

ANALYSIS OF A MIDDLE PERIOD SITE AT LITTLE RED HILL IN RANCHO CUCAMONGA

MARGARITA VILLARREAL, MEGAN A. RAMOS, HENRY DUONG, JESSICA VALDEZ, BRITTANY WEBB,
SYDNI KITCHEL, ALICE TOKUNAGA, AND RAYMOND CONTRERAS, JR.
CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA
GEOGRAPHY AND ANTHROPOLOGY DEPARTMENT

Between 1975 and 1977, Cal Poly Pomona students excavated an apparent Middle period milling stone site (CA-SBR-270) at Little Red Hill in northern Rancho Cucamonga. The site was being damaged extensively by a housing project. Several other archaeological sites are recorded nearby. We present a reanalysis of the 1970s excavations and summarize the collection, which consists of a large quantity of ground stone artifacts, bifaces, unifaces, faunal remains, and debitage. This site is one of the few large sites excavated in the Cucamonga area, and we argue that it permits a better understanding of the Middle period in inland southern California.

BACKGROUND

An archaeological site known as CA-SBR-270, located on a slope 7 to 10 km south of the San Gabriel Mountains and approximately 700 m from Cucamonga Creek, is now covered by a housing complex. The 55,200 m² site is located on Red Hill in Rancho Cucamonga, California. It was excavated by Cal Poly Pomona students during three field seasons from 1975 to 1977. The area which SBR-270 once occupied is now a housing complex; therefore, it is probable that any remnants of the site were damaged and/or destroyed during construction. However, a number of artifacts were salvaged before and during the construction, which are the subject of this research project.

The amount of time which has passed between excavation and the analysis created a number of problems. The two main issues are 1) missing paperwork for two of the three separate catalog accessions representing separate field seasons, and 2) the significant number of ground stone artifacts discarded around 1992. Despite conflicting and incomplete records, reconstruction of the excavation for analytical purposes has been conducted as accurately as possible. A total of 1,205 artifacts were analyzed for this project. Twenty-seven additional artifact pieces classified as “other” are included in this summary, but were not analyzed in depth (Figure 1). This paper summarizes our preliminary findings for the site and draws attention to a neglected area in southern California archaeology.

Local Environment

The inland portion of the southern California region has a semiarid climate, with chaparral flora dominating its landscape. Nearby alluvial deposits consist of cobbles and boulders close to the mountain slopes and transition into finer silts, clays, and sands on the floodplain. The alluvial plain begins at the base of the San Gabriel Mountains and continues in a series of alluvial fans. Streams and springs are common throughout the area, with Cucamonga Creek located approximately 700 m west of SBR-270 (Martz 1976).

Site History

Several sites with similar characteristics and artifact assemblages are close to SBR-270, supporting the idea that this area was evidently a major focus for prehistoric habitation. SBR-900 and SBR-902 are located to the west, between SBR-270 and Cucamonga Creek. SBR-901, also known as the Liberty Grove Site, is located about 100 m to the south and southwest of SBR-270 (Figure 2). Both SBR-270 and SBR-901 appear to be similar in age, based on the California State University, Long Beach Master's thesis by Roy Salls (1983). Additionally, SBR-270 is located in the vicinity of Cucamonga

