

THE WELL AND THE HUACA: CEREMONY, CHRONOLOGY, AND CULTURE CHANGE
AT HUACA CAO VIEJO, CHICAMA VALLEY, PERU

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THE ARCHAEOLOGICAL CONTEXT OF THE
WELL AT EL BRUJO

This article presents information on the excavation and analysis of materials from the “Ceremonial Well” (*Pozo Ceremonial*) and its surrounding area at the El Brujo Archaeological Complex in the Chicama Valley, Peru, and the relationship of events there to activities elsewhere at the site and in the region (Figure 1). The well was discovered in 1993 and excavated by a team of Peruvian archaeologists in the following year. In field seasons in 2002 and 2004, a combined United States and Peruvian team carried out research in the area surrounding the well. Here, we present a summary of the various field investigations, reviews of analyses of material remains, and interpretations of the significance of these studies. By determining the history of the use of the well and correlat-

ing it with events at the nearby Huaca Cao Viejo we infer that there was a significant renovation of spaces in the entire architectural complex and changes in its use. Extending the analysis to compare changes at Huaca Cao Viejo complex with those at the Huacas de Moche also offers insights into other cultural changes on Peru’s north coast.

The El Brujo Archaeological Complex occupies a raised terrace at the northern edge of the lower Chicama Valley. This tableland, averaging eighteen meters above mean sea level, is likely a remnant of a Pleistocene ground surface that was preserved when the rest of the land mass was washed away late in the era, or in the early Holocene. For the most part, the material comprising the terrace consists of an alluvium of gravel of rounded cobbles ranging in size from small pebbles to oval or round stones

20 to 40 centimeters in diameter, mixed with finer soil.

The Brujo terrace is a one square kilometer triangle with its base on its northern end and with the long sides meeting at its southern tip where Huaca Prieta, famed for its role in defining the Preceramic Period (Bird *et al.* 1985), is located. Several large archaeological complexes are on the rest of the terrace and have been identified as associated with Cupisnique, Moche, Lambayeque, Chimú, Inca, and Spanish Colonial occupations (Franco *et al.* 2005a; Mujica Barreda 2007; Tate 2006). The most intensive and extensive occupation is associated with the Moche archaeological culture, consisting of a large, relatively low complex on the southwest, known as Paredones, Huaca El Brujo (also known as Huaca Cortada) near the northwestern corner of the complex, and Huaca Cao Viejo, in the northeastern sector of the terrace.

Some research has been carried out at almost all of the archaeological sites of the El Brujo complex, but since 1990, work has concentrated at Huaca Cao Viejo and its surrounding area. The huaca is a large, terraced adobe structure with an extensive walled plaza at its front, facing north. Initially, based on work mostly on the northern front of Huaca Cao Viejo, Peruvian archaeologists (Franco *et al.* 2003a) determined that the huaca is the sum of seven construction phases, designated Phase A (the latest) to Phase G (the earliest). In Phases D through G the front terraces of the huaca were decorated with murals, Phase B was not completed, while Phases A and C were decorated with polychrome bas-reliefs. Each one of these construction phases likely represented a significant event in the history of the huaca although some phases appear to have involved only the remodeling of the front section of the structure (Phases D and E) while others completely encased an older structure

(Phases A, C, F, and G; Figure 2). If only the phases of total remodeling are considered, there were four major building stages (Mujica Barreda 2007:102) which we will refer to here as Huaca 1 (Construction Phase G), Huaca 2 (Construction Phase F), Huaca 3 (Construction Phase C) and Huaca 4 (Construction Phase A). The remodeling events of the front of the huaca were considerable but fundamentally were continuations of the previous full-scale renovation. Thus, building phases E and D were elaborations of Huaca 2 and building phase B was an elaboration of Huaca 3.

The front terraces of the huaca were brightly painted, as were patios on its summit. Rituals took place in both large, apparently public, and smaller, possibly private, spaces. The huaca remodelings were mostly on the front terraces and the front of the huaca summits. These areas were seen from the plaza and thus received the most attention from viewers and ritual participants.

A high-ranking woman, now referred to as the Señora de Cao (Burial 3), was buried in a patio on the northwest upper corner of the huaca. Her remains were found in a deep shaft in the adobes of the huaca while three other burials, all of males, were in shallower tombs nearby (Franco *et al.* 2005a; Williams 2006). During the time of Huaca 2, rituals took place in the patio above her tomb. The high status of the Señora de Cao is demonstrated not only by the quantity and quality of grave goods, but also by the presence of a sacrificed young woman next to her burial bundle in the tomb. One of the other burials (Burial 1) also had a sacrificed victim in his grave, suggesting that he, too, was of high status.

The term *montículos* is used at the El Brujo complex to refer to structures with no other name. *Montículos* means “mounds” in Spanish, but excavations in them prior to our work at the

well revealed that they are purpose-built, substantial structures made of adobe bricks. After abandonment, either deliberate “entombment” of the structures or deterioration, through time, caused them to assume the shape of small hills. Six *montículos* are at El Brujo, three of which are in the northeastern sector of the complex (Figure 1). *Montículo* 1 is relatively small and has two building phases. Excavations revealed rooms painted white, a corridor, and a patio. Domestic refuse with camelid remains and maize cobs suggest a domestic function. Remains of the second occupation included throne or altar-like features and fragments of ceramic war clubs known to have served as roof-top decorations on important buildings. Although the original dimensions of the structure are uncertain, by its second building stage it was 400 square meters in area, and ceremonial activities appear to have increased from earlier times, based on changes in architectural detail.

Montículo 2 is approximately seven thousand square meters in area and also was found to have two construction phases. The earlier structure was a small, stepped pyramid. The structure grew with the addition of platforms and a large surrounding wall. Again, all rooms were painted white, and decorative ceramic club fragments were found during excavations.

Montículo 3 is roughly one thousand square meters in area and underwent four construction phases. Staircases, platforms, floors, and ramps all were painted white, although red and yellow paint was found on fragments of plaster with cane impressions on the back, indicating that they are from either a suspended ceiling or a column made of bunches of reeds as its structural core.

The Ceremonial Well is 470 meters northwest of the front terraces of Huaca Cao Viejo, about 100 meters to the west of *Montículo* 2,

and approximately 170 meters north of *Montículo* 3. A primary goal of our research was to determine the associations of the well with these various structures and the activities that took place at and in them.

DISCOVERY OF THE WELL AND FIRST STAGE RESEARCH

The well was discovered accidentally in 1993 when an El Brujo archaeologist fell into it while walking across the site. Dense vegetal material in the well mouth supported the archaeologist by his armpits, preventing him from falling into the void. Subsequently, the Peruvian site archaeologists decided to conduct an excavation of the well.

From its lip to the current water level, the well is 12.47 meters deep with the water 2.36 meters in depth (Franco *et al.* 1995, 2003b). At its mouth, the well is 3.40 meters in diameter and the width of the shaft at the water level is 1.33 meters in diameter (Figures 3, 4). Descent from the ground surface to the water was accomplished via a spiral path that combined features of both ramp and stairway. Cobbles from the surrounding gravel were compacted into a series of 40 steps. The treads of some of these are wider than others so that two or more footsteps likely would have been necessary before reaching the next tread. Persons descending would have entered the cavity from the west, moved counter-clockwise, and reached the pool at its northern edge. The descending spiral takes two-and-a-half turns from top to bottom.

Water enters the well through three separate channels in the subsoil. The source of the water is the relatively high water table on the Peruvian coast, a phenomenon exploited by many people, ancient and modern, who excavate to just above the water table to create “sunken gardens,” known as *huachiques*. In

addition, there are large wells at the Chimú site of Chan Chan entered by ramps, although they are much larger than the Brujo well and are rectangular in shape (Campana Delgado 2006:132-135; Moseley 1975).

The well was excavated in arbitrary levels based on the turns of the spiral. Five levels were defined, including the water level. The first level was the mouth of the well, levels 2-4 each accounted for a turn in the spiral while level 5 was the muddy deposit below the water surface.

The excavated deposits consisted of great amounts, and a diverse array, of materials. These included loose soil, cobbles and angular stones, various plant remains, mollusc shells, camelid bones, utilitarian and diagnostic ceramic fragments, and human skeletal remains. None of the latter was a complete skeleton but the collection included a minimum of ten individuals of different ages, mostly infants and adolescents, as well as the remains of men and women. According to John Verano (1995:168) who conducted the analyses, these bones likely were deposited in the well after having been removed from other contexts. They may represent a random assortment, as there is no indication that they were selected with any preference to the age or sex of the individuals.

The last tread before the water was wider than those above it, creating a small recessed area where the skeletal remains of an adult male, between 30 and 40 years of age at time of death, was encountered (Verano 1995:166). The skeleton was on its back with the head oriented to the east. Conservation of skeletal remains was poor due to high humidity and the skeleton was incomplete. Bone porosity and loss on vertebrae indicate a trauma in life with subsequent bone regrowth, and various teeth had caries. There was no clear sign of a cause of death (*ibid.*: 167). Near the remains were

fragments of copper sheets, mollusc shells, and non-diagnostic sherds, also in poor states of preservation.

The water in the well was thick with soil and materials which included a whale vertebra worked to serve as a receptacle, two wooden paddle-like tools, decorated gourd fragments, mollusc shells, and charcoal. The recovered diagnostic ceramics include types commonly termed "Gallinazo" and "Salinar" as well as Moche vessels. The latter exhibited design elements that placed most of them in the middle of the five-phase sequence developed by Rafael Larco Hoyle (1939; Figures 5, 6).

There was no clear patterning of these remains to suggest that the well was filled in stages. The mix of more than a ton of materials and their general consistency suggests a single and likely rapid filling of the space by people dumping trash in the well. Once the well was excavated by the archaeologists, the stair-ramp was stabilized and gravel was placed in the space around the entry. A roofless, four-walled room of adobes was built around the well in order to prevent stray animals and tourists from falling in it.

