Preliminary Field Report for

2014 Archeological Investigations

At Round Mountain (AZ CC:4:61 (ASM))

Near Duncan, Arizona

John Roney, Robert Hard, Art MacWilliams and Mary Whisenhunt

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Figure 1. Overview of Round Mountain, with Gila River floodplain in foreground

BACKGROUND

Round Mountain is a cerro de trincheras built on the summit of a 640 foot high basaltic hill overlooking the floodplain of the Gila River near York, Arizona in Greenlee County (T 6 S, R 31 E, Sec. 31, SE1/4 of NE1/4 and NE1/4 of SE1/4). The site is located on lands administered by the Bureau of Land Management, Safford Field Office (Figure 1; Figure 2). It was first drawn to our attention over a year ago by Andy Laurenzi, of Archeology Southwest, who initially found it while browsing Google Earth.

The site is a cerro de trincheras, a complex of walls, terraces and other features made of dry-laid stones and cobbles located on the summit and upper slopes of an isolated hill. Sites of this nature are best documented in western Chihuahua, northern Sonora, and southern Arizona (e.g. Fish et al. 2007). They vary greatly in age, ranging from as early as 1300 BC in northwestern Chihuahua to as late as AD 1350 in southern Arizona. A variety of functional interpretations have been offered for these features, but residential occupation seems to be a common theme at many, if not most (Downum 1986; Fish et al. 2007; Roney 1999). We have previously argued that cerro de trincheras sites in northwestern Chihuahua were constructed for defense. A two-sigma calibrated radiocarbon date of 510 to 395 B.C. and the presence of projectile points, pipes, a rectangular stone mortar, and the ground stone assemblage, suggest that the primary occupation and construction of Round Mountain occurred during the Cienega phase (900 B.C. to A.D. 200), with subsequent minor use during the Ceramic period.

This report documents an archeological research project at Round Mountain conducted between May 15 and May 27, 2014 by Dr. Robert Hard (University of Texas at San Antonio), John Roney (Colinas Cultural Resource Consulting), and Art MacWilliams (University of Calgary), with assistance from Jacob Freeman (University of Texas at San Antonio). Student participants included David Baron, Gabriela Gonzalez, Ashley Jones, and Mary Whisenhunt. The project was funded by a small departmental grant from the University of Texas at San Antonio Department of Anthropology. Work done in 2014 involved mapping, limited surface collection, test excavation, surface recording of ground stone artifacts, and limited reconnaissance in the vicinity of the site. This work was done under BLM Permit AZ-000568, and was facilitated by Dan McGrew, BLM Safford Field Office Archeologist and by Suzanne Rowe, BLM Arizona State Office Archeologist. We also gratefully acknowledge the assistance of Mr. Dick Kaler, who provided access to the site and extended many other courtesies.

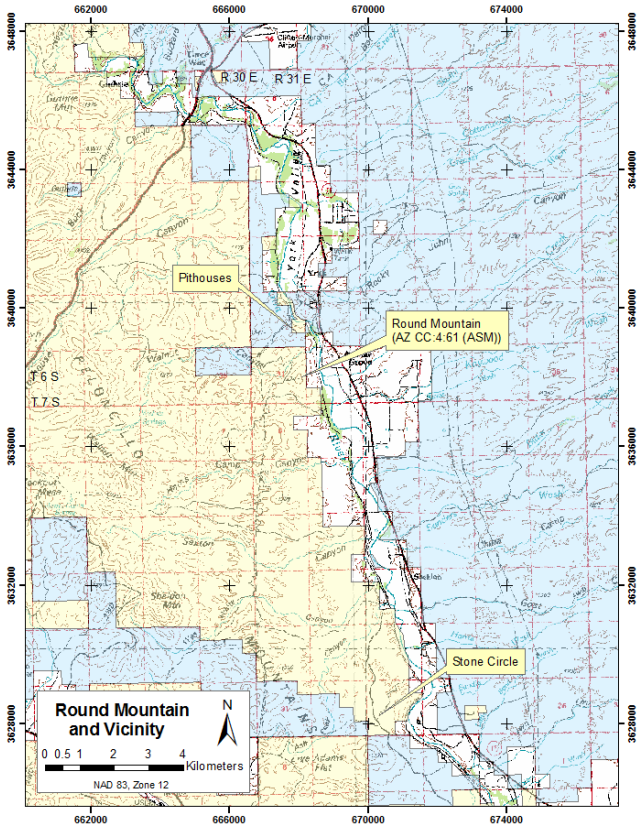


Figure 2. General Location of Round Mountain

MAPPING

The site was mapped using tape and compass techniques. An origin point was established on the summit of the mountain, and a measured baseline was laid out along the

long (north-south) axis of the feature complex. Several east-west lines were measured off of this principal axis, and supplemental lines were established as needed. Measured points were marked temporarily using engineer's flagging. Using these reference points, cultural and natural features were sketched on graph paper at a scale of 1:390 (1" = 10m).

While mapping the site, we attempted to capture walls/terraces, stone circles or enclosures, and cultural rubble. In many cases these cultural features incorporated bedrock outcrops, bedrock cliffs, and scarps. These natural features were also mapped if they were judged to be integral to the spatial organization of the site. We believe that the resulting maps are reasonably complete for the core portion of the site, and for the northern and western slopes of the mountain. There are a few outlying walls/terraces on the southern slopes of the mountain that are inadequately documented, and the eastern face of the mountain has not yet been explored much below the lowest mapped features.

The maps drawn in the field were later scanned to create .tif files, which were brought into ArcGIS 10.2 and georeferenced by projecting them against georeferenced satellite photography obtained through ESRI (ESRI_World_Imagery-2D). The cultural and natural features represented on the field maps were then traced into the geographic information system (ArcGIS), working back and forth between the satellite imagery and the scanned field map image. Finally, the map was completed by superimposing it over topographic contours traced from the USGS 1:24,000 series Sheldon Quadrangle. The resulting map is shown in Figure 3.

As currently mapped the site covers an area of approximately 6.14 hectares (15.2 acres). It includes 16 stone circles and 1.9 kilometers of constructed walls/terraces. The stone circles are assumed to represent individual dwellings, and future fieldwork will focus on them more closely. Preliminary impressions are that most are circular or oval in shape and approximately 3.5 meters in diameter. When openings are visible, they tend to be towards the northeast. The stone circles are scattered across the central area of the site. They are about 15 meters from one another, and are located on several terraces with generally southeasterly exposures.

During this initial investigation we did not distinguish between walls and terraces. Some of the features were true terraces, with substantial deposits on their upslope sides. However, many more were simple rubble walls, running up and down slopes rather than following contours. Even where contours were followed, there was often no deposit of soil and rubble behind them, so it would be inaccurate to refer to them as terraces. Construction was informal. The features are formed by piling cobbles into long windrows, and we did not observe any instances of formal, vertical masonry walls. One especially curious

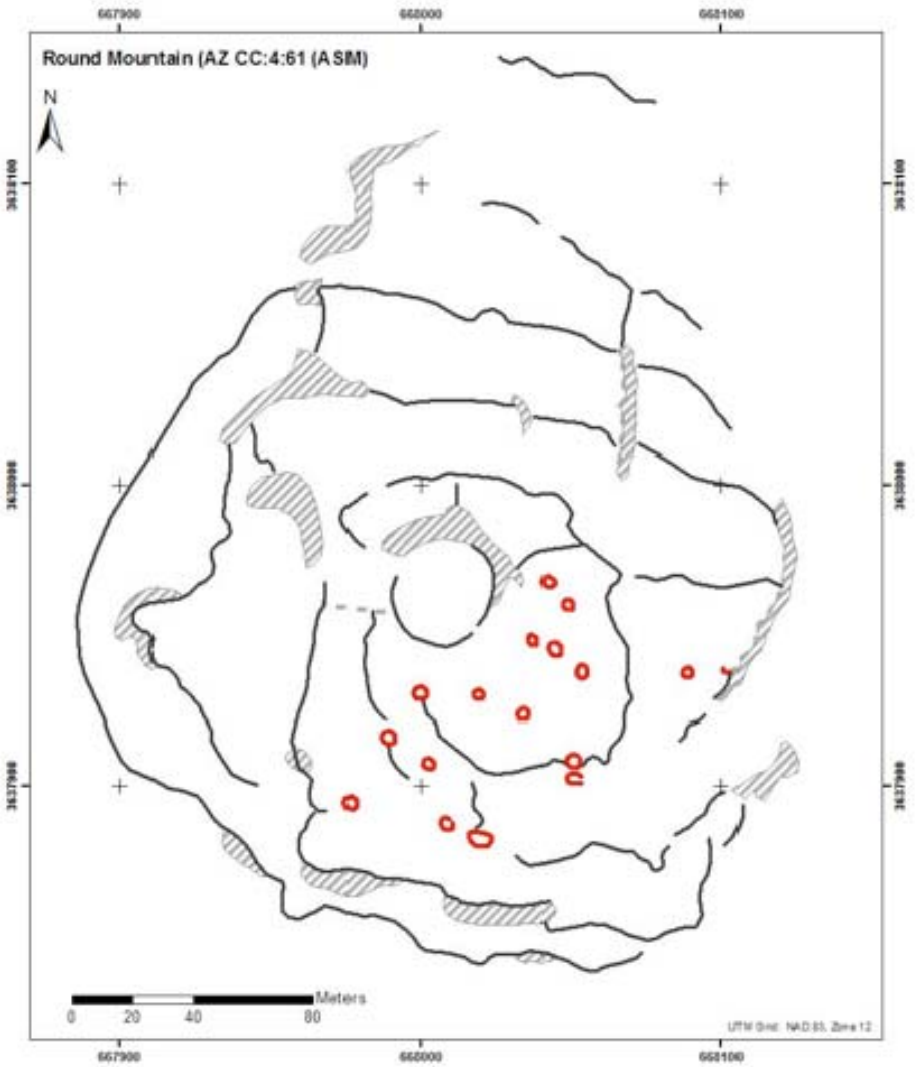


Figure 3. Cultural features including walls, terraces and rock rings

characteristic was the incorporation of long upright rocks into the construction (Figure 4). These were placed along the walls at varying intervals and their purpose is unknown. Similar embellishments have been observed at Canador Peak, 20 km to the southeast (Roney 1999), at Shi'ikik a late prehistoric site near Sells, Arizona (Stacy 1974), and at Cerro el Apache a protohistoric site near Cuauhtemoc, Chihuahua (A. MacWilliams, personal communication).