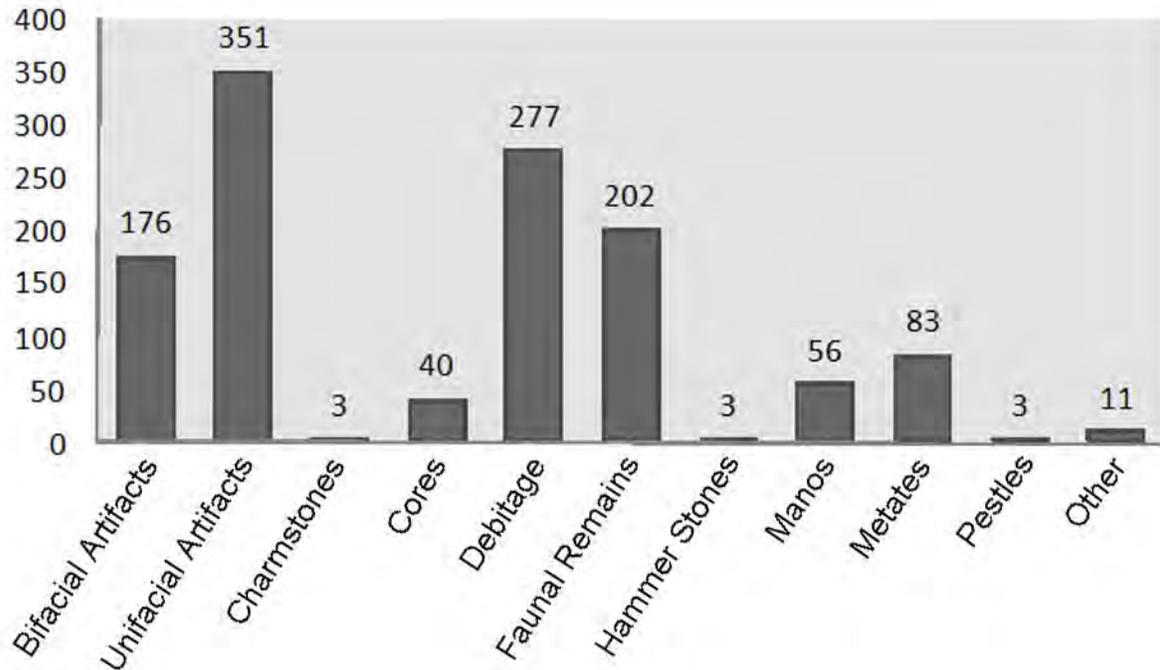


Figure 1: Number of artifacts used for analysis.

Village, an ethnohistoric site known to have been inhabited by a local Native American group known as the Tongva (Martz 1976).

SBR-270 was first identified and recorded by Dr. Thomas Blackburn of Cal Poly Pomona. The site was excavated, and the artifacts from the three accessions were cataloged. Each accession represented one field season, from 1975 to 1977 (Figure 3). His students excavated a large number of 2-x-2-m units to a range of depths, using 6-mm (1/4-in.) mesh screens to filter the soil. The deepest middens were approximately 100 cm. A number of materials were salvaged from the housing construction areas. Due to the fact that Accession 1 was not entirely excavated, there is an area where Accessions 1 and 2 overlap (Thomas Blackburn, personal communication 2010); a close examination of the original catalog supports this notion. For the past 35 years, the SBR-270 collection has been in storage at Cal Poly Pomona. The project was last under the supervision of Dr. Mark W. Allen, who joined Cal Poly Pomona in 2000. With a preliminary study of the SBR-270 collection conducted, the artifacts are permanently being curated at the San Bernardino County Museum in Redlands. Also noted is the work of Amanda Martinez, who analyzed the artifacts in Accession 1 for a senior project in 2001.

ARTIFACTS

Ground Stone Analysis

Data for the ground stone artifacts retrieved from SBR-270 indicates that 880 mano specimens and 243 metate specimens were in the original collection. However, in the current collection there are 57 manos (two of which are fire-affected), 83 metates, three pestle fragments, three charmstones, three hammer stones, and no mortars. One specimen in the ground stone collection can be defined as a multiple-use item, serving as both a hammer stone and a mano. Based on the profile shape of the manos, which can be used to determine the type of stroke used (Adams 2002), the majority of the manos retrieved from SBR-270 have flat surfaces, indicating that a flat stroke grinding technique was used. This is

