

LA 20,000: Preliminary Report on the 2017 Excavations



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On the cover: Anya Gruber taking pollen samples from EU2016-K.

Introduction

This project explores the foundations of Spanish New Mexican society. By conducting archaeological excavations and obtaining environmental samples from one of the most important early colonial Spanish sites in New Mexico, LA 20,000, we are addressing significant questions about the Spanish colonization of this region. During the 17th century, Spanish households were typically pluralistic - composed of people from a variety of ethnic backgrounds – and relied on indigenous Plains and Pueblo peoples for labor. Colonists introduced new flora and fauna, which had an impact on the environment, but subsistence activities, such as crop and livestock production, were also shaped by local environmental constraints. Indigenous peoples often had well-developed understandings of environmental conditions and the distribution of resources, and this information would have been useful to colonizers. However, the political nature of intra-household interactions, especially in a colonial context, made the transmission of knowledge and establishment of new practices complex. We know surprisingly little about the details of the daily practices that constituted household activities, but colonists' ranches, such as LA 20,000, were key arenas in which cross-cultural interactions and exchange of information took place because the performance of daily activities brought indigenous peoples and colonists together. Detailed archaeological investigation at LA 20,000 is providing information critical to the development of models of how such processes unfolded.

The household at LA 20,000 provides an outstanding context for understanding the development of these interactions in the context of a rural ranch (Snow nd; Stoller and Snow nd). It is a single component 17th-century Spanish ranch located near a branch of the Camino Real, the main road from Mexico City to Santa Fe and further north (Stoller and Snow nd). It is also situated at the juncture of several Puebloan ethnic groups, Keresan, Tewa, and Galisteo Basin and near large Pueblo villages of San Marcos, Cieneguilla, and Cochiti (Anscheutz pers comm). While it is possibly the home of the *encomendero* for nearby Cieneguilla, *encomenderos* did not necessarily live close to their *encomiendas*, and despite efforts, the site's inhabitants have not been identified. LA 20,000 is the largest, most complex, and best-preserved 17th-century Spanish New Mexican ranch thus far archaeologically identified (Stoller and Snow nd).

With permission from El Rancho de las Golondrinas and support from the museum's director and staff along with funding from the National Science Foundation and the Fiske Center for Archaeological Research, we conducted excavations at LA 20,000 during the summer months from 2015 through 2017. This report details our project goals and some achievements from our first two seasons, and it provides a preliminary report on excavations conducted from July 7, 2017 through August 3, 2017.

Previous Field Work

Originally identified in 1980 when the landowner trenched through the midden, the site was first recorded by Reggie Wiseman of the Museum of New Mexico. The location of the site, at the base of a steep hill, has resulted in substantial sedimentation that buried and preserved structures. In some cases the overburden is nearly 2 meters deep. Limited tested

occurred in 1980 and 1982, but substantial inquiry into the site began in 1987 when Dr. Marianne Stoller and Mr. David Snow undertook excavations as a field school from Colorado College. Excavations continued under their supervision until 1995. Snow and Stoller found evidence for several structures – a large house, a barn, a corral, and perhaps additional outbuildings (Figure 1; Snow nd). To assist their record keeping, they divided the site into areas called “units.” These units are not excavation units, but areas that roughly correspond to structures on the site: Unit A covers all but the northeast quadrant of the house; Unit B, the barn; Unit C, the corral; Unit D, the area to the east of the corral; and Unit E covers the area north of Golondrinas property line and includes the northeast corner of the house and some of the barn (Figure 1; Snow nd).

Snow and Stoller’s previous excavations focused on outlining the structures associated with the ranch. They identified a house with what they suggested was a possible earlier room on the exterior of the house’s southwest corner and a bread oven (or *horno*) attached to the exterior of the house’s eastern wall; a barn with internal walls, cobblestone floor, and pillar supports; a sizable corral and possible herder’s quarters outside the eastern wall of the corral; a possible torreon south of the house (not located on the map). They identified architectural features that are unusual for 17th-century ranches – the cobble surface, pillars, adobe platform, *torreon*, and *horno*, although surviving documentation of many features is slim. In addition to the architecture, these excavations have uncovered a midden nearly 1 m thick directly south of the house.

