silicate clay; and "k" is a subsurface accumulation of pedogenic calcium carbonates ($CaCO_3$). A combination of these numbers and letters indicate the important characteristics of a particular soil horizon. These designations are consistent with those outlined by Birkeland et al. (1991), Schoeneberger et al. (1998), and the Soil Survey Staff (1998). Buried soils or paleosols, representing formerly stable ground surfaces, were identified in the field on the basis of color, structure, horizon development, bioturbation, lateral continuity, and the nature of the upper boundary with the overlying deposit (Birkeland et al. 1991; Retallack 1998). Finally, the strata were correlated at each study area when possible in order to connect stratigraphic units and landscapes.

A soil sample from the Reservation Road Site was submitted to Beta Analytic, Inc., in Coral Gables, Florida, for radiocarbon dating analysis. Soils and sediments can be dated if they contain biogenic carbon in the form of organic matter or humates (i.e., soil organic matter or SOM). The differential decomposition, humification, and translocation of biogenic carbon in a given deposit determine the type and amount of SOM available for dating. The accuracy of soil dates depends on the researcher's ability to select samples that will minimize potential contaminants (Scharpenseel 1979) and to properly interpret the context of the sample (Matthews 1985). The 14C age of a soil or sediment reflects the apparent mean residence time (AMRT) of the total organic content of the analyzed material. Since soil formation is time-transgressive, AMRT dates are usually younger than the true age of the soil. Understood in this way, the 14C age of a soil does not mark a single time or event, but reflects the influence of multiple processes that affect the soil carbon system over time.

Findings

Geoarchaeological field investigations were performed at the Stegeman Loci February 17-19, at the Reservation Road site March 16-20, and at the CM-7 and Colusa County Courthouse site on April 6, 2000. Additionally, the portion of the Sacramento River between the towns of Colusa and Princeton was surveyed by boat on July 27, 2000. Soil stratigraphy and landscape contexts at each site are provided below.

Stegeman Loci

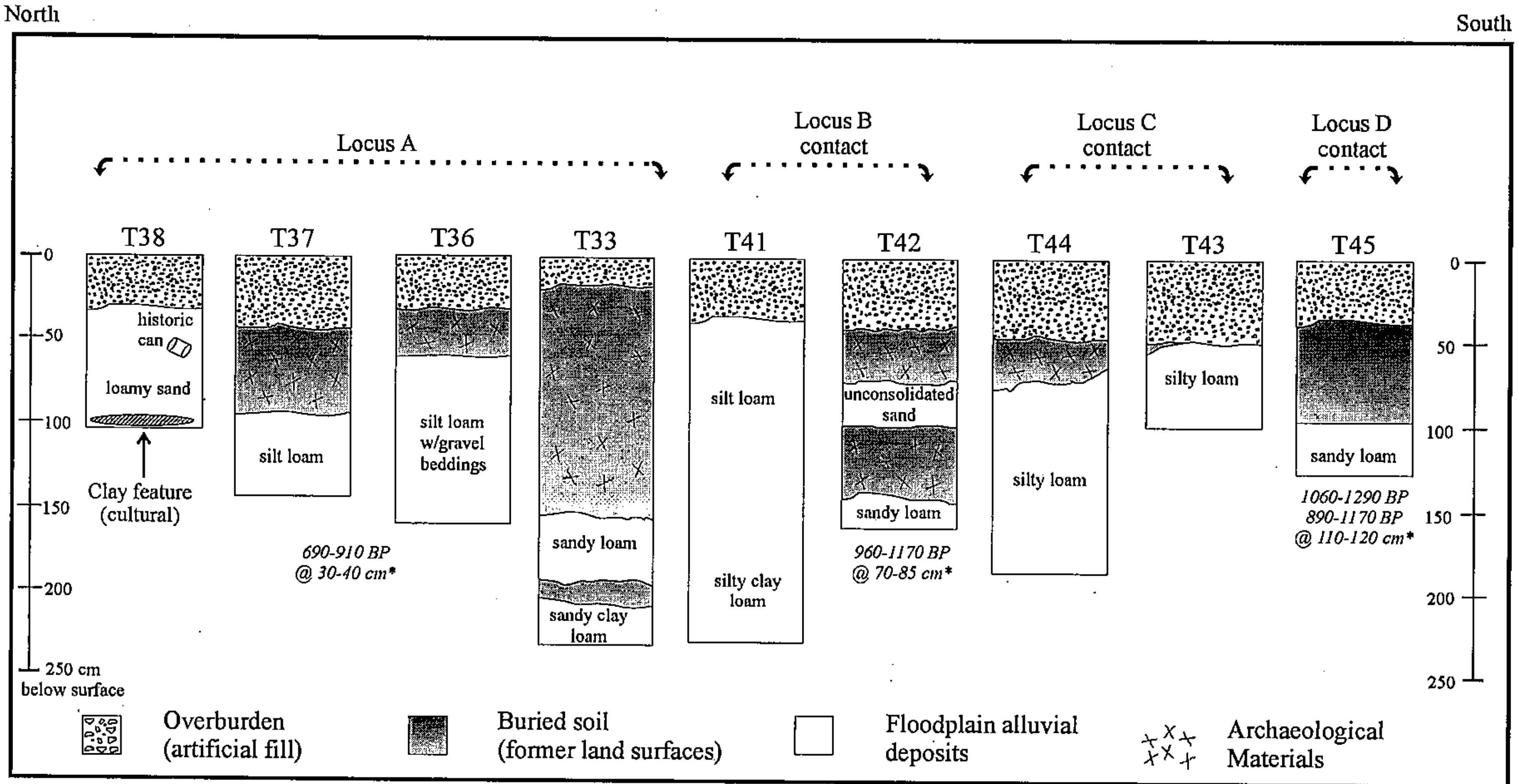
A geoarchaeological investigation of the Stegeman Loci was conducted using a backhoe to determine the nature and extent of archaeological deposits at the site. A total of 45 trenches was excavated along the linear stretch of Highway 45 at Stegeman Station. Four separate archaeological loci (A, B, C, and D) were identified as a result of the trenching. Several of the trenches were selected to analyze major stratigraphic units in detail and to study relationships between the archaeological and natural deposits. A particular focus was placed on lateral contact zones where archaeological and natural deposits converged in order to determine relationships between strata.

