

A COMPARISON OF CERAMICS FROM THE PADRE ISLAND
AND EMANUEL POINT SHIPWRECKS

by

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B.S., Florida State University, 2006

A thesis submitted to the Department of Anthropology
College of Arts and Sciences
The University of West Florida
In partial fulfillment of the requirements for the degree of
Master of Arts

2013

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ACKNOWLEDGMENTS

It is amazing to comprehend how many individuals came together to assist in the development, both material and spiritual, of a single thesis. I would like to start by thanking my wife, Irina, for her continued support and encouragement. It was by her example that I finally buckled down to finish writing this document. She also took the time to help me on my research trip to Texas that was a whirlwind of anxiety and stress, calmed only by her reassuring words.

I would like to thank all of the people in the UWF Graduate School for funding my Graduate Student Scholarly and Creative Activity Grant. In addition to the Graduate School, I thank the Pensacola Archaeology Society for my PAS Student Award. These grants went a long way toward funding my trip to Corpus Christi to review the Padre Island Collection. Ken Alderman was supremely generous to me and greatly helped in getting my research completed in Texas. I very much appreciate his encouragement and direct support. Without all this support, I would not have been able to analyze the complete collections from Padre Island. I would also like to thank everyone at the Corpus Christi Museum of Science and History in addition to Amy Borgens from the Texas Historical Commission for allowing me access to their collections and databases.

In addition to my committee, Dr. Jay Clune was of great help. He assisted in the creation of my history chapter and was very encouraging about my specific topic of study. His Spanish Borderlands course introduced me to both a much broader view of the subject matter and the depth of previous historical research available. Jake Shidner and Colleen Reese were good friends and allies during times of supreme stress and helped me in every way. We shared many classes, and I look forward to working with them again in the near future on whatever project archaeology might bring. Norine Carroll granted me access to the Emanuel Point collections and helped me to wade through them. Coby Lee McKenzie and John Phillips have been a great help in getting me started in the development of my GIS models. Their help allowed me to analyze and think about the collections in spatial terms.

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ABSTRACT

A COMPARISON OF CERAMICS FROM THE PADRE ISLAND AND EMANUEL POINT SHIPWRECKS

Scott Ryan Sorset

The focus of my thesis is to develop an archaeological baseline ceramic patterning for colonial period Spanish ships, using ceramics as an example, through which maritime archaeologists can better identify and interpret Spanish shipwrecks from the 16th century. By intensively reviewing the ceramic artifact assemblages from the *San Esteban*, Emanuel Point I, and Emanuel Point II shipwrecks, I propose that a thorough typological, spatial artifact analysis and scientific methodical approach to excavation affords archaeologists the ability to differentiate between ships of similar cultural and temporal affinity but with different prescribed missions. These similarities are shown to be material reflections of the society that operated these vessels. Therefore, by anthropologically analyzing the ceramic artifacts from two fleets with vastly different missions, I started the process of identifying and mapping a baseline Spanish ship pattern. It is my hope that other researchers will incorporate similar datasets to further refine uniquely Spanish shipwreck artifact patterns.

INTRODUCTION

The focus of my thesis is to develop an archaeological pattern for colonial period Spanish ships, using ceramics as an example, through which maritime archaeologists can better identify and interpret Spanish shipwrecks from the 16th century. By intensively reviewing the ceramic artifact assemblages from the *San Esteban*, Emanuel Point I, and Emanuel Point II shipwrecks, I propose that a thorough typological, spatial artifact analysis and scientific methodical approach to excavation affords archaeologists the ability to differentiate among ships of similar cultural and temporal affinity but with different prescribed missions. These similarities are shown to be material reflections of the society that operated these vessels. By anthropologically analyzing the ceramic artifacts from two fleets with vastly different missions, I identified and mapped a Spanish ship pattern.

I hope this process can be applied to other contemporaneous Spanish shipwrecks to elicit similarities and differences not previously considered. I compare the ceramic collections of the Padre Island and Emanuel Point shipwrecks, demonstrating that despite the ships' differing missions, striking similarities and important differences exist between these shipwrecks. At the very onset of my thesis research, the primary concern was to capture information often overlooked in shipwreck excavations. My hope was that by intensely mapping and analyzing a single material culture class from multiple similar, yet distinct, shipwrecks, I might elicit new insight into Spanish provisioning methods. This logic is based on the premise that provisioning was a behavior of people in the past. In this instance, anthropologically analyzing the behaviors of 16th-century Spanish sailors differentiates what was a common or normal behavior from what was a unique or unusual behavior. The assumption is that dissimilar elements would directly relate to the specific mission at the time of the ship's sinking. The elements that were similar likely related to the common ceramic shipboard provisions. I utilized three general methods in my research.

First, the similar yet distinct Padre Island and Emanuel Point shipwrecks were compared utilizing an adapted version of South's (2002) artifact class patterns analytical technique. This method helped to elicit statistical relationships by which the shipwreck assemblages of Padre Island (1554) and Emanuel Point (1559) are compared. I reexamined the *San Esteban* (41KN10) and *Espíritu Santo* (41WY3) ceramic collections housed at the Corpus Christi Museum of Science and History in Corpus Christi, Texas. Very quickly after arriving at the Corpus Christi Museum, I determined that the very low numbers of surviving artifacts from the *Espíritu Santo* ceramics collection rendered the collection useless in a comparative analysis. Therefore, all comparisons and contrasts made from the Padre Island wrecks utilized archaeologically recovered remains from only *San Esteban*. I utilized the coding sheets and recording methodologies in place at the University of West Florida's Conservation Laboratory to provide a uniform recordation and analysis of the ceramic collections. I compared a spreadsheet of the Padre Island collection directly to the similarly reanalyzed collections from Emanuel Point I (8ES1980) and Emanuel Point II (8ES3345). Excavations at the Emanuel Point II shipwreck site are ongoing, and the analysis includes artifacts recovered only up to the end of the 2009 summer field season.

The reason for the focus on the ceramic collection is that ceramics are among the most commonly discovered and most easily culturally identifiable shipwreck remnants. Ceramics are far less susceptible to preservation biases on both terrestrial and underwater sites and therefore were the most useful for analysis. Recordation included photographing, counting, weighing, and re-identifying each individual ceramic sherd.

Second, excavations of the Padre Island and Emanuel Point ships were, and are, affected by scrambling processes that directly impacted what was discovered within the wrecks (Muckelroy 1978:169-175). My thesis methodologically identifies site formation processes to account for missing elements of each of the wrecks. Because both fleets sank in storms and were

salvaged historically and because of the presence of preservation biases, Muckelroy's process from 1978 greatly improves accounting for these preservation biases.

Included with the scrambling processes is the consideration that Spanish salvage typically—but possibly not in the case of Emanuel Point ships—focused on items of greatest value such as gold, silver, and guns, as indicated by the fact that “about 41 percent of [the Padre Island] cargo was recovered” (Arnold and Wickman 1999). Estimates by Arnold and Wickman (1999) report that Spanish salvors recovered less than half of the 1,000,000 *ducats* lost among the three Padre Island wrecks. The great deal of time and effort involved in salvage operations from this period could imply that the salvors did not take the time and effort required for the recovery of what are primarily storage and tableware ceramics. I assert that ceramics comprise the greatest proportion of artifacts on most Spanish shipwrecks, resulting in a more accurate and complete sampling than other artifact types when analyzed thoroughly. The Emanuel Point shipwrecks likely differ because the cargos, so far as is known, did not contain treasure but rather food and stores for the building of an outpost in the remote region of Pensacola Bay. Those items of highest value to the colonists may have been stored in ceramic containers. The colonists likely had little after the storm to assist them in the recovery of the submerged stores.

Third, I utilized primary documents to supplement the material analysis, to provide historical context, and to enhance explanation of socioeconomic data from the period. The documentary record provides information such as cargo manifests, crew sizes, narratives of the wrecking events, and maps, as well as many other components of the New Spain fleet system. The record reveals information regarding the material culture found on ships of the period. I utilized previous scholarly translations of the primary documents, such as Priestley's (1971a, 1971b) *The Luna Papers: Documents Relating to the Expedition of Don Tristan De Luna y Arellano for the Conquest of La Florida in 1559-1561* and Arnold's (1979) *Documentary Sources for the Wreck of the New Spain Fleet of 1554*, among others. The documentary record

for each fleet offers similar types of information, but each contributes unique elements that, when combined, enrich the interpretation of the past.

In general, the maritime archaeology community has all too often focused intensely on ship construction in the analysis of wreck remains. While hull analysis is crucially important to the advancement of nautical archaeology's knowledge of sailing technology and engineering, I propose that the archaeology of 16th-century Spanish ships should be re-evaluated to implement more anthropological approaches. In this thesis, I examine two 16th-century Spanish fleets with differing missions. I compare them and define commonalities and differences within the New Spain fleet system. In addition, I compare the intrasite distribution of ceramics utilizing geographic information systems (GIS), a spatial analytical tool that enhances the archaeologist's ability to interpret elements like vessel orientation without relying exclusively on the hull to provide that information. This multi-fleet comparative methodology has, to my knowledge, never been conducted in this manner before.

CHAPTER I

TWO FLEETS, TWO MISSIONS, ONE END: A BRIEF HISTORICAL REVIEW

It is that on Monday, during the night of the nineteenth of this month of September, there came up from the north a fierce tempest, which, blowing for twenty-four hours from all directions until the same hour as it began, without stopping but increasing continuously, did irreparable damage to the ships of the fleet. There was great loss by many seamen and passengers, both of their lives as well as of their property. All of the ships which were in this port went aground, save only one caravel and two barks, which escaped. This has reduced us to such extremity that unless I provide soon for the need in which it left us—for we lost, on one of the ships which went aground, a great part of the supplies which were collected in it for the maintenance of this army, and what we had on land was damaged by the heavy rains—I do not know how I can maintain the people, unless it is by the means of which I am herein telling your Majesty.

– Don Tristán de Luna, 24 September 1559 (Priestley 1971b:245)

Shipwrecks are tangible historical markers of tragedies and events embodying the distinctive characteristics of the past from which they come. Archaeologists and historians alike seek to tease out details from the past that can enrich and enhance the corps of knowledge surrounding a particular topic. This chapter presents a comparative history of two Spanish fleets, one from Padre Island, Texas, and another from Emanuel Point in Pensacola, Florida. This research discusses both fleets' historical contexts, wrecking events, and provisioning.

Veracruz, Mexico, situated toward the southeastern tip of modern-day Mexico, was one of the most important port towns in the world during the 16th century (Arnold and Weddle 1978:15; Elliott 1989:19-20; Pérez-Mallaína 1998:11). Once Hernán Cortés completed his conquest of Mexico in 1521, a new bounty of silver and gold began to pour out of the port of Veracruz (Robinson 2004:32). The port was known during this period as San Juan de Ulúa. The

rapid onset of new wealth transformed Veracruz from a small coastal village into a burgeoning town on the coast of Southern Mexico. New economies and professions emerged with the creation of this colonial and port town (Arnold and Weddle 1978:15-18).

The distance from the Old World inherently necessitated the development of colonies and supply lines (Elliott 1989:13). Even if, at first, they were nothing more than simple outposts, the colonies served as nuclei from which Spanish ships, men, and supplies could be launched and received. From these centers in the Caribbean (Cuba, Jamaica, Panama, and Santo Domingo), the conquistadors undertook private ventures that eventually led to the 1521 conquest and colonization of the Aztec empire in Mexico (Robinson 2004:22, 80-85). This feat was no small task, even with the technological advantages the Spanish had over the Aztecs. It marked an important turning point in not only Spanish history, but also world history. Spain now had many footholds in the New World and had finally become a global empire, and with this empire came a massive bureaucracy to manage: “No European society until this moment had been faced with an administrative task of such magnitude and such complexity” (Elliott 1989:13). With many distant colonies and an influx of new wealth, Spain had to be careful not to overextend itself and to maintain its revenue streams. This administrative problem was solved by the creation of viceroys, governors, and even the placement of friars, who controlled Spanish colonial lands for the King (Simpson 1982:16-19; Elliott 1989:12-16, 2002:166-168).

Because Charles V was both the Holy Roman Emperor and the king of Spain, he unified the goals of Spain with those of the Catholic Church. This situation created a dichotomy of competing ideologies of conquest and conversion (Elliott 2002:99-102). A series of overlapping political networks controlled the lands of Spain in the New World. Charles V intentionally created this overlap in an effort to instigate infighting between the colonies and the various authorities, all in an attempt to keep the colonies from easily separating from Spain (Parry 1966:173-177, 192-194; Elliott 1989:71-72).

Controlling the colonies was a challenge for nearly every colonial empire throughout history. The Spanish utilized the efforts of the Roman Catholic Church to control and “civilize”

the local indigenous populations. Because Pope Paul III declared through a 1537 papal bull that Native Americans were people and that slavery was “forbidden in the new laws of 1542,” the Spanish could no longer legally enslave them (Haring 1975:50-51).

The main way the Spanish sought to control the population was through the system of *encomienda*, which was little different from outright slavery (Simpson 1982:1-2, 123-150). Another method of Spanish control was religious indoctrination. In order to control the population, Spain and the Roman Catholic Church acculturated Native Americans into Christian theology while incorporating some traditional Native American practices. The existence of more than 800 members of various religious orders in Mexico by 1559 provides evidence for this indoctrination focus (Elliott 1989:13; McAlister 1989:153-157).

Religious and political control was an integral part of the Spanish system of colonization. The Spanish Crown feared that the colonies would usurp its authority, thereby eliminating the wealth the colonies supplied. Without the control of the viceroys and the governors, Spain would have been but a distant thought in the minds of the colonists; therefore, Spain needed to and did maintain a vigilant, albeit remote, presence in its colonies. The goal was to expand Spain, not to divide it. Spain’s administrative controls were essential to its eventual success in the New World (Elliott 1989:14-18; Walton 1994:33). Although the Spanish quickly realized that they had accomplished a feat that even the Roman Empire had not, they were slow to recognize the responsibilities of such an accomplishment. This successful conquest did much to increase nationalism within Iberian Spain but created a separation of class. The successes of conquistadors in the New World created an allure to second sons, appealing to their desire for immense wealth and status not otherwise available to them in Spain. The second sons in search of new wealth account for much of the increase in colonists pouring into Veracruz (Pérez-Mallaina 1998:23-25).