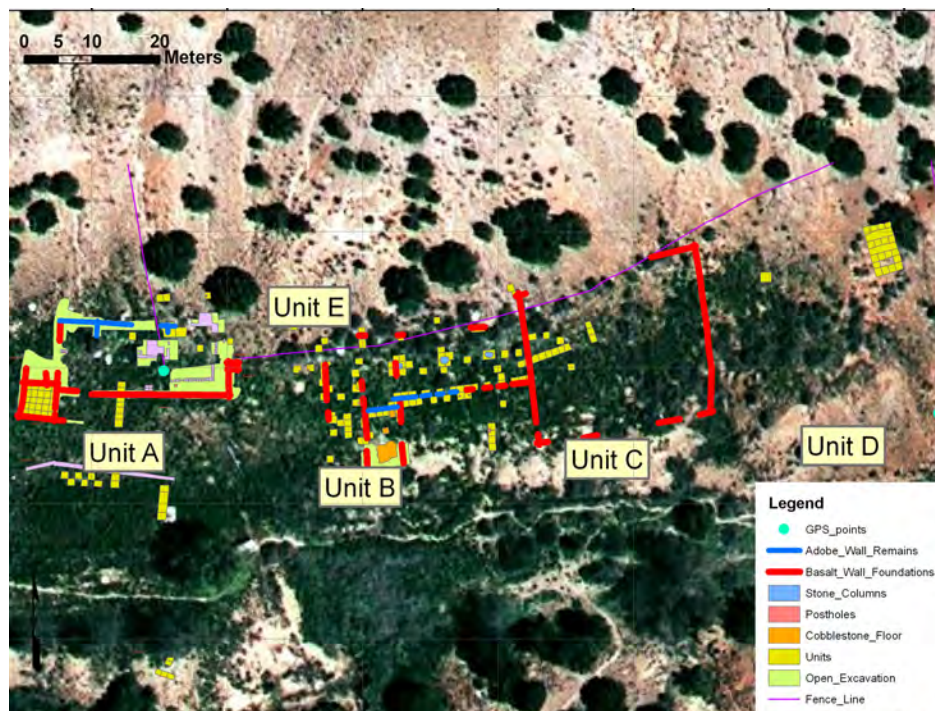


Figure 1. LA 20,000 unit designations give by Snow and Stoller.

Ceramic types and dendrochronology of two beams recovered from the barn indicate the ranch was occupied from about 1629 to 1680. These dates combined with the presence of charred structures suggest the site was burned during the Rebellion, and there is no evidence that the site was reoccupied after the 1692 Reconquest (Stoller and Snow nd). The catastrophic burning suggests there are well-preserved, in situ artifacts. Previous excavations recovered a large quantity of Pueblo ceramics, much smaller quantities of imported *majolicas*, olive jars, indigenous Mexican ceramics, and a very few specimens of porcelain. They found small quantities of metal and glass, a small lithic assemblage, numerous animal bones and they took botanical materials (Snow nd; Trigg 1999, 2005).

With a previous National Science Foundation grant, we were able to read through the numerous student field notes, create a map with all of Snow and Stoller’s excavation units, and conduct a geophysical survey. This work allowed us to identify all the previous excavations, the major architectural elements revealed during those excavations, and geophysical anomalies (Figure 2).

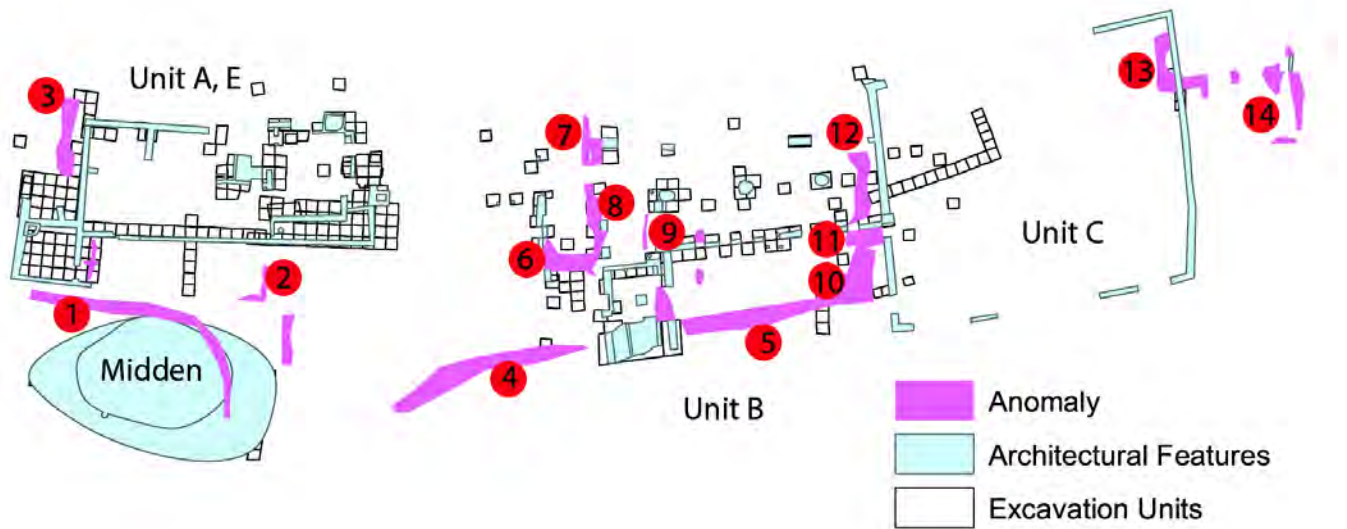


Figure 2. Excavation units opened by Snow and Stoller. Architectural and midden elements discovered by Snow and Stoller are identified in blue. Geophysical anomalies identified by Steinberg and Damiata are in pink and numbered.

Research Questions

Our major research goals with this grant are: to investigate the construction and use of space at the ranch to understand the economic activities because these integrated indigenous peoples; to reconstruct foodways to understand the process of selecting and

transforming plants and animals into meals as indicators of the interplay among ethnicity, social dynamics and environment; and to explore how the productive relationships structured and were structured by the environment. We are gathering information by: 1) excavating LA 20,000 to understand the architecture and spatial distribution of structures and artifacts; 2) collecting artifacts and materials such as botanicals and fauna to understand foodways; and 3) taking environmental samples in order to reconstruct landscape and vegetation changes.