The surface soils in the area of the Stegeman Loci are mapped as the Sycamore Series, a relatively young Sacramento River floodplain soil group consisting of loams and clay loams (Harradine 1948:22). Soils containing archaeological deposits were composed primarily of silty loams that exhibited moderate soil structure and contained common roots and gravels. The texture of the natural deposits ranged from silty and sandy loams to silty clay loams, with clay content increasing with depth. Natural soil structure consisted of coarse size moderate angular blocky peds with friable consistency. Although soil formation was evident within the deposits, clay film development was not visible on any ped faces, supporting Harradine's findings that soils in this area are relatively youthful. In several trenches, gravels and cobbles appeared in well-sorted beds, but were mostly dispersed throughout the deposits. The presence of gravels indicates occasional episodes of relatively rapid (high-energy) alluvial deposition.

The four archaeological deposits at the Stegeman Loci (A, B, C, & D) were separated by natural deposits. Contact zones between archaeological and natural deposits were located at the north end of Locus B, the south end of Locus C, and the south end of Locus D (see **Figure 3**). The lateral contact zones at each location were diffuse, while most vertical boundaries were clear to abrupt. Diffuse lateral contact zones infer that floodplain deposition occurred close to periods of occupation. In such a case, sediments from the Sacramento River and related tributaries would have spilled out across the Stegeman site and intermixed with the archaeological materials. The presence of cobbles and gravels in some of the trenches suggests tributaries intersected the Stegeman area and may have bisected portions of the site, thereby creating the separate loci.

Reservation Road Site

A geoarchaeological investigation of the Reservation Road site was conducted as part of the archaeological excavations. A large portion of the site had been exposed by backhoe and by hand, which provided cross sections of the cultural and natural deposits. Several sections of the exposure were studied to identify the nature and extent of the deposits. Sections of the walls were exposed using hand tools, and detailed descriptions of stratigraphy were recorded. Additionally, a hand auger was used to study the natural deposits on which the site is situated. The first auger hole (#3-16-B) was placed at the southernmost end of the exposures, 18.8 m directly south of the site's central datum. The second hole (#3-17-A) was placed at the northernmost end of the exposure in the center of Unit B1.



Note: Horizontal measurements not to scale.

Figure 3. Profiles of Selected Test Trenches at the Stegeman Loci.

According to Colusa County soil surveys, the Reservation Road site is located at the eastern edge of a small arm of basin soils (see **Figures 1a, 1b, and 2**) associated with the Marvin Series, a clay loam soil group containing concentrations of alkali (Harradine 1948: 25, Olmsted and Davis 1961:198). The soil surveys, however, place the site virtually on the western edge of the floodplain soils. Due to the site's close proximity to the Sacramento River, soils might be related moreso to the floodplain rather than the basin.

In auger #3-16-B, a buried A and Bt horizon (Soil Unit I) were identified 3 m below the surface (see **Figure 4**). The strata consist of silty clay loam with strong angular blocky soil development. The A horizon was approximately 40 cm thick and was underlain by a Bt horizon characterized by weak clay films located on ped surfaces. The presence of many fine root holes, shell fragments, and some charcoal flecks in the upper 40 cm of Unit I suggest that the deposit represented a stable land surface. A soil sample from the A horizon received a radiocarbon date of 5230 +/- 60 BP (4020 BC), deeming it the oldest landscape identified during this study. Yet, given that the soils were observed from a small auger rather than in their natural setting, information regarding Unit I was limited. Furthermore, it is uncertain whether the shell and charcoal materials in the A horizon were naturally occurring or culturally introduced. Additional field studies would be necessary to obtain more definitive information concerning Soil Unit I.

The A and Bt horizons from Unit I appeared only in auger 3-16-B. The stable surface associated with this unit may represent a difference in topography within the site. Or, the energy which deposited Unit II may have washed away Unit I at the 3-17-A location. In either scenario, Unit I ultimately evaded erosion at the southern end of the site.

The main body of archaeological material at the Reservation Road site was associated with Soil Unit II, a silty loam to silty clay loam with weak to moderate soil structure. Unit II represents a package of alluvial sediment extending 2 to 3 meters in thickness with archaeological materials and an A horizon concentrated in the upper 1.5 meters. The parent material, or C horizon, at the base of Unit II exhibited fine well-sorted sand and gravel beds. Auger #3-17-A revealed a Bt horizon below the archaeological deposit, but a Bt did not appear in #3-16-B at the same level.

The thick extent of Unit II reveals a high quantity of alluvial deposition in a single package. The source of the alluvium is most likely associated with river deposits despite the site's proximity to Colusa Basin soils groups. If the soils in Unit II are related to basin deposits, the river may have been located further east than its present meander belt. The nature of the A horizon and associated archaeological materials in Unit II infer the land surface was stable for an extensive period of time. Radiocarbon dates reveal that surface stability continued for well over 1,000 years.

Overlying Unit II were two A horizons containing archaeological materials (Unit III). The lower of the two horizons exhibited calcium carbonate accumulations in the form of veins. The carbonates originated from either the soil's parent material or from ground water. Soil structure in Unit III was poorly developed (weak angular blocky peds) indicating the soil's youth.

Colusa M-7 and the Colusa Courthouse Site

The Colusa M-7 site was identified in downtown Colusa during fiber optic installation activities. After a fiber optic duct entrance pit had been excavated, archaeological materials including human remains were discovered. Two components of the M-7 site were distinguishable in the excavation profile (see **Figure 5**). The city of Colusa is located on young river floodplain sediments and soils, some of which were deposited as recently as 660 years ago. Until levees were constructed, the broad and somewhat flat topography of Colusa allowed Sacramento River overflow to spread out over the town and into the Colusa Basin. Despite the relative instability of the landscape at Colusa, humans have occupied the area for at least 1,000 years. The earliest component, at 125-160 cm below surface, received two radiocarbon dates ranging between 660 and 960 years BP. The first component is overlain by a weak to moderately developed silty loam with less than 10% gravel content. This sediment was most likely deposited by slow-moving water that appears to represent Sacramento River overflow. Once the location at M-7 stabilized, the area was reoccupied. A younger cultural component was identified directly below the sidewalk and gravel roadbed. Both prehistoric and historic-period artifacts were identified in this deposit, indicating that the younger component dates to the historic contact period.