The conquests of Mexico and the Caribbean demonstrate the model by which the Spanish conquered and then colonized. The typical approach was the placement of large numbers of troops followed by the establishment of a base or foothold. Spaniards would then establish a fort

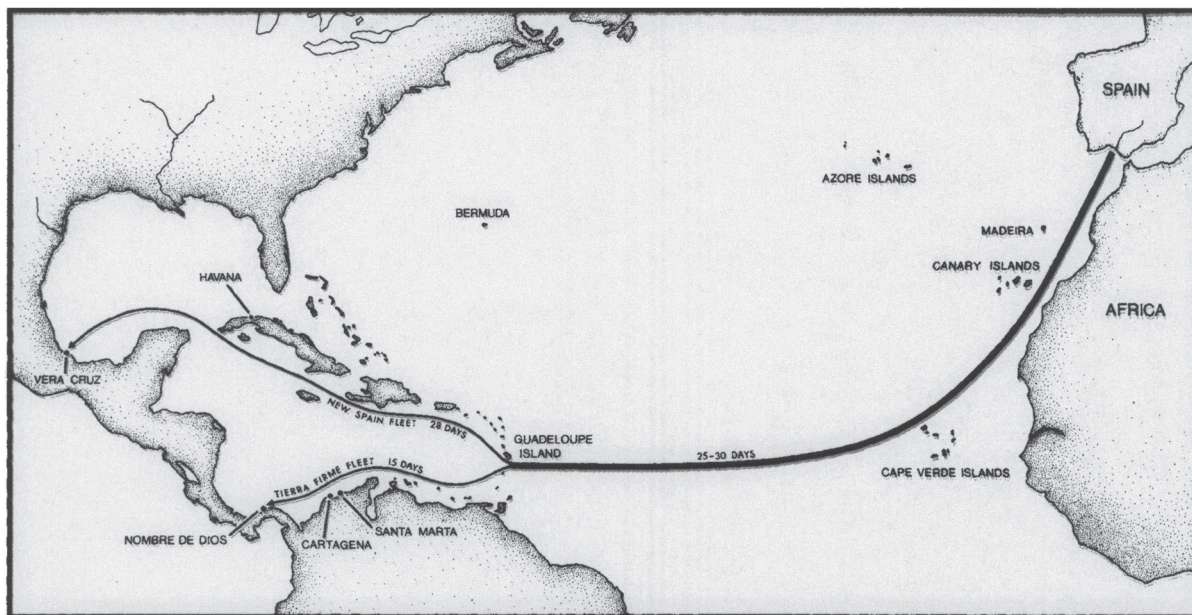
and later bring in permanent or semi-permanent settlers. Even the famous Juan Ponce de León requested that the Crown grant him permission to conquer and settle—in that order—*La Florida* (Weber 1992:33-34). The British system of colonization, as evidenced by the establishment of early colonies like town, was very different from that of Veracruz, Cuba, Española, or Puerto Rico. While the Spanish plan for colonization included incorporation of the native peoples, the British system did not (Weber 1992:12). British settlements created initial footholds in the New World not preempted by prior conquest, unlike the Spanish in Veracruz.

The town of *Villa Rica de la Vera Cruz* was founded 21 April 1519 (Robinson 2004:8). Once Cortés and his men completed much of the work of conquest and the Aztec empire had fallen, the town of Veracruz was moved to a more convenient location not far from the port of San Juan de Ulúa. The new location provided easier access to the town and to the supplies entering port by ship. Unfortunately, the new location provided little in the way of protection from sea attack or from the infamous weather of the Gulf of Mexico. The port town, placed just above sea level, sat near a river on the inland. This poor location would come to plague the Spanish, especially in September 1552, when a hurricane hit the port and town. The storm surge caused such devastation that when the ships of the Padre Island fleet arrived just under a year later, the port still was in disarray (Arnold and Weddle 1978:11).

The Padre Island Fleet

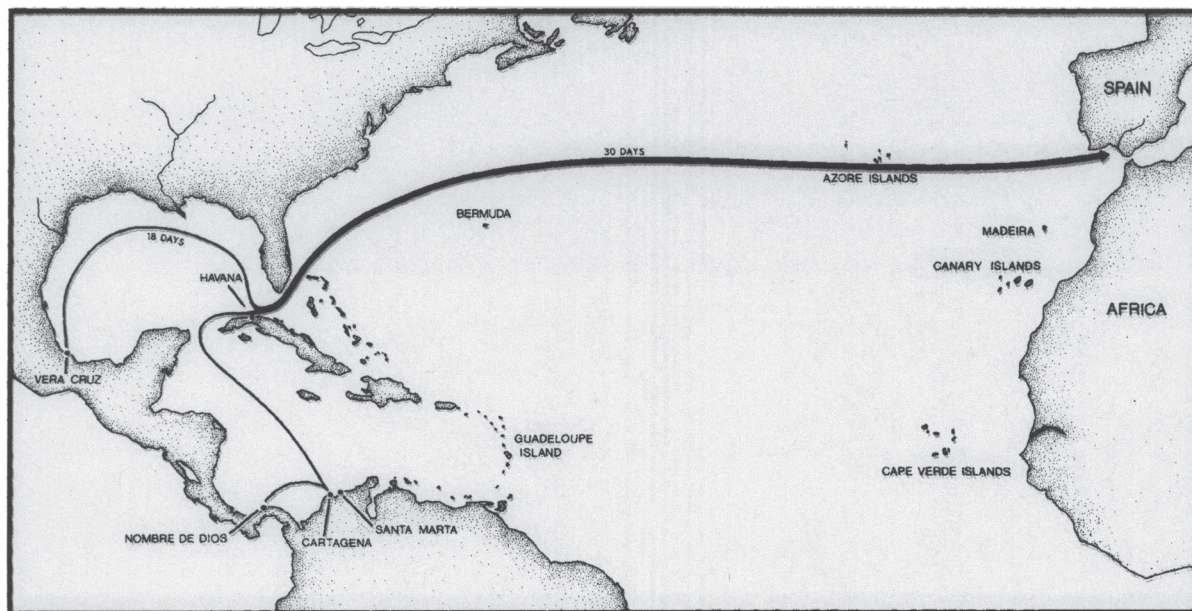
The Padre Island fleet, or *flota*, left the ports of Spain on their over 5,500-mile journey on 4 November 1552, led by Captain Bartolomé Carreño (Figure 1; Arnold 1978:5). The Padre Island fleet, which researchers named after an island off the coast of Texas following the ships' discoveries, represents the oldest shipwrecks yet found in the waters of the United States of America (National Park Service 2006). The contingent of 54 vessels hit a fierce storm soon after they departed from Seville, Spain. The storm ripped the sails from the masts, leaving them bare, the crew shaken, and the fleet separated. Much to the surprise of the Spanish commanders, French privateers saw the flotilla in its weakened state and attacked while they had the advantage (Arnold 1979:48).

OUT-BOUND VOYAGE



1

HOMEBOUND VOYAGE



2

FIGURE 1. 16th-century fleet routes. (After Arnold 1979:xi).

Much of the weaponry of the 16th century was not powerful enough to sink fully provisioned warships but was very effective at taking down sails, masts, and killing the crew (Glete 2000:21). The French captured and seized the cargos of four of the Spanish ships. Enemy ships consistently made easy prey out of weakened Spanish flotillas until 1564, when Pedro Menéndez de Avilés revised the rules regarding the Spanish fleet system (Parry 1966:134). By 22 November, another three ships of the fleet were lost to French privateers, yet Captain Carreño ordered the flotilla to proceed onward.

During the mid-16th century, Spain levied a tax called an *avería*, which charged merchants for the protection of their vessels and provided a form of insurance against loss of their cargoes and ships (Hoffman 1980:33). Because the Spanish merchants sought to maximize every possible source of profit, they very frequently overloaded their vessels with trade goods and people. Ships were so heavily laden they could not effectively maneuver. Even the vessels of the Spanish Crown, the *naos* and *galleones* intended for the defense of the merchant vessels, were overladen to increase profits. Because of this overfilling, the warships suffered from the same maneuverability problems as the merchant vessels they were supposed to protect (Arnold and Weddle 1978:8-9; Parry 1966:135).

Many of the ships that made transatlantic crossings were old and had reached the end of their use-lives (Braudel 1979:393). Merchants often acquired these older vessels in the hope that the ship would survive a single additional voyage. In order to prevent massive and unnecessary loss of life, the House of Trade in Seville instituted regulations requiring inspections prior to long overseas voyages. Despite these inspections, a bishop traveling with the Padre Island fleet wrote to the highest governing body at that time, the Council of the Indies, to complain of the unseaworthy conditions of the ships of the *flota*, mentioning they were “leaking water like sieves and so laden with merchandise and people that they [the ships] could neither navigate nor defend themselves” (Arnold and Weddle 1978:9). As the ships were insured at nearly double their fair value, the merchants stood to make a fortune whether the vessel survived the journey or not.

Captain Bartolomé Carreño's first priority was the safe arrival of the Padre Island fleet. He battled the forces of adverse weather, raids by the French, a nearly mutinous crew, cannibals in the Canaries, and the loss of his flagship to a lantern fire. The fire took the ship and 300 lives, including two of his nephews and one of his sons (Arnold and Weddle 1978:10). Carreño's experience was typical because just as his crew, he lived with the constant possibility of death. The weather alone was enough to try even the most seasoned sailors, but Carreño's problems were multiplied by the threats of enemy ships, cannibals, and hostile Native Americans. After nearly five months at sea, the ships of Carreño's fleet finally arrived at the port of San Juan de Ulúa near Veracruz on 25 March 1553. Many of the ships were scrapped at the end of their journey or were prepared for yet another return voyage.

Carreño's fleet was busily preparing for the return. Once ships arrived from their transatlantic voyage and unloaded their cargos, they often went through a standard careening process. Typically, the process involved ballast removal, the washing of the interior holds, barnacle removal, and the plugging of leaks. This process prepared the ships for the next long voyage and helped to prevent disease aboard ship (Arnold and Weddle 1978:19). Spain certified each vessel for transatlantic sea-worthiness before it made its journey, and only a select few had the privilege and fortitude to make a round trip.

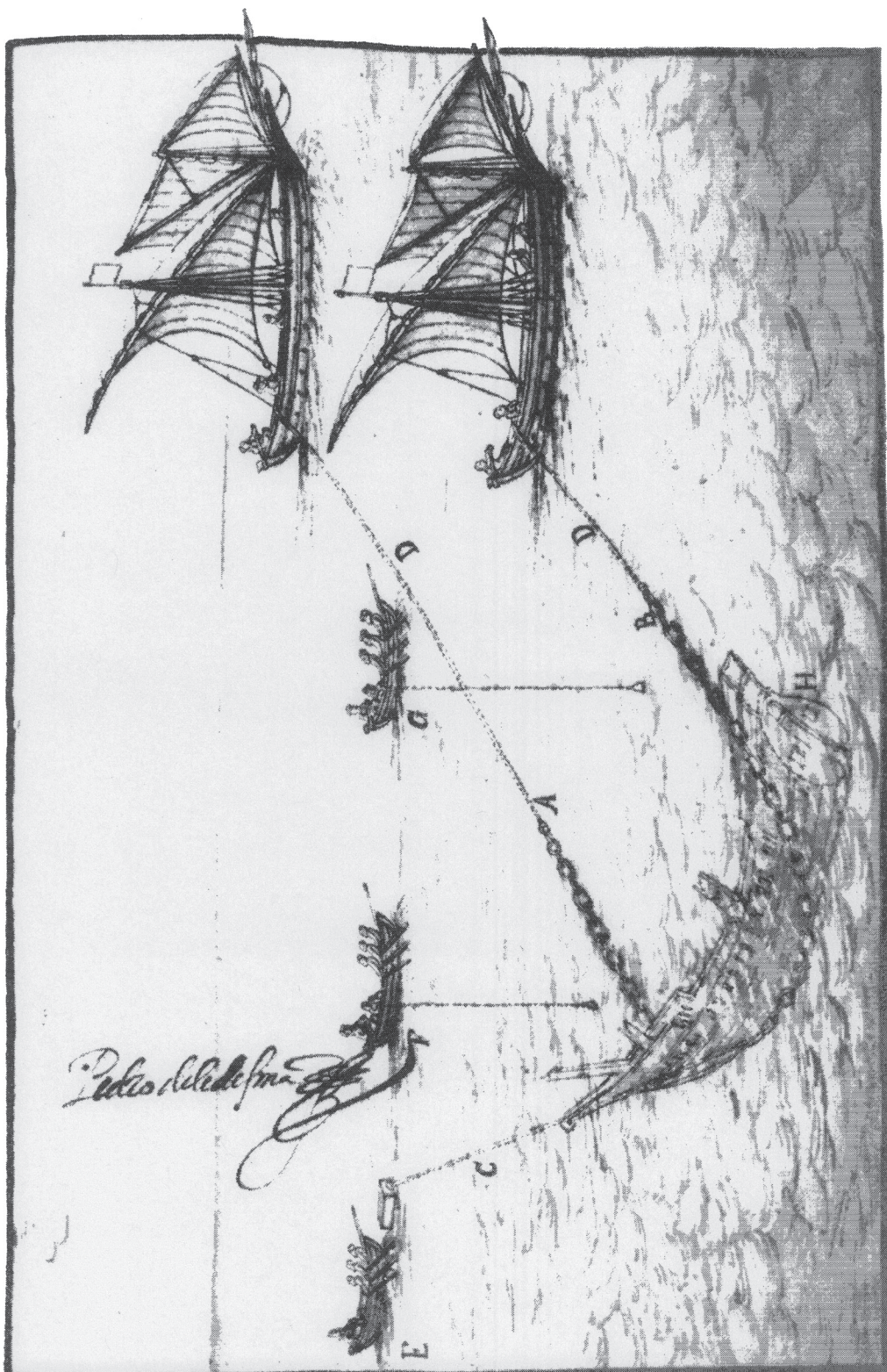
In order to make a return voyage, enough ships for a fleet had to be assembled at the port of departure, and they needed to be of sufficient size and type. Long delays were common; Carreño and his men waited over a year for additional ships until they could wait no more, lest they risk entering hurricane season. During early April 1554, Carreño decided to reap the benefits of fair weather, and he and his men sailed to the port of Havana with just four ships in the fleet. Carreño could not have known a tempest would soon bear down on the ships when he left Vera Cruz for the long journey to Spain.