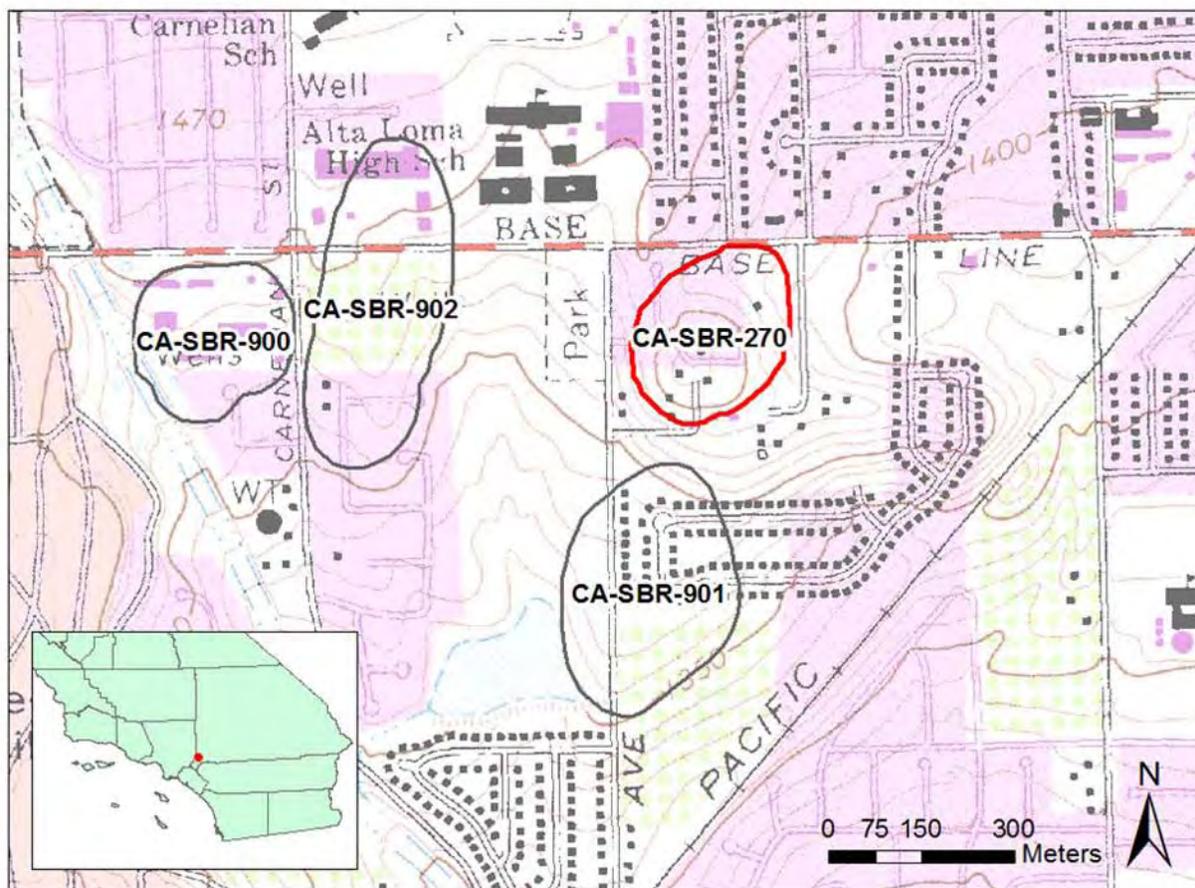


Figure 2. Map of CA-SBR-270 and relation to other sites associated in the Cucamonga complex.

consistent with the number of metates found with flat grinding surfaces. Pecking on several of the manos implies that inhabitants of the site spent a lot of time customizing and formalizing their manos. In addition, finger grooves were present on a small number of manos in the collection.

Overall, the data suggests that SBR-270 was occupied during the Milling Stone horizon as characterized by Wallace (1955:219-221). He referred to the Milling Stone as a culture marked by “extensive use of milling stones and mullers,” a lack of mortars and pestles, and “a general lack of well made projectile points” (Wallace 1955:219). In addition, there was a unique mortuary practice of burial beneath rock cairns, which were often assembled from milling tools (Jones 2008). In the SBR-270 collection, 83 percent of manos and metates were classified as fragments.

Three possible charmstones were also retrieved from the site, along with a discoidal stone, one small fragment of a stone ring, and one very small pestle. A recent study by Fitzgerald and Cory (2009) argues that such artifacts have been in southern California for thousands of years.