We have completed three field seasons, and below the findings from the first two seasons are outlined. In the previous two field seasons, we explored anomalies 1-3, 6, and 11 (Figure 2) and conducted excavations in the house, between the house and barn, and in the barn (Figure 3). While using the term “Unit” to define a broad area of the site might lead to confusion with excavation units, we have followed Snow and Stoller’s convention, but our excavations are specifically identified as EUs (excavation units). Our EUs are named according to the year when excavation commenced followed by an alphabetic label (e.g., 2015-A, 2016-I).

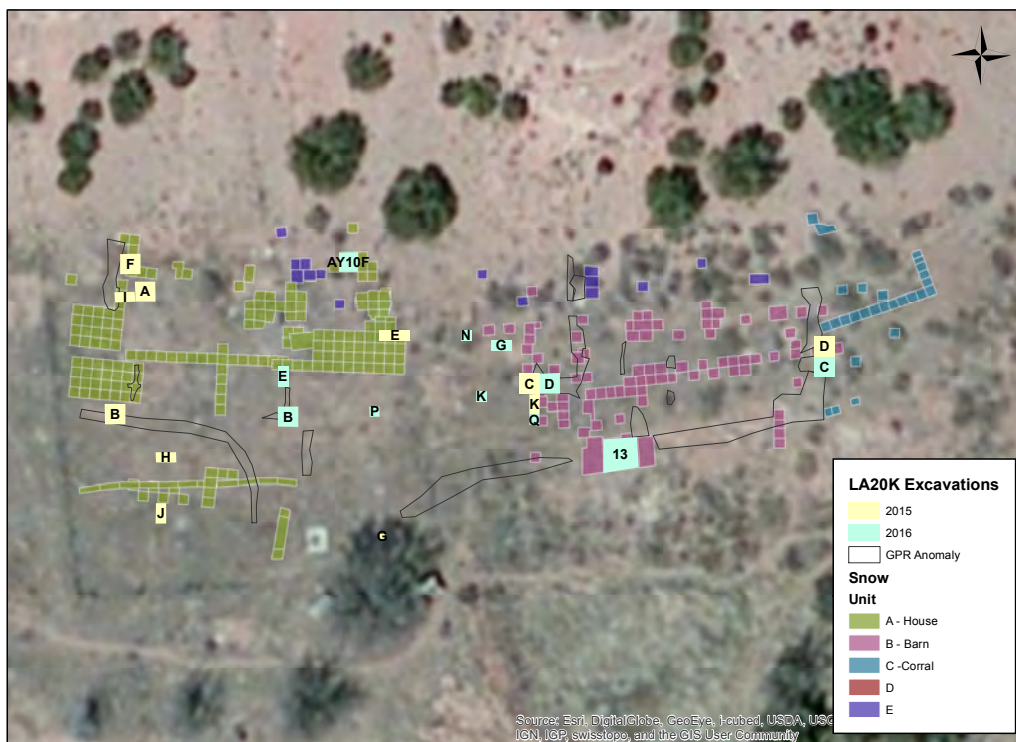


Figure 3. Excavation units opened during the 2015 and 2016 field seasons.

House

During the first two seasons, we opened areas in and around the house, testing anomalies, the midden, and establishing wall locations and construction methods. We tested anomalies 1, 2, and 3 (Figure 2). Anomaly 1 in EU 2015-B turned out to be a 1980s era TV cable. Anomaly 3 (EU 2015-I) turned out to be a previous excavation that disturbed the adobe melt adjacent to a wall. Anomaly 2 was more interesting. Excavation in EU 2016-B revealed a substantial wall made of multiple courses of river and limestone cobbles. We opened EU2016-E, just north of EU 2016-B, to verify that this wall connects to the house's main southern wall. This new architecture adds a substantial amount of space to the house, but we still need to understand the nature of this area: is this interior (roofed) space or is it a walled garden or something similar?

EU2015-A and 2015-F were opened to try to determine the location of walls and size of rooms. We found walls in the central part of 2015-I and the very eastern edge of 2015-A allowing us to calculate the room's width at 2.25m. The fill of this room was composed of wall fall - tumbled and broken adobe bricks - and daub with plant stem impressions, possibly from the roof fall. The wall in the eastern profile of 2015-A was made of adobe bricks laid directly on the floor. The outer wall of this room was exposed in 2015-I and had basalt boulder and cobble footings, with adobe bricks on top.

EU 2015-H was originally opened to locate midden deposits although none were evident there. This gives us a better indication of the size of the midden. EU 2015-J had substantial midden deposits, which yielded significant numbers ceramics and botanical samples, but more importantly, faunal remains critical for understanding animal husbandry at the site.

We re-opened a couple of areas that had been previously excavated to document them better. EU 2015-E was excavated to reveal and document the *horno* located by Snow and Stoller. An alignment of smaller basalt cobbles appears to be all that is left of this feature. AY10F (north side of the house) where Snow and Stoller had found an "adobe platform" was opened so that we could more fully describe this unusual feature, take photos, make drawings and better geo-reference our map.