After 20 days at sea, a fierce storm hit the fleet on 29 April 1554. The vessels had little control and were subject to the will of the wind. Sixteenth-century vessels of the *galleon* and *nao* classes, like Carreño's ships, suffered from the effects of *windage*, in which the wind catches the

structural elements of the hull, pushing the vessel on a course contrary to that which the crew desires. Large 16th-century Spanish ships had very tall forecastles and sterncastles that acted like sails. These castles provided an elevated platform from which soldiers could take advantage with weaponry like crossbows. Tactically, the crew of the ship with the highest castle could rain down arrows on its enemy, but this advantage came at the cost of reducing the helmsmen's ability to control the ship effectively and made the ship top-heavy (Walton 1994:61). The effect of windage was often compounded by overloading, which further reduced maneuverability (Phillips 1986:54-60; Glete 2000:32-40; Konstam 2004:10).

San Esteban, *Espíritu Santo*, and the *Santa María de Yciar* barreled toward the shore of what is today Padre Island, Texas. The ships' crews threw their anchors in a last-ditch effort to prevent the ships slamming into the coast. Unfortunately, the effort was not sufficient, and all three ships were lost (Arnold and Weddle 1978:36-37, 46). The fourth vessel in the fleet, *San Andrés*, limped onward to Havana harbor and reported the loss of the other three vessels. Once word reached Havana, a recovery operation was quickly organized and a portion of the treasure recovered. Spanish salvors may have used the techniques described by Pedro de Ledesma in 1623 to locate the Padre Island shipwrecks (Arnold 1979:316).

Ledesma identified the key elements of salvage: "two frigates at full sail" dragged a chain or heavy rope far behind their vessels (Figures 2, 3, 4; Arnold 1979:319). Two rowboats used sounding leads to determine what, if anything, the frigates had snagged. The salvage crew attached buoys to the newly discovered shipwreck, helping to keep track of the target while the recovery ships maneuvered. Once the ships were in place, free divers sought to gain entry to the vessel through open hatches or breaks in the hull (Arnold 1979:319-322). This process was very treacherous work and generally assigned to slaves. The Spanish recovered approximately 41% of the lost cargo, and 300 men lost their lives in the sinking (Arnold and Wickman 1999).



Pedro de Ledesma

*Esta invencion haze, dentro de tres en los cajis de maza, variles por abaxo, e las planas de los dos
cajonas con la plata la moxerora, e al dhoon se don de dho pas quies alla el un no e m3 bacas*

FIGURE 2. Ledesma salvage technique no. 2. (After Arnold 1979:320).

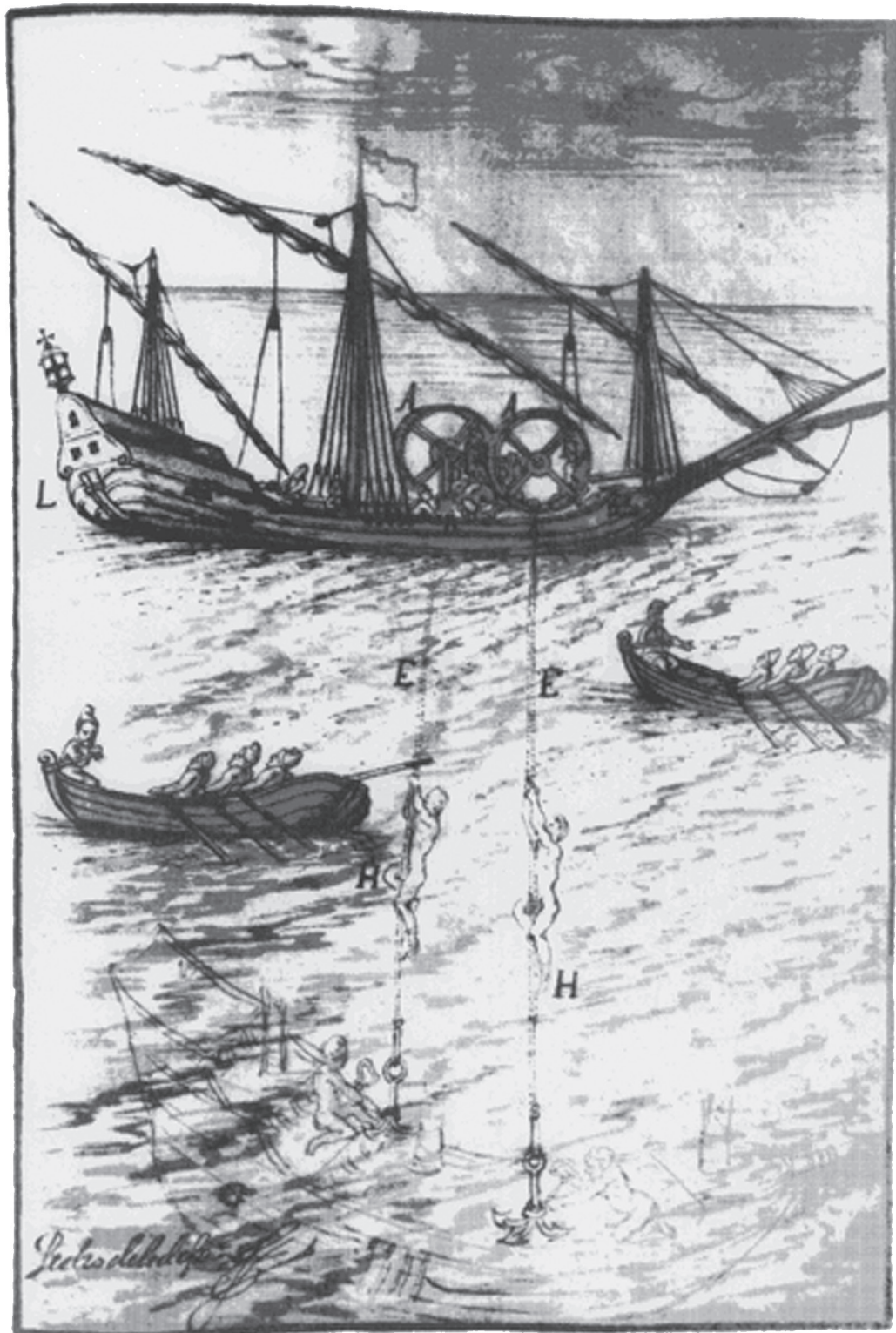


FIGURE 3. Ledesma salvage technique no.5. (After Arnold 1979:324).

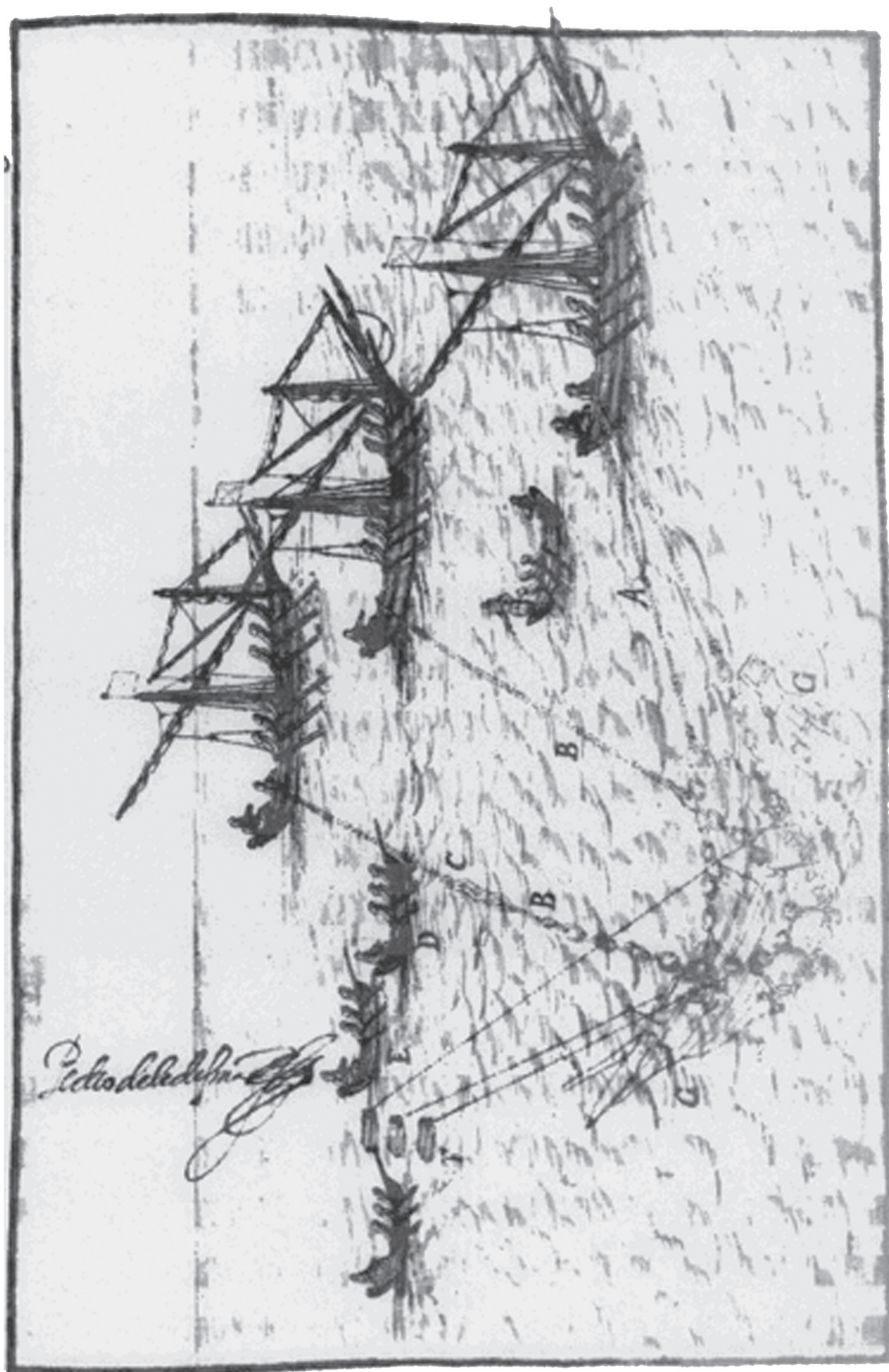


FIGURE 4. Ledesma salvage technique no.3. (After Arnold 1979:321).

After the sinking, a small group of survivors made it to a small boat and sailed for Mexico along the beaches of Texas. The remaining survivors swam to shore and thinking they were closer to home than they actually were, decided to walk back to Mexico. Shortly after they departed for Mexico, local Native Americans attacked them, and only Fray Marcos de Mena survived the return march.

Emanuel Point Fleet

In order to survive and succeed in conditions on the frontier, Spaniards must have had an adventurous spirit, as well as a conquistador spirit. Conquerors like Juan Ponce de León and Hernán Cortéz embodied this quality, which historians have famously and simplistically defined as “God, gold, and glory.” Spaniards carried with them this bold character that enabled them to overcome the obstacles and challenges of colonizing the New World. Tristán de Luna brought with him this boldness as he attempted to colonize the lands of *La Florida* some 40 years after Cortéz established Veracruz.

Don Tristán de Luna y Arellano was a young conquistador who began his career by serving as Francisco Vásquez de Coronado’s *Maestre de Campo* (a rank of Chief of Staff) and ended by nearly becoming the first Governor of *La Florida* (Walton 1994:55). When Spain made yet another attempt at colonizing *La Florida*, Luna was chosen because of his experience and strong service record. He established such a name for himself that when this opportunity arose, the Viceroy of New Spain, Luís de Velasco, personally nominated Luna to become governor of all the lands of *La Florida* (Priestley 1936:63-66; Priestley 1971a:16-17).

Increasing tensions between the French and Spanish created an immediate need for the settlement of La Florida (Hudson et al. 1989:120). If the French developed a foothold within the Gulf of Mexico, it would destabilize Spanish shipping routes (Priestley 1936:87-90). These routes were heavily dependent upon the tradewinds, and these winds not only limited where the Spanish could travel but also limited the geographic locations for placement of future colonies (Walton 1994:54).

The Spanish Crown requested and funded Luna's operation. The purpose of the colony was to help defend against French forays into the region and to provide another safe harbor for Spanish ships. The government backing for Luna differed from previous ventures; privately financed missions represented almost the entirety of previous Spanish efforts to conquer and colonize the New World such as those of Ponce de León, Lúcas Vázquez de Ayllón, Pánfilo de Narváez, and Hernando de Soto. But none ever approached the scale of Tristán de Luna's attempt of 1559 (Weber 1992:33-34, 42-44; Smith et al. 1999:1-2). Luna's colonization effort was the largest, most organized, and best funded in Spanish history, and included 1,000 colonists, 500 soldiers, 240 horses, 100 Aztec warriors, 11 ships, cattle, building materials, and enough provisions to last the colony for over a year (Priestley 1936:98, 101-103). Despite the preparation and effort, the colony was destined to fail (Rodgers 2003:3, 53, 108).

Just as the ships of the Padre Island fleet had left the port of San Juan de Ulúa, Luna's fleet of 11 vessels departed from Mexico on its journey to settle *La Florida*. The fleet left on 11 June 1559 and arrived offshore of Santa María de Ochuse, modern-day Pensacola Bay by 15 August 1559. Luna explored the region including Mobile Bay in Alabama and concluded that the best and most defensible harbor in all the Indies was Pensacola Bay. The viceroy of New Spain, Luís de Velasco, sent reports of the quality of the port to King Philip II, the recently crowned king of Spain. The Viceroy described the port as, "one of the best ports to be found in the discovered part of the Indies. . . . The port is so secure that no wind can do them any damage at all" (Priestley 1971b:275). Unfortunately for the expedition, the port was not as secure as the Viceroy believed.

Just over a month after Luna's landing, a hurricane entered Pensacola Bay on 19 September 1559. The storm raged for 24 hours. Most of the ships of Luna's fleet did not survive. Six of the 10 vessels that were in and around the bay sank, and the storm drove one ship ashore (Priestley 1971b:245). The most secure structures the colonists had at that point had been the ships, and as a result of the storm, the colonists lost all of their essential provisions that had been

left onboard (Padilla 1955). This loss placed over 1,500 people without the food and supplies necessary to survive in the Florida wilderness.