SECOND STAGE RESEARCH

A combined U.S.-Peruvian team returned to the well for further studies in 2002 and 2004. During this work, research was concentrated in the area around the well to better understand its context within the El Brujo site complex (Figure 7).

One to two meter wide trenches were placed running perpendicular to each of the four walls of the room surrounding the well and then expanded outwards as work revealed features of interest. In 2002, various features were found on the east and west sides of the well. These mostly consisted of fragments of walls that had been

robbed of adobes, and small sections of rooms that had been badly damaged due to looting, making it difficult to interpret past activities in the area. In one of the rooms, a poorly preserved adult burial was found laid on a mat. On the north and south sides, however, few traces of human occupation were clearly in evidence, other than areas of melted adobe.

In 2004 work continued in the same manner as previously. There was a relatively large, flat area running along the northwest to the northeast side of the well with relatively little looting in evidence. Work was focused in this sector and uncovered features amenable to interpretation. Excavations determined that there are two major “natural” stratigraphic levels in the area around the well, Capas A and B (Figure 8). Capa A is a single deposit, whereas Capa B is subdivided into three levels. Capa A includes the contemporary ground surface, and is between 10 and 20 centimeters in thickness. In addition to light amounts of modern trash, this layer contains angular stones, cobbles, shells, ceramic sherds, a few bone fragments, and fragmented adobes. The adobes are of a “tall” form associated with late building phases at Huaca Cao Viejo (Gálvez Mora *et al.* 2003).

Capa B, Level 1, is between 30 and 60 centimeters in thickness and generally contains the same kinds of materials as Capa A. The soil color is lighter than the upper level and more compact and homogenous. The primary difference between this level and Capa A is that the adobes found in the lower level are of the “short” variety, associated with earlier building phases at Huaca Cao Viejo.

Capa B, Level 2, is gray in color due to abundant ashes and decomposed organic materials. The latter include chili pepper seeds, cotton, fish and camelid bones, crab parts, and bivalves, as well as other materials. Sherd

densities are higher than in the upper levels. This layer is also between 30 and 60 centimeters thick and is associated with structures made of adobes and small cobbles.

Capa B, Level 3, is a smooth textured, brown soil. It ranges in thickness from 2 to 10 centimeters. This layer rests on sterile soil deposits and is associated with circular hearths and non-diagnostic sherds of bowls and plates.

The stratigraphic levels discussed above correlate with major occupations near the well. The Phase 1 occupation is associated with Capa B, Level 3 and is the first evidence of human occupation in the area. The occupation was light, and activities included making small fires. The nature and quantities of remains are such that we cannot assign a firm relative or chronometric date to this occupation. Based on features of the utilitarian wares, this occupation is likely to have occurred in the Early Intermediate Period. We do not know, however, if the well was dug or in use at this time.

The Phase 2 occupation of the area around the well is associated with Capa B, Level 2. During this phase, a number of small structures made of rectangular adobes and cobbles were built surrounding the well. Although the recent construction of the roofless structure around the well prohibited investigation, it appears that a space of two or more meters around the circumference of the well was kept clear of structures.

The utilitarian ceramics associated with these structures include many examples of necked jars and bowls, suggesting that they contained liquids. The diagnostic sherds are of the same kinds as found in the well, Moche style ceramics and examples of Gallinazo and Salinar-like wares. It is worth noting that of the eight stirrup spout fragments found in the second stage work that were large enough to identify, four resembled the Moche Phase III style in the

relatively squat shape of the stirrups, and four had tall stirrups or had narrow spouts in the manner of the Moche Phase IV style.

We took two samples of materials from different areas of a large hearth in one of the structures in Capa B. Combined, the two unscreened samples weighed 1.63 kilograms and consisted of soil, ashes, cinders, and plant and animal remains. Subsequently, these remains were analyzed by Victor F. Vásquez S. and Teresa E. Rosales T. (2009) of the ARQUEOBIOS center at the National University of Trujillo (Table 1).

	Common Spanish	Common English
Animals		
Molluscs		
<i>Tetula atra</i>	caracol negro	snail
<i>Prisogaster niger</i>	caracolito negro	snail
<i>Polinices uber</i>	caracol luna	snail
<i>Xanthochorus buxea</i>	—	snail
<i>Thais haemastoma</i>	caracol	snail
<i>Bostryx</i> sp.	—	snail
<i>Helisoma</i> sp.	—	ramshorn snail
<i>Physa</i> sp.	—	tadpole snail
<i>Pisidium</i> sp.	—	pill clam, pea clam
<i>Semimytilus algosus</i>	chorito playero	mussel
Fish		
<i>Sardinops sagax sagax</i>	sardina	sardine
<i>Engraulis ringens</i>	anchoveta	anchovy
<i>Sciaena deliciosa</i>	lorna	drum, croaker
<i>Cynoscion analis</i>	cachema	Peruvian weakfish
Mammals		
<i>Cavia porcellus</i>	cuy	guinea pig
Plants		
Dicots		
<i>Salix</i> sp.	sauce	willow
<i>Chenopodium</i> sp.	—	white goosefoot, pigweed
<i>Prosopis</i> sp.	algarrobo	carob
<i>Crotalaria</i> sp.	—	rattle pod
<i>Phaseolus lunatus</i>	pallar	lima bean
<i>Phaseolus vulgaris</i>	frijol	common bean
<i>Manihot esculenta</i>	yuca	manioc
<i>Solanum tuberosum</i>	papa	potato
Monocots		
<i>Zea mays</i>	maíz	maize, corn
<i>Cyperus</i> sp.	junco	sedge

Table 1. Animal and plant remains from a hearth near the Ceremonial Well.

The contents of the hearth included macrofossil remains of small molluscs, especially

gastropods, mussels, sardines, anchovies, drumfish, Peruvian weakfish, and guinea pig. Plant remains included willow, goosefoot, lima bean, common bean, maize, manioc, and potato. The latter two plants were detected by starch grain analysis because no macro remains were present.

The animal and plant materials found in the hearth are probably the remnants of meals eaten by the people who lived in the vicinity of the well, as also indicated by partial burning of some of the large fish bones. Such meals likely were common, everyday ones. No traces of festival foods, such as llama bones, were encountered, but our sample was relatively small. The overall impression offered by the analyzed sample, however, is that the people who ate the food and lived in the vicinity of the well were relatively low status residents of the El Brujo complex.

The Phase 3 occupation is associated with Capa B, Level 1. This phase witnessed a substantial renovation of the area. The Phase 2 structures were filled in and covered over with rubble, and the well was filled with trash, including human remains from the previous occupation, as described above. The area was smoothed over with puddled adobe, and a series of small adobe platforms and a low cobble-faced wall were constructed (Figure 9). The adobes used in these features consisted of old, short-style adobes robbed from the earlier constructions and new style, tall adobes. This wall ran over or very close to the lip of the now filled-in well. The filling in and end of the use of the well were associated with a substantial reorientation of the overall use of the site area.

Twenty-five meters east of the well, the remains of an adobe wall are in evidence by a rise in the ground surface formed by the melting of the adobes from the upper levels of the wall (Figures 1, 10). The mound of the wall runs 18 degrees west of north. The rise in the ground

above the wall can be seen directly east of the well. It runs northward for 45 meters, then makes a right angle, running another 38 meters before disappearing from the ground surface. Given that the wall is relatively close to the well, and that it separates the well area from *Montículo* 2, we decided to investigate it. We excavated a total of four units on the wall. Our largest excavation, Unit 1, revealed two parallel single-file adobe walls running with the same orientation, and a large double-file wall over them, at a different orientation (Figure 11). Due to the severe looting of the entire site area, we could not determine if the bases of walls were associated with any of the phases in the well area, although some reasonable inferences are possible as will be discussed below.

EVALUATING THE CEREMONIAL NATURE OF THE WELL

The feature under discussion has been called the Ceremonial Well because it has been assumed, given its location near Huaca Cao Viejo and the ceremonial activities that are known to have occurred there, that the well also was a place of ritual activity. A review of the issues involved in evaluating ritual at the well seems appropriate here, and several factors may be taken into account in such an assessment.

There are many examples, past and present, of Andean people conducting ceremonies and holding beliefs that celebrate and revere water, as well as fluids in general (Carrión Cachot 1955). Among the many examples are the role of blood in Moche sacrifices (Quilter 2001) and the great Inca ceremonies of state involving irrigation canals and their waters, such as the sacrifice of a young woman, Tanta Carhua, and her entombment at an important section of an irrigation canal, as described by Hernández Principe (1923 [1621]:62-63; see Silverblatt 1987:90-101). So, too, many of the

shrines on the ceque system of Inca Cusco were fountains or other water sources (Bauer 1998:62-134, 2004; Rowe 1979).

It is a common practice, worldwide, to carry out rituals for or about water and its importance and power. These involve, among other things, the first rains of the agricultural cycle, great rivers as sources of fecundity, and springs as sites of miracles. All peoples, especially those in environments where the quantity, quality, and dependability of water is uncertain, tend to focus ceremonial and religious activities to try to guarantee that water is available when needed, and is controlled.

Given that water in agricultural societies may be enmeshed in religious concepts and activities, the extent to which we can interpret the well as “ceremonial” versus “utilitarian” is not clear. Reserving water for only “ceremonial” use and making it off limits for consumption is a course of action that is maladaptive in environments where water is scarce. Small amounts of water may be off-limits for consumption, such as holy water used for non-immersion baptisms or for sprinkling on the faithful in some Christian (Roman Catholic, Orthodox, Anglican) rituals. However, the sacrality of water often is attributed to its life-giving properties in rather fundamental, biological ways, whether it be the Nile or the Ganges. Washing or bathing in sacred grottoes and similar features, however, allows it to be both holy and still of use.