Bifacial and Unifacial Artifacts

A total of 527 bifacial and unifacial artifacts, including scrapers, scraper planes, projectile points, and drills, were retrieved from site SBR-270. Of these, 176 are classified as bifacial and 35 are unifacial. Thirty-four of the bifacial specimens and 302 of the unifacial specimens appear to have been used as scrapers. These artifacts are retouched or worked flakes and fragments with one or more smooth and/or



Figure 3. Map of accession locations.

worn edges or surfaces. There are 11 scraper planes, which are large in size and unifacial; they are characterized by one relatively smooth, flat surface. The scraper planes have a better hand fit, as compared with the other small scrapers that were retrieved from the site. Kowta (1969) identified these as common tools in the nearby Cajon Pass, and attributed the larger size and better hand fit to the processing of agave and yucca plants. Thirty-five of the remaining bifacial specimens are projectile points, 26 are drills, and of the unifacial specimens seven are projectile points. All the remaining artifacts are distal or proximal fragments of points or knives; most are fragments too small to determine an accurate type, thus unclassifiable.

The presence of the scraper plane at site SBR-270 indicates that it is a Milling Stone horizon site (Jones 2008; Kowta 1969; Salls 1985). Unlike other Milling Stone horizon sites where scraper planes have been meager and crudely manufactured, the scraper planes retrieved from SBR-270 are more formalized by having a better hand fit (Jones 2008), thus making it apparent that SBR-270 is a transition from middle to late Milling Stone horizon. The large number of scrapers, both bifacial and unifacial, along with scraper planes, convey that the inhabitants of this early site were a sedentary group. Similar to site SBR-901, heavy plant processing was done by utilizing the tool known as the scraper plane. Large numbers of processing tools at SBR-270, such as scrapers and scraper planes, imply that inhabitants of the site were spending a lot of time processing resources (Salls 1985). For instance, the scraper plane would have been used to process plants, particularly agave and yucca (Salls 1985).

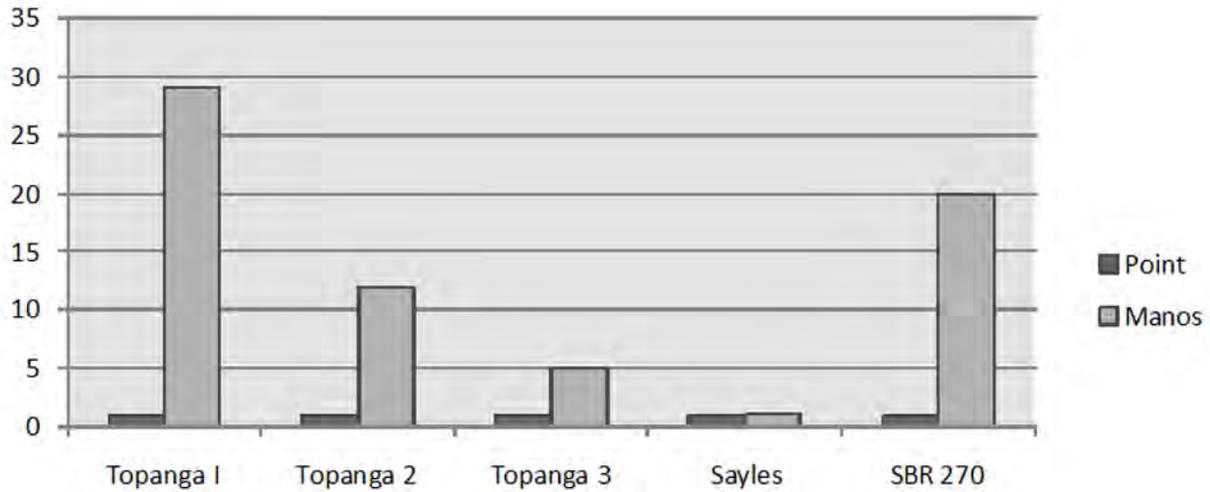


Figure 4. Manos to point ratios.