Between the House and Barn

We opened four excavation units between the house and barn to look for additional structural elements or extramural activity areas (Figure 3, EU 2016-N, 2017-G, 2016-K, and 2016-P). In most of these units, we found layers with numerous artifacts, evidence of burning and substantial layers of manure. In 2016-K we found evidence for two burning episodes. EU 2016-N had artifact-rich layers and some evidence of burning. EU 2016-G had deep, very thick layers of manure, which were unburnt and largely unconsolidated. The manure layer had significant deposits of slopewash and aeolian deposits and a burn layer capping it. At the very bottom of this unit (at a depth of about 1.5 m) we found a solid caliche layer.

The area between the barn and house is interesting because it appears to have two burn layers separated by a manure layer. Those burn layers also appear in EU 2105-C. Dennis Piechota took microgeomorphical samples of this area to verify if both of those dark layers are truly burn layers – rather than a burn layer and a layer of thoroughly rotted plant materials, which also might look very dark. The presence of two burn layers would be very interesting. The assumption has been that the site was burned during the Pueblo Revolt (a single burning event) and not reoccupied. If there are two burning episodes, separated by at least some significant use for animals followed by another burn, was the site reoccupied? And if so, when? After the first revolt, and then burned again in the revolt of 1696? Or did the earlier burn happen during the occupation of the site, and the barn rebuilt prior to the Pueblo Revolt? This question will be examined with the micromorphology analysis.

EU 2016-P, directly south of the house, had virtually nothing in it – few artifacts, no midden, no burn layers, and no manure.

Barn and Corral

Excavations in the barn and corral emphasized the testing of walls and anomalies. EU 2015-C revealed a wall composed of basalt and limestone cobbles. This wall was constructed differently than the walls of the house because the two courses of cobbles appeared to be set in adobe mud rather than mortared together or dry laid. EU 2015-K and 2016-Q were designed to locate the end of this wall, which does not connect with other cobble walls, but appears to simply end, perhaps in a wooden structure although there is no direct evidence for this. There were two burn layers in 2015-C, but in 2016-D, a mud floor was covered by a single burn layer.

Geophysical anomalies (11 and 12) at the interface between the barn and corral (Figure 2) suggested that there might have been a separation between the corral and barn, which is inconsistent with the descriptions in the 1990s student notebooks. To verify the anomalies, we opened two units: 2015-D and 2016-C. Some of that area had been previously excavated, but profile drawings and photographs do not exist. With our excavations, we were able to document the two walls in this area and record the size and building materials used in the construction of each. The interior east west running wall through the middle of the barn clearly attaches to the corral wall – so the barn and corral were constructed as a unit – as the student notebooks indicated. This is not new information, but it does give a pretty good picture of some geophysical anomalies and what they are – old excavation units that disturbed the hard adobe melt, adjacent to the substantial walls of the corral. This understanding allows us to prioritize other excavations.

EU 13 (Figure 4) was opened to document the unusual cobble surface discovered by Snow and Stoller (their unit B-13). The cobble surface was constructed of rounded river cobbles with a basin-shaped depression in the center. Basalt and limestone cobbles bordered the cobble surface.

These excavations answered important questions regarding the construction of the house and barn, the size of the midden, and the nature of many geophysical anomalies. We also now understand the geophysical anomalies paralleling walls that have been excavated relate to the differences in soil compaction. We have been able to collect samples for environmental reconstruction and analysis of foodways and animal husbandry practices. However, some excavations raised additional questions. What is the nature of the area between the house and the new wall discovered in EU 2016-B? What is the size and location of walls that might subdivide the house? How is the cobble surface connected to the barn? What is the nature of the herder's quarters identified by Snow and Stoller? These questions were the focus of the 2017 excavations.