Figure 4. Upright stones incorporated into walls

We found evidence of limited bulldozer activity near the summit of the site. This disturbance was very old, and was visible in the form of several push piles and spoils berms on the edges of the bulldozer pass. These disturbances can be distinguished from the prehistoric constructions because they are linear, they are of consistent width, and they are not size-sorted. We assume that they are the result of mineral exploration. Other evidence of modern activities included a brass cap survey marker along with associated lathe and wire, a few aluminum cans near the summit, and a small area of recent disturbance near our Test Unit 3, which appeared to be a looter's hole.

SURFACE COLLECTION

As we mapped the site and as we crisscrossed it while completing other aspects of the investigation, we flagged the locations of diagnostic artifacts. Later, as the field map neared completion we returned to these locations, plotted them on the field map, and collected the items, assigning them sequential surface collection numbers. Artifacts collected in this way are listed in Table 1.

Pottery

Table 2 tabulates all 25 sherds included in this collection. In classification of brownwares, Alma Plain was somewhat of a catchall category. We sought to distinguish it from Jornada Series brownwares, which are usually tempered with white particles of larger and more uniform size, and Gila Plain which should include mica in the temper, as well as

having paddle and anvil construction. Only one sherd was tentatively classified as Gila Plain because its temper included mica.

In classification of decorated pottery no attempt was made to separate San Simon Series types from those of the Mimbres Series. Three Circle Red-on-white was recognized by reddish paint and a thick slip that was warmer in color than the slip typical of Mimbres Black-on-white. Almost two thirds of the sherds are white-slipped brownwares, and a large proportion are jars, including at least one very large jar. Three Circle Red-on-white was well represented. This, along with one Early Style I sherd and other Mimbres Black-on-white sherds, could imply that the assemblage dates to the Late Pithouse Period, AD 550 to 1000, although the assemblage is very small. As discussed below in more detail, virtually all of the sherds came from a small area at the very summit of the mountain. Because of this we believe that they represent a specialized, later use of this location.

Chipped Stone

Chipped stone artifacts collected from the surface in 2014 are all illustrated in Figure 5. Almost all of the chipped stone artifacts were found inside the walls, within the area where evidence of cultural activity is greatest. One of these, #42, was found in a saddle about 300 meters west of the terrace complex, the others were all inside the walls, within the area where evidence of cultural activity is greatest. Four of these points (#8, #12, #11, and #42) are classified here as Tularosa Corner-notched (Justice 2002). They are small to medium-sized points, corner-notched with expanding stems, convex bases and prominent barbs, and they have a minimum stem width of 11.5 mm or less. According to Justice (2002: 217) this form is derived directly from the San Pedro type and dates between 100 BC and AD 700 to 900. However, at Cerro Juanaquena, another cerro de trincheras located about 240 km to the south, similar points were relatively common in deposits dating to around 1250 BC, although this type is typically placed somewhat later in time.

A fifth point, #7 is unclassified. Several additional projectile point fragments are illustrated in the second row of Figure 3. One of them, #13 is very likely the midsection of another Tularosa Corner-notched point, although its base is missing. Another, #43 is likely from a San Pedro point, which typically dates between 1200 B.C. and A.D. 700-900. The others, #40, #6, and #9 are additional dart point fragments.

Table 1. 2014 Surface Collection

Coll. #	*Bag #*	*Artifact Class*	*Description*
#01	040	Ceramics	3 sherds; one Mimbres Black-on-white, Early Style I bowl; one worked Three Circle Red-on-white bowl; one white slipped brownware jar
#02	035	Flaked stone	Stage III biface midsection, obsidian
#03	034	Ground stone	Stone pipe
#04	033	Ground stone	Stone pipe
#05	037	Flaked stone	Stage II/III biface, white translucent chert
#06	038	Flaked stone	Dart point midsection, dark volcanic stone
#07	039	Flaked stone	Projectile point, unclassified, obsidian
#08	036	Flaked stone	Projectile point, Tualrosa Corner-notched, obsidian
#09	116	Flaked stone	Stage III biface tip, white translucent chert
#10	080	Flaked stone	Stage III biface tip, white chert/chalcedony
#11	078	Flaked stone	Projectile point, Tularosa Corner-notched, obsidian
#12	082	Flaked stone	Projectile point, Tularosa Corner-notched, obsidian
#13	079	Flaked stone	Projectile point midsection, white chert
#14	081	Ceramics	1 sherd, Alma Plain jar
#15	084	Ceramics	1 sherd, Mimbres Black-on-white jar
#16	083	Ceramics	1 sherd, Mimbres Black-on-white jar
#17	075	Ceramics	1 sherd, Mimbres Black-on-white bowl
#18	085	Ceramics	1 sherd, white slipped brownware
#19	086	Ceramics	1 sherd, Three Circle Red-on-white, jar
#20	076	Ceramics	1 sherd, Alma Plain jar
#21	128	Flaked stone	Stage II biface, opaque white chert
#22	096	Ceramics	1 sherd, Mimbres Black-on-white bowl
#23	094	Flaked stone	Stage II biface, obsidian
#24	087	Flaked stone	Large flake scraper, light grey quartzite(?)
#25	095	Flaked stone	Stage I/II biface, opaque white chert
#26	097	Flaked stone	Bifacially modified flake, pink opaque chert
#27	098	Ceramics	1 sherd, Three Circle Red-on-white jar
#28	089	Ceramics	1 sherd, Alma Plain jar
#29	092	Ceramics	1 sherd, white slipped brownware jar
#30	088	Flaked stone	Large flake, grey quartzite(?)
#31	104	Ceramics	1 sherd, Alma Plain jar
#32	103	Ceramics	1 sherd, white slipped brownware
#33	105	Ceramics	2 sherds, one white slipped brownware bowl, one Mimbres Black-on-white bowl
#34	100	Ceramics	1 sherd, black on white jar
#35	102	Ceramics	2 sherds; one Alma Plain jar, one Alma Plain bowl
#36	101	Ceramics	1 sherd, Gila Plain?
#37	093	Ceramics	1 sherd, Alma Plain jar
#38	090	Ceramics	1 sherd, Alma Plain jar
#39	074	Ceramics	1 sherd, Three Circle Red-on-white jar
#40	099	Flaked stone	Dart point midsection, obsidian
#41		Groundstone	Stone tray
#42	032	Flaked stone	Projectile point, Tularosa Corner-notched, white chert
#43	091	Flaked stone	Stage III biface, obsidian

Table 2. Ceramics

Type	*Bowls*	*Jars*	*TOTAL*
Alma Plain	1	7	8
Gila Plain (?)	0	1	1
Three Circle R/W	1	3	4
Mimbres B/W	4	2	6
White-slipped Brownware	2	4	6
TOTAL	8	17	25

Artifact #10 is the blade of a large finished biface and #2 is the basal portion of another finished, unnotched biface. Artifacts #5, #23, and #21 are bifaces shaped by percussion flaking, but not yet finished using pressure flaking. Artifact #25 is an early stage biface.

The remaining three artifacts are informal. Artifact #24 is a large flake with heavy unifacial nibbling and nicking on several edges. Artifact #30 is a large limestone flake, and #26 is a bifacially modified flake.

Unusual Stone Artifacts

We discovered three rather unusual stone artifacts in surface collection, including two stone pipes (SC#3 and SC#4; Figure 6a). According to Ferg (Ferg 1998), pipes are extremely rare at Archaic and Early Agricultural period sites in the southern southwest, and most of those that are known appear to date to the Cienega Phase. Both pipes are short, tubular pipes made of vesicular basalt. One of the two stone pipes (#3) is partially drilled from both sides. This well-shaped cylindrical pipe is 43 mm in length by 38-46 mm in diameter, drilled to depths of 13mm and 23mm from each end. The second pipe (#4), which has both complete and broken surfaces, is drilled all the way through. Its complete length is 46.5 mm, with a diameter of 34.5 mm.

The other unusual stone artifact found at Round Mountain is a fragment of a rectangular stone mortar made of vesicular basalt (#41; Figure 6b). It is similar to the doughnut ground stone found in the road enroute to the Round Mountain site, and to another stone mortar fragment found at the Duncan Doughnut site immediately adjacent to the road. The mortar fragment suggests a possible temporal link between the two sites. The fragment's dimensions are 116 mm in length, and 80 mm in width, with a bottom thickness of 25 mm. Height from base to lip was 73 mm. The fragment's wall thickness at the lip was 14 mm, broadening to 25 mm before tapering to the bottom of the bowl. The mortar fragment is carefully shaped, with a flat bottom and a vertical wall that rises to an interior height of 44 mm from the base. The base shows substantial grinding, with the wall itself undercut by the grinding. The exterior bottom of the artifact shows wear from being abraded against another surface during the grinding process.

We also recorded a 7 X 5 cm by approximately 5.5 cm possible polishing stone crafted of fine-grained basalt, with medium wear on one side, and light wear on the other.