Projectile Point Analysis

Forty-two (20 percent) of the total artifacts retrieved from site SBR-270 are projectile points. The classifiable points are Pinto, Elko, Humboldt, and Desert Side-notched. A majority of these points appear to be an unclassifiable triangular-shaped point. An obsidian Pinto point (Cat. No. 1-333) was sent for hydration rim measurement and yielded a 7.9 ± 0.1 micron reading. No absolute date is attempted here, but this appears consistent with Pinto point measurements from the nearby Mojave Desert (Gilreath and Hildebrandt 1997). The Pinto and Elko points probably came through interactions with the desert culture along Cajon Pass, which supports the notion that SBR-270 was occupied between 4000 and 2000 B.P. The triangular-shaped points resemble points retrieved from the Sayles site, a late-period Milling Stone site in nearby Cajon Pass (Kowta 1969). In 1976, Martz classified SBR-270 as a Gabriellino site; under these circumstances, it is possible that these triangular points are Cottonwood points, possibly an early variation of these normally late-period diagnostic artifacts (Fenenga 1953; Sutton 2009; Thomas 1981).

For the Sayles Complex, Kowta (1969) advocated an important index for projectile points: the ratio of points to ground stone artifacts. He found that a high point-to-mano ratio would indicate an earlier cultural complex, specifically the Topanga complex. SBR-270 has a ratio of one point for every 20 manos (1:20) originally recorded during the fieldwork, which matches Kowta's index for the more coastal Topanga II complex (Kowta 1969:45) (Figure 4). In contrast, the average length of the points (2.2 cm) matches the average length of points for the Cajon Pass-area Sayles complex, which might indicate that SBR-270 dates to a transitional period between the middle and late Milling Stone horizon.

In comparison, at SBR-270 the ratio of points to extant faunal remains from the collection is 1:5, while at SBR-901, a nearby site, it is 1:99 (Figure 5). This implies that SBR-270 is a heavy plant-processing site. It is also quite possible that the extant faunal remains are not representative of the original site assemblage at SBR-270. Nevertheless, the relatively large number of points suggests a late Milling Stone horizon date, when a shift to a more balanced diet between hunting and plant processing occurred (Kowta 1969). In contrast, the high point-to-mano ratio, thought to be typical of earlier periods, and the high point-to-extant-faunal ratio indicate that SBR-270 is a transitional site dating between the middle and late Milling Stone horizon.