In the Stage I research, the well water was tested, compared with water from a contemporary well nearby, and found to be highly saline (Franco Jordán *et al.* 2003b). No clear conclusions can be drawn about the potability of the water in ancient times from this study, however. Many factors, such as surface conditions, precipitation rates, intensity of land and water use, and others, including the use of motorized water pumps, could have affected the quality of the

water in the well at El Brujo between antiquity and the present day. In short, we cannot say whether the water in the well was potable or not in the past.

It may very well be that the waters of the Ceremonial Well at El Brujo were sacred. The chief problem in attempting to evaluate this issue is that the behavior associated with sacredness is not clearly in evidence in the archaeological record here, and it is difficult to develop testing procedures that might elucidate the matter. Numerous fragments of utilitarian jars associated with the structures of the Phase 2 occupation indicate that liquids were consumed, but we cannot infer that the liquid in question was water from the well.

A conclusive determination of the role of the well at El Brujo cannot be made with certainty, at present. Its waters likely were used and perhaps they were considered to have had special qualities. The only way to further evaluate the status of the well as ceremonial, or not, would be to gain a better appreciation of how it relates to other architectural features nearby. There were signs of domestic debris to the north and south of the well, but the great amount of looting in the area challenges such research.

The relatively low status of the local residents is in evidence through our analysis of human remains (Gaither 2002). Few burials were found with relatively complete skeletons, and most could not be identified with a particular stratum, because they were almost all from highly disturbed contexts. Of those with complete enough remains to determine sex or age, there were four adult males, three adult females (including one whose sex is not completely certain due to ambiguous skeletal characteristics), six adults whose remains did not include the skeletal elements necessary for the determination of sex, and five unsexed sub-adults. It is

not possible to determine sex morphologically in sub-adult remains.

Many of the adults showed evidence of hard lives including periodontal disease and extensive tooth wear. Periostitis, a non-specific indicator of stress that manifests itself as new bone deposition on pre-existing bony surfaces, was common. Interestingly, all three relatively complete crania showed evidence of cranial modification, symmetrical occipital flattening, for both men and women.

Hard lives also are indicated by the evidence of trauma on the bones. This includes cases of parry fractures and defensive wounds indicative of interpersonal violence in two males. A woman (QM02-02), associated with the B1 occupation, had a particularly hard life. Although she lived to the relatively advanced age of forty to forty-five, she had a healed depression fracture on her right frontal bone and a wide, perimortem cut mark on her left parietal bone (Figure 12). In other words, she had survived a blow to the head on at least one occasion, and had received a cut on the back of her head shortly before, or just after, her death. It seems reasonable to infer that her death was violent and at the hands of another human being.

In sum, the evidence suggests that the people who were buried and, inferentially, had lived around and near the well, were non-elites and lived relatively hard lives. This suggests that if these people had any special association with the well it did not accord them high rank in Moche society. Indeed, the signs point to the interpretation that these people were poor townspeople.

Ceremonial activities are in evidence in the Phase 3 occupation with its small platforms and clean, leveled area. These features and any ritual activities that were associated with them,

which left no observable traces, occurred after the well was sealed and no longer in use. It is possible that the platforms above and around the well area evoked memories of the well below them. This seems unlikely, however. Rather, there is a sense of erasure of past practice in the way in which the features above the sealed well seem to obliterate its presence.

Another way to approach understanding the role of the Ceremonial Well is to consider an analysis of vessel forms found in our 2004 excavations in the area surrounding it. As noted above, vessels reasonably interpreted to have held liquids are the most common utilitarian ceramics found in our excavations (Figures 13, 14). These consist of variations of necked jars (cántaros), restricted mouth jars (ollas *cuello convexo* and others), and large jars (tinajas), as well as various bowl forms that could have held either liquids or solids (ollas and *cancheros*). Other vessel forms include bowls, plates, and other forms, some of which include finewares and items usually associated with ritual or burial, such as *floreros* and stirrup spout bottles, but in very low numbers.

Of the four major capas excavated, very few utilitarian sherds with diagnostic traits were recovered for the uppermost (A1) and lowest (B3) strata, but sufficient numbers for quantitative analysis were found for Capas B1 and B2 (Table 2). A simple chi-square analysis (Table 3) of the distribution of forms suggests, however, that there is no strong patterning in the data that might be interpreted as due to human activities. With a probability of 0.235, the observed distribution of vessel forms is not that different from what would be expected in a random distribution and the variations from that expectation, slightly more cántaros in B1 and slightly fewer in B2, slightly fewer ollas in B1, and more in B2, do not readily yield to interpretation that might be significant in terms of human behavior. Indeed, the distribu-

tion of forms suggests that relatively similar activities took place during both the B1 and B2 occupations. Occupation B1 appears to have been somewhat more intense, based solely on the fact that there are more artifacts in its strata.

2004 Ceramic vessel forms by levels						
Forms	Rims	Capa - Nivel				Totals
		A1	B1	B2	B3	
Cántaros	C. Gollete	2	13	1		16
	Convexo		2			2
	Recto	2	40	12		54
	Expandido	2	66	13		81
Ollas	Sin Cuello		8	2		10
	Convexo		3	1		4
	Expandido	1	30	8		39
	Evertido	1	6	3		10
	Recto		4			4
	Insipiente	6	42	20	1	69
Tinajas	Expandido		2			2
	Ref. en borde		7	4		11
	Sin Cuello	2	46	17	3	68
Other Forms	Jarra		5	1		6
	Cuenco	1	13	5		19
	Plato		2			2
	Florero		1			1
	Canchero		1	1		2
	Cuchara		1			1
Totals		17	292	88	4	401

Table 2. 2004 ceramic vessel forms by levels.

Capas	Cántaros	Ollas	Tinajas	Others	Totals
B1	(113) 121	(97.6) 93	(58.4) 55	(23.1) 23	292
B2	(34.0) 26	(29.4) 34	(17.6) 21	(6.95) 7	88
Totals	147	127	76	30	380

Expected values in parentheses, observed values without.
Chi-square = 4.26, Degrees of freedom = 3, Probability = 0.235

Table 3. Chi-square analysis of ceramic vessel forms found in area surrounding the Ceremonial Well.

A SECOND WELL

A second well has been found recently at El Brujo. It is 270 meters to the northeast of the

Ceremonial Well and 575 meters almost directly north of the front terraces of Huaca Cao Viejo. Well 2 is 8.6 meters deep from the ground surface to the top of the current water level, which 60 centimeters deep. The maximum diameter of the orifice is seven meters, with a minimum diameter of four meters. Like the Ceremonial Well, Well 2 was entered by a counter-clockwise ramp, although it lacks the step-like treads of the previously discovered feature (Figure 15).

Details of the features of the upper sections of Well 2 were destroyed in antiquity when it was filled with soil containing relatively small amounts of cultural debris compared to the Ceremonial Well. Another activity that destroyed the construction details of the upper part of Well 2 was the building of an adobe chamber tomb on top of, or beside, the access ramp, now 2.5 meters below the modern ground surface. Burials in the chamber consisted of a male between 20-35 years at time of death, and two females, aged 20-34 and 35-45 years (Gaither 2008). No sign of severe trauma was evident in these remains, and a few small bones, such as from the hands and feet, were missing from all three burials, and a clavicle, molar, and a few other small bones from a fourth individual were found. These data suggest that the human remains were not sacrifices, but were burials removed from another location and reburied when the well was closed. Among the diagnostic artifacts in the tomb were two fineware ceramics in the Larco Phase V style (Figure 16).

We cannot be sure, at present, if both known wells were in operation simultaneously. We only know that the Ceremonial Well was filled with trash that appears to be relatively early, and Well 2 had burials with Moche V ceramics. The wells may have overlapped in dates of use with Well 2 being later than the Ceremonial Well or, alternatively, both wells

were closed at about the same time. The latter is a possibility partly because the assumption that the Larco phases follow in strict chronological order is being increasingly challenged by a number of scholars (see Quilter and Castillo 2010). Overlapping or even contemporaneous existence of styles seems quite likely. As in the case of studies of the Northern Moche (Castillo and Donnan 1994), a chronology of Early Moche (Larco Phases I and II), Middle Moche (Larco Phase III and early Phase IV), and Late Moche (late Larco Phase IV and Phase V; Castillo 2001:308, 2003:67) seems to best address current understandings and has been used in this article.

Also as previously discussed, there is a large wall running between the Ceremonial Well and *Montículo 2*. The wall may have enclosed the *montículo* or it may have turned to form a large compound next to it, with domestic occupations located outside of the wall. There were at least two major wall construction phases. The earliest wall is made of single-file adobes, and our excavations revealed a parallel wall next to it, suggesting that the two walls formed a street in the town. On top of that wall, however, is a larger two-file adobe wall running at a slightly different, more northwesterly, direction. This wall seems more a perimeter wall than a house compound wall, and appears to be the same wall that is observable as a low mound that makes a turn to the east north of the Ceremonial Well.

Although more excavation would be necessary to confirm it, there is a strong suggestion from our research that the walls just mentioned demarcated different spaces at the El Brujo site. The area east of them contains the large *Montículo 2* and the area to the west consists of residences. The walls may have been a division between sacred and profane spaces at the site.

In addition, the closing of both wells, after or in late Middle Moche times, strongly implies

that whatever their ceremonial roles, their use-life was deliberately ended. These changes conform to larger reorientations of the site, including the remodeling of Huaca Cao Viejo itself, and to dramatic changes among the Moche in general.

CULTURAL CONTEXT AND SOCIAL CHANGE

To summarize the results of field-work, after a light occupation in the area, the Ceremonial Well at El Brujo was excavated and put into use. While the date of this event is uncertain, the well appears to have been used during the Middle Moche period. The use of the well occurred at the same time as the use of small structures nearby which may have been residences of relatively low status people. Eventually, the well was filled in and the structures were abandoned. This part of the site was then remodeled and reoriented for a use or uses that included small adobe platforms, perhaps for ceremonial activities. How much time elapsed between the closing of the well and its associated buildings and the remodeling is uncertain, but the people who changed the spaces apparently did not identify themselves with the human remains that they threw into the well with other refuse even if a perfunctory human “offering” was placed in the recessed area near the water.