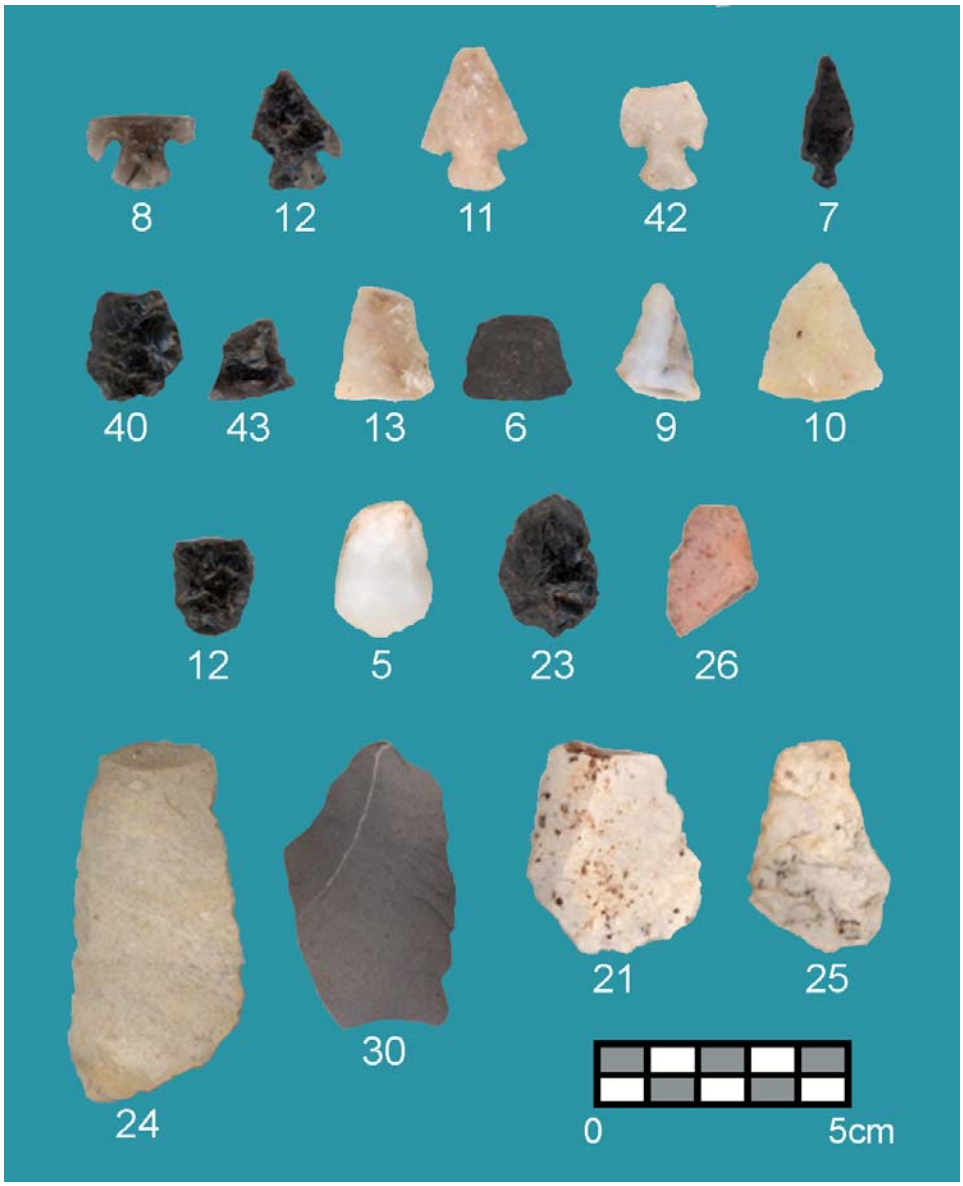
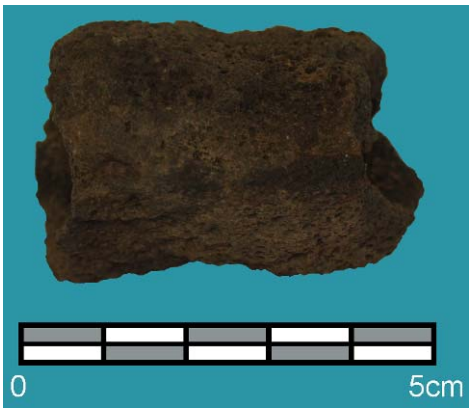


Figure 5. Surface artifacts.





a. Stone pipes, SC #4 and SC #3



b. Stone mortar or tray, SC #41

b. Stone mortar or tray. SC #41

Figure 6. Unusual artifacts

SURFACE RECORDING OF GROUND STONE ARTIFACTS

During the surface mapping of the site, we placed pin flags by all ground stone tools, as well as other diagnostic artifacts, and marked their location on the map. An identifying number was attached to each ground stone tool. We walked the site multiple times in order to search for additional artifacts prior to recording them. Each tool or tool fragment was closely examined, photographed, and its attributes recorded. All whole or partial metates, and all whole manos, were recorded but not collected. The following metate attributes were recorded in the field: its item number; whether it was complete or a fragment; type; number of grinding surfaces; overall length, width, and thickness; grinding surface length and width; wear depth; material; and degree of wear (light, medium, or heavy). Mano attributes included its item

number; type; number of grinding surfaces; whether its ends were used as grinding surfaces; length, width, and thickness; material, and degree of wear.

We defined a large basin metate by its elongated, curvilinear, “bathtub“ shape. The defining feature is that the length of the grinding base is much larger than the width. Lap stones are flat slabs with light to medium wear and small grinding surfaces. Circular basin metates are standard basin metates, in which the length and width and the grinding surfaces are approximately equal.

Metates

We recorded a total of 63 whole (25) and partial (38) metates on the surface. Artifact looting may have caused the number of whole metates to be underrepresented, as we noted at least two cases where a number of metate fragments had been placed together on the site in recent times. Half (32) of all metates were classified as basin metates, 27 were slab metates, and 4 were indeterminate (Table 3), although at times clearly differentiating slab and basin forms was difficult as many of the metates had only a slight basin concavity and these were classified as basin forms. Nonetheless this is a large assemblage of forms typical of the Late Archaic or Early Agricultural period and it is notable that trough metates or other late forms are absent.



Figure 7. Measuring a basin metate

Basin forms trended larger than slab forms, based on measurements of complete metates that were not partially buried (Table 4). Basin forms had overall median dimensions of 51.0 x 33.0 cm while slab forms were notably smaller at 39.0 x 20.7 cm. The grinding area of the basin forms were 32.0 x 19.0 cm, larger than that of the slabs at 26.0 x 14.5 cm. The slab forms represent substantial variability, and likely include tools that were small portable grinding slabs, that were unlikely to have been used in food processing, as well as grinding surfaces found on large flat stones that were classified as slab metates.

Approximately 86% of the metates were composed of basalt that appeared to be picked up from Round Mountain itself. This material is variable in the presence of vesicles, from abundant to none, with 65% of all metates being vesicular basalt. The balance of the metate materials appeared to have been brought onto the site, including rhyolite, another igneous material, and an unknown material (Table 5).

Metate wear was observed by both measuring the depth wear and noting the wear on the asperities of the grinding surface. The basin metate wear was measured from the bottom of the basin to the top of the metate and the median depth of wear of the basin metates was only 2.0 cm (n=7). This is quite low and less than one-third that that of the heavily worn basin metates found at Cerro Juanaqueña. The grinding surface of both slab and basin metates were classified as heavily worn if the contours of the natural surface are altered by grinding, medium wear is identified when the asperities are worn flat, and light wear is indicated if only the tops of the asperities show wear. Nineteen of 27 slab metates showed only medium to light wear, reflecting minimal use of these tools (Table 3). Another approach to assessing degree of use is examination of potential wear on both sides of a metate. Only 23 out of 56 (41%) of the basin and slab metates that were observable were used on both sides, again suggesting that metates are not exhausted when they were abandoned.

Table 3. Metate Form and Wear

		Wear				
		Heavy	Medium	Light	Unknown	Total
Basin	Count	30	1	1	0	32
Slab	Count	8	13	6	0	27
Unknown metate	Count	3	0	0	1	4
	Count	41	14	7	1	63

Few of the basin or slab metates showed evidence of manufacturing or maintenance. Most metates did not show evidence of shaping, those that did have only minimal shaping of the stone's natural contours. While the basalt is naturally rough, and perhaps needed little resharpening, the rarity evidence of pecking or resharpening was notable.

The morphology of the metates is consistent with that at Late Archaic or Early Agricultural period sites in that trough metates or other late forms are absent, while slab and basin forms are typical of sites of this time period. This metate set represents locally acquired material, with little effort invested in manufacture or maintenance. The basin forms reflect substantially more wear than the slab forms, but the depth of wear on the basin metates does not reflect an assemblage that supported the grinding needs of a population for an extended period of time. The number of metates however is relatively high considering other aspects of the site. Since few metates in the assemblage are exhausted, perhaps the metates reflect the processing activities of a population with multiple households that occupied the site for a relatively short period of time, or possibly returned to the site at intervals.