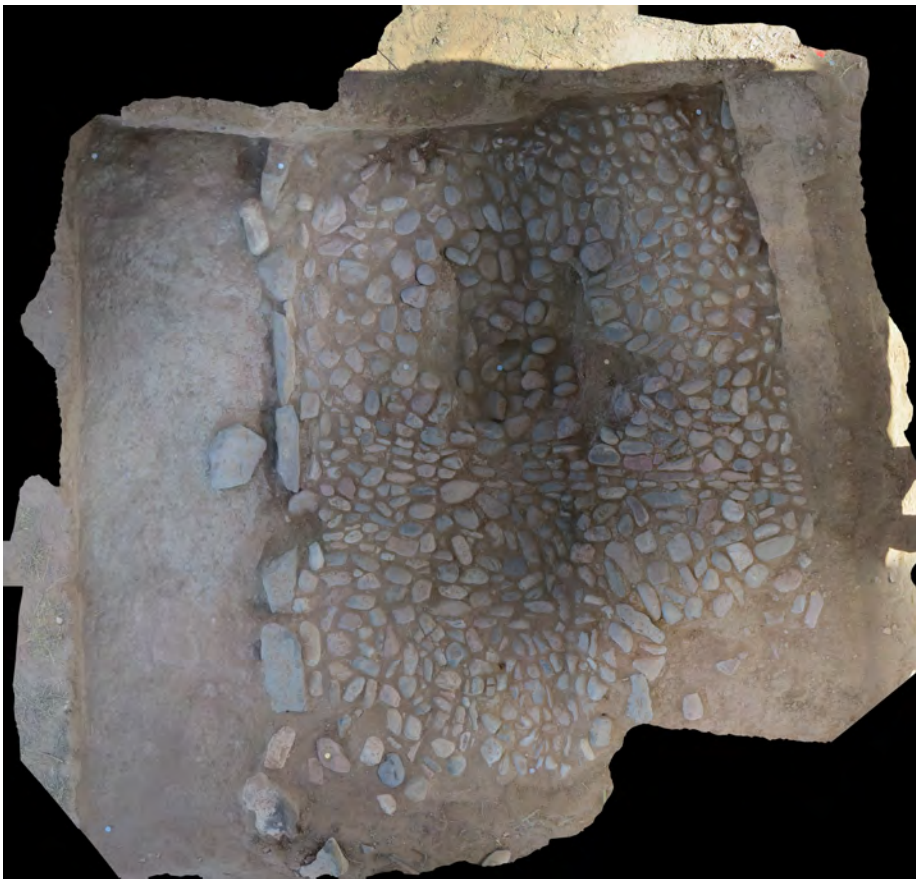


Figure 4. Cobble surface associated with the barn, EU 13.

Summer 2017 Field Season

Fieldwork was directed by Dr. Heather Trigg with the assistance of Dr. Stephen Mrozowski and Christina Spellman. The field crew consisted of graduate students from University of Massachusetts Boston, University of California Santa Cruz, with help from graduate students at Columbia University and University of Texas at Austin: Annie Greco, Anya Gruber, Ivana Ivanova, Clint Lindsey, Ana Opishinski, and Adam Vitale from UMass

Boston, and Danielle Huerta from University of California Santa Cruz (Figure 4). Evin Grody from Columbia University and John Ellison from Albion Environmental provided invaluable skills and labor. Emily Dawson from University of Texas at Austin and Dennis Piechota, a Fiske Center senior staff member, assisted with specialized samples and analysis.



Figure 4. The Summer 2017 field crew at Pecos Pueblo. Back, from left to right - Clint Lindsey, Annie Greco, Heather Trigg, Christina Spellman; middle - Ivana Ivanova Danielle Huerta, Ana Opishinski, Anya Gruber; Front Adam Vitale.

Excavation Plan

The results from the previous two field seasons have given us a pretty good notion of what many geophysical anomalies are – typically old excavations through adobe melt. So we did not focus much attention on these. Re-opening old excavations, on the other hand, has generated a good deal of useful information. Finally, while we have investigated portions of the house, barn, corral and midden, we have not examined the alignments in area east of the corral. With this in mind, our the excavation plan included:

1) Reopening several areas in the house to better document the division of domestic space. Among the important issues are the number of rooms in the house and their sizes, better geo-referencing and association of walls, and possibly the identification of roofed and unroofed sections of the interior space. We will not be able to give a precise number of

rooms in that house, but currently, there is little indication of subdivisions that can be called rooms. The walls in the northeast corner were not well geo-referenced and previous maps are unclear with respect to these alignments.

2) Testing one geophysical anomaly. During the previous field season, we re-opened Snow and Stoller's unit B-13, a cobble floor associated with the barn. Nineteenth- and twentieth-century photos of such cobble surfaces at Mexican haciendas often show them flanked by walls with arched roofs above them. The areas to the east and west of the cobble surface have linear geophysical anomalies (Figure 5). We opened excavation units to test whether these are walls enclosing the cobble surface similar to the Mexican haciendas or simply the stratigraphic changes associated with the steep slope of the impoundment.