The colonists did everything they could to recover as many of the provisions and weapons as possible. Luna had brought sufficient amounts of food so that the colonists would not have to rely on the Native Americans, but that food was ruined, and the nearest substantial Native American village was approximately 70 miles away. Once the weather calmed, Luna immediately dispatched one of the three surviving vessels to report what had happened and to request help. What had been the premier colonial venture in Spanish history was suddenly transformed into one of its greatest tragedies (Hudson et al. 1989:126-134).

Help would not arrive quickly. All of the ports in the Indies were typically overfull during hurricane season, and ships were unavailable. The vessels in port at the time of Luna's great need were mostly private merchant vessels or were utilized for the defense of the Tierra Firme and New Spain fleets. Luna and the colony eventually received the ships Velasco dispatched, but it took them many months to get provisioned and underway; it was, in essence, too little, too late (Priestley 1936:137; Pérez-Malaína 1998:9).

With the much-needed building supplies lying at the bottom of Pensacola Bay, what little local material existed was insufficient to create a foothold in the dense forest and brush that was Pensacola. The welfare of Luna, the colonists, and the soldiers now depended almost completely upon the local tribes (Hudson et al. 1989:126-127). But the locals were of little help. During the Hernando de Soto expedition of 1539-1543, many of the local Native Americans had been harassed and butchered. The memories of these experiences led the surviving natives to flee at the sight of a Spaniard (DePratter et al. 1985:108-128; Hudson et al. 1989).

Luna dispatched a team of soldiers inland, carrying every possible trade item. Some of the same men who had accompanied Soto also accompanied Luna on his mission to colonize Pensacola, likely because of their familiarity with the region and the Native Americans (Priestley 1936:88). The Soto veterans on the trade mission reported that the interior villages had changed from lush and populated to nearly deserted. Many authors and historians attribute this change to

the rapid spread of disease after contact with the Spanish (Newson 1985). The remaining villages had no significant population centers, and few had surplus foods to trade. Certainly, they did not have enough to feed 1,500 people.

The early failures of Luna and his men to provide for the colonists was a sign of things to come. In 1561, the colony failed, and Luna sailed home to Spain and to a storm of a different kind: the wrath of a Spanish king. The failure of the colony left Tristán de Luna penniless and shamed for the remainder of his years (Priestley 1936:128, 1971a:lxvi). Tristán de Luna, like Carreño, was a victim of both the elements and circumstance. Arnold and Weddle (1978) aptly referred to voyages during this period as “a great lottery.” To the winners of this lottery went great sums of wealth and power; to the losers went poverty, dishonor, prison, or even death (Arnold and Weddle 1978:4). The fleets wrecked at Padre Island and Emanuel Point mark the extremely tenuous nature of these missions and illustrate how easily even the best prepared voyages failed.

Although the fleets of Tristán de Luna and Bartolomé Carreño represent two vastly different missions, they both left from one of the most utilized and therefore important ports in the Indies (Pérez-Mallaina 1998:11-12). In addition, the dates of the sinkings are relatively close in time, providing a unique window into 16th-century fleets and sailors. Carreño’s ships carried treasure, passengers, and their provisions, while Luna’s carried passengers and everything essential to establishing a new colony. Because both groups of ships are contemporary and of the same nationality, they provide a dataset for comparison to answer anthropological questions about past Spanish behavior. In this thesis, detailed ceramic analysis is used to produce a possible Spanish provisioning pattern and identify similarities and differences.

Documents in the Archaeology of the Padre Island and Emanuel Point Shipwrecks

Historical archaeology, by necessity, requires the historical record. Research into the Padre Island and Emanuel Point shipwrecks is no exception. Professional historians, paleographers, and historical archaeologists conducted extensive research into the Padre Island and Emanuel Point shipwrecks. Thanks to the persistent efforts of the Spanish to document

many aspects of their operations, records exist that help to enhance the history and archaeology of these shipwrecks. In addition, because both of these fleets wrecked and the colonists testified in the investigation following the loss of these vessels, an unusually large number of official documents pertaining to the ships and their crews still exist. The Crown had a stake in both the Padre Island and Luna fleets, and therefore, the disasters themselves were worthy of special documentation.

Like the archaeological record, the documentary record, no matter how useful, is flawed because the documents are a product of individual humans. They may contain biases, lies, errors, and fictions that necessitate a careful and critical analysis by researchers (Naylor and Polzer 1986). As a result, no document can be treated at face value but must be viewed as circumstantial evidence in a grand trial of history. Sixteenth-century Spanish documents tend to be official records, such as petitions, licenses, accounting records, service records, lawsuits, and church records. The ability to write was a rare skill, even more so in remote New Spain. Therefore, minimal personal diaries, journals, and personal correspondence are available from that time. Compared to the lack of personal documents, the sheer volume of the official Spanish records is staggering. In fact, the sheer weight of the documents in the central archive of Mexico was so great that the archive began to sink into Lake Texcoco, upon which Mexico City is built (Naylor and Polzer 1986).

The Corpus Christi Museum of Science and History houses documents relating to excavation reports, conservation records, budget documents and analyses for the Padre Island ships. The Texas Historical Commission chose this repository as the best location to house the collection since most of the artifacts are located in the museum. Records are stored at the back of the museum in a dedicated library. Emanuel Point I shipwreck files are housed both in the State of Florida's repository with the Bureau of Archaeological Research in Tallahassee and at the University of West Florida (UWF) in Pensacola. Because UWF has taken over the primary responsibility of documenting and excavating Emanuel Point I and Emanuel Point II, UWF also houses a large number of copies of documents pertaining to the excavations of these shipwrecks.

Published Documents on the Padre Island Fleet

The best single source of documentary records regarding the Padre Island shipwrecks is the book *Documentary Sources for the Wreck of the New Spain Fleet of 1554* by Arnold (1979). The authors utilized archives in Spain, Portugal, France, and Mexico. The documents in the Arnold and McDonald book include *Libro de Registros* records from 1530 to 1565 that reference ships, ship owners, masters, and pilots; letters to and from the House of Trade in Seville; registries of the four vessels of the Padre Island fleet; documents pertaining to the salvage and accounting for the loss of mass quantities of gold and silver; the 1554 Belleró map; and Dudley's 1646 map of the New World.

The Belleró map contains far less detail than the Dudley map but accurately demonstrates the extent to which the Spanish understood the region's geography by 1554. The Dudley map is useful because it illustrates names of places important to the Spanish. Dudley's map is, however, missing the location of La Antigua Vera Cruz, where both the Padre Island fleet of 1554 and Emanuel Point fleet of 1559 began their final voyage. The ships were moored at San Juan de Ulúa which is represented as "S: Jua: di Vlhua" on the Dudley map. La Antigua Vera Cruz is missing from the map, likely because of the location's propensity to be struck by hurricanes. La Antigua Vera Cruz's low-lying position made the city vulnerable to both wind and water, making its historic location variable. The depth of knowledge of the region reinforces the extent to which Spain was relying on this area for the growth of Spanish power and colonial expansion.

Pictured in the Arnold (1979) book are complete illustrations and descriptions of the Ledesma salvage techniques from 1623, which provide insight into how gold and silver may have been recovered from the Padre Island shipwrecks. It is possible that the colonists who survived in Luna's fleet also used the Ledesma techniques to recover goods lost inside the sunken vessels; however, this technique could have been applied to any Spanish ship-based recovery of the period.

The *Libro de Registros* is a list of ships, their owners, and their masters. This register is one of the primary means by which a ship can be traced from port to port (Arnold 1979). Many

ship owners named their vessels after saints. Some saints were favorites of ship owners, and it is not uncommon to find a ship owner who had three or more of the same class of ship with the same name but different ship masters. Common ship names can create confusion when searching for a particular ship, especially when that particular ship sank and others by the same name still operated in the area. The fleet of Tristán de Luna, for example, contained two vessels named *San Juan de Ulua* and a ship named the *San Andrés*. The *San Andrés* was the sole surviving ship from the Padre Island fleet, yet another vessel with the same name was in Luna's fleet. The Padre Island *San Andrés* and the Emanuel Point *San Andrés* were not, in fact, the same vessel. Some of the more common names in the mid-16th century included *La Magdalena*, *San Nicolás*, and many variations on *Santa María*.

After the high-profile excavations of the Padre Island shipwrecks, the Texas Antiquities Committee (TAC) released a number of publications. One of the first was a joint publication by the Texas Memorial Museum and the TAC by Olds (1976) entitled *Texas Legacy from the Gulf*. The publication summarized the investigations and some of the recovered materials from the Padre Island wrecks. The publication was intended for a public audience and provides an overview of the materials and technology of the 16th-century Spanish. Arnold's (1978) edited work *Beneath the Waters of Time* covered a multitude of topics on maritime archaeology, including the excavations of the Padre Island shipwreck sites.

In 1982, James published two analyses on both the ceramics and coarse earthenwares from the *San Esteban* shipwreck as part of Hamilton's reporting to the TAC entitled *Analysis of the Ceramics from the San Esteban* and *Analysis of the Coarse Earthenwares from the San Esteban*. The report details what was recovered following conservation at the University of Texas at Austin. The technical papers were combined for publication by the TAC. In 1987, Skowronek's paper entitled *Ceramics and Commerce: The 1554 Flota Revisited* reevaluated the ceramic assemblages of the 1554 wrecks. Skowronek suggested combining both terrestrial site evidence and the remains of the Padre Island wrecks to obtain a holistic view of Spanish commerce in the 16th century.

Published Documents on the Fleet of Tristán de Luna

The best sources of documentary records pertaining to the fleet of Tristán de Luna are the two volumes by Priestley (1971a, 1971b) entitled *The Luna Papers*. This collection was the first and remains the most complete collection of translated and transcribed documents associated with the Luna expedition. Priestley's book of official documents presents chronological records of the Dominican Order of New Spain, correspondence between the governor of New Spain and Luna, and documents directly relating to the trial of Luna and his company.

Priestley selected the documents for *The Luna Papers* because they all belonged to the expedition to colonize Florida. The documents included trial, church, military, and court records. Court records can be especially deceiving because they were written for a very specific audience and purpose. Official legal testimony often attempted to shift blame from one individual or group to another. In Luna's case, his detractors were his captains, company officers, and the *Maestre de Campo*, who tried to demonstrate Luna's incompetence (Priestley 1971b). Padilla's interpretation of the Luna disaster is a particularly useful synopsis written almost 30 years after the tragedy (Weddle 2012). In 1955, the account was republished as *Historia de la Fundación y Discurso de la Provincia de Santiago de México de la Orden de Predicadores*.

Hudson et al. (1989) have published a number of articles and chapters within books not only on the Tristán de Luna expedition but also on Hernando de Soto's expedition through the southeastern United States. Shortly after the publication of the Hudson et al. documents, the first official reports on the Emanuel Point excavations were published. The first report (Smith et al. 1999) detailed the excavations of Emanuel Point I from 1992-1995 and summarized the efforts of Smith et al. A follow-up report was issued on the excavations and artifact conservation in 1997 and 1998 (Smith et al. 2001). Excavations of Emanuel Point II are more recent, and notable publications on the shipwrecks include Florida Anthropological Society articles from Volume 62, a UWF report to the State of Florida (*Emanuel Point II Underwater Archaeology*; Cook et al. 2009), and a recent book by Clune and Stringfield (2009:37) entitled *Historic Pensacola*.

CHAPTER II

THEORY

I investigated three ships for this study, one from 1554 and two from 1559: *San Esteban* (41KN10), Emanuel Point I (8ES1980), and Emanuel Point II (8ES3345). *Santa María de Yciar*, also part of the Padre Island fleet, could not be included in this study because of the site's destruction in the 1940s when the Mansfield Cut Underwater Archeological District was accidentally dredged by the U.S. Army Corps of Engineers (Arnold and Weddle 1978:188-191). *Espirítu Sancto* similarly could not be included because of damage from treasure salvagers and the scattered nature of artifact recovery. *San Esteban* was part of a mercantile fleet carrying a vast amount of gold, silver, and supplies. The vessels in the two Emanuel Point shipwrecks were part of a colonial fleet taking part in the transport of over 1,500 colonists to establish a foothold in what is today Pensacola, Florida.

The focus of this study is to develop a model that will allow researchers to employ ceramic analysis to identify and interpret Spanish shipwrecks from the 16th century more thoroughly. Historically, maritime archaeology has tended to focus on hull construction at the expense of more detailed investigations of the material culture assemblages (Arnold and Weddle 1978; Oertling 2004). Intense review of the assemblages from investigated 16th-century Spanish shipwrecks reveals identifiable patterns. I compare these patterns to show that despite the ships' differing missions, similarities exist between selected shipwrecks. These similarities are material reflections of the people who operated these vessels and of their society (Berger and Luckmann 1967). By anthropologically analyzing the material culture from two fleets with vastly different missions, I identify what I believe to be a 16th-century Spanish ship pattern.

I utilized two main theoretical frameworks for the analysis and comparison of the Emanuel Point I, Emanuel Point II, and *San Esteban* shipwrecks. These frameworks relate to artifact typology and patterning and to site formation processes. In 1977, South (2002) published the first artifact class patterning model, and in the book *Maritime Archaeology*, Muckelroy (1978)

developed a model for submerged site formation, including scrambling processes. These two theoretical frameworks correlate well because one is a descriptor of site formation processes, and the other is an analytical tool used for sorting and interpreting artifacts based on functional categories.

The Influence of Archaeological Theory

By introducing artifact class patterning, South (2002) forged a path by which historical archaeologists could classify and pattern certain types of sites by sorting artifacts into material culture categories. South created patterns like Brunswick, Carolina, and the frontier artifact patterns. Within these types are groups such as kitchen, architecture, furniture, arms, personal, tobacco pipes, and clothing. Archaeologists use these categories to organize, interpret, and analyze sites. In this study, I sorted the material culture categories into functional groups dictated by 16th-century Spanish manifest records and the most current ceramic classifications used by historical archaeologists. One of the major critiques of South's artifact class patterning is that the material culture categories are a subjective creation of the archaeologist's own views on how to group artifacts. By utilizing the manifest records that exist for the 16th-century Spanish New Spain fleet, the archaeologist is no longer selecting categories for the grouping of artifacts in a largely subjective manner. The scientist utilized the culture of study's own perspectives and worldviews to analyze and interpret archaeological data. In this research, I attempted to balance Spanish cultural perspectives with the needs of a future archaeologist. The geographic information systems (GIS) maps and data tables created for these investigations demonstrate a South-like 16th-century Spanish shipwreck pattern.