Table 4. Metate Dimensions

	Overall Length (cm)	Overall Width	Overall Thickness	Grnd Area Length	Grnd Area Width
	Median	Median	Median	Median	Median
Basin (n=7)	51.0	33.0	(n=5) 15.0	32.0	19.0
Slab (n=15)	39.0	20.7	9.5	26.0	14.5

Table 5. Metate Raw Material

	Frequency	Percent
Basalt	13	20.6
Vesicular basalt	41	65.1
Non-local igneous	4	6.3
Rhyolite	4	6.3
Unknown	1	1.6
Total	63	100.0

Manos

We made observations on 13 complete manos during the mapping and surface recording process, while the fourteenth mano was partially buried and could not be measured. We did not record mano fragments. However we did record a fragment of polishing stone. These manos were all of the small, or "one-hand" variety, with median dimensions of 10.2 x 9.0 x 4.0 cm (n=13). Seven of the 13 were made from the hill's vesicular and non-vesicular basalt. The other six were brought to the site and included four made from rhyolite, one from a pink granite, and one unknown material. Eight of the 13 manos showed heavy wear; four showed medium wear, and one light wear. These manos showed little to no shaping, are circular to oval in plan view, and in cross-section they are plano-convex or bi-convex. They also show little attempt at maintenance with only four showing evidence of pecking or resharpening. These mano forms are compatible with the basin metates, and some would likely function with the larger slab metates. As a group they are slightly smaller than the Cerro Juanaqueña manos as those had mean dimensions of 11.8 x 9.8 x 4.5 cm (n=111).

SURFACE ARTIFACT DISTRIBUTIONS

Many post-occupational processes move artifacts around on the surface of archeological sites. Nevertheless, on a large, relatively isolated site like Round Mountain surface artifact distributions can retain a useful degree of integrity. Because of this, we plotted the locations of all collected artifacts, and we recorded the locations of manos and metates which were not collected. We were specifically interested in identifying areas of most intensive occupation to guide test excavation, and we wanted to consider the relationship of artifacts to residential structures. Because of dating implications, we were also very interested in the distribution of pottery on Round Mountain. If sherds were comingled with other occupational debris, then the entire site could well date to the Ceramic Period. On the other hand, if pottery was restricted to specific areas within the larger site, then the cultural remains found elsewhere might be attributed to pre-ceramic times.

Figure 8 shows the distribution of retouched stone tools, manos, metates, pipes and stone trays in relation to walls and structures. Although there are a few outlying manos and metates in the northern portion of the feature complex, most of the mapped artifacts are concentrated near the summit and on the southeastern slopes of the hill. The distribution of unmapped lithic debitage is also most dense in this area. This distribution surrounds the cluster of stone circles which we interpret as dwellings, much as might be expected.

Figure 9 shows the distribution of pottery. In general, pottery is very scarce in relation to lithic artifacts. There is a striking concentration of pottery among the boulders at the very summit of the hill. Of the 22 sherds for which we have locational information, 14 were found in this cluster, and 7 others were recovered within a 20 meter radius of this location. Only two were more than 20 meters from the summit, one found 70 m to the southwest and the other recovered during excavation of Test Unit 3, 30 meters to the southeast. We believe this restricted distribution of pottery suggests that the ceramics reflect specialized, post-occupational use of the mountain top. If the pottery was associated with a major residential occupation, it should have been intermingled with other artifacts.

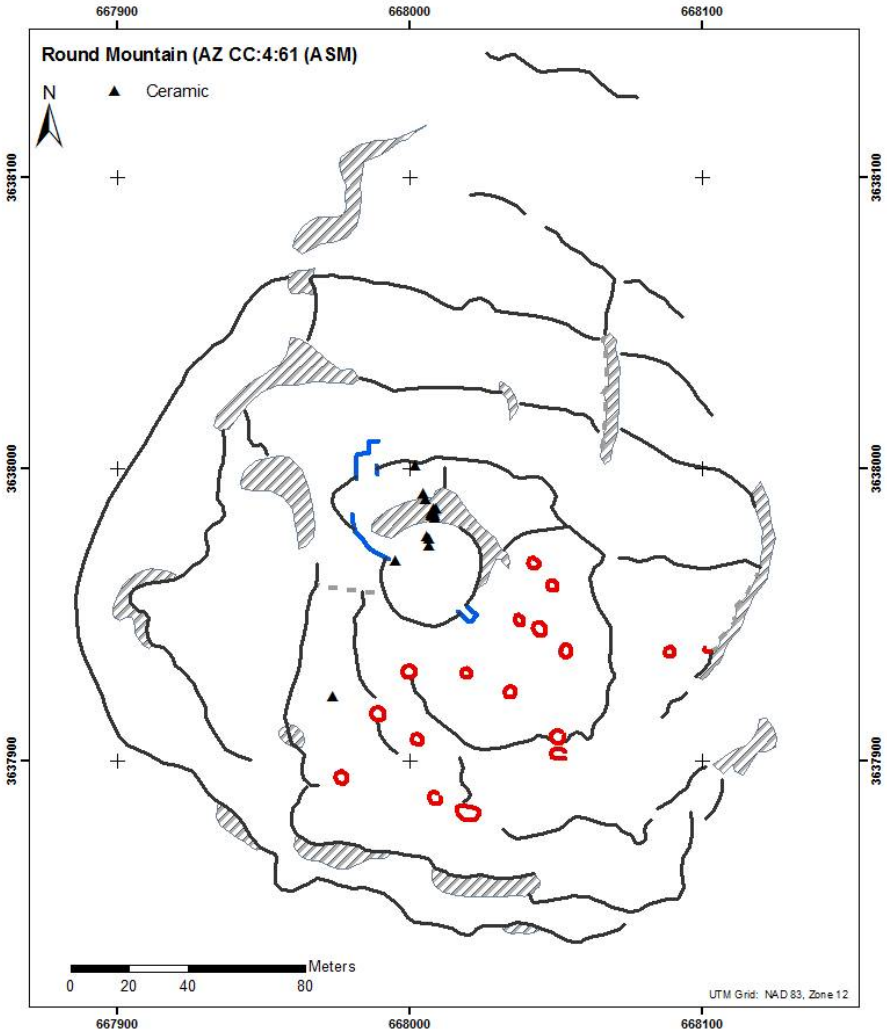


Figure 9. Distribution of ceramics.

TEST EXCAVATIONS

Field Methods

In order to investigate the depth, integrity, and stratigraphy of the site and to obtain radiocarbon and botanical samples, we excavated three 1 meter x 1 meter test units on three separate cultural terraces. The three test units, all located south or southeast on the hill and near its summit (Figure 9), were selected due to their potential for deep cultural deposits, the presence of darker soil and the number of chert flakes and other artifacts observed during

survey work. The presence of several manos and metates in the proximity of the test units also suggested occupational presence and thus potential productivity. Initially, we considered excavating 50 cm x 50 cm units in order to work more rapidly, but determined that the amount of vesicular basalt cobblestones and boulders would impede investigations in smaller units. All three units were excavated by hand trowel and brush, in arbitrary 10 cm increments. Depths were recorded as below datum (BD) using a string and line level. The datum string was anchored approximately 10 to 20 cm above the surface, so that the bottom of Level 1 was 20 or 30 cm below datum. Units 1 and 2 were excavated until the maximum depth, or bedrock, was reached, while Unit 3 was excavated to the bottom of Level 2, 40 cm below datum. Excavated sediment was screened through 1/8-inch mesh . We employed a Munsell soil color chart in determining the color of the dry sediments, and conducted soil texture analysis. Lithics, ground stone, charred plant material, and bone were collected, recorded, and removed for further study (Table 6). Metates and manos were described and recorded separately. At least two one-liter flotation samples were taken from each 10 cm level at each unit, and processed at base camp. Magnetic soil susceptibility samples were taken at 5 cm intervals from completed Test Units 1 and 2. Major artifacts recovered from the three test units are illustrated in Figure 10.

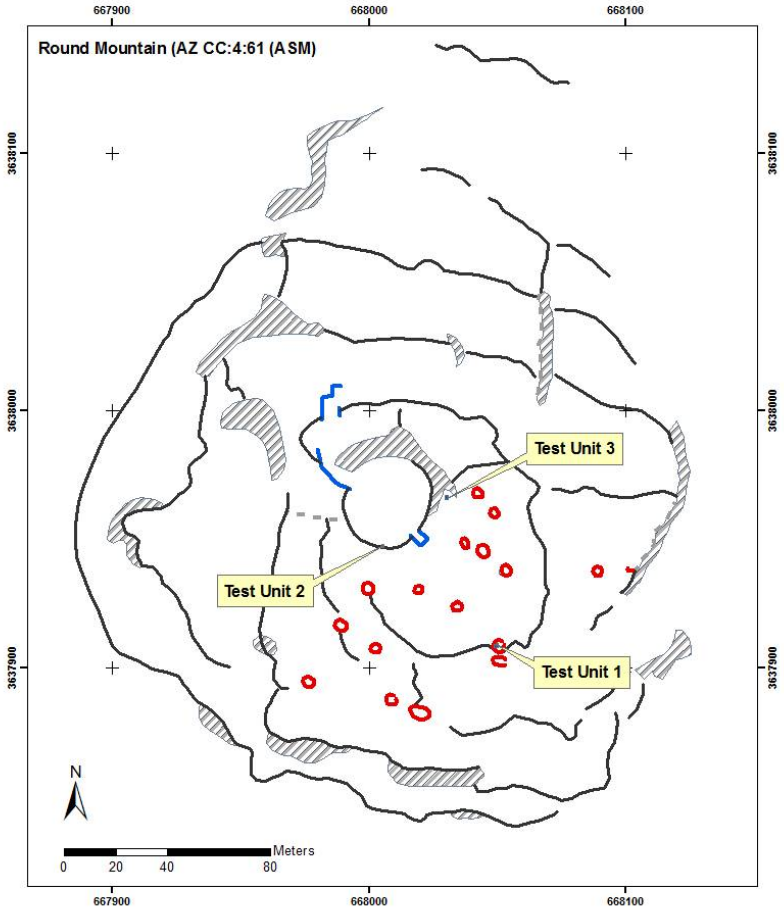


Figure 10. Locations of test units

Table 6. Artifacts by Level

Test Unit Depth (below datum), Level	Flakes	Shatter	Core	Point	Biface	Retouched	Utilized Flake	Ceramics	Charcoal	Mano	Ground Stone	Metate	Seeds	Bone	Total
Test Unit 1															
0-20 cm L-1	36	24													60
20-30 cm L-2	44	21		4										1	70
30-40 cm L-3	60	16	1			1					1			1	80
40-50 cm L-4	42	11	1	1	2				2	1				2	62
50-60 cm L-5	1								1						2
Test Unit 2															
0-20 cm L-1	51	30										2	1		84
20-30 cm L-2	34	12	2			1									49
30-40 cm L-3	35	6	1				1							1	44
40-50 cm L-4	9		1		2						1				13
50-60 cm L-5	17	3	1											1	22
60-70 cm L-6	6	1							1					1	9
70-80+ cm L-7	4	2			1										7
Cleanup (0-60 cm)	4	2													6
Test Unit 3															
0-30 cm L-1	28	12	1			1				1					43
30-40 cm L-2	19	1	1		1			1							23
Grand Total	390	141	9	5	6	3	1	1	4	2	2	2	1	7	574