Located less than 0.5 mile to the east of Colusa M-7 is the Colusa Courthouse Site. This site, located underneath modern fill deposits and road bedding, is situated on the same young river floodplain as M-7 (see **Figure 2**). Again, both prehistoric and historic-period artifacts were identified in this deposit. Thus, it may be inferred that the Courthouse site is located on the same land surface as the younger component identified at M-7.

Sacramento River Bank Study

A survey was conducted by boat along the Sacramento River between Colusa and Princeton for the purpose of locating natural cutbanks that were suitable for assessing subsurface stratigraphy of landforms near the project area. Roughly 15% of the river banks between Colusa and Princeton had clear vertical faces for conducting soil profiles. The remaining 85% of the riverbanks were either covered in Riparian vegetation or exhibited erosional slumping that obscured vertical profiles. The survey particularly focused on locating buried land surfaces in areas near the Reservation Road Site and the Stegeman Loci. In the areas where profiles were visible, a close examination was made of the stratigraphy by stepping onto the bank and exposing the profile with hand tools. Banks along the Stegeman Loci area were obscured by thick vegetation and by bank slumping. Several clear profiles, however, were located near the Reservation Road site. These profiles were examined for soil development, buried surfaces, and archaeological materials. Multiple buried surfaces could be seen in the profiles (see **Figure 6**), but all appeared thin and poorly developed. In general, periods of surface stability along the Sacramento River meander belt have been relatively brief. Although moderate soil development occurred in some of the deeper strata, most soils were weakly developed and sediments were commonly unconsolidated.

Figure 6. Sacramento Riverbank Across from the Reservation Road Site.
Soils were observed in the dark area near the center of the photo.

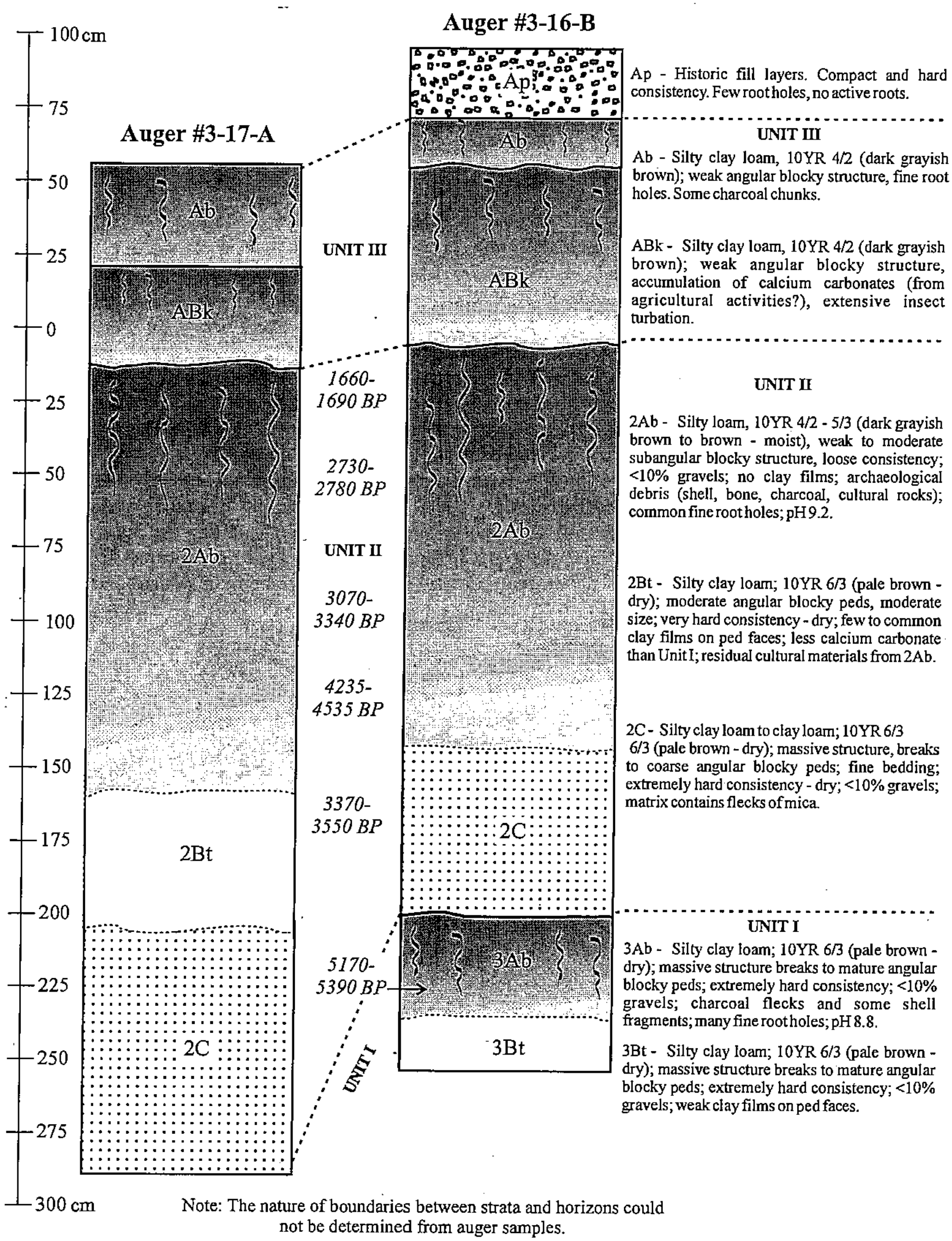
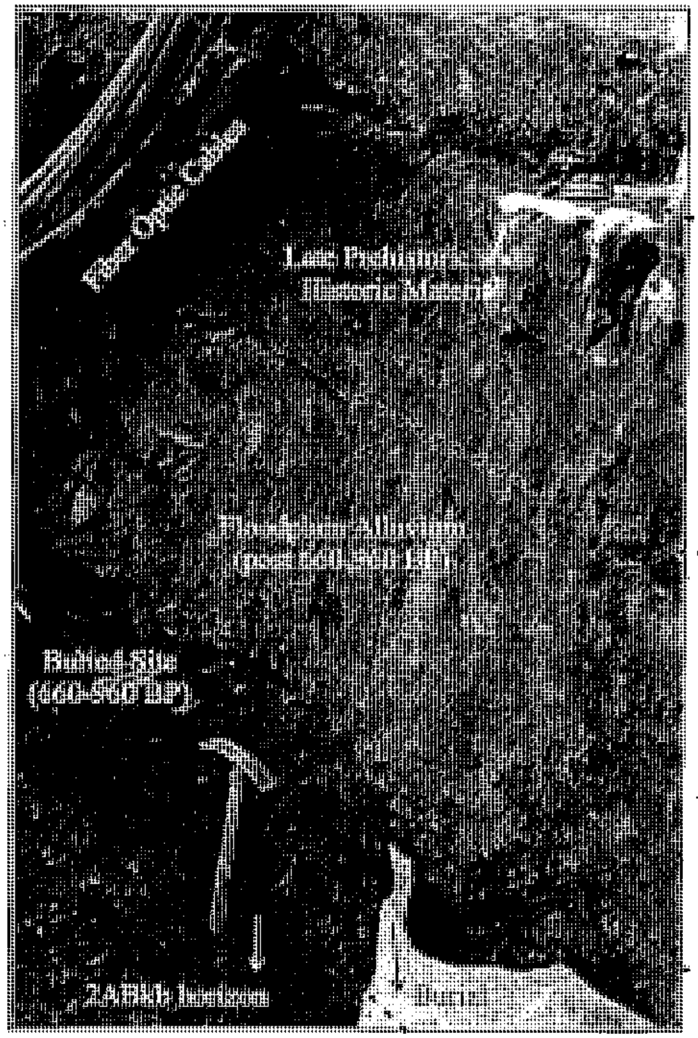