Well 2 may have been used concurrently or, as seems more likely, somewhat later than the Ceremonial Well. Both wells were located outside of *Montículo 2* and far from *Montículo 3* and the plaza and temple of Huaca Cao Viejo. Although we cannot correlate the various remodelings and construction phases of all of these features in detail, we can note that the closing of the wells occurred in the same phase and, likely, at about the same time, as a substantial and, apparently, dramatic reorientation of the structures at the site and the activities that occurred in them.

Huaca 3 shares the same ceramic styles and adobe forms as Phase 2 of the well. At the end of the use-life of Huaca 3, the temple underwent a period of decline and perhaps even temporary abandonment or, at least, disuse. Walls were torn down on the huaca terraces and wind-blown soils accumulated in the main plaza. Eventually, however, Huaca 4 was built over the ruins of earlier construction. Work carried out in this phase reutilized some old adobes, but the new, tall form was used extensively, as in the construction of the cobble wall and platforms of occupation Phase 3 over and around the well.

In addition to the correlations between the Ceremonial Well and Huaca Cao Viejo, the same general pattern of a substantial remodeling that included the use of the new tall adobe style occurred in *Montículo 2*. In short, there was a major break in the occupation and use of Huaca Cao Viejo, followed by a period of disuse and then, by a time of revitalization in which the huaca and many other constructions were reconfigured. This included the end of the use of the Ceremonial Well and possibly also of Well 2. This suggests that the entire architectural program and, inferentially, the religious and political systems associated with it, were dramatically altered at the site at the end of the use of Huaca 3 and that Huaca 4 represents a major change in the nature of the occupation at the site.

It has been known for some time there were substantial changes in Moche culture towards the end of its history, marked by sharp changes in fineware ceramic styles and their symbolic contents, changes in construction activities at ceremonial centers, and shifts in settlement patterns (see Bawden 1982, 1996; Lockard 2009). The combination of data and information for the various areas of the El Brujo complex may now contribute to an interpretation of how these events transpired there, and an evaluation of their importance for understanding Moche culture change in the greater region.

Sample #	Sample Type	Sample Context	RC Age (BP)	Uncalibrated date (BP)	1 δ Cal	2 δ Cal	SH 1 δ Cal	SH 2 δ Cal
OxA-6896	caña brava	Phase A (Huaca 4)		1480 $\pm$ 40	550-621	441-652	599-655	556-667
OxA-7005	caña brava	Phase D (Huaca 2+)		1675 $\pm$ 70	255-432	179-548	354-540	256-591
OxA-7006	caña guayaquil	Phase F (Huaca 2)		1670 $\pm$ 65	257-502	232-542	385-540	258-590
OxA-7007	caña guayaquil	Phase D (Huaca 2+)		1865 $\pm$ 80	61-241	41 BC-343	90-329	29-408
OxA-7008	paint (vegetal carbon)	Phase F (Huaca 2)		1650 $\pm$ 65	263-532	244-546	402-546	261-606
Beta-109132	wood	wooden idol Phase C (Huaca 3)	1490 $\pm$ 80	1530 $\pm$ 60	436-596	416-641	542-646	433-659
Beta-208269	collagen	sacrifice, Huaca E base	1210 $\pm$ 40	1370 $\pm$ 40	650-680	620-700	659-767	644-805
Beta-208630	collagen	sacrifice, Patio C, Offering 1	1340 $\pm$ 50	1540 $\pm$ 50	440-580	410-630	542-638	433-654
Beta-208631	plant	sacrificial rope, hild, T. 1, Sra. group.	1740 $\pm$ 40	1750 $\pm$ 40	240-350	220-400	261-408	239-440
Beta-208632	plant	sacrificial rope, girl next to Sra.	1619 $\pm$ 40	1580 $\pm$ 40	420-540	400-570	440-598	427-620
Beta-212819	cotton	unprocessed from Sra. wrapping	1530 $\pm$ 40	1550 $\pm$ 40	440-560	420-610	538-622	435-647
Beta-212820	textile (cotton)	threads from Sra. wrapping	1740 $\pm$ 40	1760 $\pm$ 40	230-340	150-390	260-396	238-425
Beta-230123	charred material	ritual fire above Sra. Cao Tomb	1450 $\pm$ 50	1420 $\pm$ 50	593-659	542-680	613-761	585-773
Beta-230124	plant	material from Sra. Cao	1580 $\pm$ 50	1580 $\pm$ 40	430-536	385-597	438-600	425-636
Beta-230125	plant	upper section of huaca front	1610 $\pm$ 50	1590 $\pm$ 50	424-535	349-583	435-584	418-631
Beta-230126	wood	upper terrace	1730 $\pm$ 50	1730 $\pm$ 50	249-381	140-420	260-427	243-533

All calibrations performed on the OxCal/ORAU database. The first (left-hand) two columns of calibrated dates are based on the Northern Hemisphere correction while the two (right-hand: "SH") columns are adjusted for the Southern Hemisphere correction. All dates, unless otherwise indicated, are A.D. and are published here for the first time.

Table 4. Radiocarbon dates for major building phases at Huaca Cao Viejo.

In reviewing previously published radiocarbon dates for Huaca Cao Viejo, we discovered that the conversions to calendar dates had been made using the Northern Hemisphere calibration. Adjusting to the Southern Hemisphere calibration brings the Cao Viejo dates more in line with known chronologies elsewhere, such as Huaca de la Luna. As adjusted (Tables 4 and 5), the two dates for Construction Phase F are close: A.D. 258-590 (OxA-7006) and 261-606 (Ox-7008) for the 95% confidence interval. The dates for Construction Phase D are of interest: OxA-7007 (A.D. 29-408) is earlier than the dates for Huaca F while OxA-7005 (A.D. 256-591) is contemporary with them.

Given the overall patterning of the dates, however, the general indication is that construction phases F-D occurred within the fourth to sixth centuries A.D., most likely in the period between the 400s and early 500s A.D. The OxA-7007 date is anomalous because Phase F occurred stratigraphically before Phase D, and there are two consistent dates for Phase F that are later than the out-of-sequence Phase D date. Phases F and D cannot be temporally separated with these radiocarbon dates, but the law of superposition can establish that the Phases D and E remodeling occurred after the Phase F construction phase (Huaca 2). The Señora de Cao burial dates, and other dates associated with it, are generally coeval with the D-F dates; her burial has been associated with Phase F, stratigraphically.

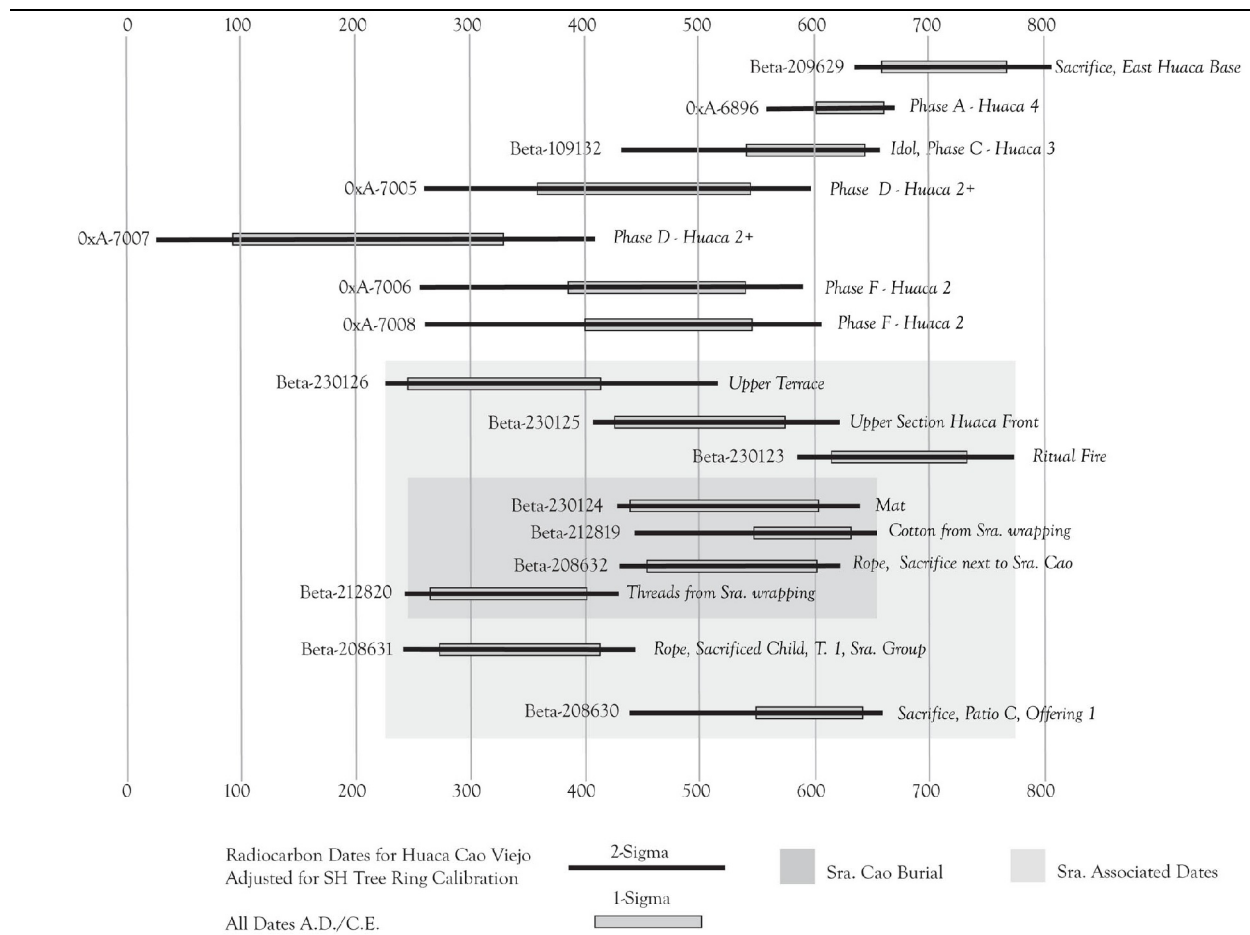


Table 5: Bar chart of radiocarbon dates for the Moche occupation at Huaca Cao Viejo at the El Brujo archaeological complex.