Figure 11. Artifacts from Excavations

Unit 1, Level 4. Tularosa Corner-notched point
Unit 1, Level 2. Base of small point. Neck Width = ca. 5.5 mm
Unit 3, Level 2. Base of small point. Neck Width = ca. 7.5 mm
Unit 1, Level 2. a. Fragment of dart point base?
b. Base of small point. Neck Width = 7.3 mm
c. Modified flake.
Unit 3, Level 2. Large sherd of Alma Plain jar.

Test Unit 1

Test Unit 1 is located within a circular house feature on the east flank of Round Mountain. The house feature—a basalt rock ring--is roughly three meters in diameter. Most of the basalt cobbles in the ring are concentrated in the northwest and south-southeast sections of the ring. Approximately half of the cobbles making up the southeastern border of the ring lie over the edge of a south-southwest to north-northeast running terrace wall, making a down sloping talus ranging from approximately 80 cm to 1.8 m from the edge of the terrace. The 1 x 1 m test unit was placed just east of center in that feature, approximately 80 cm from the edge of the terrace. Several manos and metates were found in the rock ring, including two manos found in the northwest portion, one in the south-southwest, a metate in the northern section, and a metate found in the eastern talus section.



Figure 12. Test Unit 1 prior to excavation (view facing east).

Stratigraphy

Level 1 (surface to 20 cm below datum). Level 1 sediment (7.5YR 6/2 dry; 7.5YR 3/3 wet) is dry clayey silt, with some sand. It appears to be largely aeolian fill, though not neccessarily post-occupational. The eastern edge of the unit has an ant mound. Float samples are not taken from this level. A significant number of small flakes and shatter are recovered.

Level 2 (20-30 cm below datum). Level 2 sediment transitions to a darker (7.5YR 4/2 dry; 7.5 YR 2.5/2 wet) but still clayey silt with a blocky texture. The soil (top 5 cm from surface) generally resembles an A horizon (topmost mineral horizon in which most biological activity occurs). The level yielded a steady trickle of flakes and shatter, as well as the base of a projectile point (Figure 10, 2nd from left), three possible projectile point fragments (Figure 10, 4th thru 6th from left), two biface fragments, a fire-cracked rock, and a fragment of burned bone. Obsidian seems to increase with increasing depth and white chert drops off. Flotation soil samples were taken from the north half and southwest quadrant of the unit.

Level 3 (30-40 cm below datum). Level 3 soil color and texture is identical with most of the preceding level. The presence of increased numbers of cobbles indicated possible

structure or terrace construction fill. The level continued to yield flakes and shatter from throughout the unit, as well as one piece of broken ground stone in the northern quadrant of the unit, and one piece of bone.

Level 4 (40-50 cm below datum). Level 4 sediment color and texture is identical to preceding levels. The heavy presence of basalt cobbles continues to suggest terrace fill. As the excavation neared the 50 cm point, bedrock began to appear in several places. In addition to assorted flakes and shatter found throughout the level, Level 4 produced several pieces of charcoal, particularly in the lower east half of the unit. Some were within 1 cm of bedrock, or even directly on the bedrock. A hammerstone or core was discovered in the north side of Test Unit 1 again, either on bedrock or very close to it. This artifact, which weighed approximately two pounds, was found pinned under two rocks at the bottom of the unit on bedrock. Its location and weight suggest cultural emplacement, rather than bioturbation such as rodent burrow activity. A complete projectile point was also discovered in situ (Figure 10). Other finds included three pieces of bone and 12 pieces of fire-cracked rock. This level clearly demonstrated that the unit has cultural fill all the way to bedrock. Because of the richness of the cultural material found in Level 4, we took a total of six flotation samples.

Level 5 (50-60 cm below datum). Excavation continued only in the northeast quadrant of Test Unit 1, as the rest of the unit floor was bedrock. Level 5 sediment color and texture was identical to preceding levels. One soil sample was taken from this quadrant. Flakes and shatter continue to be found in the northeast quadrant down to bedrock level, as did one piece of charcoal. After drawing a profile of the west wall, photographing it, and taking sediment samples at 5 cm intervals in a column for soil magnetic susceptibility testing, we backfilled and then photographed the completed unit.

The west wall profile shows the stratigraphic uniformity of sediment color, structure and texture in the lower horizon (everything below 5 cm) and lack of any kind of vertical variability. The profile and excavation reports indicate that there were no large rocks in most of the unit for deposits to trickle through, nor were there any indications of stratigraphic disturbance such as bioturbation, apart from minor ant activity.

The permanent datum for the terrace is set 53 cm southeast of the southeast corner of the unit. The permanent datum is a capped rebar; the top of the rebar is 1 – 1.5 cm lower than the line level used for excavation.

Artifacts and Samples

More than 250 flakes and shatter were collected from Test Unit 1, as well as two cores, 2 bifaces, one mano, three samples of charcoal, four pieces of burned bone, five complete and partial points, one groundstone artifact, and 13 fire-cracked rocks (Table 7). The majority of the ecofacts were found in the lower half of the unit. Approximately 61% of the lithics were chert; 35% were obsidian.

Percentages by level of the 274 artifacts found were almost evenly divided between levels one through four; level 3 had the highest number of artifacts at 29%. Level 5 yielded the fewest at 1% (Table 8).

Table 7. Test Unit 1 Lithics by Type

Lithic Materials by Artifact Type for Test Unit 1							
Artifact Type	Chert	Basalt	Obsidian	Limestone	Rhyolite	Quartzite	Type Totals
Flake	93	8	82				**183**
Shatter	63	1	7		1		**72**
Core	1	1					**2**
Projectile Point	1		4				**5**
Biface	2						**2**
Retouched Flake	1						**1**
Utilized Flake							**0**
Hammerstone							**0**
Material Totals	**161**	**10**	**93**	**0**	**1**	**0**	**265**
Percent Total Lithics	**61%**	**4%**	**35%**	**0%**	**0%**	**0%**	**100%**

Table 8. Test Unit 1 Artifacts by Level

Artifacts Recovered by Level from Test Unit 1						
Artifacts	Level 1	Level 2	Level 3	Level 4	Level 5	Total
Total Flakes	36	44	60	42	1	**183**
Shatter	24	21	16	11		**72**
Core			1	1		2
Projectile Point		4		1		5
Biface				2		2
Retouched Flake			1			1
Utilized Flake						0
Groundstone			1			1
Mano				1		1
Total Tools						**12**
Charcoal				2	1	3
Bone		1	1	2		4
Seeds						0
Total Ecofacts						**7**
Ceramics						0
Total Artifacts	**60**	**70**	**80**	**62**	**2**	**274**
Percent Total Artifacts	**21%**	**26%**	**29%**	**23%**	**1%**	**100%**



Figure 13. Test Unit 1, Level 4. View Towards north

Test Unit 2

Test Unit 2 is located on a cultural terrace with a slightly parabolic shape measuring approximately three meters by seven meters. The terrace wall is on the south side, and interior to a large (30 meters in diameter), circular macrofeature located at the top of the hill. The east side of the terrace has been disturbed by ant activity, with soil fill clearly darker. The wall bordering the eastern edge of the unit is a cultural construct with an approximately three meter wide talus. The wall is part of a much larger continuous berm running from east to west and south to west. There is a 4.5 meter-wide flat surface that is bounded on the south by a small vertical escarpment approximately one meter high. Sediments close to the berm are fine and grade into small basalt cobbles about two meters north of the berm. The string datum for the test unit was placed 20 cm above the modern surface.



Figure 14. Test Unit 2 prior to excavation (view facing east).

Stratigraphy

Level 1 (surface to 20 cm below datum). We removed and screened the first 5 cm of surface sediments, which were largely loose gravels and ant redeposited soil. Below the surface gravels, Level 1 sediment is a dry, slightly compacted dark brown (10YR3/3), heavily disturbed by ant activity. Sediments are slightly darker on the east side of the unit, possibly due to ant disturbance. Lithics presence was robust, with approximately 80 chert and obsidian flakes recovered. Most were under 1 cm in size. As we neared the bottom of the level, the presence of large cobbles suggested that we could be digging through berm construction rubble. Two large (approximately 26 x 33 x 15 cm and 36 cm x 19.5 cm) broken basalt metates were found on the unit surface. The fragments were apparently placed there recently and are not in situ. The broken pieces appear to fit together, but are actually from two distinct metates. Sediment under the metates was disturbed, with rodent feces mixed in with the soil.