Figure 4. Reservation Road Site soil profiles from two hand auger tests



Ap - 0 to 30 bsw; top 12 cm is sidewalk; gravel bed below sidewalk; historic artifacts within gravel matrix; lower boundary is abrupt smooth.

Unit II

A - 30 to 75 cm bsw; medium brown silty loam; weak to moderate angular blocky soil structure; breaks to crumbs; coarse to very coarse size peds; friable consistency; <10% gravels; many fine roots; charcoal flecks; gradual wavy lower boundary; contains the sites upper archaeological deposit and has both historic and prehistoric artifacts.

ABkb - 75 to 125 cm bsw; light brown loam; weak to moderate angular blocky structure; friable peds; <10% gravels; calcium carbonate veins; oxidation; extensive bioturbation; gradual wavy lower boundary.

Unit I

2Ab - 125 to 160 cm bsw; brown to dark brown silty loam; weak angular blocky structure; medium size peds; very friable consistency; no gravels; contains the lower archaeological deposit; cleary wavy lower boundary.

2ABkb - 160 cm bsw o bottom of exposure and beyond; silty clay loam; moderate angular blocky structure; medium size peds; no gravels; many fine root holes, no active roots; calcium carbonates veins.

Note: Per G. White (April 2000) alluvial stratrigraphy continues down to at least 330 cm bsw and is void of buried surfaces or archaeological material.

Figure 5. Soil profile of western wall at Colusa M-7 showing archaeological deposits separated by floodplain alluvium.

Geoarchaeological Context

The alluvial fans, floodplains, and basins on the floor of the central Sacramento Valley have a long and complex depositional history that is only partly understood. Below the present land surface is a kind of layer cake of buried land surfaces, inundated by overflow sediments from the Sacramento River and associated tributaries. Many of these buried surfaces contain evidence of human occupation. This fact was confirmed when buried cultural components were identified at the Stegemam Loci, Reservation Road Site, and Colusa M-7.

The nature of depth of sediment in the Sacramento Valley has commonly deterred geologists from studying deep stratigraphy. The same holds true for archaeologists since many buried land surfaces are simply inaccessible. It is possible that numerous depositional changes have occurred since the time that people first occupied the central Sacramento Valley, and that these changes have affected the visibility of archaeological deposits on a regional scale. It has long been known that geological processes have buried numerous archaeological sites throughout the valley (Heizer 1949:39-40, 1950:5, 1952:9; Lillard, Heizer, and Fenenga 1939; Moratto 1984:214). This was clearly recognized by Schenck and Dawson in the northern San Joaquin Valley when they noted,

> So far as physical environment is concerned, man could thus have lived here from his most antiquity. But any record which he might have left would have been buried by the recent alluvium and would be difficult of access except in extraordinary circumstances or by chance. Moreover, the present wash of the alluvial fans and silting over of the valley floor would tend to obliterate quickly human remains of even a few thousand or perhaps a few hundred years ago. Accordingly the archaeologist who approaches the region has little justification for expecting to secure very ancient data [Schenck and Dawson 1929:294].

Even so, there have been very few studies in the region that attempt to integrate the findings of geological and archaeological studies in order to evaluate the potential effects of landscape change on the nature and completeness of the archaeological record (Meyer 1996). Given the potential biases imposed by natural landscape evolution, the lack of systematic geoarchaeological studies is an ongoing problem for investigators who attempt to interpret the relationships between regional site distribution patterns and demographic and settlement/subsistence change (Meyer and Rosenthal 1997). For instance, the predominance of Late Holocene archaeological sites in the Great Central Valley is often interpreted as *prima facie* for increased human population densities and changes in settlement subsistence patterns during the past 4,000 years (e.g. Beaton 1991:950-951; Bouey 1987:66; Broughton 1994; Schulz 1981:184).

The study of buried archaeological deposits is useful for supplementing portions of the archaeological record that are otherwise unknown or underrepresented. As such, they often provide unique research opportunities for understanding the timing and extent of human occupation within a limited area or an entire region. The research value of buried sites is related to the process of burial itself, which often preserves the systemic context of archaeological materials that would otherwise be disturbed or destroyed by on-going processes at or near the surface (e.g. collecting, erosion, fire, weathering, etc.). Buried sites can also contain considerable information about the nature and timing of past events and environmental conditions that contributed to their burial (Waters 1992).