The date for Construction Phase A is satisfactory in being later than any of the previously mentioned, at A.D. 556-667 (OxA-6896). The only radiocarbon date that may be associated with Construction Phase C is from a wooden idol found buried in a room dating to that era. The two-sigma date range for the idol is 433-659 A.D. (Beta-109132). As the Phase C construction is stratigraphically between Phase D and Phase A, a cautious placement of the time of the Phase C (Huaca 3) construction would be in the first half of the seventh century.

If there were environmental disruptions on the north coast of Peru due to severe El Niño events in the sixth century (Moseley *et al.* 1981; Moseley *et al.* 2008; see also Sandweiss and

Quilter 2008), it is interesting to consider that the greatest activity, or at least the greatest number of radiocarbon dates indicating activities at Huaca Cao Viejo, are in the late fifth through the sixth centuries. We suggest, however, that these occurred before the Phase C/Huaca 3 construction that dramatically reworked the Ceremonial Well area and Huaca Cao Viejo. The establishment of the bas-relief friezes similar to those at Huaca de la Luna occurred after the inferred El Niño events and shortly before the huaca was abandoned altogether.

To the south, in the Moche Valley, Santiago Uceda Castillo (2010) suggests that at some time circa A.D. 600 construction at Huaca de

la Luna halted, with the temple no longer actively in use. Huaca del Sol was then greatly expanded relatively quickly, and a new structure, Platform 3, was constructed on the side of Cerro Blanco, above the plaza of the old Huaca de la Luna. Now known as the New Temple and famed for the Revolt of the Objects mural, this platform (Quilter 1990) became the main religious structure of the site complex. Both it and Huaca del Sol were built with tall adobes.

It has long been recognized that the times associated with the transition between Phases IV and V of the Larco sequence marked major changes in Moche culture (e.g. Bawden 1982, 1996; Lockard 2009) and significant changes in cultural patterns, including ceramic styles, are now well in evidence at many other sites, such as San José de Moro in the northern Moche region (Castillo 2010). Even though there is an ongoing reevaluation of Moche sub-styles that are now identified as likely reflecting geographical and even site-specific styles instead of relatively uniform chronological changes, there still appears to have been dramatic changes in ceramics and in socio-political relations late in the Moche era.

The evidence gathered from excavation of the wells at the El Brujo Archaeological Complex and the correlation of events in these locales with changing construction phases in the montículos and at Huaca Cao Viejo demonstrate that great and important changes occurred at both places. After centuries of huaca building—Huacas 1 and 2, Construction Phases E and D, and Huaca 3—construction stopped and Huaca Cao Viejo was little used. Then, some more work was carried out, followed by the last major construction, Huaca 4.

It is important to note that the use of bas-relief friezes begins at Huaca Cao Viejo on the front of Huaca 3 (Construction Phase C). Little remains of this decorative program, but one

terrace wall has designs of stylized catfish, imagery that was used over many years at the site and may have been emblematic of it. Another terrace, below the catfish frieze, has small panels depicting a deity, hero, or similar anthropomorph sacrificing another (Franco *et al.* 1994; Mujica Barreda 2007:138-139). This technique of representation, while appearing relatively late at the site may have developed independently of specific imagery.

In the last major phase of the Huaca Cao Viejo, Huaca 4, the artistic program on the front of the huaca, as well as the designs in rooms on its summit, followed the same decorative program as at Huaca de la Luna, where at least three major building phases previously had been made in a distinctive style. That style utilized bas-relief to represent life-sized prisoners paraded by victorious warriors on the face of the lowest terrace of the huacas, and a series of mythological beings on the walls of the terraces above them. It thus appears that this decorative program, its symbolism, and, inferentially, a suite of religious practices, were imported from Huaca de la Luna to Huaca Cao Viejo, or that there was a third, as yet undiscovered, source for the art program of both Huacas de la Luna and Cao Viejo. Unless another source is identified, however, Huaca de la Luna should be considered the origin point for this design program and its associated social and political phenomena.

The evidence from the excavation of the wells, and our consideration of changes that occurred in every structure at the site that has been investigated, indicate that the adoption of new ideas and practices at the El Brujo complex was a radical departure from older ways. The adoption of an artistic program similar to that of the Huaca de la Luna program at Huaca Cao Viejo thus appears to represent not just a close political and social relationship between the two sites, but a reconfiguration of ritual practice

and political alliances as well. This change occurred while many other shifts in behaviors and relations were occurring elsewhere in the Moche region and was likely part of dramatic and significant events throughout the Andes.

In conclusion, our research at the Ceremonial Well, in combination with a review of architectural phases in other structures at El Brujo, has identified a dramatic and profound halt in activities in the Moche occupation associated with Huaca Cao Viejo. After a period of time, a new artistic and, very likely, religious and political system, apparently very similar to that of Huaca de la Luna, revitalized Huaca Cao Viejo. These events confirm that there was likely a widespread reorientation of cultures on the north coast of Peru that occurred in the seventh century, resulting in what is seen in art and iconography as a new Moche style, commonly seen in Larco Phase V. Further studies of the specific events that occurred at sites such as Huaca de la Luna and the El Brujo complex will surely help clarify the causes and consequences of such changes.

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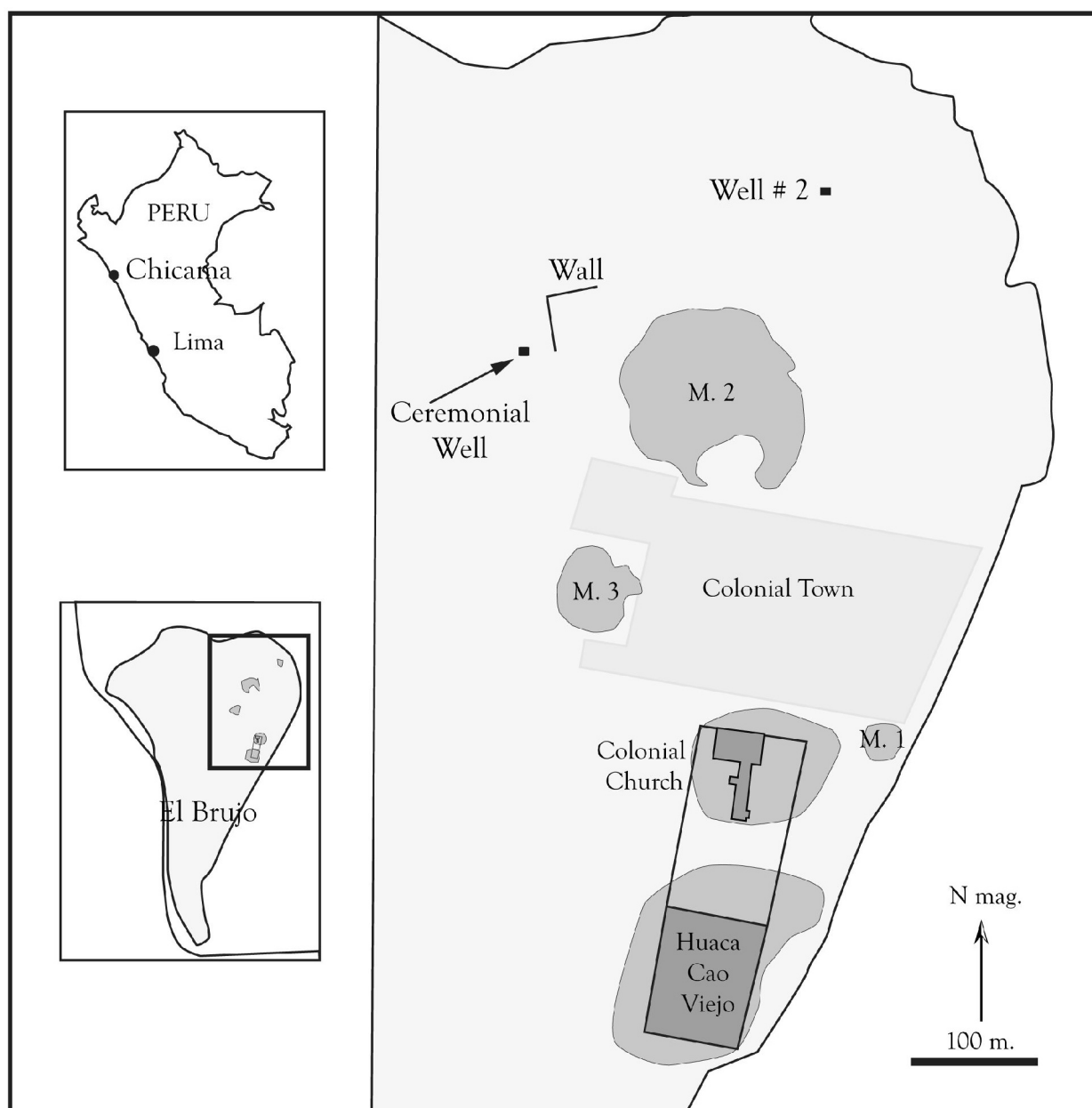


Figure 1: Map showing the northeastern sector of the El Brujo Archaeological Complex with features discussed in the text. "M" designates a montículo.

Huaca El Brujo lies to the west of the complex and is not shown in this figure.