Level 2 (20-30 cm below datum). Level 2 sediment is a dry, compact dark yellow brown (10YR 3/4) loamy sand, heavily disturbed by ants. The level had a high proportion of basalt cobbles (an estimated 50-75% by volume), suggesting that we were continuing to excavate through increasingly dense construction rubble from the berm. The cobbles increased the difficulty of excavation, and eventually required the use of a small pickax to dislodge some of the larger stones. Sediments appeared slightly darker and softer on the south end of the unit. We continued to see high levels of lithics, with approximately 46 basalt, chert, and obsidian flakes and shatter found. Most were under 1 cm in size.

Level 3 (30-40 cm below datum). Level 3 sediments began to darken in some sections, and grew generally softer, with some compacted areas. Level 3 sediment is a dry, dark yellow brown (10YR 3/4) loamy sand. We removed several large cobbles from the east side of the unit, some of which extended beyond the boundaries of the unit. Some of these cobbles had large voids under and between them (approximately 3-5 cm). Several cobbles that were removed were located in Level 2; thus, we screened the sediment separately,

annotating artifacts as belonging to Level 2. Level 3 is heavily disturbed by ant colonies. Approximately 35 lithic flakes were found, with 26 under 1 cm in size. A bone fragment was also discovered.

Level 4 (40-50 cm below datum). The darker soils noted in Level 3 became more pervasive in Level 4, with color shifting to dark grey (10YR 4/2). The fine, dry loamy sand sediment became looser. Soil in the southern part of the 1 x 1 appeared darker and moister than in the rest of the unit. Flake numbers declined to a total of nine, but included two early stage biface pieces and a possible hammer stone fragment. As artifact densities dropped, larger rocks and gravels emerged. Those large rocks bisect the unit from and east-west trajectory. Possible bedrock may be emerging in the northern portion of the unit.

Level 5 (50-60 cm below datum). Level 5 sediment darkened to a very dark brown (10YR 2/2) and softened. While soil texture analysis continued to indicate loamy sand, the sediment appeared moister, and to have a slightly higher amount of clay. Soils also appeared darker at the southern end of the units. The unit yielded 17 flakes, including a higher frequency (5) of large (3 + cm) flakes and comparatively fewer (4) smaller (less than 1 cm) flakes. We continue to remove large rocks, indicating that the unit is in terrace construction fill.

Level 6 (60-70 cm below datum). Level 6 sediment is a soft, dry, very dark brown (10YR 2/2) loamy sand. It continued to seem to have slightly higher amounts of clay. Lithic density fell precipitously to 6 flakes, three of which were smaller than 1 cm in size, and one piece of burnt bone. When we discovered what may have been charcoal residue on the underside of a rock, we took a flotation sample of the sediment under it. We took two additional floatation samples in the unit when we screened charcoal from the unit. In all, we took five flotation samples in Level 6. We hit apparent bedrock, though a few areas with softer soil remained in the unit.

Level 7 (70-80+ cm below datum). Sediment in Level 7 was a soft, dry 10YR 3/2 sandy loam, with ant activity noted in the northeast corner of the unit. Avoiding the bedrock, we excavated those softer sediments down as far as 84 cm below datum, taking two final soil samples. Lithic levels remained low, with a biface and four flakes found in this level. After drawing a profile of the west wall, photographing it, and taking sediment samples at 5 cm intervals in a column for soil magnetic susceptibility testing, we backfilled and then photographed the completed unit.

Artifacts and Samples

Test Unit 2 yielded a total of 234 artifacts and ecofacts, including three small bone fragments (Tables 16 and 17). Formal tools included three biface pieces and a possible vesicular basalt hammer stone fragment. Approximately 76% (177 artifacts) of the site's cultural material was discovered on the surface and in the first three levels. Although the total number of artifacts (13) found in Level 4 is relatively low compared to Levels 1-3, three of the tools were found at that level. Artifact recovery was high in Level 1 (84), Level 2 (49), and Level 3 (44), but sediment volume in each level was variable due to stone density.

Consistent with Test Unit 1 lithic material representations, approximately 62% of Test Unit 2 lithics were chert, and 27% were obsidian (Table 10). Nine percent of the lithic assemblage was basalt. Percentages of artifacts found by level show the heaviest concentrations (76%) of cultural materials in Levels 1-3 (Table 9). Level 1 yielded the highest percentage (36%) of the unit's total number of artifacts.

Table 9. Test Unit 2 Artifacts by Level

Artifacts Recovered by Level from Test Unit 2									
Artifacts	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 6**	**Level 7**	**Cleanup**	**Total**
Total Flakes	51	34	35	9	17	6	4	4	**160**
Shatter	30	12	6		3	1	2	2	**56**
Core		2	1	1	1				5
Projectile Point									0
Biface				2			1		3
Retouched Flake		1							1
Utilized Flake			1						1
Groundstone				1					1
Metate	2								2
Mano									0
Total Tools									**13**
Charcoal						1			1
Bone			1		1	1			3
Seeds	1								1
Total Ecofacts									**5**
Ceramics									0
Total Artifacts	**84**	**49**	**44**	**13**	**22**	**9**	**7**	**6**	**234**
Percent Total Artifacts	**36%**	**21%**	**19%**	**6%**	**9%**	**4%**	**3%**	**3%**	**100**

Table 10. Test Unit 2 Lithics by Type

Lithic Materials by Artifact Type for Test Unit 2							
Artifact Type	**Chert**	**Basalt**	**Obsidian**	**Limestone**	**Rhyolite**	**Quartzite**	**Type Totals**
Flake	93	14	47	3	3		**160**
Shatter	45	2	9				**56**
Core	2	2	1				**5**
Projectile Point							**0**
Biface	1		2				**3**
Retouched Flake			1				**1**
Utilized Flake		1					**1**
Hammerstone							**0**
Material Totals	**141**	**19**	**60**	**3**	**3**	**0**	**226**
Percent Total Lithics	**62%**	**9%**	**27%**	**1%**	**1%**	**0%**	**100%**



Figure 15. Test Unit 2, Level 7, view Towards East

Test Unit 3

We opened a third test unit on a small terrace on the east side of the hill, just below an escarpment (a bedrock cliff) approximately 2.0 to 2.5 m high. The area directly below the escarpment includes a significant amount of boulder collapse and two large boulders are incorporated into the terrace construction. The terrace is approximately 35 cm high from the downslope side, but sediment depth varied, dipping to the southeast by five degrees or so. The terrace wall incorporates several bedrock exposures, and forms a C-shape on the east side of the escarpment. The presence of ashy sediment and multiple pieces of ground stone found three meters southeast, two meters west, and 60 cm west-northwest of the unit, suggested possibly deep cultural deposits. The string datum for the test unit was placed 20 cm above the modern surface. Due to time constraints, the unit was backfilled after completing Level 2. Completing the unit would have required at least two more levels; optimally, we will do so in the 2015 field season.



Figure 16. Test Unit 3 prior to excavation (view to northwest)

Stratigraphy

Level 1 (surface to 20 cm below datum). The dark yellow-brown (10YR 3/4) loamy sand sediments were dry and loose, and were ashy on the unit's surface. The dark ashy soil that initially looked promising disappeared soon after Level 1 excavation began. The emergence of large amounts of small (1-5 cm) basalt cobblestones and gravel replaced the darker surface sediments, requiring the use of a pickax. Rocks comprised at least 25% of fill by volume, making excavation and maintaining the level difficult. These dense cobbles and gravels were generally found in soft sediment. As we descended in the level, the size of the rocks seemed to increase. Soils appear darker on the west side of the test unit. We collected one broken mano at the southwest corner of the unit. Level 1 also yielded approximately 28 flakes, composed of basalt, obsidian, and chert, as well as one core.

Level 2 (20-30 cm below datum). Sediments in Level 2 were loose, dry silty clay, with minor sand noted; the soil texture was powdery. The soil appeared slightly darker as we approached the bottom of the level, but showed no signs of bedrock. By volume, approximately 50% of the material excavated was loose rock. The presence of a low, crumbling escarpment several meters upslope of the unit could explain the loose rock. Lithics included 19 flakes found throughout the 1 x 1, the base of a small projectile point (Figure 10), a core from the northeast quadrant, and one brownware sherd (Figure 10). One soil sample from Level 2 was collected.

Artifacts and Samples

Test Unit 3 yielded a total of 66 artifacts, including 47 flakes and 13 pieces of shatter (Table 11); no ecofacts were excavated (Table 12). More than half (53%) of the lithics were chert, the lowest level of chert composition of the three units; 38% were obsidian, the highest level of obsidian. Approximately 65% of Test Unit 3's artifacts were found in Level 1; 35% were excavated from Level 2.

Table 11. Test Unit 3 Lithic Material by Type

Lithic Materials by Artifact Type for Test Unit 3							
Artifact Type	Chert	Basalt	Obsidian	Limestone	Rhyolite	Quartzite	Type Totals
Flake	23	3	20			1	**47**
Shatter	11		2				**13**
Core		1	1				**2**
Projectile Point							**0**
Biface			1				**1**
Retouched Flake				1			**1**
Utilized Flake							**0**
Hammerstone							**0**
Material Totals	**34**	**4**	**24**	**1**	**0**	**1**	**64**
Percent Total Lithics	**53%**	**6%**	**38%**	**1.5%**	**0%**	**1.5%**	**100%**

Table 12. Test Unit 3 Artifacts by Type

Artifacts Recovered by Level from Test Unit 3			
Artifacts	Level 1	Level 2	Total
Total Flakes	28	19	**47**
Shatter	12	1	**13**
Core	1	1	2
Projectile Point			0
Biface		1	1
Retouched Flake	1		1
Utilized Flake			0
Groundstone			0
Mano	1		1
Total Tools			**5**
Charcoal			0
Bone			0
Seeds			0
Total Ecofacts			**0**
Ceramics		1	1
Total Artifacts	**43**	**23**	**66**
Percent Total Artifacts	**65%**	**35%**	**100%**

MAGNETIC SOIL SUSCEPTIBILITY ANALYSIS

Sediment samples (approximately 100-200 mg) were collected from columns in Test Units 1 and 2 at 5 cm intervals for soil magnetic susceptibility testing. This analysis measures magnetic susceptibility in cubic meters per kilogram (m^3/kg) and reflects the relative presence of magnetic iron-oxide minerals. These minerals can originate from multiple sources including burning and natural microbial activity related to soil formation. The correlation of magnetic susceptibility and cultural material peaks could suggest the presence of intact, stratified deposits with potentially discrete temporal units. Dr Raymond Mauldin at UTSA's Center for Archaeological Research (CAR) will analyze the sediment

samples. Shifts in artifact size will also be analyzed and used to examine the integrity of cultural material deposits.