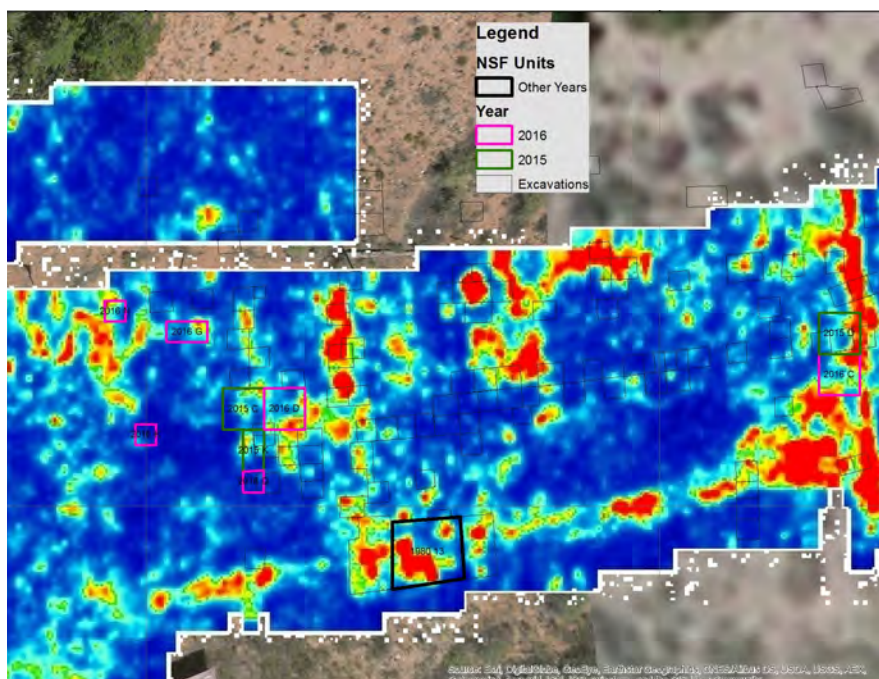


Figure 5. B-13, the cobble surface is outlined in black. Note the linear anomalies running east and west from the unit.

3) Testing the herder's quarters. Snow and Stoller suggested that there are herders' quarters attached to the eastern edge of the corral (Figure 2, anomalies 13 and 14). They started excavation of this area, but did not fully document this. We placed excavation units to explore the possibility of domestic structures here.

Excavation Units

In 2017, we opened 10 excavation units (Table 1, Figure 6). The corners of excavations were shot in with a total station, and the excavation unit datum consisted of the highest corner. Excavation proceeded with shovels and trowels and occasionally

mattocks when adobe melt made shoveling and troweling difficult. All new excavation matrix was screen through 1/4 in mesh. Feature fill was screened through 1/8 in mesh. In areas where we removed backfill from previous excavation, every 4th bucket was screened through 1/4 in mesh.

Table 1. Units Excavated in 2017

Excavation Unit	Size (m)	North	East	Opening Elevation	Unit	Comments
2017-A	1 x 2			1788.416	A	Area between south house walls
2017-B	1 x 3			1788.593	A	Internal walls
2017-C	2 x 4 & 1 x 2				A	Re-open southern area of house
2017-D	1 x 3			1789.437	E	Re-open to geo-reference walls
2017-F	2 x 2			1788.747	B	Test anomaly/ barn and cobble surface
2017 G	2 x 2			1791.117	C	Herder's quarters
2017-H	2 x 2			1791.350	C	Herder's quarters
2017-K	1 x 1			1788.541	A	Extension of 2017A
2017-L	2 x 2.5			1787.736	A	Re-open Feat. 52
2017-M	2 x 2			1789.447	B	Re-open B-6/ Pillar



Figure 6. Excavations at LA 20,000. Snow and Stoller's excavations are outlined in black. The 2015 excavation units are filled in pink, 2016 in orange, and the 2017 units are yellow and labeled with their EU designations.

Each unit-level and each feature was assigned a context number, and context/unit level forms were filled out for each level in each unit. Profiles were drawn for at least one wall of each excavation unit. Plan maps were drawn for features, structures or other findings. Photographs were taken at the close of each level. All artifacts were bagged with each type bagged separately (e.g., different bags for bones, ceramics, lithics, etc.), and each bag was assigned a unique number. Flotation, pollen, phytolith, and geomorph samples were taken when we judged that we might obtain good recovery. All excavators kept field notebooks. These records have been digitized.

Preliminary Findings

House Area – Unit A and Unit E

Excavation units 2017-A and 2017-K were opened to explore the nature of the area between the south wall of the house identified by Snow and Stoller (Feature 4) and the walls found in 2016 (Figure 2, geophysical anomaly 2). We wanted to understand whether these areas could have been a roofed series of rooms or perhaps a walled garden. We opened a 1 x 2 meter unit that included the south wall found by Snow and Stoller so that we could investigate the construction of this wall and the nature of the deposits outside the wall. We found wall fall in the form of tumbled adobe bricks to the south of the wall in this EU's fill. We exposed the footings for the house, which revealed that these were 2 courses of large basalt cobble to boulder-sized stones, topped by adobe bricks. This wall is different from the wall discovered in 2016 in anomaly 2 which had more courses of smaller cobbles of a variety of stone types, such as limestone and rounded river cobbles. Small quantities of artifacts, primarily ceramics with some selenite, were recovered from the use surface. From excavation alone, we could not determine whether this area was exterior or interior. So geomorphological and phytolith and pollen samples were taken from the surface to see if microstratigraphy or plant remains could help us distinguish interior rooms from merely a walled area.

EU 2017-K was opened just north of 2017-A to explore the relationship between the interior (north) of the wall and the exterior (south) of the wall. The use surface is the same depth both sides of this wall, which contrasts with the construction of the building's west wall where the interior is lower than the exterior. There is no evidence of a builder's trench.

We excavated EU 2017-B because old site maps provided conflicting information about the presence of walls between the outer house wall and possible internal walls. This unit was only partially excavated, but the top of a north-south running adobe brick wall was identified (Figure 7). This wall connects the southernmost house wall identified by Snow and Stoller (Feature 4) with an east-west running wall in their excavation units BX0A and BY0A.