Conclusion

The geoarchaeological investigation revealed that the project area is composed of multiple landform-deposits that were formed at different times by varied alluvial processes. Furthermore, it shows that buried archaeological deposits are present in the region, and that Mid to Late Holocene-age sites may be deeply buried by floodplain alluvial deposition. These findings are important because they suggest that landscape evolution has significantly influenced human occupation and the subsequent preservation and visibility of the archaeological record. The Stegeman Loci and the Colusa M-7 site exhibited evidence of late Holocene archaeological materials situated on young floodplain deposits, while the Reservation Road site contained evidence of Mid Holocene-age occupation associated with a significantly older buried surface. Components of each of these sites experienced burial by floodplain deposition.

The scope and findings of the geoarchaeological investigation were minimal when compared to the project area's broad research potential. Given that the project area appears to contain the type and variety of data necessary for evaluating the relationships between human occupation and landscape evolntion, the following research questions may aid in focusing future geoarchaeological studies in the project area and surrounding region.

1. Are the buried land surfaces identified in the project area of sufficient vertical and horizontal extent that they can be targeted and searched for unidentified archaeological remains?

2. Does the project area contain, or have the potential to yield, other unidentified buried land surfaces that were available for human use or occupation, and can these surfaces also be targeted and searched for unidentified archaeological remains?

3. Do the landform-deposits in the project area contain, or have the potential to yield, radiometrically datable materials suitable for determining the age and deposition history of the natural geological deposits?

4. Does the project area contain, or have the potential to yield, evidence that contributes to an understanding of the timing and extent of landscape evolution and its effects on the nature and completeness of the archaeological record in the immediate area and surrounding region?

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APPENDIX J:
RECOMMENDED BURIAL RECOVERY AND ANALYSIS PRODCEDURES (DEVELOPED BY CORTINA PATWIN AND ARP)

Prefield Plan for Burial Recovery and Analysis: Patwin Tribes-CSUC Archaeological Research Program

(I) Management Plan

This document constitutes a management plan for the excavation and analysis of human remains. The plan dictates a set of procedures and responsibilities to be implemented in the field and lab, and actions to be taken on further discovery. All parties to the plan, including the Pa-Twin Most Likely Descendent, Archaeological Consultant, and Project Lead, have provided input, support, and endorse the plan.

(II) CEQA Compliance

No physical action should be taken at the site of discovery until implementation of the lawful procedures mandated by CEQA, Appendix K, Section VIII "Discovery of Human Remains," as follows: "In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:" 1. (the discoverer) contacts the County Coroner (CC), 2. (CC) contacts the Native American Heritage Commission (NAHC), 3. (NAHC) identifies and contacts the Most Likely Descendent (MLD), and 4. (Lead) initiates consultation with MLD and landowner.

(III) Comportment

All parties to the action are strongly advised to treat the remains with appropriate dignity, as provided in Public Resources Code Section 5097.98. We further recommend that all parties to the action treat tribal representatives and the event itself with appropriate respect. For example, jokes and antics pertaining to the remains, or other inappropriate behavior such as loud music, smoking, etc., are ill-advised.

(IV) Training and Experience

Project directors and crew chiefs shall have thorough training and a working knowledge of skeletal anatomy and a demonstrated knowledge of Native California prehistoric burial practices. The primary archaeological consultant will be responsible for providing up-to-date CVs or resumes for all field personnel on request.

(V) Blessings

Prior to any physical action related to the remains, a designated Pa-Twin tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring individuals and tools involved in the action are available for traditional blessings and prayers.

(VI) Excavation Methods

A number of different burial exposure techniques have a history in the discipline and reasonable adaptations of methods to special circumstances are expected. Ideally, an initial exposure of the bones will be done to confirm they are human and to determine the position, posture, and orientation of the remains. At this point, we recommend the following procedure:

(A) Tools. Ideally, all excavation in the vicinity of the remains will be conducted using fine hand tools and fine brushes to sweep loose dirt free from the exposure.

(B) Extent of Exposure. In order to determine the nature and extent of the grave and its contents, controlled excavation should extend to a full buffer zone around the perimeter of the remains.

(C) Perimeter Balk. To initiate the exposure, a perimeter balk (essentially, a shallow trench) should be excavated, representing a reasonable buffer a minimum of 10 cm around the maximum extent of the known skeletal remains, with attention to counter-intuitive discoveries or unanticipated finds relating to this or other remains. The dirt from the perimeter balk should be bucketed, distinctly labeled, and screened for cultural materials.

(D) Exposure Methods. Excavation should then proceed inward from the walls of the balk as well as downward from the surface of the exposure. Loose dirt should be scooped out or brushed off into a dustpan or other collection device. Considerable care should be taken in the direct exposure of the bones, and a number of investigators have had success using dental tools or fine-pointed bamboo or wood skewers, the latter preferred because they are less likely to damage the bone.

(E) Provenience. Buckets, collection bags, notes, and tags should be fully labeled per provenience, and a distinction should be made between samples collected from: (1) **Perimeter Balk** (described above), (2) **Exposure** (dirt removed in exposing the exterior/burial plan and associations, and (3) **Matrix** (dirt from the interstices between bones or associations). Thus, each burial may have three bags, "Burial 1 Perimeter Balk," "Burial 1 Exposure," and "Burial 1 Matrix."

(F) Records. At a minimum, the following records should be compiled in the field: (1) a detailed scale drawing of the burial, including the provenience of and full for all bones, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, and intrusive disturbance, (2) complete a formal burial record using the consultants proprietary form or other standard form providing information on site #, Unit or other provenience, level depth, depth and location of the burial from a fixed datum, workers, date(s), artifact list, skeletal inventory, and other pertinent observations, (3) crew chief and worker field notes that may supplement or supercede information contained in the burial recording form, and (4) photographs, including either or standard photography or high-quality (>300 DPI) digital imaging.

Please note the provisions below with respect to handling and conveyance of records and samples.

(G) Association. Association between the remains and other cultural materials is to be determined in the field in consultation with a Pa-Twin representative, and may be amended per laboratory findings. Records of provenience and sample labels should be adequate to determine association or degree of likelihood of association of human remains and other cultural materials.

(H) Samples. For each burial, all **Perimeter Balk** soil is to be 1/8"-screened. All **Exposure** soil is to be 1/8"-screened, and a minimum of one 5-gallon bucket of excavated but unscreened Exposure soil is to be collected, placed in a plastic garbage bag in the bucket. All **Matrix** soil is to be carefully excavated, screened as appropriate, and then collected in plastic garbage bags placed in 5-gallon buckets.