Muckelroy's (1978) idea of scrambling processes is one of the key theoretical approaches to understanding how underwater archaeological sites are formed. Before his theory, underwater sites were referred to as if they were pristine "time capsules" (Gould 2000:12-14). People who believed this misconception failed to take into account the many factors that take place during a ship's wrecking event and therefore the full potential distribution of artifacts on a shipwreck site:

The shipwreck is the event by which a highly organized and dynamic assemblage of artifacts are transformed into static and disorganized state with long-term stability. While the archaeologist must observe this final situation, his interest . . . is centered on the former, whose various aspects are only indicated indirectly and partially by surviving material. If the various processes which have intervened between the two states can be identified and described, the researcher can begin to disentangle the evidence he has uncovered. (Muckelroy 1978:157)

Because of the nature of shipwrecking events, both the Padre Island and Emanuel Point shipwrecks have undergone scrambling processes, as does any shipwreck. The Padre Island shipwrecks encountered severe winds in a high surf environment before running aground. After the sinkings, ships departed from Cuba to salvage as much of the wrecks as possible, further scrambling the wrecked ships' contents (Figures 2, 3, 4). More specific intra-site locations for the artifacts of *San Esteban* were lost when Clausen ceased his employment with the Texas Historical Commission and left with the original site plans for the wreck site (Arnold and Weddle 1978:191, 215). While these plans were partially reconstructed by Arnold, much of the site-specific location information was lost.

In an effort to better understand site formation processes on the Emanuel Point and Padre Island shipwrecks, I adapted and utilized the analytical method developed by prehistoric archaeologists in the 1980s to analyze lithic microdebitage (Hull 1987:772). Microdebitage analysis theorizes that even the tiniest pieces of chert can elicit critical information on site formation processes. The analysis in this thesis indicates the potential effectiveness of a similar ceramic microdebitage fine-scaled analytical technique. My results suggest that ceramics broken or discarded before the wrecking event may have found their way to the lower portions of the ship. This ceramic stratigraphy of the shipwrecks is naturally delineated among the upper sediments and first layers of ballast as primary and the sub-ballast layers as secondary. Since detailed analysis of the ceramic relics can potentially help determine a ship's mission at the time of sinking, the differentiation of primary ceramics specific to the voyage at the time

of the sinking from secondary ceramics or those from past voyages is a critical element for identification.

Espiritu Santo was severely damaged, not only by winds and waves, but also by treasure salvors from a company called Platoro, Inc. Because of the actions of this company, the Texas Historical Commission revised the rules concerning investigations in Texas waters, ensuring strict legislative action against those who would seek to collect ships' treasures in lieu of excavating archaeologically (Arnold and Weddle 1978:188): Those who sought to treasure hunt within State-owned sovereign submerged lands would be prosecuted under new rules. Following the close of Platoro, Inc.'s, Texas operations, archaeologists opened only a single test unit before returning for three months in 1973 to undertake a full recovery.

The Emanuel Point shipwrecks sank in a fierce hurricane that devastated the fleet. These ships were destroyed in a similar manner to those of the Padre Island fleet. The documentary record indicates that colonists probably salvaged the wrecked and surviving ships for every usable or recoverable scrap in order to supply the already faltering colony (Padilla 1955).

Each of these events directly affected what archaeologists discovered and where they found the archaeological remains. By understanding these scrambling processes, excavators can infer likely areas for excavation that could encompass the entire site's distribution. In addition, scrambling processes can indicate why some elements of the shipwreck are intact while others are missing. One specific question relates to the reason the Padre Island wrecks have far fewer total ceramics recovered compared to the Emanuel Point shipwrecks. This difference may be directly related to the high surf environment found off the Texas shores and not found in Pensacola Bay.

Modern shipwreck archaeology typically focuses on those areas identified as having high probability of artifacts because of the results of remote sensing equipment such as magnetometers. Metal was a relatively rare commodity in the 16th century and often indicates a ship's construction material rather than the material culture. Once a shipwreck's hull is identified,

excavations focus almost exclusively on the documentation of those shipwreck materials and associated artifacts.

Additionally, very little of the upper decks of the shipwrecks typically survive, if any. As a result, the information extracted from these excavations is indicative of only those areas at the very bottom of the ship, usually in and around the ship's ballast. Archaeologists who want to know about the people living in the upper hull or upper decks have to look outside the typical realm of surviving shipwreck timbers and search outside the existing hull. One method for determining this area is to factor the angles at which the ship settled and then overlay a model that approximates the ship (Muckelroy 1978:170). Once the keels from both the site plan and the model are matched in scale and alignment, archaeologists can use the visual representation to estimate the area in which the upper deck material culture is potentially distributed. This area must include scrambling factors both during the wrecking event and during the decomposition of the vessel's upper decks. In this thesis, I refer to this methodology as *shadow-casting*.

Ships sometimes do not remain on an even keel on the sea floor, but rather settle at an angle. In the case of Emanuel Point II, the ship lists to its port side at approximately 15 degrees. Thus, archaeologists need to cast a shadow using what is known about 16th-century hulls in order to search for materials that would not show up via remote sensing. Artifacts on the upper hull and decks likely fell into the sediment and became buried as the ship's timbers decomposed, or later were lost to tides, inclement weather, or looting.

An archaeological approach that includes targeted excavations for certain classes of artifacts has the potential to enhance our understanding of the past by providing in situ data about people who may have been poorly documented within historical records. The search for these missing pieces is essential to the continued relevancy and success of maritime archaeology. Identifying what is missing from the archaeological record and substituting what the historical record has to provide creates a more complete and robust image of the past than what archaeology alone can provide. By analyzing both the documentary records and the archaeological records, archaeologists can identify new areas of targeted historical research and

excavation. Additionally, a method for categorizing the various types of historical documents for use in concert with archaeological data enables the identification of missing elements for a more holistic study of 16th-century Spanish ships.

Current shipwreck excavations focus on the core of the ship's hull and excludes those areas where the upper structure of the ship has not survived. This technique is evidenced in the methodical approach utilized by many maritime archaeologists in the hope of maximizing the rate of information recovery. However, excavating outside the hull can inform archaeologists about people and behaviors not directly represented in the documentary record, reflecting a terrestrial approach to underwater archaeology that Muckelroy (1978) introduced with his example of the *Kennemerland* site scatter. Using this historical archaeological approach on other sites provides for more all-encompassing understanding of the past and is more inclusive of the individuals not typically given a "voice" in the historical record (Little 1996:42-78).

The Perspective of the Documents and the Contribution of Archaeology

Contained within the historical documents and the archaeological record is an information subset that, when carefully analyzed, is indicative of the fundamental objects necessary to operate a 16th-century Spanish vessel. Analyzing shipwrecks from fleets with two vastly different missions employing both history and archaeology provides new datasets that previously were not available and that will consequently enlighten the fields of both history and archaeology (Rouet et al. 1997). The Padre Island and Luna fleets were selected as a topic for research mainly because the two fleets were contemporaneous, and they were both provisioned in Veracruz, Mexico. Because many of the ships in the two fleets were of similar size, they likely held the same basic shipboard provisions necessary for the operation of the vessels (Walton 1994:54). Uncovering details about the distribution of artifacts among Spanish vessels and additional information about the types of materials used for sailing informs historians and archaeologists about the fundamental elements of a Spanish 16th-century vessel. From this location information, archaeologists can create models to help identify 16th-century Spanish ships that no longer contain any structural clues to their cultural and national affiliation.

Additionally, archaeologists can select target areas for their excavation that will provide additional anthropological information about the people who operated these vessels.

The documentary record is compatible with the archaeological record because each contributes to different aspects of the same research question. Documents relating to Spanish ships and fleets of the 16th century tend to focus on cargo manifests, legal proceedings, court testimonies, maps, and governmental records surrounding dealings with the House of Trade in Seville, Spain (Arnold and Weddle 1978:213). Most often, these records neither contain details concerning the daily life aboard these vessels nor reflect information about the more mundane details of their operation. Furthermore, because literacy was not as common in the 16th century as it is today, the records usually pertain to oddities or things of extreme interest to the person writing (Little 1996).

The only people normally reflected in the documentary record pertaining to these fleets are European. Very little is written about the approximately 100 Aztec warriors who accompanied Luna and his men to Florida or about the common sailors of the Padre Island fleet. Archaeology has the unique ability to give a voice to the disenfranchised whose history and lifestyles were not chronicled in the historical record (Little 1996:42-78). The materials and supplies these warriors and sailors brought along have been found on two of the ships in Pensacola Bay and among the Padre Island collection (Arnold and Weddle 1978; Smith et al. 1999; Smith et al. 2001).

Large gaps exist in the historical and archaeological records that detail exactly who the men operating these vessels were as well as what the term *Spanish ship* actually means. In order to enhance the current knowledge of 16th-century New Spain, archaeologists must focus their attention on understanding those people who are represented in the archaeological record but not reflected in the historical record. Archaeologists can conduct this type of study by specifically targeting excavation in areas where people lived and worked.

Many documents that survive from the Spanish colonial period are copies or transcriptions of the originals. Spanish policy dictated that when an audit or trial was to take

place, the documents were to be copied verbatim and made legible. This practice is evidenced by the numerous masses of documents and trial records that are notated as being copied by an official notary and contain a statement swearing to authenticity. On occasion, the copies and the originals were submitted together to the archive, but usually only the copy was utilized (Haggard 1941:8-21). The extent to which errors were made in these copies is not well-known, and the presence of transcription mistakes may consequently have created anomalies in the historical record.

In 1960, the historian Paul Rubicam created a chart that describes and divides primary documents into three basic sections (Table 1; Feder 1993:54-55):

TABLE 1
PRIMARY DOCUMENT CLASSIFICATIONS

Section	Document
Family Records	Bibles
	Correspondence
	Diaries
	Diplomas
Institutional Records	Church records
	Educational records
	Newspapers, including articles, birth and marriage notices, and obituaries
Public Records	Census records
	Federal mortality schedules
	Military records
	Vital records
	Court and probate records
	Tax lists
	Land records
	Cemetery records

The Spanish records of the 16th century fall into Rubicam's categories of both institutional records and public records. Detailed documents pertaining to the activities of the

Jesuit and Franciscan orders operating in New Spain also exist. These records often include basic correspondence between both secular and non-secular authorities regarding the treatment of Native Americans, baptisms, and requests for supplies necessary to conduct Catholic Mass. In addition, the Spanish of this period kept military records, tax records, land records, court records, and maps (Feder 1993:54-55). Many surviving tax records pertain to shipping because it was one of the central sources of revenue for the Crown. Each vessel carrying cargo paid a tax, called an *avería*, which provided for the protection of ships and supplied merchants insurance for their goods (Hoffman 1980:33).

The study of material culture of Spanish shipwrecks often is relegated to the single site or single fleet contexts. Thanks to the discovery and excavation of 27 16th-century Spanish vessels to date, the opportunity now exists to analyze the material culture from multiple sizes of ships from multiple fleets of vessels with differing missions (Castro 2008:65). As maritime archaeologists begin to uncover and analyze these remains, they compile new amounts and kinds of data that will transform the archaeological community's approach to the study of the Spanish in the 16th century and beyond. My combination of South's (2002) classification model with Muckelroy's (1978) understanding of scrambling devices, comparison with documents, and the use of shadow casting will help move archaeology to this new analytical method.

CHAPTER III

A MIXED BAG OF METHODOLOGIES

Maritime archaeology methodologies often vary from project to project based on a number of factors. The most critical are typically issues of budget and time. Nearly 40 years has passed since the excavations of the Padre Island fleet. A number of methodological as well as technological approaches have changed since then. In comparing the Emanuel Point excavations to those of Padre Island, differences like methodology and time are critical factors in the analysis. This chapter reviews the technological and historical processes of excavation for each of the ships under study, as well as the methodologies used for analysis of the ceramics from all of the collections. Because of the recent and ongoing nature of excavations of the Emanuel Point ships, far more detail is available for those than for the far earlier excavations of the Padre Island wrecks.

The Padre Island shipwrecks had limited archaeological work for a number of reasons. The U.S. Army Corps of Engineers destroyed one of the shipwrecks, *Santa María de Yciar*, during the construction of the Mansfield Cut Underwater Archeological District in the late 1940s. The only artifact recovered from the site was a two-*reales* coin. This vessel, therefore, was not included in this comparative study. In 1967, commercial salvagers nearly destroyed the shipwreck remains of *Espíritu Santo* while in search of gold, silver, and jewels. The cavalier nature by which the salvage company attempted to recover the remains left little for scientific investigation; as a result, *Espíritu Santo* could not be included in the ceramic analysis (Arnold and Weddle 1978:417).

Analysis for this study focuses on the ceramic assemblage from the site of *San Esteban*. Although *San Esteban* was also damaged by looters, that damage was soon followed by archaeological excavation by the Texas Historical Commission and the University of Texas from 1972 to 1975 (Arnold and Weddle 1978:418). However, after a series of disagreements, Carl Clausen resigned as director of excavations of the *San Esteban* shipwreck, taking with him

the original site plan. Arnold partially recreated the site plan based on the original excavation notes and a photograph taken by one of the 1973 field school students (Jack B. Irion 2012, pers. comm.). The attempt was met with only limited success, and determining the precise recovery location of many of the artifacts, including the ship's ceramics, is still problematic.

More than 20 years of archaeological investigation has been conducted on the Emanuel Point shipwrecks. Two ships have been discovered thus far, and they are named for the nearest point of land to the sites. Excavations of the site of Emanuel Point I started in the 1990s by archaeologists from the State of Florida's Bureau of Archaeological Research headed by Dr. Roger Smith. Later, work was conducted through a joint venture with UWF and the State of Florida (Smith et al. 1999; Smith et al. 2001). The investigations on the second-oldest shipwreck found in United States waters used many modern methods of excavation, such as improved mapping technologies and refined artifact provenience.