EU 2017-C was located in an area previously excavated by Snow and Stoller. We initially opened these units to check the distance between the walls identified by Snow and Stoller and to understand the construction of the building's foundation. We found that

Snow and Stoller did not fully excavate this area, but seemed to stop above floors and at the tops of potential walls. Although we had originally envisioned only opening a single 1 x 2 m unit, we expanded this area to include five 1 x 2 meter units (Figure 6) to explore not only the nature of the interior and exterior walls, but features and floors that were revealed during excavation (Figure 8). We found several additional walls, a threshold, and a thermal feature. The thermal feature may have been built during a remodeling episode as it sits above the floor, or it may have been originally constructed on a rubble-filled platform. We recovered numerous ceramics and fauna, and sampled the thermal feature for macrobotanicals.



Figure 7. Top of an adobe brick wall in EU 2017-B.



Figure 8. EU 2017-C showing postholes and walls.

EU 2017-D is a 1 x 3 meter area, which was opened to document two walls identified by Snow and Stoller. This area was not well geo-referenced during previous mapping efforts and the excavator notebooks are vague about the presence of walls in some units. We re-excavated these areas and found possible remnants of an adobe wall first identified in 1994 in units AY10A and AY11A. Rather than a multiple-coursed adobe brick wall described in 1994, we found a single adobe brick in the western edge of the EU. While multiple courses were not evident, the location corresponds to the wall previously identified just to the south. A second possible wall identified in 1993. Excavators in 1993 ultimately felt that what they found was not really a wall; however, it remains on site maps. In the eastern end of the EU, we found a single layer of cobbles with possible adobe on top of them. This cobble wall appears to be more modest (less robust) than many walls associated with the house. Between the two walls, was a floor surface with slight undulations and gravel-sized rocks embedded in it.

EU 2017-L was opened to document the corner fireplace listed on maps created by Snow and Stoller. On the 1990s map, this area had previously been identified as the walls comprising the corner of a room (Feature 52) with a fireplace in the northwest corner. When we opened this area, the archaeological deposits were not far beneath the current ground surface. We did not find a fireplace as described in the student notebooks, nor did we find walls. Instead we found a cobble surface (Figure 9), which is composed of one layer of cantaloupe-sized river cobbles. There appears to be mortar between some of the stones, and the surface slopes down toward the center of the photo.



Figure 9. Cobble surface in Feature 52.

Barn Area – Unit B

In the barn area, we opened two units, EU 2017-F and 2017-M. EU 2017-F was placed to explore a geophysical anomaly (Figure 2, anomaly 5) and the relationship between barn walls and the cobble surface documented in 2016. We had hoped that this anomaly might be a wall running from the cobble surface and enclosing this area of the barn, but we did not find evidence of architectural features. In the western profile of this excavation unit, we found a wall topped with adobe bordering the cobble surface. Strata in this unit consisted of manure layers, but no burn layer as was evident in other units in the barn. Rodent disturbance was obvious especially in the east profile. Walls in this part of the barn are substantial given the size of the boulders (Figure 10).



Figure 10. EU 2017-F west profile showing the size of footings comprising one of the barn walls.

EU 2017-M was excavated to document a previously identified architectural feature identified as a pillar. We reopened Snow and Stoller’s units B-6 and B-3, but it became clear that these had been only partially excavated. We continued excavation to reveal the size and construction methods of the pillar and the deposits around it. The pillar is much more massive than had been anticipated and is among the most robust architectural features at the site (Figure 11 top) with perhaps five courses of stone. A significant burn layer was

present in the eastern portion of the unit where the deposits were intact (Figure 11 bottom). While the burn layer was extensive, there is only one such layer here – in contrast to areas outside the barn where two are evident.



Figure 11. EU 2017-M. Top: the pillar showing robust construction. Bottom: burn layer.

East of Corral– Unit D

We excavated two units in the area identified as possibly a herder's quarters. Rock alignments are evident on the surface, and the geophysical survey indicated anomalies, possibly walls, in this area. This area was minimally tested in 1988, but the nature of the deposits was not described. We placed two 2 x 2 excavation units: EU 2017-G and EU 2017-H. Excavation revealed that both units had thick alternating layers of green-gray manure and reddish colluvial sediment.

Based on the stratigraphy and artifacts, we were able to determine that this area was probably not used as a herder's quarters. Were this the location of a living area, we might expect to have found a hearth or thermal features for cooking or heating, charcoal, or artifacts associated with food production, preparation or consumption. We might also have found architecture similar to the house, with its adobe bricks or, if more temporary, of jacal or simple shades. We found none of these. The uniformity of the deposits across the 10 meters between the two units we excavated suggest a single set of depositional processes in both units. This suggests an open, undivided area that would not be expected from a living area of this size. There were also manure layers, and the artifact counts were strikingly low. Animal bones were the most common specimens recovered, with ceramics, so common on the rest of the site, being limited in number. These findings suggest that the area was not used as for habitation, such as home for low status or temporary workers, but was instead another corral adjacent to the main corral.



Figure 12. Stratigraphy of EU 2017-H. Note the alternating layers of gray manure-rich sediment and reddish, sterile colluvial sediment. This pattern is evident in EU 2017-G.