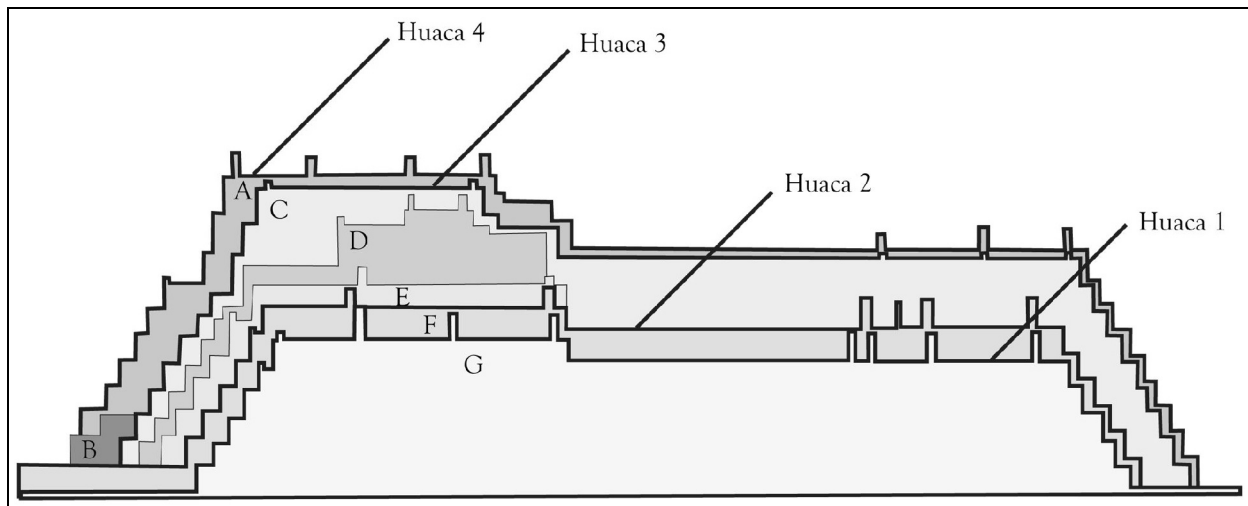


Figure 2: North-South profile of building stages of the Huaca Cao Viejo (not to scale).
The northern, front side of the huaca is to the left.

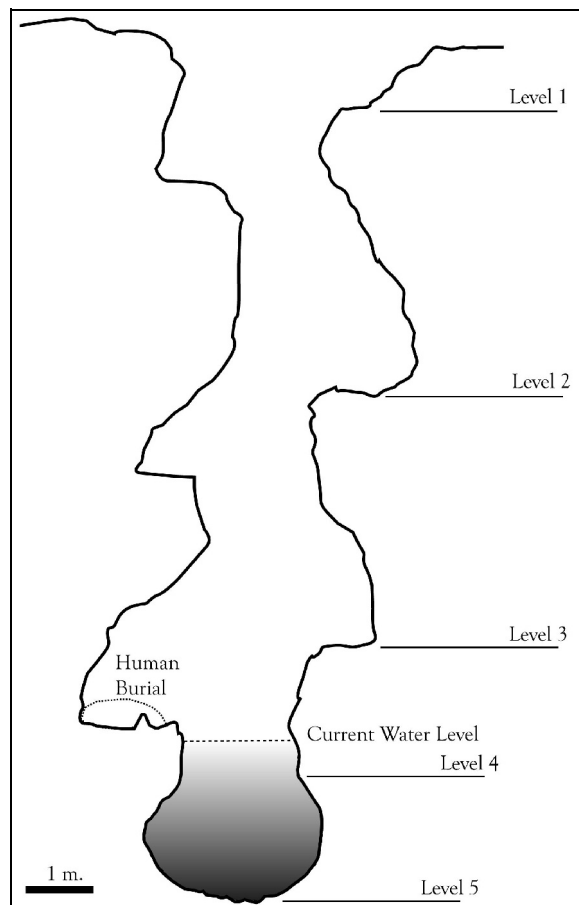


Figure 3: North-South profile of the Ceremonial Well. North is to the left.



Figure 4: The Ceremonial Well at Huaca Cao Viejo.

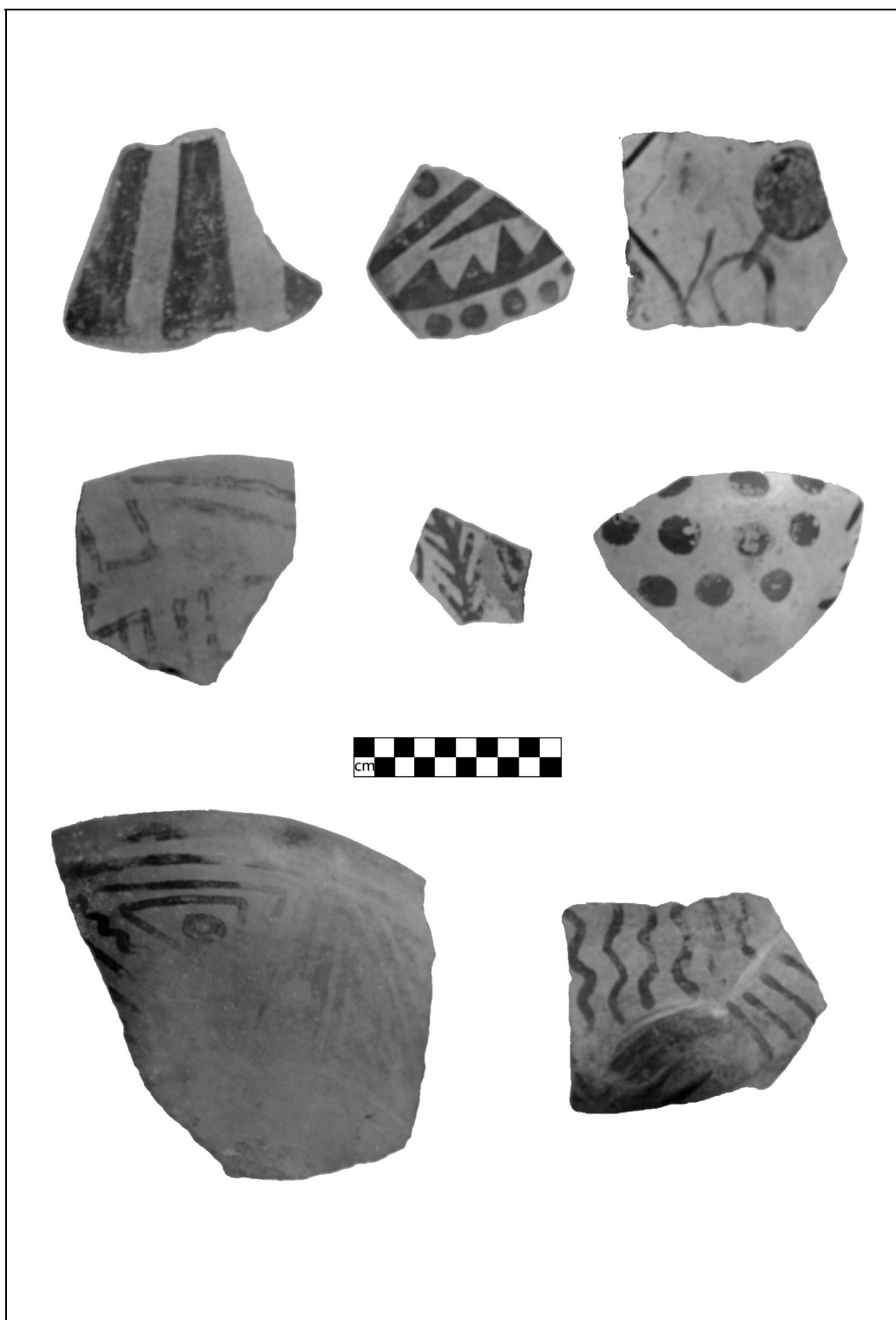


Figure 5: Body sherds found in excavations. All are red on cream except for upper right (black and brown on white) and lower left (black on red).



Figure 6: Two sherds found in excavations around the well. Both are red on cream.