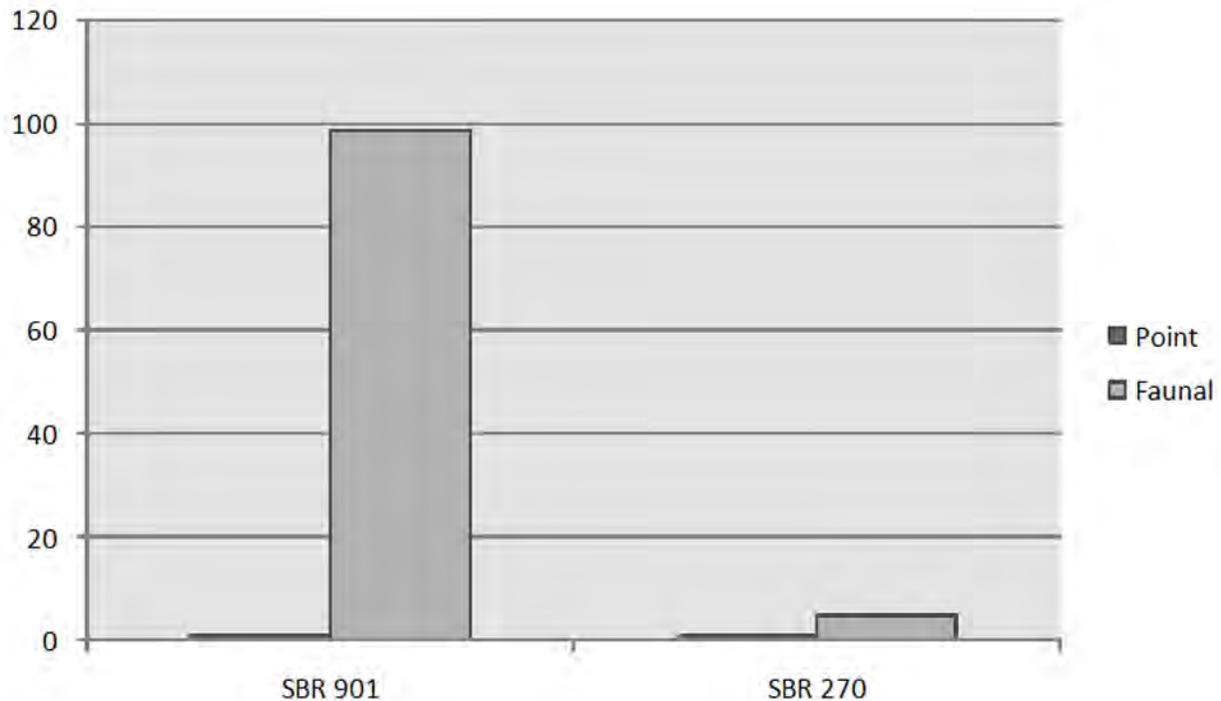


Figure 5. SBR-901 and SBR-270 point-to-faunal ratios.

Drill Analysis

An unusually large number of drills are included in the SBR-270 tool assemblage. Twenty-six artifacts collected were classified as drills. Twelve artifacts appear to be tip fragments of drills; five are medial fragments, and two are basal fragments. Only seven artifacts have been classified as complete drills; two have a small winged shape, two are lozenge-shaped, and three have elongated tips. Functions of these drills have not yet been determined; however, the range of their functions might have included plant or wood processing.

Core Analysis

In the original catalog, 256 artifacts were classified as cores, but there are 40 cores remaining in the current collection. In the year 1992, 217 of the artifacts classified as cores were discarded; therefore, whether or not all 256 artifacts were legitimate cores cannot be determined. All 40 of the remaining cores in the collection are multidirectional cores, with an average length of 5.49 cm, an average width of 4.34 cm, an average thickness of 3.09 cm, and average mass of 107.81 g.

Debitage Analysis

SBR-270 has a total of 277debitage artifacts, which were excavated at a range of levels from the surface to 100 cm. There were a high number of chert flakes (80) in Accession 1 and obsidian flakes (37) in Accession 2, and a high concentration of both obsidian (13) and chert (24) flakes in Accession 3. The large amount of chertdebitage coincides with the significant number (260) of chert bifacial and unifacial artifacts. This suggests that the early inhabitants of the area most commonly used chert to manufacture

tools. The high number of obsidian flakes does not correlate with the low number of obsidian projectile points, which may suggest that obsidian tools were manufactured at this site but exported elsewhere.

Faunal Analysis

Faunal analysis for SBR-270 consists of counts and weights. The majority of bones recovered were fragments. The bones were not identified by species due to time constraints and lack of access to a comparative collection. There appears to be a low amount of bone present in comparison to the number of points found in the site; some of the bone may have been missed due to the small fragment sizes or neglected due to the lack of an identifiable level in the original catalogs. Additionally, some faunal remains may have been lost due to the poor conservation conditions of the soil. The majority of faunal remains are found in three units between four different levels, all of which are in Accession 2.

Other Collected Artifacts

The only ornamental piece retrieved from this site was a fragment of a ground granite ornament. In addition, three pieces of shell, a piece of scoria, and fragments of modern glass, plastic, and metal were retrieved from the site.

CHRONOLOGY

Based on technology and obsidian hydration dates, it has been concluded that SBR-270 is dated somewhere between 2,000 and 4,000 years old. The technology is that of the Milling Stone horizon; however, there are a number of smaller artifacts that appeared in the late Milling Stone horizon. These include a few mortars or pestles, which are indicative of a transitional period between the middle and late Milling Stone horizon. Though currently unclassifiable, points that resemble Cottonwoods are also in the collection, which may be an early form of this traditionally Late Prehistoric style. In addition, a small number of obsidian hydration measurements were recently made for SBR-270, and they match well with those from SBR-901, reflecting the simultaneous occupation of both sites (Table 1). These readings range from 6.4 ± 0.1 to 8.6 ± 0.1 microns, which is also suggestive of a 2,000-4,000-year occupation at the site (Figure 6).

CONCLUSION

This preliminary analysis of the site records, notes, and the extant collection indicates that SBR-270 is a Milling Stone horizon site, approximately 2,000 to 4,000 years old. It can be concluded that SBR-270 served as a processing site for plant materials. This idea is supported by the high quantity of manos and metates retrieved from the site, along with the high point-to-bone ratio and the presence of a significant number of scraper planes. This analysis throws light to inland southern California early inhabitants' way of life at Rancho Cucamonga's Little Red Hill, where SBR-270 was established and utilized during the transition from the middle to late Milling Stone horizon.