ETHNOBOTANICAL COLLECTION

Dr. Karen Adams examined the light fraction from 31 flotation samples as well as all samples of charred plant remains recovered during excavation to evaluate the range of plant species found at the site. Thirty-three float samples were uniformly collected in one-liter volumes, however 2 samples were lost. The decanting method was used to process light and heavy fractions at the field lab in Portal, Arizona. Of the 31 total floatation samples collected and processed, 23 heavy fractions were retained for future examination for the presence of microartifacts and faunal remains including fish bone. Light fractions were obtained from all 31 samples. Our priorities for processing and evaluation are to identify samples suitable for radiocarbon dating, the presences of cultigens, and the site's range of subsistence resources.



Figure 17. Processing float samples

Before initiating the decanting process, the team filled out entries in the flotation log and on labels for both the light and heavy fractions. We poured one one-liter flotation sample into a large bucket full of clean water, gently agitated it with a wooden spoon or stick, and allowed the heavier sediments to settle for one minute. We then slowly decanted the water, which contained floating botanical materials, into a 1.5 by 1.5 foot square of chiffon tied over a colander. We continued to pour until the heavier sediments in the bucket threatened to spill over into the chiffon. We then repeated the process after slowly pouring more clean water into the bucket with the sample. The light fraction was then tied with its associated label, hung on a clothesline, and dried in the shade. To obtain the heavy fraction, we processed the sediment remaining in the bucket by carefully pouring and spraying it into the colander or

through nested geologic screens. Heavy fractions were labeled and placed into 1.5 by 1.5 foot muslin or cotton squares and hung on a shaded clothesline to dry.

Karen Adams scanned all of the light fractions, looking for potential radiocarbon dating material, preferably annual material or short-lived species suitable for AMS radiocarbon dating. All three test units yielded charred remains, in fact 71% (22/31) of float samples yielded burned plant material. Recovery was dramatically higher in the lower levels, 94% samples (17/18) from Levels 4 and lower produced charred remains, while only 38% (5/13) from Levels 1-3 were productive. Charred wood dominated the material while unfortunately annual charred plant material was not well represented, nonetheless several samples were selected for submission for radiocarbon dates, and are discussed below.

The site's charred wood record is heavily dominated by juniper (11 samples), with some mesquite (5 samples) and oak (3 samples), all taxa that grow in the area today. The non-wood samples were tiny, difficult to identity, and yielded minimal information. Two samples contained Poaceae culm bases, three samples contained an unknown fruit, seed, or tissue fragments, two samples contained an unknown stem fragment, and one contained a monocot tissue fragment. Six macrobotanical samples were recovered during excavation and five of these contained charred juniper wood. There are uncharred seeds in many samples, indicating post-occupation intrusives. However, these modern seeds provide a sense of the local plants found at the site and include: Trianthema, Aizoaceae family (tiny seeds), Panicum caryopses, Leguminosae seeds, Portulaca seeds, Echinocereus seeds, Castilleja seeds/fruit, Cheno-am seeds, Euphorbia seeds, Sphaeralcea seeds, Opuntia (p. pear) seeds, and unknown heart-shaped seeds (very thin).

RADIOCARBON DATING

Our goal was to prioritize the AMS radiocarbon dating of annual seeds or other short-lived material. We first submitted to Beta Analytic, Inc. two very small, charred seed samples recovered from flotation and identified by Dr. Karen Adams. These appeared to be our best candidates for dating annual material and are listed in Table 13. However Beta Analytic determined that both were too small to process and the laboratory returned them. The third sample submitted was a charred piece of *Atriplex* sp. (saltbush) recovered during the excavation of Test Unit 2. It yielded a 2 sigma, calibrated date of BC 510-395 (cal BP 2460-2345) and the details are in Table 14 and laboratory report is included as an appendix.

An age of cal 510-395 BC is consistent with the material culture found widely scattered across the site, other than the cluster of sherds previously described. In particular the age range of the Tularosa Corner-notched points, and likely San Pedro point found on the surface of the site are consistent with this age. This time period is contemporaneous with the early Cienega phase as characterized in southern and southeastern Arizona and dated to calibrated 800-400 B.C. (Mabry 2014) and falls in the Early Agricultural period that dates from cal 2100 BC to A.D. 50.

Table 13 Submitted radiocarbon samples

Beta No	Project No	Provenience	Material	Outcome
390187	AZ:CC:4:61 (ASM)-1	TU1, L-2, 20-30 cm BD, SW corner of unit	charred unknown fruit or seed from flotation	Too small, preprocessed by Beta, & returned
390188	AZ:CC:4:61 (ASM)-2	TU2, L-7, 70-74 cm BD, Bag 111	Unknown charred seed fragment from flotation	Too small, returned

Table 14 Results of radiocarbon sample

Beta No	Project No	Provenience	Material	Conventional Radiocarbon Age	13C/12C	2 Sigma Calibration	Intercept with calibration curve
390818	AZ:CC:4:61 (ASM)-3	TU 2, L-6, 60-70 cm BD Bag 66	Charred *Atriplex* wood	2370±30 BP	-11.3‰	BC 510-395	Cal BC 405

NEARBY SITES

Figure 18 shows the locations of several prehistoric archeological sites in the vicinity of Round Mountain. Most of these were brought to our attention by Dick Kaler, who owns adjoining private land and who has the BLM grazing permit encompassing Round Mountain.

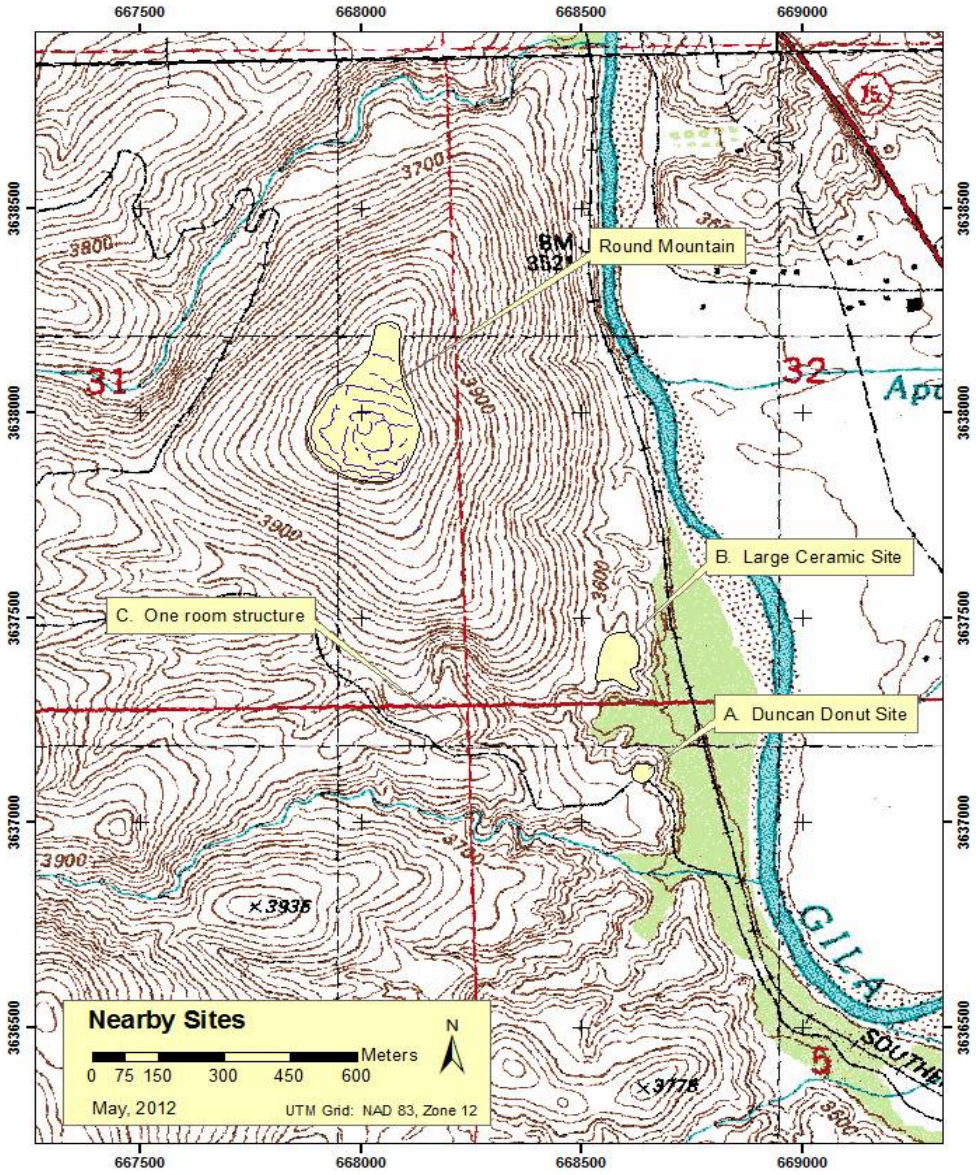


Figure 18. Other Sites Near Round Mountain

A. Duncan Donut Site. One morning while opening a gate on the road leading to Round Mountain one of the field crew (M. Whisenhunt) found a distinctive donut stone in the road bed. Immediately upslope from this discovery we found the Duncan Donut Site. It consists of a scatter of lithic artifacts about 30 meters by 35 meters in size. There are approximately 50 artifacts exposed on the surface, as well as two ash stains, each one 1 to 2 meters in diameter. In addition a third area of ashy soil and abundant lithic artifacts is exposed by a mechanically enhanced erosion cut on the southern margin of the scatter. The