(I) The remains are not to be cleaned in the field.

VII Lab Procedures

Lab Methods will be determined on a project-specific basis in consultation with Pa-Twin representatives. However, the following procedures are recommended:

(A) Responsibility. The primary archaeological consultant will be responsible for insuring that all lab procedures follow stipulations made by the Pa-Twin representative.

(B) Blessing. Prior to any laboratory activity related to the remains, a designated Pa-Twin tribal representative may conduct prayers and blessings over the remains. Further, the laboratory consultant will be responsible for insuring that pertinent personnel and lab facilities will be available for traditional blessings and prayers.

(C) Physical Proximity of Associations. To the extent possible, all remains, associations, samples, and original records are to be kept together throughout the laboratory process. In particular, matrix dirt is to be kept in buckets and will accompany the remains to the lab. The primary archaeological consultant will be responsible for copying a field records and images, and insuring that the original notes and records accompany the remains throughout the process. Additionally, remains should be kept in a secure location during the entire analysis process.

(D) Stipulations for Acquisition and Use of Imagery. Photographs and images may be used only for showing location or configuration of questionable formations or for the position of the skeleton. They are not to be duplicated for publication unless a written release is obtained from a Pa-Twin representative.

(E) <u>Additional Lab Finds</u>. Laboratory study should be done making every effort to identify unanticipated finds or materials missed in the field, such as objects encased in dirt. In the event of discovery of additional remains, materials, or associations, the Pa-Twin representative is to be contacted immediately.

(F) <u>Cleaning Methods</u>. Remains should be cleaned of any adhering matrix material prior to any reconstruction or analysis. Care is to be taken during cleaning to recover and save as much associated matrix material as reasonably possible. The primary recommended cleaning tool is a clean, damp, soft-bristled toothbrush. Secondary tools (standard dental picks) used to remove large pieces of matrix should be applied sparingly. A light water rinse may be applied to the surface of structurally sound cortical bone remove additional matrix, but no bone is ever to be submersed or allowed to soak. During cleaning, remains are to be handled at all times over not less than 1/16 inch mesh screen and all residue from such screens is to be retained. Following cleaning, remains should be air-dried out of direct sunlight on clean paper for at least 24 hours priors to further handling.

(G) <u>Reconstruction Methods</u>. Fragmentary remains should be reconstructed if at all possible to facilitate analysis and interpretation. Fragments are to be hand-fit and secured using light applications of Duco-brand contact cement or another similar product.

(H) <u>Analysis Methods</u>. Following reconstruction, data from the remains should be recorded using standardized forms. Such data may include an inventory; cranial, longbone, and dental measurements; nonmetric features; notation of pathologies or uniquenesses; and X-rays or CAT scans. Copies of all recording forms or ancillary material (e.g. X-rays) are to be kept with the remains, as per the recommendations for burial recovery. Under consultation with a Pa-Twin representative, samples may be taken for chemical, DNA, or histological analysis.

(I) <u>Reporting</u>. Following analysis, data recorded from remains are should be synthesized into a comprehensive, narrative osteological report with figures and appendices as needed. Minimally, this report should provide information as to the probable age, sex, ancestry, stature, and health of the individual represented by the remains, including the references used to make such determinations.

(J) <u>Storage</u>. Following submission of the final report to the primary archaeological consultant, remains are to be carefully packed in labeled bags according to their associated: longbones, cranial elements, ribs, etc. The exact number and contents will vary based on the number and type of remains recovered in each burial. Remains should then be boxed with their attendant records and forms while awaiting final disposition.

Appendix K: Dental Increment Analysis Report

Analysis of Mammal Teeth from the Level 3 Fiber Optic Project

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Introduction

The analysis of incremental structures formed in mammalian teeth provides accurate and precise data on the age and season of death of individuals in zooarchaeological assemblages (Pike-Tay 1991; Pike-Tay *et al.* 1999; O'Brien 1994). Data from dental increment analysis of large prey taxa such as pronghorn antelope (Basgall and O'Brien 1985; Lubinski and O'Brien 2001), numerous species of cervid (Pike-Tay 1991, 1995; Pike-Tay *et al.* 1999; Leigh 1998), equids (Burke 1993; Burke and Castanet 1995; O'Brien 1994, in press.) and several species of African game (O'Brien 1994) have been used to infer prehistoric site seasonality, prey selection, and hunting methods (Gordon 1988; Lieberman 1993; Miracle and O'Brien 1998; O'Brien 1994, 1996; Pike-Tay *et al.* 1999). Sites excavated in northern California as part of the Highway 45 project produced artiodactyl and carnivore tooth remains likely to yield season and age-of-death data preserved in the dental cementum. The only positive genus-level identifications made for the artiodactyl sample indicated *Odocoileus* (deer) and one sample of *Antelocapra* (pronghorn) present in the assemblage, although the remaining samples were clearly cervid and may have also included elk (*Cervus elaphus*). Carnivore and Rodent genera identified included *Canis* (probably coyote), *Castor* (beaver), *Procyon* (racoon), *Taxidea* (badger) and *Mephitis* (skunk).

Dental increments are identified in the cementum deposits on the roots of mammalian teeth and under microscopic examination appear as alternating dark and light bands, analogous to tree rings. Research with comparative samples of known-age and known date-of-death individuals has demonstrated a consistent relationship between annual seasons and the formation of distinct increment types (Pike-Tay 1991, 1995; Lieberman 1993; Lieberman *et al.* 1990; O'Brien 1994). In general, northern latitude taxa exhibit formation of a winter, or arrested growth increment followed by a summer, or growth, increment. Combined, these increments represent one year of an animal's life. Because cementum is deposited on teeth throughout an individual's lifetime, increments provide an annual record of the animal's life history. The total number of increments identifies the animal's age from the time of initial cementum formation, while the last increment in formation reveals the season of death. Although causal factors underlying the relationship between increment formation and season are still debated (Lieberman 1993; Pike-Tay

1991, 1995; Burke and Castanet 1995) the correspondence between season of death and outer increment type is consistent in analyzed comparative populations (Pike-Tay 1991, 1995; O'Brien 1994; Lubinski and O'Brien 2001; Burke and Castanet 1995).