Artifact and Sample Recovery

We collected nearly 500 artifact and sample bags. Artifacts were primarily ceramics and some faunal remains. Like all previous excavations, the vast majority of the ceramics were locally produced Pueblo wares. Small numbers of lithics were recovered, including one small obsidian projectile point, and while modern bottle glass and nails were common, 17th-century glass and metal artifacts were extremely rare. Most artifacts were cleaned in the field and the remainder has been processed at University of Massachusetts Boston. Artifacts are being catalogued in a Filemaker database devoted to the LA 20,000 materials.

Samples

We undertook a comprehensive sampling strategy for environmental and site formation data. In previous years, we collected pollen samples from a soil column (2015-G) and some cultural contexts, such as the barn and manure layers. We continued this year with sampling from floor contexts around the house and barn areas. We re-opened EU 2015-J in the midden to take phytolith samples. These samples will be analyzed by Emily Dawson of the University of Texas, Austin (Figure 13). All flotation samples were processed in the field, and we were able to float soil samples collected by Snow and Stoller, which were being stored at El Rancho de las Golondrinas.



Figure 13. Emmy Dawson sampling the midden for phytoliths.

Dennis Piechota took additional soil micro-morphology samples from several areas of the site: EU 2016-K and 2017-M to understand the burning layers evident in the area to

the west of the barn and associated with the pillar. Hand samples were taken from EU 2017-H the herder's quarters to understand the nature of the manure and sterile layers, and he took a sample from 2017-A to understand the nature area between the main south wall of the house identified by Snow and Stoller and more southernmost wall identified in 2016.

Continuing Work

The artifacts from the 2015 and 2016 excavation seasons have been cleaned, catalogued, and entered into the database. All artifacts from 2017 have been cleaned, and we are currently cataloguing these finds. The ArcGIS site map has been updated with the new excavation units and we have begun entering provenience and artifact identification data into the database.

Specialized analyses are underway as Dennis Piechota has prepared and interpreted some of the geomorphological hand samples and will be analyzing those taken during 2017. These samples will help illuminate the history of the site and the nature of the stratigraphy. Graduate students from a variety of institutions are undertaking analysis of artifact assemblage and samples. Engaging graduate students in the research is an important component of the project, and University of Massachusetts Boston students are using the materials for master's theses. Anya Gruber has extracted pollen from some samples taken during the 2015 to 2017 field seasons. Her research contrasts the vegetation changes around LA 20,000 with the analysis done by Kyle Edwards (Edwards 2015; Edwards and Trigg 2016) at the Leonora Curtin Wetland Preserve to tease apart local and regional environmental changes accompanying Spanish colonization. Ivana Ivanova has begun examining the macrobotanical samples to understand the foundations of New Mexican cuisine. Ana Opishinski has inventoried the recently discovered faunal remains from Snow and Stoller's excavations along with the recent 2015-2017 collections. She is identifying the animal remains and looking for butchery marks to help us understand the meat component of the diet. Clint Lindsey has begun to examine the lithic materials, especially tool production and use and their relationship to local indigenous communities. Adam Brinkman is looking at the distribution of cooking and food consumption artifacts (*manos*, *metates*, *comales*, and ceramics) across the site to see if he can identify kitchen or kitchens at the site (Brinkman 2017). This research seeks to explore how the household created meals and how enslaved or temporary workers might have been provisioned with food. Caitlin Connick is studying the ceramic vessels within the house specifically looking at the size and forms of ceramics that might relate to food preparation and storage. Stephanie Hallinan is using GIS to study the location of Spanish settlements relative to environmental factors, such as water or arable land, and social factors, such as the presence of missions or laws regulating the placement of ranches relative to indigenous villages.

There are students from other universities who are using LA 20,000 materials for their research. Danielle Huerta, a PhD student from University of California Santa Cruz, is looking at the petrography to source some of the ceramics to trace connections between LA 20,000 and the surrounding Pueblo communities. Emily Dawson from University of Texas

Austin is looking at phytoliths to understand the plant component of the foodways that cannot be discerned by other plant parts such as seeds and pollen.

Future Work

The specialized analyses that are underway should give us some understanding of the foodways and environment. Material culture analyses will shed light on the daily life of the inhabitants and their connections to Mexico and with Pueblo peoples. We have enough information from the excavation, stratigraphy, and artifact analyses to develop a picture of the ranch's architecture and some economic activities undertaken there.

We may undertake additional fieldwork during the summer of 2018. From our recent excavations, we have a fairly good understanding of how the house was constructed – the methods and to some extent, the materials. Despite Snow and Stoller's extensive excavations in the 1980s and 1990s and the recent efforts, the house remains enigmatic, particularly the way space is partitioned. Opening additional areas will help us understand how space is divided in the house. Because LA 20,000 is provides a unique opportunity to study 17th-century Spaniards, we need to balance the disruption of the site that accompanies excavation with the opportunity to gather information. We would likely focus on parts of the house that have not yet been examined.

Reporting our findings, especially integrating our data with information gathered from Snow and Stoller's work, is a high priority. We anticipate a writing descriptive report that pulls together the work from all 14 years of excavation and data collection. This will include a detailed map of the site with the location of architectural features. As much as possible we will include stratigraphic information and profile drawings from each excavation unit, a catalogue of artifacts that were recovered, and the results of any specialized analyses.

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