ACKNOWLEDGMENTS

The authors would like to thank Dr. Mark W. Allen for support and providing this opportunity. We would like to recognize Dr. Thomas C. Blackburn for his collaboration with us by answering questions about this site excavation that he headed some 30 years ago. Additional support and advice was provided by Gregory R. Burns, who constructed the maps for this site. We greatly appreciate the San Bernardino County Museum for curating the collection. We are grateful for the pictures of the excavation site that were provided by Dr. David G. Lord. Also greatly appreciated is the Northwest Research Obsidian

Table 1. Obsidian hydration analysis results.

SITE	ARTIFACT NO.	PROVENIENCE	DEPTH (CM)	HYDRATION RIM (MICRONS)	OBSIDIAN SOURCE	LAB
SBR-270	1-306	?	20-30	8.5 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	1-333	N11E2	20-30	7.9 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	1-1184	N8E2	40-50	7.1 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	2-195	N18E1	20-30	6.4 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	2-1109	N16E1	30-40	8.6 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	3-719	x3 y2	50-60	6.6 ±0.1	Coso-West Sugarloaf	Northwest Research
SBR-270	A	Pit 30	40-50	8.7	Coso	Somoma State
SBR-270	C	?	?	6.1	Coso-West Sugarloaf	Sonoma State
SBR-901	9458	Pit 1	10-20	10.7	--	UCLA (Meighan, Scalise 1988)
SBR-901	9464	Pit 7	60-70	3.5 / 4.5 / 3.8	--	UCLA (Meighan, Scalise 1988)
SBR-901	9465	Pit 7	60-70	6.7 / 7.3	--	UCLA (Meighan, Scalise 1988)
SBR-901	9460	Pit 7	80-90	6.2 / 8.1	--	UCLA (Meighan, Scalise 1988)
SBR-901	9459	Pit 11	30-40	7.0 / 6.5	--	UCLA (Meighan, Scalise 1988)
SBR-901	9461	Pit 13	50-60	4.1	--	UCLA (Meighan, Scalise 1988)
SBR-901	9457	Pit 25	30-40	4.5 / 4.9	--	UCLA (Meighan, Scalise 1988)
SBR-901	9466	Pit 25	40-50	7.6 / 7.8	--	UCLA (Meighan, Scalise 1988)
SBR-901	9467	Pit 25	40-50	10.6	--	UCLA (Meighan, Scalise 1988)
SBR-901	9468	Pit 25	40-50	9.5 / 10.2	--	UCLA (Meighan, Scalise 1988)
SBR-901	9462	Pit 27AA	70-80	9.4	--	UCLA (Meighan, Scalise 1988)
SBR-901	9469	Pit 27AA	80-90	7.1 / 7.8	--	UCLA (Meighan, Scalise 1988)
SBR-901	9463	Pit 27AA	90-100	4.9+ / 4.6	--	UCLA (Meighan, Scalise 1988)