Methods of increment analysis are broadly similar. Teeth are embedded in epoxy or similar resin to maintain structural integrity and then sectioned. The cut surfaces are polished, mounted on glass slides, and then cut again, leaving a thin section on the slide. This section is ground and polished, then viewed under magnification for the presence of increments. Recent research into the biology of cementum formation (Lieberman *et al.* 1992; Lieberman 1993) suggests that the petrographic method of sectioning is most appropriate for both archaeological and comparative samples because it takes advantage of changes in polarized light defraction resulting from biological variation in the structure of cementum increments. Spurious results frequently reported by biologists utilizing the method for determining age in managed game populations most likely result from the use of non-petrographic methods of thin sectioning (O'Brien 1994, in press). With the petrographic method, teeth are embedded in epoxy to help maintain structural integrity, thin sections are cut with a diamond saw, mounted on glass slides, and then ground and polished to an appropriate thickness. More significantly, sections are viewed under high magnification using a transmitted, polarized light source (Lieberman 1993).

Accurate interpretation of dental increments is predicated upon establishing seasonal increment formation times in the particular taxon under analysis. Increment formation periods are often well established in taxa where numerous known date-of-death individuals have been studied over an annual cycle and season-of-death estimates within a 2-3 month period can be confidently assigned. However, for most taxa, these periods are not well defined and season-of-death estimates are not advisable beyond the general ranges of "winter" or "summer". In some cases, collective data from a variety of related taxa (*e.g.* artiodactyls, ungulates) are used to narrow seasonal estimates considerably (Pike-Tay *et al.* 1999).

Analysis

Table 1 lists the tooth specimens submitted for analysis to determine the presence of increments in the dental cementum. Six genera, two artiodactyl, one rodent and three carnivore are identified in the sample. The remaining samples are grouped into general family (i.e. cervid) or Order (carnivore) designations. Genera identified include: *Odocoileus* (deer), *Antelocapra* (pronghorn), *Canis* (probably coyote), *Castor* (beaver), *Procyon* (racoon), *Taxidea* (badger) and *Mephitis* (skunk). Elk (Cervus) is also probably represented, although confident identification of this taxon could not be made.

The entire tooth or root segment was embedded in Epo-Tech® epoxy to maintain structural integrity of the sample during sectioning and then bisected using a geological saw equipped with a diamond blade. The cut "face" of each segment was then polished with silicon carbide grit on a glass plate and mounted, face down, on a glass slide. The specimen was then sectioned parallel to the slide surface, leaving a thin section of the tooth. Each thin section was then polished with silicon carbide grit and frequently checked under the microscope for the presence of incremental structures. Polishing continued until structures in the tooth tissues (enamel, dentine and cementum could be identified. Sections were examined at a magnification of 125X using a transmitted, polarized light source. With this method, winter (non-growth) increments appear opaque (dark) and summer (growth) increments appear translucent (light) (Lieberman *et al.* 1990; Lieberman 1993). A digital imaging system was used to "capture" images for further analysis. The clarity of each section was also subjectively rated from 1 (Excellent; clear increments) to 4 (Poor; increments difficult to identify).

Cat No.	Site	Unit	Level	Tooth	Taxon	Comments
327-97-14	Res Road	4	80-90	M3	*Odocoileus*	
327-02-06	Res Road	A1	10-20	I	cervid	
327-141-07	Res Road	A1	80-90	M	possible Elk	
327-121-16a	Res Road	A14	20-30	indet	*Castor*	
327-127-11b	Res Road	A16	10-20	PM	cervid	
327-134-15	Res Road	A18	10-20	PM/M	*Canis*	2 total
327-42-10	Res Road	A5	40-50	PM/M	*Taxidea*	
327-94-09a	Res Road	B4	50-60	C	*Canis*	
327-102-18	Res Road	B5	40-50	PM	*Odocoileus*	
327-117-08	Res Road	B6	90-100	man	*Canis*	
326-04-14	M-7		upper silt	PM/M	med carnivore	2 total
326-05-20	M-7		lower midden	canine	*Procyon*	
326-01-40	M-7		mixed deposit	canine	med carnivore	2 total
326-01-40	M-7		lower midden	PM/M	cervid and carnivore	2 total
328-45-05	Stegman	1	20-30	man	*Mephitis*	
328-17-12	Stegman	1	20-30	PM/M	*Mephitis*	2 total
328-18-11	Stegman	1	30-40	PM/M	*Procyon*	
328-05-14	Stegman	1	40-50	M	possible Elk	
328-31-05	Stegman	2	10-20	PM/M	cervid/deer	
328-36-06	Stegman	2	60-70	PM	*Procyon*	
328-37-09	Stegman	2	70-85	max	*Antelocapra*	
328-37-09	Stegman	2	70-85	max	*Procyon*	

Table 1. List of tooth samples from Highway 45 Project archaeological sites submitted for dental increment analysis.

All areas of cementum apposition are examined for increments although focus is on those areas just at and below (apical to) the cementum-dentine-enamel junction (root cervix). Both the outer increment and the total number of opaque increments are identified in all areas where views of the cementum are relatively clear. If necessary, determination of the number of increments as well as increment types is noted and then the slide re-polished to clarify some areas. Because several areas of a single slide are examined repeatedly and the slide frequently re-polished, several determinations of increment quantity and type might result. Consecutive numbers following the tooth and slide numbers identify each of these areas (*e.g.* "85D-1.2" denotes tooth 85D, slide 1, view area 2). Results from each of the view areas are compared for quality and consistency to determine the final increment number and outer increment type. The width of the outer increment is subjectively compared to previously deposited increments of the same type to gauge the degree of growth. For translucent increments, estimates are made in quarter fractions (25% growth, 50% growth, etc.). Opaque increments tend to be thin, and estimates are based on whether they are greater or less than 50% the width of previously deposited opaque increments

Results

Table 2 indicates the results of the dental increment analysis for the Highway 45 Project. Of the total sample of 27 teeth, 19 were sectioned to determine the presence of incremental structures in the cementum. The remaining eight tooth samples were not sectioned for one or more of the following reasons: 1) upon visual inspection, the sample did not appear to have any cementum deposition (i.e. the sample consisted completely or mostly of enamel crown with no root or root segment; or the sample appeared to be highly abraded on the root surface); 2) the tooth represented a young individual with little or no wear (indicating cementum incrementation has yet to occur; see Lieberman 1993[1]); or 3) the tooth was too small or fragmentary to physically manipulate on the sectioning saw (this was particularly true of many of the small carnivore teeth).