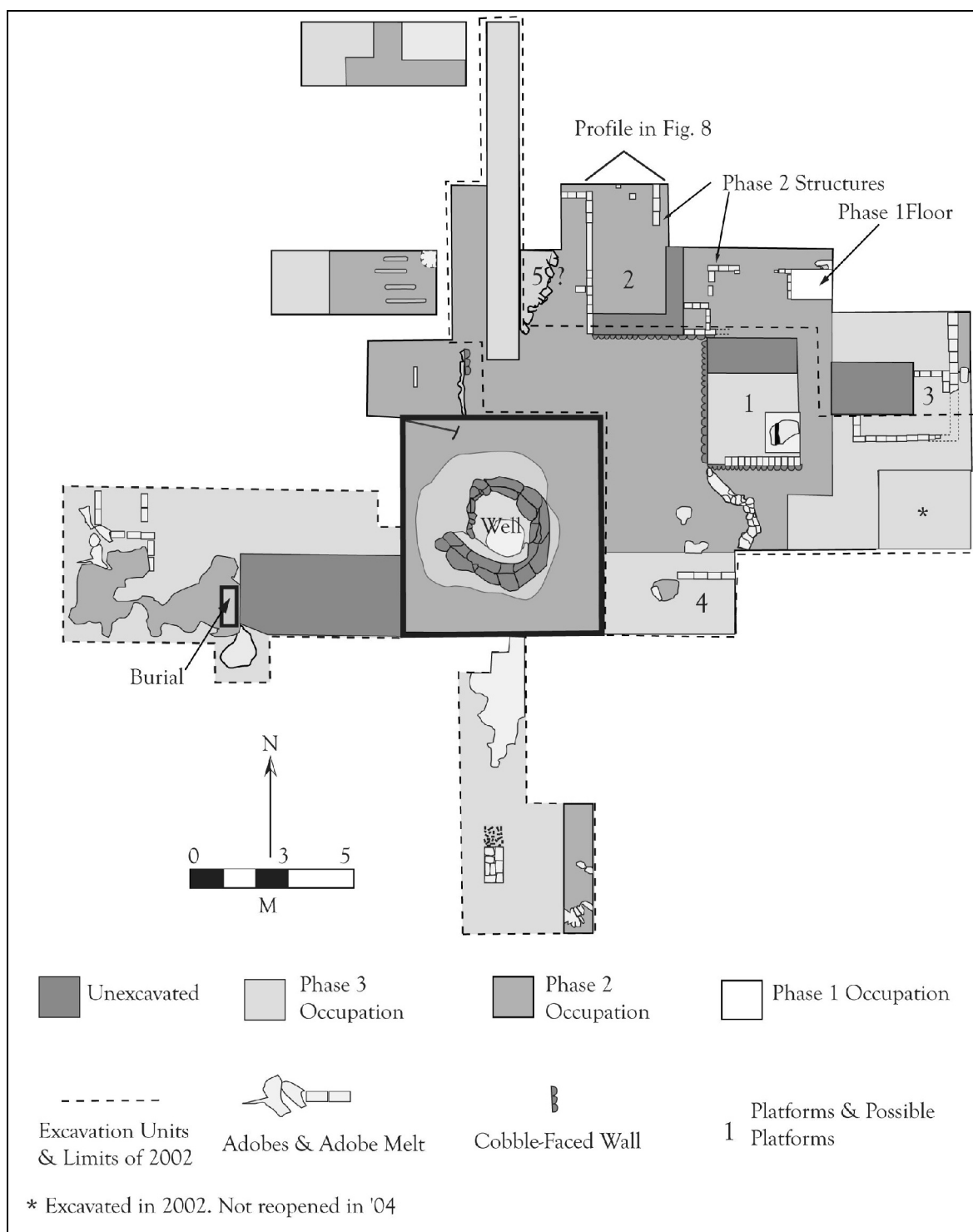


Figure 7: Plan of excavations around the well.

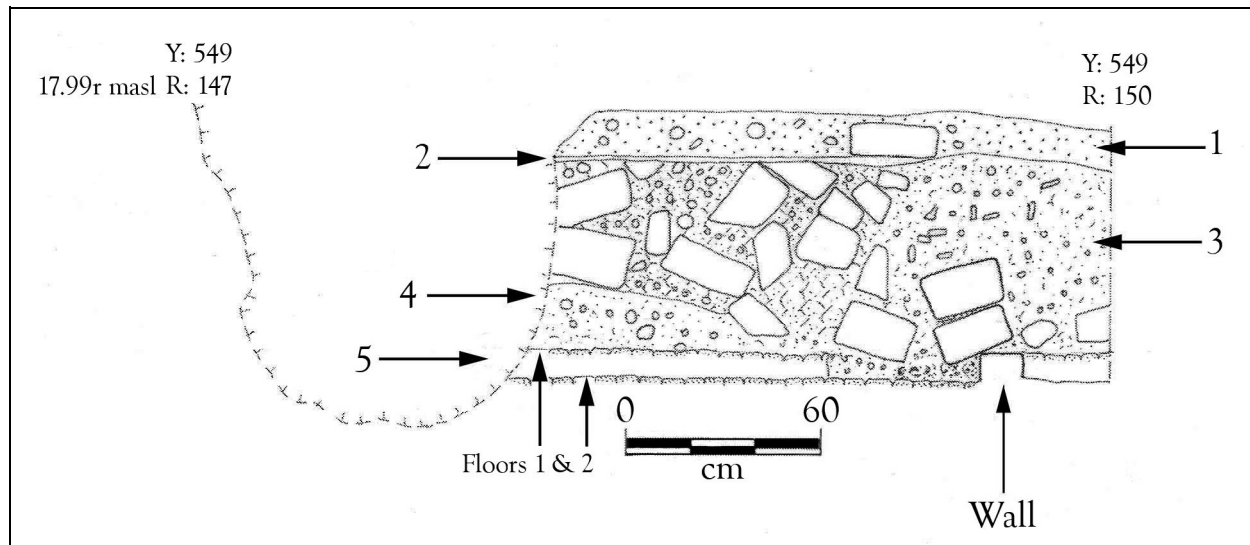


Figure 8: North wall profile of excavations around the well (see Figure 6). 1. Capa A, salitre; 2. Surface in use during late occupation; 3. Capa B, Level 1; 4. Capa B, Level 2; 5. Capa B, Level 3 showing two floors (P1 and P2); Declivity to the viewer's left (west) is a looter's hole.

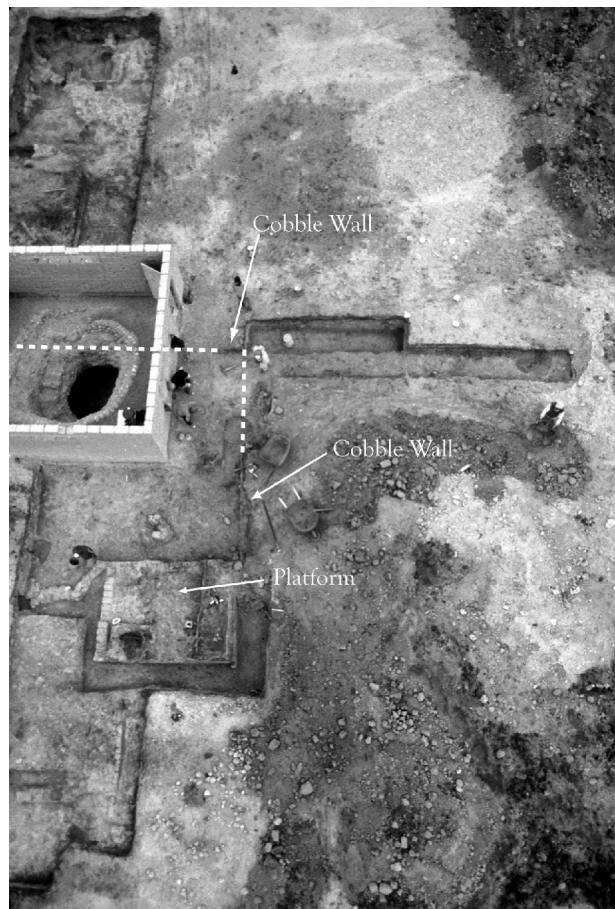


Figure 9: Aerial photograph of the well area showing a Phase 3 adobe platform. The cobble-faced wall and its line of continuation across contemporary features are indicated. Top of the photograph is West.

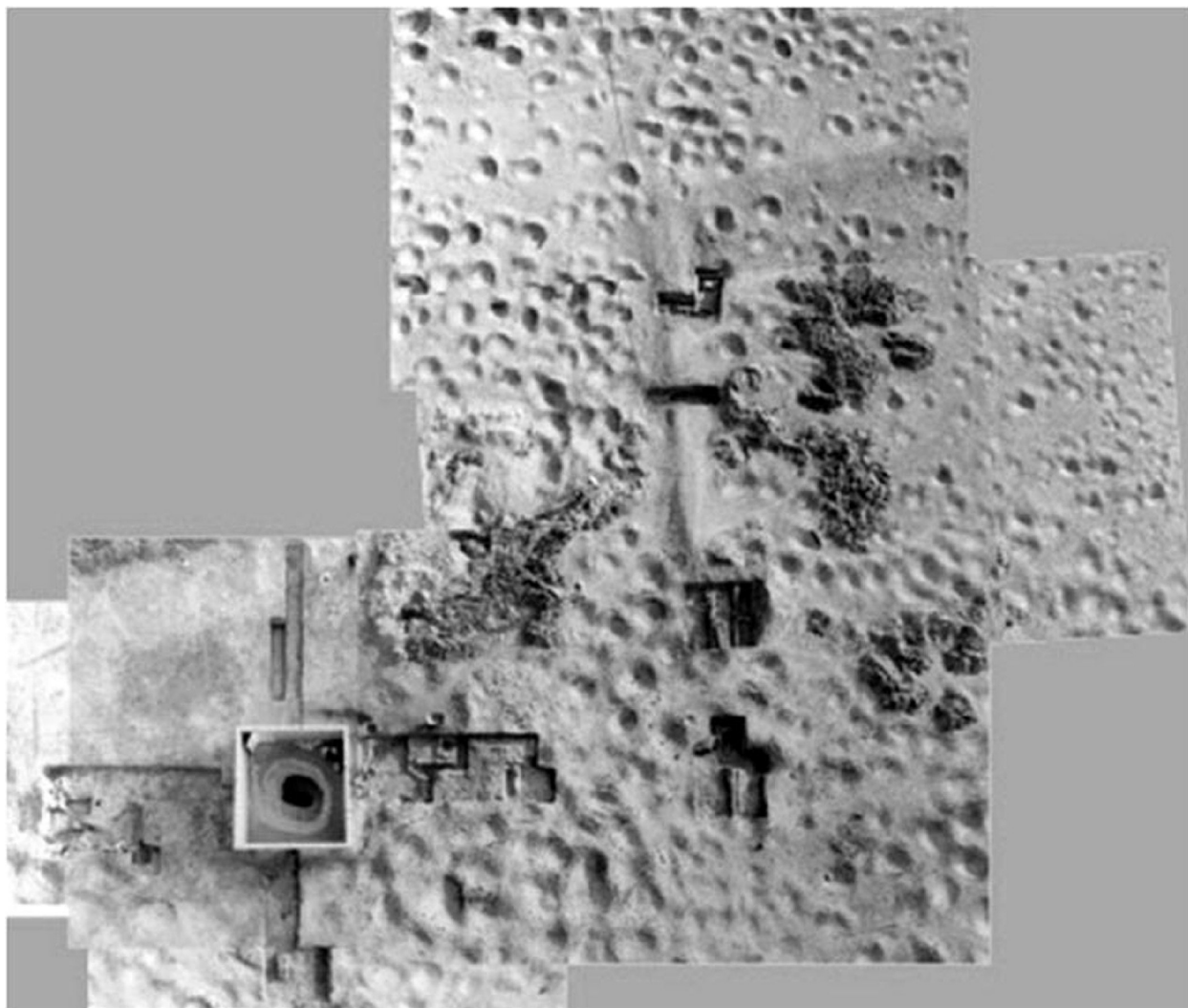


Figure 10: Aerial photograph of the well and its surrounding area.
Note the large wall at right. North is at the top of photograph.