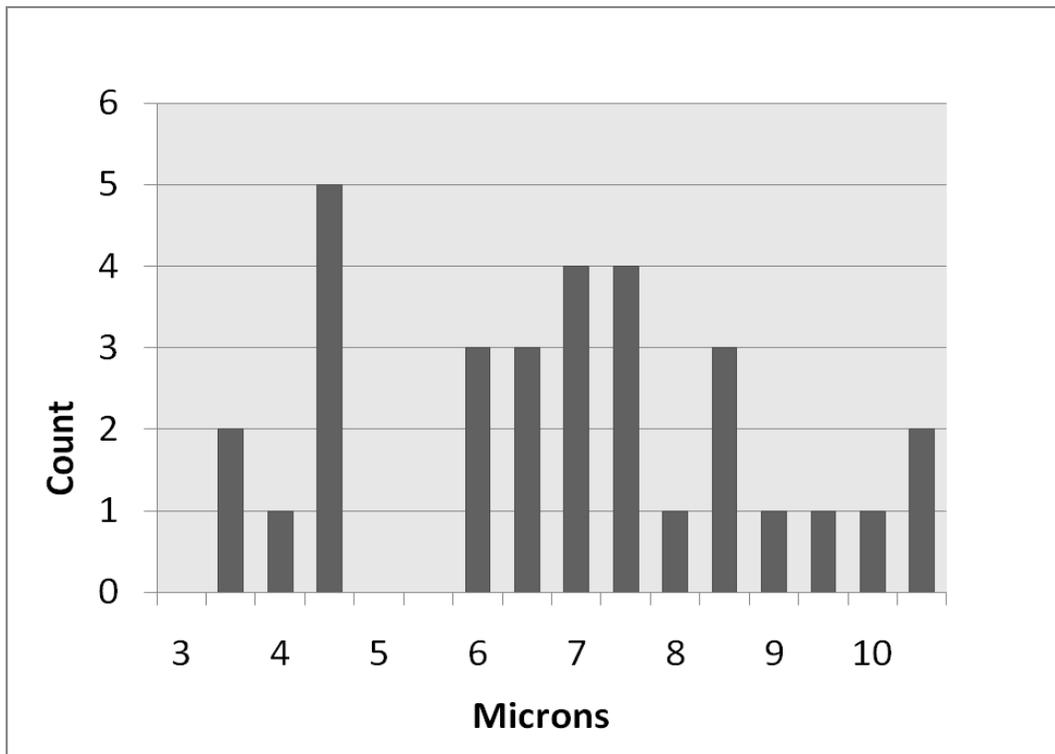


Figure 6. SBR-270 and SBR-901 obsidian hydration values.

Studies Laboratory for conducting the obsidian hydration on our samples and for conducting a free XRF analysis on the six obsidian samples sent. Thank you!

REFERENCES CITED

- Adams, Jenny L.
2002 *Ground Stone Analysis: A Technological Approach*. University of Utah Press, Salt Lake City.
- Fenenga, Franklin
1953 The Weights of Chipped Stone Points: A Clue to Their Functions. *Southwestern Journal of Anthropology* 9:309-323.
- Fitzgerald, Richard T., and Christopher Cory
2009 The Antiquity and Significance of Effigies and Representational Art in Southern California Prehistory. *California Archaeology* 1:183-204.
- Gilreath, A. J., and William R. Hildebrandt
1997 *Prehistoric Use of the Coso Volcanic Field*. Contributions of the University of California Archaeological Research Facility No. 56. Berkeley.
- Jones, Terry L.
2008 Culture or Adaptation: Milling Stone Reconsidered. In *Avocados to Millingstones: Papers in Honor of D. L. True*, edited by Georgie Waugh and Mark E. Basgall, pp. 137-153. Monographs in California and Great Basin Anthropology No. 5. Archaeological Research Center, California State University, Sacramento.
- Kowta, Makoto
1969 *The Sayles Complex: A Late Milling Stone Assemblage from Cajon Pass and the Ecological Implications of its Scraper Planes*. University of California Publications in Anthropology No. 6. Berkeley.
- Martz, Patricia
1976 *Description and Evaluation of the Cultural Resources within Cucamonga, Demens, Deer, and Hillside Creek Channels, San Bernardino and Riverside Counties, California*. Submitted to U.S. Army Corps of Engineers Environmental Planning Section Technical Report 0-76-1. Los Angeles.
- Salls, Roy A.
1983 The Liberty Grove Site: Archaeological Interpretations of a Late Millingstone Site on the Cucamonga Plain. Unpublished Master's thesis, Department of Anthropology, California State University, Los Angeles.
1985 The Scraper Plane: A Functional Interpretation. *Journal of Field Archaeology* 12:99-106.
- Sutton, Mark Q.
2009 People and Language: Defining the Takic Expansion into Southern California. *Pacific Coast Archaeological Society Quarterly* 41(2&3):31-94.
- Thomas, David Hurst
1981 How to Classify the Projectile Points from Monitor Valley, Nevada. *Journal of California and Great Basin Anthropology* 3:7-43.
- Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11:214-230.