The majority of teeth sampled for increment analysis yielded readable increments. Almost all teeth analyzed from the Colusa Market and Reservation Road sites produced season of death data. Two teeth from the Reservation Road sites (one cervid and one *Canis*) exhibited cementum deposits, but incrementation could not be confidently identified. Two from the Colusa Market and 7th excavations were not sectioned for reasons cited above, but the other two yielded seasonality information. Only samples from the Stegeman sites generally did not yield readable sections. Only one of the seven teeth sections exhibited a readable outer increment. The reasons for this are unclear, but probably do not relate to age of the deposits. Of the three areas sampled, teeth from the Reservation Road excavations occur in the oldest deposits (Greg White, personal communication) but yielded the most clearly readable sections. Those from the Market Street excavations are from the latest deposits. Samples from the Stegeman excavations come from deposits that intermediate in time between the two other areas. Our inability

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[1] Although cementum deposition may begin prior to complete eruption of the tooth, Lieberman (1993, 1994) has demonstrated that cementum *incrementation* does not begin until the onset of occlusion.

to obtain readable sections from the Stegeman samples probably has much to do with the relationship between bone degradation and soil diagenesis, and is locally variable (O'Brien personal observation). Teeth from the Stegeman sites also tended to be smaller and/or fragmentary, limiting the areas of cementum that could be read for increment analysis.

Cat No.	Unit	Level	Tooth	Taxon	Outer Increment	Width
327-97-14	4	80-90	M3	*Odocoileus*	T	0.25
327-02-06	A1	10-20	I	cervid	indet.	
327-141-07	A1	80-90	M	possible Elk	T	0.50
327-121-16a	A14	20-30	indet	*Castor*	T	<.25
327-127-11b	A16	10-20	PM	cervid	T	0.25
327-134-15	A18	10-20	PM/M	*Canis*	**O**	**1.00**
327-42-10	A5	40-50	PM/M	*Taxidea*	T	1.00
327-94-09a	B4	50-60	C	*Canis*	indet.	
327-102-18	B5	40-50	PM	*Odocoileus*	T	0.25
327-117-08	B6	90-100	man	*Canis*	**O**	**indet**
326-04-14		upper silt	PM/M	med carnivore	not sectioned	
326-05-20		lower midden	canine	*Procyon*	T	0.25
326-01-40		mixed deposit	canine	med carnivore	**T**	**1.00**
326-01-40		lower midden	PM/M	cervid and carnivore	not sectioned	
328-45-05	1	20-30	man	*Mephitis*	**O**	indet
328-17-12	1	20-30	PM/M	*Mephitis*	**indet**	
328-18-11	1	30-40	PM/M	*Procyon*	indet	
328-05-14	1	40-50	M	possible Elk	**indet**	
328-31-05	2	10-20	PM/M	cervid/deer	**indet**	
328-36-06	2	60-70	PM	*Procyon*	**indet**	
328-37-09	2	70-85	max	*Antelocapra*	**not sectioned**	
328-37-09	2	70-85	max	*Procyon*	**indet**	

Table 2. Results of dental increment analysis for samples from Highway 45 Project archaeological sites.

Discussion: Seasonality

Although a small sample from three excavations areas that are separated spatially and chronologically, the tooth samples sectioned for increment data do suggest some patterning. Cervid teeth consistently exhibit outer translucent increments that are 25-50% of full growth. Following increment growth patterns for *Odocoileus* determined by Leigh (1998) and those for elk determined by Pike-Tay (1990) this degree of growth suggests spring and summer kills. Carnivores, including *Canis*, *Mephitis* and one medium carnivore unidentifiable to species exhibit outer opaque increments indicative of winter kills. One *Procyon* exhibits an outer translucent increment approximately 25% of full growth, but the pattern of increment formation in carnivores is note currently well documented outside of general opaque = winter and translucent = summer categories. It is possible that the limited translucent development seen on this tooth is not necessarily inconsistent with a late winter, early spring death. This distinction in season of death between the carnivores and cervids represented in the excavation areas is interesting in light of differential human behavioral associations between the two groups. Although probably self-evident, given that cervids are frequent prey for prehistoric aboriginal groups throughout northern California it is likely that these individuals were introduced into the sites as a direct result of human hunting and carcass processing behavior. In effect, season-of-death determinations in these samples are indicative of seasonal occupations of the sites. The same cannot be said for the carnivore data. Although it is not unknown for aboriginal groups to prey on carnivores, their generally lower proportional representation in the ecosystem coupled with less utility as a food resource generally translates into limited representation in archaeological sites. If this is the case for the Highway 45 Project excavations, then carnivore presence at the sites suggests time frames when humans were not occupying these locations. The fact that the carnivore tooth assemblage by and large exhibits a season of death (winter) distinct from that for the cervids (spring-summer) is further suggestive that carnivore introduction into the sites occurred in absence of human activity. Alternatively, carnivores could have been introduced through human hunting and/or trapping, however, some explanation for the differential seasonal efforts in exploiting carnivores and cervids is in order. An analogy with the winter trapping of fur-bearers in historical contexts might be considered in this regard. Interestingly, the one non-cervid to exhibit a clear early spring season of death is the single beaver (*Castor*) represented in the tooth sample.

Conclusion

Dental increment analysis of teeth from three excavation areas of the Highway 45 Project yielded season-of-death information for most of the samples submitted. The sample size is small and therefore the data do not represent an exhaustive evaluation of seasonal activities at these sites. Moreover, the dental increment data do not preclude activities taking place at other times of the year. However, the results do indicate the seasonal time for some events (presumably hunting). Results indicate that between spring and summer some game animals (deer and non-identifiable cervids) were taken at these sites. Carnivore season of death data were also yielded from the analysis and these indicate the introduction of carnivores during winter. The clear seasonal distinction in carnivore and cervid introductions into the assemblages raises interesting questions regarding human activities at these sites.

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