In 2006, a second ship from Tristán de Luna's doomed fleet was discovered one quarter mile from the site of Emanuel Point I (Cook et al. 2009). The ship was originally named Target 17 and later confirmed as a second ship from Luna's fleet; excavations of Emanuel Point II began almost immediately with support from the archaeological and local communities and with funding from the State's Special Category Grants. Archaeological excavation methodologies have changed tremendously over the past 40 years, and the excavations of *San Esteban*, Emanuel Point I, and Emanuel Point II demonstrate this growth.

San Esteban (41KN10)

The artifact recovery and data analysis of the *San Esteban* shipwreck assemblage was far better than that performed on its counterpart, *Espíritu Santo*. Excavations were conducted from a modified barge that served as a working and diving platform (Arnold and Weddle 1978:198). Sand removal was conducted primarily in round pits and initially utilized a custom-made two-foot-diameter pipe attached around a propeller that was linked to a diesel engine, known as a mailbox. This mailbox moved large quantities of sediment quickly. Dr. Jack Irion (2012, pers. comm.) describes this device as penetrating the Beaumont clay to a depth as much as three

feet. Reportedly, divers could approach the resulting pits with the engine running only at low revolutions because of the force of the propeller wash. The mailbox method proved effective on *San Esteban* for efficiency's sake, but the amount of control is questionable and resulted in the almost certain loss of smaller artifacts. Divers then inspected the expanding craters, removing items such as chunks of oyster shell from the pit (Arnold and Weddle 1978:198-199). By the second season of excavation, an even larger barge (Figure 5) was acquired, and operations continued with a large number of student divers assisting the project.



FIGURE 5. Barge *Dixcoverer* used for *San Esteban*. (Photo courtesy of Jack B. Irion, 1974.)

As field director, Clausen created the site plan, but he was accused of stealing the plan when he left that position. Arnold (1978:215) recreated the site plan from notes, photos, and the overall grid system. While Arnold's map is not completely precise, its estimated accuracy is 80% (Arnold and Weddle 1978:210-211, 215). The artifacts from this collection were conserved by Hamilton at the University of Texas at Austin and are now held almost entirely at the Corpus Christi Museum of Science and History under the direction of Dr. Robert Drolet, Collections Manager.

Archaeological Methods of Emanuel Point I (8ES1980) and II (8ES3345)

Excavations on Emanuel Point I were conducted in 2 x 2 m excavation units. The artifacts were treated primarily at the conservation laboratory at UWF under the direction of Bratten. Induction dredges were used, with collected material screened on the barge surface. A special barge was created to assist in the Emanuel Point I investigations and to provide a stable working platform.

The excavations of Emanuel Point II, initially called Target 17, were conducted primarily using 1 x 1 m excavation units. During the initial investigation, 2 x 2 m units were used, but excavators later refined their strategy, using the smaller size. The finer level of resolution for artifact location resulted in a more accurate GIS map. Unlike in the investigations of Emanuel Point I, the dredged material was collected on the bottom in a series of mesh bags clamped to an exhaust hose. Like the remains of Emanuel Point I, the artifacts were conserved at UWF.

In 2009, UWF students were given the opportunity to open three units outside and to port of the midships of the Emanuel Point II shipwreck. The students conducted a metal detector survey using a gridded area on the port side, the same side to which Emanuel Point II lists. The purpose of this survey was to attempt to remove the two most common biases found in underwater excavation: a general favoring toward excavation around the ship's hull and in those areas that indicate higher presence of ferrous objects. The students therefore selected areas that were outside the ship's core and that had no indication of any ferrous objects, as determined by a metal detector survey.

During Summer 2009 UWF field school, three units were opened with the above guidelines. The first unit was named Control Unit 1 and was placed to port 5 m from the approximate center point of the ship at 90N 487E. This unit contained olive jar ceramics, four concretions, lead sheathing, and wooden treenail-like ship remnants. The second, Control Unit 2, was placed another 1 m to grid north and 1 m further to grid west at 89N 486E. Again, more artifacts were located including worked coral, columbia plain, and majolica ceramics. The last unit, Control Unit 3, was placed a total of 17 m to port of the bow's last remaining structural

elements, and only 2 small ceramic storage jar sherds were recovered at 96N 477E. Although limited, the results of these three controlled excavation units indicates that more material culture remains are present, as postulated, on the listing side of the vessel. These remains could be remnants of artifacts originally stored within the no-longer-extant higher decks of the ship. Alternatively, these artifacts could have been mobilized from the vessel to port or could have been mobilized by past storm activity or previous exposure from erosion. Certainly, these artifacts would otherwise have remained unexcavated, at least for many years, in favor of documenting the critical elements of the ship's hull. Unfortunately, insufficient time was available to test the starboard side of Emanuel Point II to directly compare whether any similarly secondary refuse existed outside the hull remains on the non-listing of the vessel.

Ceramic Analysis

I analyzed a total of 3,726 ceramic artifacts from all three wrecks in order to provide a uniform interpretation and analysis across several databases, including artifact type, size, weight, and condition. I conducted the analysis of the artifacts with the assistance of Dr. John Bratten, Dr. John Worth, Dr. Gifford Waters, Jan Lloyd, Norma Harris, and Irina Sorset. The reference material utilized for the analysis included the works of Deagan (1987), Goggin (1964, 1968), Lister and Lister (1982), Marken (1992), and the Florida Museum of Natural History's (2004) Digital Type Collection, among others. If any of the ceramics were too small, damaged, or unrecognizable to identify definitively, they were given the designation of indeterminate.

The records of the Padre Island artifacts are located in the Corpus Christi Museum of Science and Industry. These records include all of the remaining field excavation notes, billing records, and records of student research and classwork associated with the Padre Island field investigations. Similar to the Padre Island records, those of the Emanuel Point ships include the investigation records, conservation logs, student records, and the artifacts themselves, which are located mostly at UWF. Some earlier records pertaining mainly to Emanuel Point I and some of the earliest investigations of that wreck site are still housed in Tallahassee, Florida, at the Bureau of Archaeological Research and the Florida Master Site File.

The ceramics were plotted onto the *San Esteban*, Emanuel Point I, and Emanuel Point II site plans utilizing ArcGis 9.30 and 9.31 Student Evaluation Editions. Each artifact was placed into its corresponding excavation unit and labeled using both a symbol and a color. The symbols and colors remained constant among maps to allow easier comparisons. Because the grid systems of both Emanuel Point I and Emanuel Point II were based on the northeast corner of each unit, artifacts were plotted within the units to depict as precise a placement as possible. Because of the large number of artifacts, corresponding conservation records and excavation notes can be difficult to interpret. GIS, a powerful spatial reference tool that can be used to compile large amounts of data onto discernible layers and maps, greatly improved the analysis of the ceramics by providing a comparable spatial reference by which to review.

As with any shipwrecking event, both the ship and its contents likely shifted after sinking, and current plots may not represent original locations; rather, artifacts probably scattered across the site. In particular, Arnold (1978:217) described *San Esteban* as being within an area of high surf, and he indicated that the small number of ceramics recovered was a direct result of the constant wave and current flow, to say nothing of the prop-wash from the blower excavation method. Furthermore, the ceramics that are present have likely been subject to intra-site migration, scrambling their original provenience.

Despite the difficulties in reconciling different excavation strategies, my analysis allows for meaningful research. It is unfortunate that the original site plan from *San Esteban* was lost; however, visual reference is not the only method by which to analyze. Statistics are about relationships, either similar or different. In this instance, I analyzed the behaviors of 16th-century Spanish sailors to differentiate what was a common or normal behavior from what was a unique or unusual behavior. The premise is that dissimilar artifacts among culturally similar studied shipwrecks may relate to the specific mission at the time of the ship's sinking, and similar elements likely relate to the core or regular shipboard provisions. This splitting of artifact groups can help to differentiate the mission-related artifacts from the basic supplies.

CHAPTER IV

CERAMICS

In this chapter, ceramics recovered from the *San Esteban*, Emanuel Point I, and Emanuel Point II shipwrecks are presented to create a framework for comparisons between shipwrecks and the resulting conclusions in Chapter V. Ceramic shapes and their basic terminology (Appendix A) provide a visual reference to common vessel form names. This collection of shapes was produced by the Florida Museum of Natural History (2004). This chapter includes observations and hypotheses concerning the origins, use, and production of ceramic types found on these wreck sites. Because excavations on Emanuel Point II have not been completed, the ceramic study is necessarily preliminary and contains analyses from all field seasons up to 2009. The site of the *San Esteban* shipwreck was approximately 30% excavated. The Emanuel Point I site was approximately 40% excavated. At the end of the summer of 2009, the Emanuel Point II site was approximately 20% excavated (Greg Cook 2009, pers. comm.). With these limitations in mind, observations considering frequency of the ceramics are made, and the Padre Island wreck *San Esteban* from 1554 and the two known shipwrecks of Tristán de Luna from 1559 are compared to one another.

What was a disaster for the sailors and colonists of the mid-16th century created unparalleled glimpses into Spanish life in the 1550s for modern archaeologists. Luna's vessels were ships of colonization involved in efforts to transport people, supplies, and ideas far away from their native Spain and Mexico. Most of the Spanish ships discovered before Luna's were vessels of exploration, ships of war, or treasure ships (Castro 2008:63-87). Very little is known about what constituted a Spanish colonizing ship of the 16th century (Scott-Ireton 1998:2-3). Excavating Luna's colonizing ships provides unique views into the life of the Spaniards who dominated the Caribbean in the 16th century. By comparing Luna's ships with the Padre Island shipwrecks, archaeologists can better understand Spanish colonial seafaring systems. Because a sufficient number of scientifically investigated 16th-century Spanish shipwrecks are known,

researchers can now go beyond a single examination of each ship or fleet and can compare and contrast the archaeologically recovered material culture from one fleet or ship to another. These investigations, in turn, help to fill gaps in the archaeological record which were caused by looting and preservation biases. The investigations can possibly reveal some of the selection biases inherent in underwater archaeology. This chapter demonstrate the usefulness of multi-fleet comparisons with data discovered in the analyses of ceramics from three 16th-century Spanish shipwrecks.

For voyages of colonization and mercantile ventures alike, the storage, transportation, and preservation of food was very important. Foods were dried, salted, cured, pickled, and fermented to preserve them for the voyage across the seas (Rodgers 2003:80). In many instances, animals were kept alive until they were prepared for meals so their meat would not spoil. For protection and preservation, food items were placed into containers that ensured that dry goods stayed dry and that the remaining items were protected from the constant onslaught of the elements aboard a ship. For Spanish seafarers, containers made of ceramic proved the most useful for this purpose.

The most common form of ceramic storage vessel was the Spanish olive jar (Deagan 1987:31). The olive jar, like many tools in Europe, has ancient origins. The vessel borrowed stylistically from the Greco-Roman amphora of the classical period (Goggin 1964:255) and had a relatively long use-span from about 1490 until 1800 (Deagan 1987:31). The olive jar was not waterproof, and if untreated, its coarse earthenware matrix led to some degree of leakage. The evaporative process, in turn, also cooled the jar's contents (Deagan 1987:32, 36). Alternatively, when the olive jar was used as a more permanent storage container, interior treatments served to make the matrix more waterproof (Figure 6). One method of sealing the vessel was the use of pine resin, referred to as "*pez*" (Sánchez Cortegana 1994:102). Another method was the use of glazing, or "*vidriera*" (Mena García 2004:462-463). Spanish olive jars were very heavy when filled, making them useful as ballast as well as storage during ocean voyages (Smith et al. 1999:97). The olive jar is by far the most commonly found ceramic onboard all three of the shipwrecks in this study and, by extension, perhaps on every Spanish ocean-going vessel of the

period. The olive jar has been found on Emanuel Point II specifically in Goggin's (1960) types for the period, "A," "B," and "C." Although olive jar-like ceramics have been found in pitcher forms, the Florida Museum of Natural History (2004) records these under the "Spanish storage jar" category because of its generic nature.



FIGURE 6. Olive jar with resin, recovered from Emanuel Point II. (Photo by author, 2009.)

The largest of all vessels recovered from the Emanuel Point II shipwreck are the Spanish coarse earthenware storage jars (Figure 7). Unfortunately, little is generally known about this ceramic type (Deagan 1987:36). The term is actually nondescript, and coarse earthenware storage jar forms can range from pitcher-like to large, globular vessels. Samples recovered from Emanuel Point I represent very large *bacín*-like vessels that have a similar paste and coloring to that of the olive jar (Figure 6). The coarse earthenware storage jars samples are excluded from the olive jar category, however, because of the thickness of the vessel walls. Deagan (1987) theorizes that these containers were used primarily to store water. Olive jar ceramics are found throughout the Caribbean, and the dates of these vessels are largely unknown, although they obviously were

used in the 16th century (Deagan 1987:36-37). Perhaps additional excavations from the Emanuel Point ships will reveal new insight into this vessel form.



FIGURE 7. Spanish storage jar sherd from Emanuel Point II. (Photo by author, 2009.)

Along with the ubiquitous olive jar, various types of majolica indicate Spanish or Iberian origin, and several types have been recovered from all three vessels under study. Majolica is a coarse earthenware that had a special treatment of tin glaze applied to its surfaces (Lister and Lister 1982:vii). Spanish majolica was produced in Spain (mostly Seville) and in Mexico. Its name comes from the island of Majorca, and the ceramic was named by Italians in the 14th century. Much of what is known about early majolica production comes from Cipirano Piccolopasso, who wrote three treatises in 1557 about the techniques used by majolica potters. These treatises include descriptions of shapes, colors, glaze recipes, and decorations (Cooper 1972:159). Considerable variety is present in majolica production over geographical region and time, leading to multiple forms and decorations. Examples from the three wreck sites are classified as Columbia plain, Isabela polychrome, or yayal blue on white (Figure 8). A key

discovery by Lister and Lister (1982:48) indicates that New Spain-produced tin-glazed majolicas contained far less tin content than their Iberian counterparts.



FIGURE 8. Isabela polychrome majolica from Emanuel Point II. (Photo by author, 2009.)