Figure 11: Unit 1. Possible room or compound walls with large wall superimposed. View to the North.



Figure 12: Skull of a badly treated woman.

Top: Arrow indicates compression wound on right side of cranium.

Bottom: Arrow indicates unhealed cut mark on left side. Insert: Detail of cut mark.

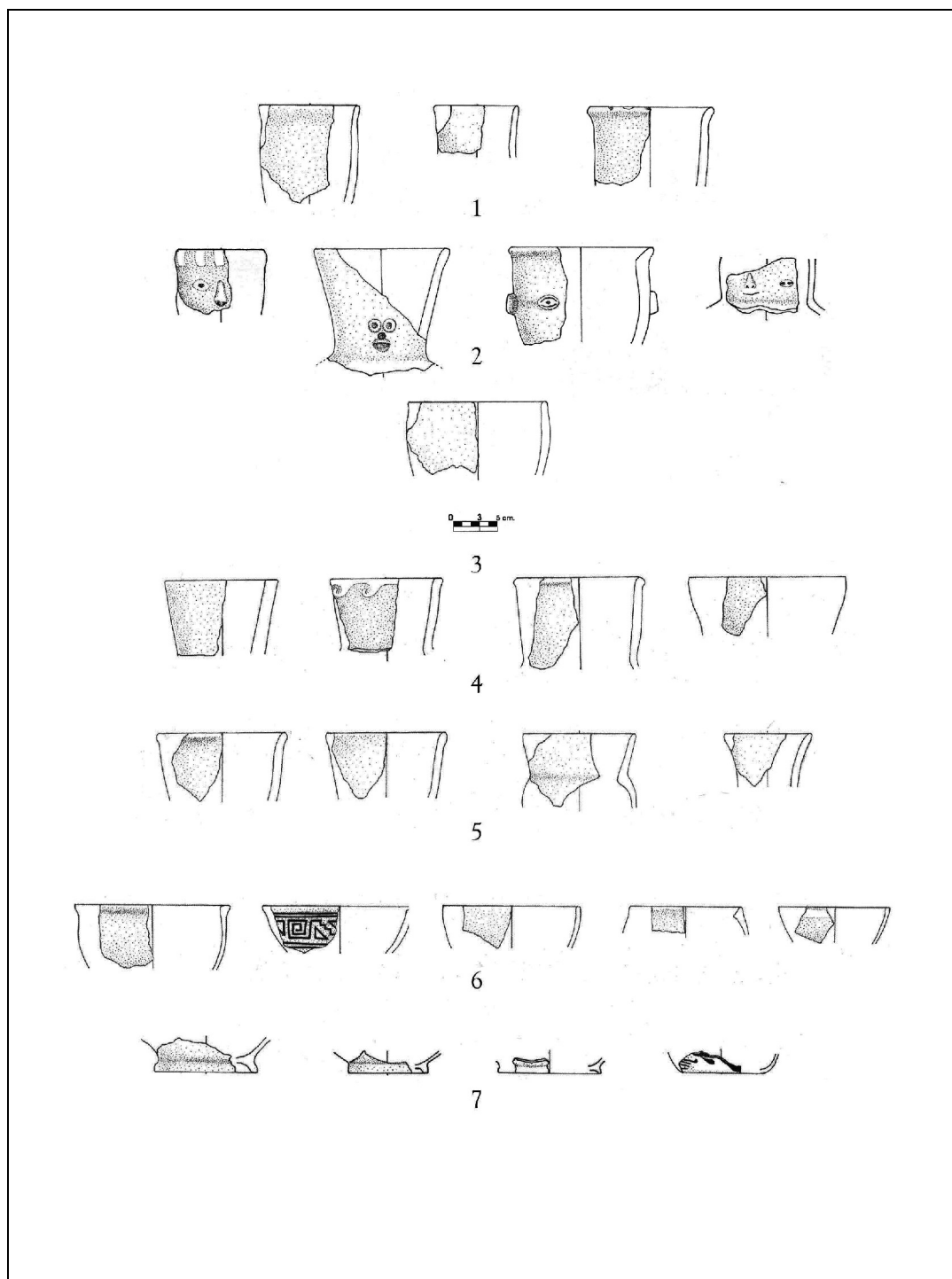


Figure 13: Rim profiles of vessel types found in excavations around the Ceremonial Well.
 Row 1: Cántaros Cuellos Rectos; Row 2: Cántaros Cara Gollete; Row 3 Cántaro Cuello Convexo;
 Rows 4 and 5: Cántaros Cuellos Expandidos; Row 6: Cuencos; Row 7: Bases.

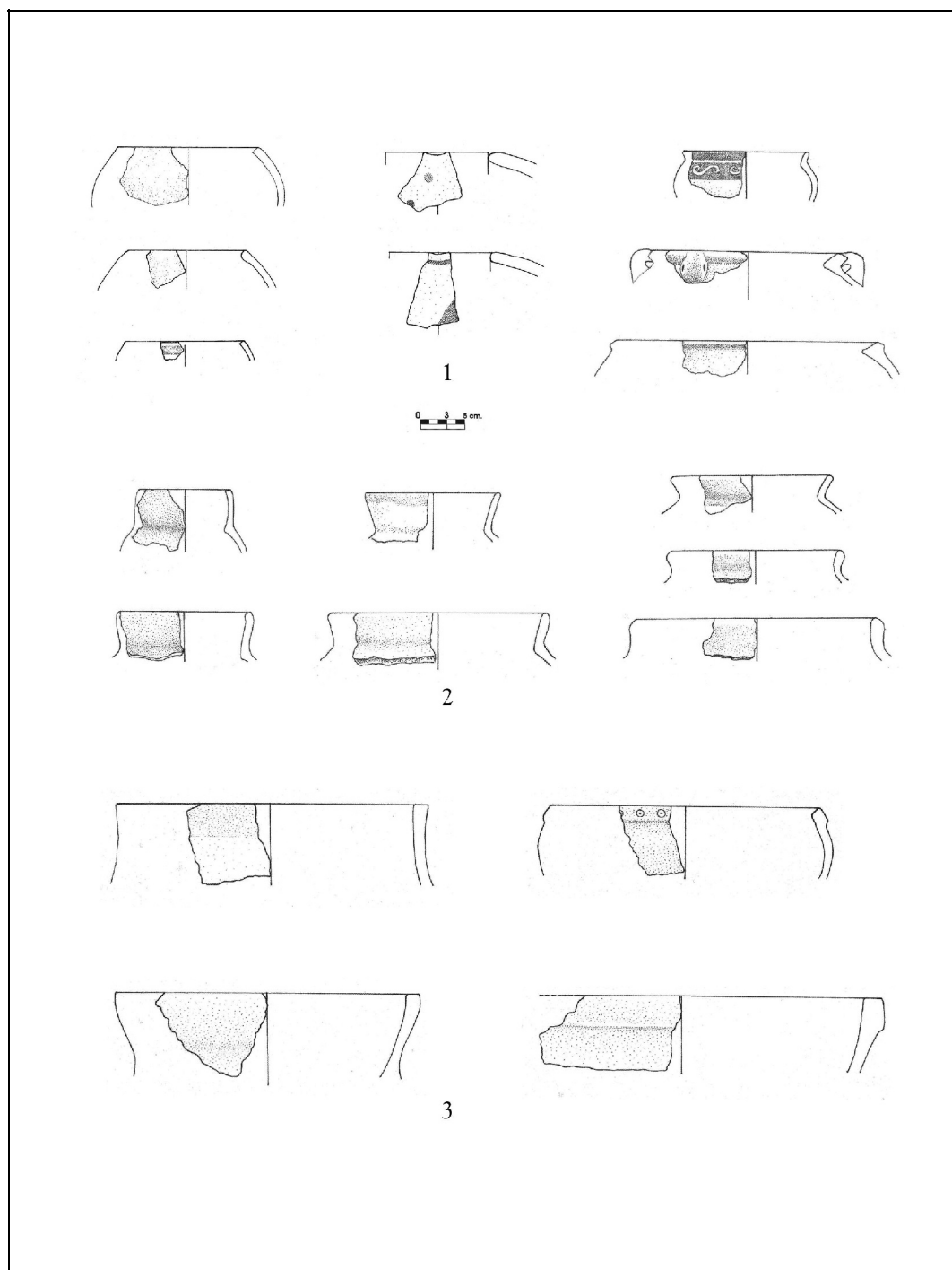


Figure 14: More rim profiles of vessel types found in excavations around the Ceremonial Well.

1. (Top 3 Rows): Left Column: Ollas Sin Cuello; Middle Column: Cancheros;
Right Column: Top: Olla Cuello Expandido; Bottom (2): Ollas Cuellos Truncados.

2. (Middle 2 Rows): Left Column: Ollas Cuellos Convexos;
Middle Column: Ollas Cuellos Expandidos; Right Column: Ollas Cuellos Evertidos.

3. (Bottom 2 Rows): Left Column: Tinajas Cuellos Expandidos;
Right Column: Tinajas Bordes Reforzados.



Figure 15: Well 2 with burials.



Figure 16: Two stirrup spout vessels found with the Well 2 burials. The dimensions of the restored vessels are: Left: Height: 21.7 centimeters; Maximum Width.: 14.6 centimeters; Right: Height 22.3 centimeters; Maximum Width: 14.5 centimeters.