ashy deposit included some animal bone and appears to be three meters long, with as much as a meter of depth. Notable artifacts on the site include a complete donut stone and a fragment of a rectangular basalt mortar, both collected (Figures 19 and 20). The white volcanic tuff donut stone is 6.9 cm in diameter, with all surfaces shaped by pecking. The interior of the hole, shaped in a biconvex pattern, is consistently rounded with even wear, suggesting the stone may have been mounted or fit onto a shaft. We also found a carefully made rectangular-shaped stone mortar or tray fragment, with dimensions of 136 mm in length by 104 mm in width (Figure 20). The artifact's height was 35 mm; bottom thickness was 26 mm. Its bottom surface shows heavy grinding wear and a slight concavity indicating heavy use. Like the mortar fragment found at the Round Mountain site, the artifact shows substantial wear on its exterior bottom from abrading against another surface during use. Other artifacts not collected at the Duncan Donut site include a core or chopper and three manos.



Figure 19. Donut stone



Figure 20. Fragment of stone mortar or tray

This site is located on the edge of an alluvial terrace about 60 feet above the Gila River floodplain. It is bounded by the terrace edge on the east and by a major drainage on the north. A secondary drainage with deep, steep banks defines the western edge of the artifact

scatter, and on the south it is bounded by a much smaller drainage which has been enhanced by construction of a berm and runoff channel as part of a ranch road. The road construction itself resulted in minimal disturbance at the southwestern corner of the artifact scatter. Vegetation is dominated by creosote and mesquite, with an understory of grasses (including annual grass) and forbs. Except for the southern edge, the surface of the site is stable and is littered with ancient river cobbles.

This site is near the southeastern base of Round Mountain (AZ CC:4:16 (ASM)) and may be contemporaneous with it. Elsewhere artifacts similar to the donut stone and stone tray have been recovered in Cienega Phase contexts, which is also consistent with the absence of pottery here. The ashy deposits and variety of artifacts could imply residential occupation, although the number of artifacts on the surface seems surprisingly low.

B. Large Ceramic Period Site. Mr. Kaler directed us to this site, which is located on a large terrace about 60 feet above the Gila River Floodplain. The site was inspected very briefly, and the description provided here is just a preliminary impression. The site covers approximately 2.5 acres, and includes several distinct room blocks, recognized by mounded adobe and river cobbles, as well as some cobble alignments. We estimate that there may be as many as 50 to 100 rooms in all. Pottery is mostly plainware. We observed no black-on-white sherds, and only a single corrugated sherd. There is evidence of looting in the form of manual excavation (including some quite recent), but overall this site is surprisingly intact. It clearly warrants further investigation.

C. This site consists of the cobble outline of a single rectangular room, surrounded by a lithic scatter of moderate density. No pottery was found during our brief inspection.

SUMMARY

Round Mountain is a cerro de trincheras located on the summit and upper slopes of a 640-foot high hill/mountain overlooking the floodplain of the Gila River in eastern Arizona. The terrace complex covers an area of about 6.14 hectares (15.2 acres) and includes 1.9 kilometers of walls/terraces. The site includes about 16 stone enclosures, each ca. 3.5 m in diameter, which we assume were individual family dwellings. Other cultural remains include a moderately dense lithic scatter focused in the vicinity of the dwellings and a varied assemblage of stone artifacts, including slab and basin metates, one-hand manos, relatively small projectile points, bifaces, retouched flakes, cores, and hammerstones. Unusual artifacts include a fragment of a carefully manufactured stone tray and two cylindrical pipes.

The two-sigma calibrated radiocarbon date of 510 to 395 B.C., combined with the presence of projectile points, pipes, a rectangular stone mortar, and the ground stone assemblage, indicate that the primary occupation and construction of Round Mountain occurred during the Cienega phase (900 B.C. to A.D. 200). The summit of Round Mountain contains evidence of an isolated reuse of the site dating to the Ceramic period. While we have not yet recovered cultigens at this site, its large scale and ground stone assemblage implies maize agriculture was likely a part of the subsistence base.

Limited reconnaissance in nearby areas show that at least one potentially contemporaneous site occurs on a terrace overlooking the Gila River. In addition a large residential site is located at the base of Round Mountain.

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Beta Analytic Inc.
4985 SW 74 Court
Miami, Florida 33155 USA
Tel: 305 667 5167
Fax: 305 663 0964
Beta@radiocarbon.com
www.radiocarbon.com

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September 29, 2014

Dr. Robert J. Hard
University of Texas at San Antonio
One UTSA Circle
Department of Anthropology
San Antonio, TX 78249
USA

RE: Radiocarbon Dating Result For Sample AZ:CC:4:61 (ASM) - 3

Dear Dr. Hard:

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO-17025 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO-17025 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

The cost of the analysis was charged to the MASTERCARD card provided. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,



Digital signature on file

BETA ANALYTIC INC.
DR. M.A. TAMERS and MR. D.G. HOOD
4985 S.W. 74 COURT
MIAMI, FLORIDA, USA 33155
PH: 305-667-5167 FAX:305-663-0964
beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Dr. Robert J. Hard

Report Date: 9/29/2014

University of Texas at San Antonio

Material Received: 9/22/2014

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 390818	2150 +/- 30 BP	-11.3 o/oo	2370 +/- 30 BP

SAMPLE : AZ:CC:4:61 (ASM) - 3
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 510 to 395 (Cal BP 2460 to 2345)

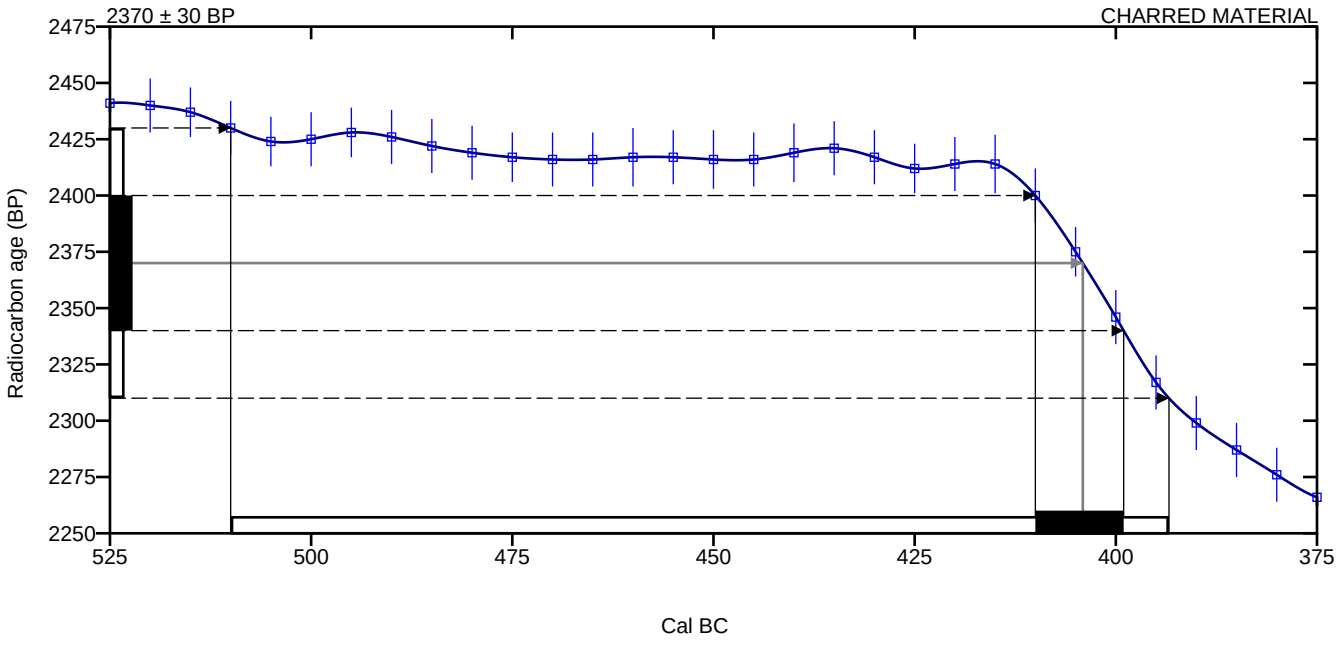
Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -11.3 o/oo : lab. mult = 1)

Laboratory number	**Beta-390818**
Conventional radiocarbon age	**2370 ± 30 BP**
2 Sigma calibrated result 95% probability	**Cal BC 510 to 395 (Cal BP 2460 to 2345)**
Intercept of radiocarbon age with calibration curve	Cal BC 405 (Cal BP 2355)
1 Sigma calibrated results 68% probability	Cal BC 410 to 400 (Cal BP 2360 to 2350)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

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667800 667900 668000 668100 668200

3638200 3638100 3638000 3637900 3637800 3637700

27-39

Round Mountain (AZ CC:4:61 (ASM))

J. Roney, G. Gonzales **August, 2014**

#	Artifacts		Natural Scarp
!	Mano		Bulldozer Scrape
"	Metate		Rubble
	Structure		Outcrop
	Wall		

Meters
0 25 50 100

Contours: 20 ft.

UTM: NAD 83, Zone 12