The most common type of majolica found on the shipwrecks, Columbia plain, is mostly white with flared rims (Lister and Lister 1982:48). This type was named by Goggin (1968:117) for the county (Columbia) in Florida in which it was first identified. Almost all of the examples of majolicas from each of the shipwrecks are the *escudilla* or bowl-like form. Of all the majolica types, Columbia plain is the most commonly found throughout North America and typically dates to the late 16th and early 17th century (Lister and Lister 1982:48).

Isabela polychrome is another common majolica pottery type, typically decorated elaborately with cobalt blues and manganese purples in hastily drawn designs (Lister and Lister 1982:52). The designs are most often found on *plato* or plate-like forms and contain parallel

bands of purple and blue. One of the best locations for the study of Isabela polychrome is the Spanish colony of Santa Elena located in modern day South Carolina. At this site, Isabela polychrome is found in only two forms, the *plato* and the *escudilla*. Examples of Isabela polychrome are slightly larger than Columbia plain examples from the same site, and this pattern holds true among the Padre Island and Emanuel Point collections (South et al. 1988:228).

Yayal blue on white is one of the least frequently found types among the Padre Island or Emanuel Point shipwrecks. Similarly, very little was found from the wealth of majolica ceramics discovered among the collections of the Metropolitan Cathedral and Subway sites of central Mexico (Lister and Lister 1982:53). Goggin (1968:128-130) named the type for *Yayal*, a Cuban site that contained a significant collection of the rare ceramic type. Yayal was the most commonly found majolica type at the Cuban site in the 15th and very early 16th century strata, but later apparently fell out of favor (Lister and Lister 1982:53). The Padre Island and Emanuel Point yayal blue on white examples were decorated with cobalt blue rings of varying thickness. The center, if decorated, contains a stylized floral motif. The inner walls of these ceramics always have sloppily drawn lines perpendicular to the cobalt rings forming the densest portion of the decoration.

Archaeologists and students from UWF excavated numerous sherds of thick-walled, green lead-glazed coarse earthenware with a high-shine finish. When initially recovered, the sherds exhibited a very black or tan metallic finish. Once in, the artifacts were taken to the conservation lab; however, baths of hydrogen peroxide revealed the original deep green, shiny glaze located beneath the tarnish (Figure 9). The Florida Museum of Natural History (2004) Digital Type Collection describes the green lead-glazed coarse earthenwares as very large and thick utilitarian wares, usually found in *bacín* and *lebrillo* forms. The deep green lead glaze is a commonly found coating in a variety of ceramic types (Lister and Lister 1982:48). Potters placed the glaze in the base of the vessel, swirling the hot glaze until it coated the entirety of the interior of the vessel. The thickness of the glaze provides a clue to the location of the sherd relative to the

base of the vessel. The thicker the glaze, the closer the sherd is to the base because gravity forced the heavy lead-glaze to the bottom of the vessel.



FIGURE 9. Green lead-glazed coarse earthenware from Emanuel Point II. (Photo by author, 2009.)

The green lead-glazed coarse earthenware ceramics with their large and globular shape and distinct coloring were highly distinct from the other ceramic types, so these ceramics were mapped and recorded separately from the smaller, more refined black lead-glazed coarse earthenware ceramic type. The black lead-glazed ceramic type is small bodied and exhibits refined paste with a thinly spread deep gloss-like shine. Not much is known about the black lead-glazed examples found on the Emanuel Point wrecks in a variety of styles. Many of the types noted for Emanuel Point II represent different vessel forms but do not correspond to any named type. One definable type recovered from investigations of Emanuel Point I, Emanuel Point II, and *San Esteban* is classified as *El Morro ware* (Smith et al. 1999:100). El Morro ware was wheel-thrown and usually hand-shaped. The glazing exists only on the interior and is typically

either orange or olive green. Early researchers gave these ceramics a manufacture date between 1600 and 1770 (Deagan 1987:50).

According to the Florida Museum of Natural History's (2004) Digital Type Collection, melado ware dates from 1490 to 1550. The *Espíritu Santo* and Emanuel Point shipwrecks further redefine these dates, placing melado ware in use at least as late as the Luna expedition in 1559. Goggin (1968) dates the melado ware as ranging from 1490 to 1550, and Deagan (1987:47-48) notes only that melado ware is absent from St. Augustine, which was founded in 1565. Melado ware is also a lead-glazed type of coarse earthenware. It is easily identified by its soft paste and salt glaze of golden hues (Florida Museum of Natural History 2004). Melado ware is similar to majolica in manufacture except that its glaze is produced from the inclusion of iron oxide. Melado ware is usually more colorful, with yellow and brown glazes; some have thick painted decorative lines (Deagan 1987:48).

Cologne Ware—Rhenish ware, as it is now referred to—is a hard stoneware ceramic and the only stoneware variety found on any of the ships in this study. It is often easily identified because of its “orange peel”-like finish (Florida Museum of Natural History 2004). Some recorded examples are brown and are salt glazed; these vessels are usually highly decorated (Noël Hume 1967). The stoneware pieces from Emanuel Point I are easily identified because the highly dense stoneware is from a paste that is very different from that of the coarse earthenware ceramics. Production is identified as mid-16th century only and it is likely, therefore, that the examples found on *San Esteban* and Emanuel Point I may be some of the earliest examples in the New World. Production of this ceramic type was exclusive to the Rhine region in Germany (Florida Museum of Natural History 2004). Deagan's (1987:20) ceramic analysis sums up Spain's needs for foreign goods by stating “Spain's inability to supply her colonies with Spanish-produced goods was largely based on the failure of the infant, postmedieval Spanish industrial sector to meet the steadily increasing demands of the New World colonists for manufactured goods.” The increasing demand for these goods may explain why non-Spanish goods can be found among the remains of Spanish shipwrecks.

Aztec IV ceramics have been found on the Emanuel Point I shipwreck. According to Deagan (1987:44-15), this type is known as “Tonalá Ware,” “Aztec IV Polychrome,” “Guadalajara Polychrome,” and “Mexican Type-A.” For ease of analysis, I refer to this ceramic type as *Aztec ware* or lumped as Mexican-Indian ceramics in certain data descriptions. This ceramic type is found in Mexico, Florida, and Cuba and is often covered with a thin buff-like slip (Deagan 1987). “The Clay of the Guadalajara ware, known as búcaro, was thought by the Spaniards to have beneficial properties for women, and vessels made from it were shipped in large quantities to Spain” (Florida Museum of Natural History 2004). Furthermore, when the clay got wet, it produced a strong odor that could reportedly clear the skin (Deagan 1987:45). These containers are often painted in red, black, brown, and orange and come in a variety of small shapes, including bowls, cups, and vases. The discovery on Emanuel Point I redefines the production periods for these ceramics. The Florida Museum of Natural History (2004) describes the production dates for Guadalajara polychrome as ranging from 1650 to 1800. King (1981:91) suggests in her master’s thesis that two sherds recovered from a nearby St. Augustine site date in contexts to as early as 1600 to 1650. The discovery on Emanuel Point I should now refine the production dates to as early as 1559.

Shipwrecks are like puzzles. Each piece fits into a larger and more complete picture, in this instance ceramics telling of the mid-16th-century Spanish world. Archaeologists must extract details from each piece and part of a shipwreck in order to place the wreck in the bigger global picture of people in the past. Tables 2 and 3 show both the counts and weights of ceramics by percentage from the San Esteban, Emanuel Point I, and Emanuel Point II shipwrecks. These tables were created from the data presented in Appendixes B, C, and D.

TABLE 2
CERAMIC ANALYSIS BY COUNT

Type of Ceramic	<i>San Esteban</i>	Emanuel Point I	Emanuel Point II
Aztec Ware	N/A	0.28%	N/A
Black Lead-Glazed Coarse Earthenware	N/A	0.45%	0.96%
Cologne/Rhenish Ware	3.59%	0.06%	N/A
Columbia Plain	9.87%	3.87%	5.70%
El Morro Ware	N/A	8.41%	4.44%
Green Lead-Glazed Coarse Earthenware	N/A	N/A	1.60%
Indeterminate Coarse Earthenware	4.04%	1.18%	1.70%
Isabela Polychrome	3.59%	0.11%	0.10%
Melado Ware	1.35%	0.56%	2.90%
Olive Jar	74.00%	84.47%	82.50%
Storage Jar	2.69%	0.50%	N/A
Yayal Blue on White	0.87%	0.11%	0.10%

TABLE 3
CERAMIC ANALYSIS BY WEIGHT

Type of Ceramic	<i>San Esteban</i>	Emanuel Point I	Emanuel Point II
Aztec Ware	N/A	0.23%	N/A
Black Lead-Glazed Coarse Earthenware	N/A	0.30%	1.76%
Cologne/Rhenish Ware	2.55%	0.06%	N/A
Columbia Plain by Count	4.73%	5.00%	1.07%
El Morro Ware by Count	N/A	3.85%	0.47%
Green Lead-Glazed Coarse Earthenware	N/A	N/A	5.04%
Indeterminate Coarse Earthenware	1.86%	3.76%	0.52%
Isabela Polychrome	3.45%	2.33%	0.01%
Melado Ware	.071%	0.19%	0.62%
Olive Jar	51.69%	83.13%	90.50%
Storage Jar	34.70%	1.08%	N/A
Yayal Blue on White	0.31%	0.07%	0.01%

Carefully collected ceramic data is necessary to interpret past behaviors of the Spanish sailors and passengers. Reanalysis of ceramics from all three shipwrecks by a single archaeologist reduced biases and sampling errors from the multitudes of students and archaeologists who have worked on the collections over the years. Observer bias is often a challenging problem associated with ceramic analysis. In addition, I recategorized a large number of ceramics, reducing the number of indeterminate ceramics, thus increasing the resolution of interpretation. The final result provided for a more complete GIS mapping of both Emanuel Point shipwrecks and a more modern analysis of the Padre Island ceramics. The analysis in the following chapter would not have been possible without removing these biases. A more complete data set should increase the likelihood of a precise analysis, in turn increasing the likelihood of accurate data interpretations.

CHAPTER V

ANALYSIS OF TWO FLEETS

In my thesis statement, I propose that a thorough typological spatial artifact analysis and methodical scientific approach to excavation affords archaeologists the ability to differentiate among ships that have similar cultural and temporal affinity but different prescribed missions. The data support this conclusion within the ceramic material culture category. Despite their common regional, temporal, and cultural connections, the Padre Island and Emanuel Point shipwrecks may at first glance seem very different. The Padre Island ships were primarily purposed for treasure transport and the Emanuel Point ships for colonization. Common sense suggests that these fleets should look very different in an archaeological context, no matter the type of artifact analyzed. But analysis of the ceramic material category reveals both similarities and differences. It appears as if there were a near-uniform Spanish methodology for provisioning ceramics on ships in the mid-16th century. Archaeologists can recognize this uniform ceramic supply through site distribution and patterning. It is important to note, however, that while it is evident that all the shipwrecks investigated in this study are Spanish, there are no suitable equivalent non-Spanish 16th-century shipwrecks to test whether or not this patterning is uniquely Spanish. Testing shipwrecks of other nationalities would be a logical expansion of this thesis and would further define which provisioning elements are uniquely Spanish. Despite this shortcoming, however, ceramic assemblages of three Spanish shipwrecks clearly reveal that each of the ships was provisioned very similarly. Although uniformities exist, several important differences were revealed.

Emanuel Point I and Emanuel Point II GIS maps of the ceramic assemblages demonstrate the uniform distribution of ceramics among the vessels (Figures 10 and 11). In particular, the most striking result is the dense accumulation of olive jar ceramics around the ballast piles, with highest densities near the center.

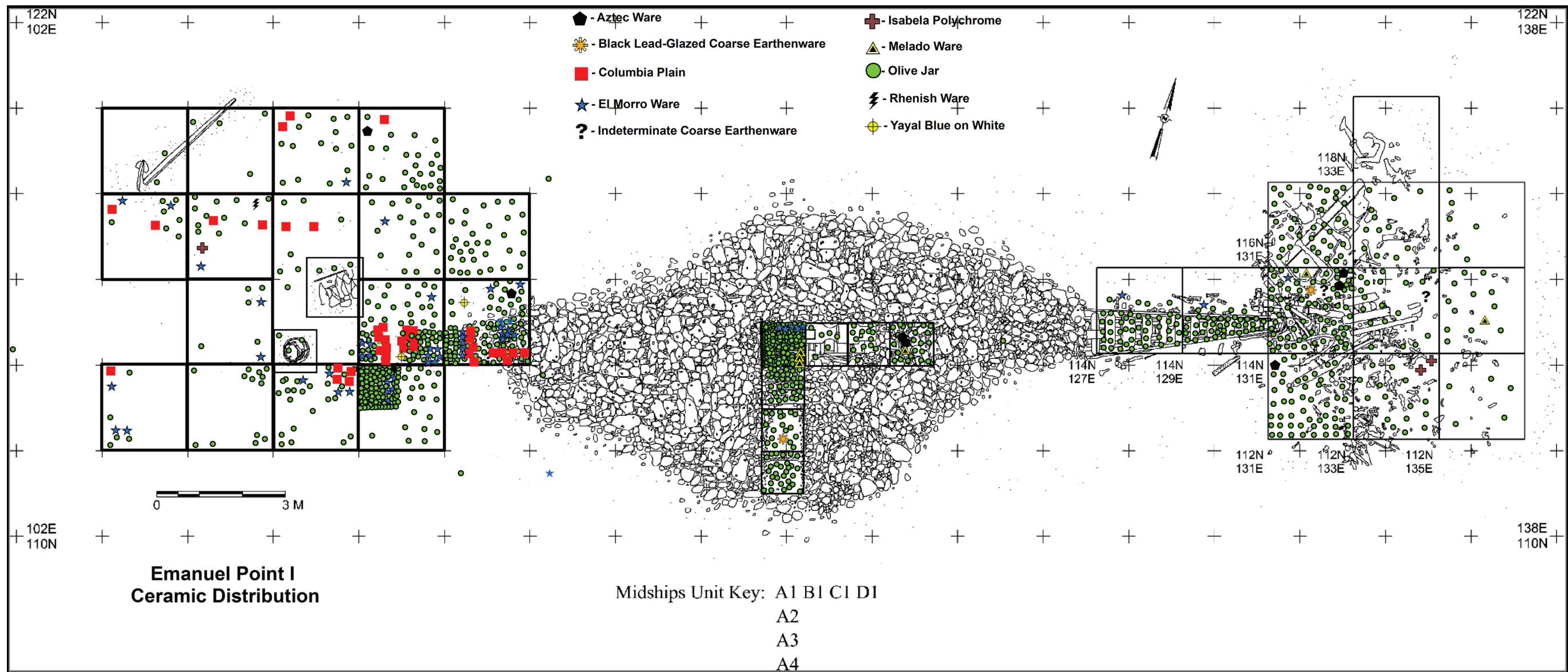


FIGURE 10. Emanuel Point I ceramic map. (Created by author, 2012.)



FIGURE 11. Emanuel Point II ceramic map. (Created by author, 2012.)

In an effort to better understand site formation processes on the Emanuel Point and Padre Island shipwrecks, I adapted and utilized the analytical method developed by archaeologists in the 1980s to analyze lithic microdebitage (Hull 1987:772). Microdebitage analysis theorizes that even the tiniest pieces of chert can elicit critical information on site formation processes. My research indicates the potential effectiveness of a similar fine-scaled technique applied to ceramics. The results revealed that ceramics broken or discarded before the wrecking event may have found their way to the lower portions of the ship. Because of frequent weather events, the ship's tendency to rock and sway, and human accident, day-to-day ceramic breakage seems a likely commonplace occurrence within the normal operation of a ship. Microdebitage analysis refers to discarded regular breakage as "secondary refuse," and the term "secondary" seems to work in the shipwreck context as well. If the ceramics are indeed secondary, their placement requires the broken ceramic pieces to work their way between and below the ballast, an event which seems rather unlikely. The second more probable notion is that the majority of the fragments are primary, formed as a direct result of a combination of the wrecking process and the breakdown of the ship's upper structure.

The makeup of Emanuel Point I and II ceramics is likely a combination of primary ceramic refuse (breakage during sinking) and secondary refuse (breakage during sailing). The ceramic stratigraphy of the shipwrecks is naturally delineated among the upper sediments and first layers of ballast as primary and the sub-ballast layers as secondary. In contrast, the high-energy environment of the Padre Island shipwrecks was so great that ballast stones possibly attributable to *San Esteban* and *Espíritu Sancto* were found as far as the beach dunes at an unspecified distance from the wrecks (Arnold and Weddle 1978:205-207). The environment at Padre Island would likely deter an archaeologist from distinguishing primary and secondary artifacts.

The striking statistical similarity among ceramic classes likely has to do with the fact that both fleets were provisioned in Veracruz with only a five-year span separating the two fleets. In fact, the time span was short enough that I researched the *San Andrés*, the sole surviving ship

of the Padre Island fleet, to see if it could be the same ship so named in Tristán de Luna's fleet. However, records indicate that the *San Andrés* of the Padre Island fleet was scrapped after being sent to a shipyard near Santo Domingo (Arnold 1979:148).

The typical shipwreck artifact patterning consensus is that the elite wares are found near the stern, where the captain and officers typically slept (Smith et al. 1999:105). The GIS maps indicate a scattered patterning of these elite wares, not specifically indicating a bias toward one area over another. This pattern may be the result of a combination of scrambling processes and a tendency in underwater field methods to focus excavation on the areas that contain intact ship structure. Because almost all of the upper decking and ship structure does not typically survive and because of the highly mobile nature of ceramic sherds, ceramics may be located some distance from the main body of the wreck. The only direct way of confirming this assertion is to conduct significant excavations outside the hull remains.

Perhaps the uniformity observed in both the data and GIS mapping is a result of the common and necessary usage of cargo as additional ballast. This provisioning distribution practice assists with the proper handling of the ship, and generally the heaviest items on board were placed low in the hull. Because all the shipwrecks investigated were intact only below these ballast areas, the distinct variation among artifacts is likely found in the upper decks of Spanish ships. Alternatively, a strong possibility exists that the Spanish of the mid-16th century had a uniform system and approach to provisioning ceramics associated with storage, cooking, and eating of food.

A clear disparity exists in the presence of gold and silver onboard the Padre Island fleet and a complete lack of these elements onboard Tristán de Luna's fleet, but a useful continuity is present in these and other ships based on other material culture categories. Lawrence (2010) recently demonstrated the astounding uniformity between the Emanuel Point ships with regard to the botanical remains. Military weapons are also similar across ships. Crossbow bolt shafts were found onboard Emanuel Point II, copper bolt heads on Emanuel Point I, a goats-foot lever for cocking a crossbow on *San Esteban*, and iron crossbow bows on the Molasses Reef wreck

(Keith 1987; Smith et al. 2001). All too often, these fleets are treated as independent entities despite the many similar elements that can inform the discipline of archaeology with a more complete and strikingly similar image of 16th-century shipboard life. A more complete picture emerges, however, when the total artifact assemblages of contemporaneous and culturally similar shipwrecks are pieced together and not limited to one ship or a group of ships within a fleet.

In the early days of underwater archaeology, few 16th-century Spanish ships were investigated that had not already been salvaged by treasure-hunters. The early excavations answered many questions of the “what” and “when” types. Contemporary underwater archaeology is at the point at which enough of these ships have been studied to combine what is known about each and to create a more thorough image of 16th-century Spanish shipboard life. A listing of archaeologically-investigated 16th-century Spanish wrecks by Castro (2008:63-87) estimates that 23 of these wrecks that have now undergone some form of investigation. The potential now exists not only to compare these ships, but also to expand earlier engineering-focused methodologies to answer more anthropologically focused questions.

If these ships were outfitted similarly, what would be the point of continuing to search for and excavate these ships? While this point may seem valid at the surface, it is short-sighted and limiting. Archaeology depends heavily on the preservation of material culture to inform current knowledge about past ways of life. The key to understanding the need for excavation is that archaeology is additive at its core. While it is important to explore a shipwreck as a single site and to discover what the wreck can reveal about that specific place and time, shipwrecks are special because of their highly mobile nature. Wreck sites can be placed in the greater context of the culture regionally and even globally. Shipwreck sites vary greatly in their level of preservation and the amount of seafloor scattering (Muckelroy 1978:160-182). Therefore, each site can contribute new information to our knowledge of the past.

To illustrate shipwreck variation spatially, one can examine the environmental differences between the high-surf environment of Padre Island and the sheltered bay in Pensacola. Pensacola’s environment contributed to extensive organic preservation by means of a quick

infilling of the site with sediment and the rapid growth of oysters on the shipwreck. The environment in Padre Island disarticulated the shipwreck and scattered many of the artifacts over a greater area than was the case with the two Pensacola shipwrecks. Despite these environmental differences, a striking similarity appears in the percentages of ceramics recovered.

Mapping the Wrecks

Two GIS maps depict Emanuel Point I and Emanuel Point II. They were created to represent spatially the locations of ceramics to aid in the analysis of each wreck's remains to the greatest extent possible. Both the site plans and the field excavation notes were used to aid in the generation of these maps. However, because excavation unit size varied, the general location of each plotted artifact also varies, thereby generating a 2-dimensional accuracy: 2 m accuracy for Emanuel Point I and 1 m accuracy for Emanuel Point II. The only Padre Island wreck was not mappable because the original site plan was lost. The plan was partially recreated by Arnold, but the excavation methods used on *San Esteban* did not adequately identify, record, or document the recovered locations. Thus the data recorded from *San Esteban* is far too general to produce a worthwhile GIS map.

Olive Jar

By sheer numbers and overall weight across all three shipwrecks, olive jar was by far the most commonly found ceramic type. One important distinguishing factor between *San Esteban* and both Emanuel Point shipwrecks was a drastic discrepancy in total weight of olive jar ceramics between the two fleets. The *San Esteban* collection contained 51.69% olive jar by weight, while Emanuel Point I and Emanuel Point II contained 83.13% and 90.50% respectively. The findings of my analysis suggest that the mercantile *San Esteban* and the colonial Emanuel Point ships had different missions. It is logical that vessels dispatched to supply a new colony of 1500 settlers in the frontier of Florida would carry substantially more provisions than would a mercantile ship transporting gold and silver ingots. While this finding may seem obvious given the differing missions of the fleets, it demonstrates the possibility that the ceramic assemblage can speak to the vessels' activities despite—in the instance of *San Esteban*, for example—olive

jars carrying water, wine, and olives having no direct connection to the mission-specific cargo of gold and silver.

Storage Jar

This ceramic type is similar in paste and manufacture to olive jars but is far larger in overall body size and is most commonly identified by the very thick walls of the vessel. Deagan (1987:36) theorized that these vessels were most commonly used to store water and were preferred in some instances to the thinner-walled olive jar because of their enhanced durability. The only examples of these ceramic vessels are found on *San Esteban* and Emanuel Point I. Both ships are similarly sized and are of a comparable class of ship. By count, the proportions are miniscule: 2.69% in the *San Esteban* collection and 0.5% in the Emanuel Point I collection. Analysis by weight, however, demonstrates a striking difference between *San Esteban* and Emanuel Point I, at 34.70% and 1.08% respectively. The much larger presence onboard *San Esteban* likely indicates the longer overall voyage length for that ship compared to those of Emanuel Point I and Emanuel Point II.

Columbia Plain

The Columbia plain ceramic type is found on of all three shipwrecks. The similarly sized Emanuel Point I and *San Esteban* shipwrecks have similar percentages by weight, with 4.73% and 5.00% overall. The Emanuel Point II collection contains far fewer sherds, by a factor of nearly five. Careful analysis of the ceramic collection GIS maps and the use of microdebitage analysis reveals that Columbia plain ceramics on Emanuel Point II were scattered throughout the shipwreck, whereas the Emanuel Point I collection of Columbia plain was found exclusively in the bow. In addition, since the ceramics were relatively shallow in recovery depth, microdebitage analysis indicated that these ceramics on Emanuel Point I were likely primary, or associated with the ship's mission at the time of the sinking.

Sufficient excavation has taken place on both shipwrecks to allow meaningful comparison of ceramics, and a larger total area was excavated on Emanuel Point I than on Emanuel Point II. The data support the conclusion that the Emanuel Point I Columbia plain

ceramics were loaded as cargo for the Pensacola colony and thus were likely still crated when the hurricane struck. Emanuel Point II, however, contains a highly scattered collection, suggesting that these Columbia plain ceramics were possibly part of the core tableware set used by the ship's crew or by passengers during the voyage. Unfortunately, there is insufficient information to determine which ceramics other than olive jar and El Morro ware were used by the crew and passengers of Emanuel Point I.

Isabela Polychrome

Isabela polychrome is an easily identifiable ceramic type because of its colorfully decorated patterns with cobalt blues and manganese purples decorating the *plato* and *escudilla* forms (Lister and Lister 1982:52). A significant proportion of this ceramic type is found on *San Esteban* and Emanuel Point I; however, only a tiny proportion is found on Emanuel Point II. On the Emanuel Point I shipwreck, this type is found significant distances outside the hull at the extreme ends of the bow and stern of the ship. The only example recovered from Emanuel Point II is also found near the bow; however, later excavation toward the extremities of the bow and stern may produce more of this ceramic type. Without more spatial data from *San Esteban* or Emanuel Point II, little comparison or analysis can be made at this time.

Yayal Blue on White

Yayal blue on white is the least frequently found type of majolica ceramic excavated. *San Esteban* barely exceeded 1.00% by count and 0.31% by weight. However, for measurements on the Emanuel Point wrecks, yayal blue barely surpassed even 1/10th of 1% of the total collections. These small proportions across all three wrecks indicate that these ceramics ceramic types were rare on ships and possibly indicate that these remains could be broken pieces lost in the hull from a previous voyage.

Green Lead-Glazed Coarse Earthenware

The 1992-1995 Preliminary Report of the Emanuel Point I ship excavations refer to an apple-green handle similar to a type on file with the Florida Museum (Smith et al. 1999:100). Unfortunately, this piece was not listed in any of the existing Emanuel Point I databases or

the revised collections list in this thesis. There is, therefore, no way to verify independently if this one piece is, in fact, green lead-glazed coarse earthenware. If the Emanuel Point I ship did contain some of this ceramic type, then both of Tristán de Luna's ships may have contained this artifact type, but the presence of this ceramic type on Emanuel Point I is not reflected in the data tables or in the GIS maps.

Green lead-glazed coarse earthenware ceramics are truly a special category. No official definition exists for this ceramic type. The Florida Museum of Natural History's (2004) Digital Type Collection suggests only that the green lead-glazed coarse earthenware may be of Spanish origin. The green lead-glazed type was excavated not only from Spanish American colonies like St. Augustine but also from the Spanish colonial ship Emanuel Point II (Deagan 1987:28). The fact that this material type was found in Spanish terrestrial contexts and in the maritime context is interesting. The location of the manufacture of this ceramic type is, at the time of this study, unknown. However, the presence of the green lead-glazed ceramic type on the Emanuel Point II shipwreck now suggests that the origin of this ceramic type may be near La Antigua, Veracruz, or that the ceramic had at least traveled to the port.

Black Lead-Glazed Coarse Earthenware

As with all research, some questions that are asked of the data raise more questions and generate few answers. The black lead-glazed coarse earthenware is such a category. Very few of these sherds were recovered, and those were small fragments from the Emanuel Point ships exclusively. Both ships contained this ceramic type in the stern sections, but a higher total number were found in the stern of Emanuel Point II. It is possible that the period between the sinking of *San Esteban* and the Emanuel Point ships marked the first export of this ceramic type. It is more likely, however, that the high surf environment surrounding *San Esteban* scattered this small ceramic vessel or that it was not recovered during excavation.

Aztec Ware

Aztec ware ceramics are exclusive to Emanuel Point I. While indicators like obsidian blades may suggest a Mexican-Indian presence on *San Esteban*, no ceramic indicators were

present. The Aztec pottery fragments' presence near the stern of Emanuel Point I suggests to some that this vessel may have been owned by a passenger of some note or importance (Smith et al. 1999:105). The GIS maps indicate that the Aztec ware ceramics on Emanuel Point I were located in the bow, amidships, and the stern. Ceramic effigy containers, such as the one found on Emanuel Point I, often were ceremonial, compared to the vast abundance of functional ceramics often discovered (Smith et al. 1999:138). Because many historical accounts document the presence of armed Native Americans on Tristán de Luna's mission to colonize Pensacola, the ceramic assemblage in this instance suggests that Emanuel Point I may have been the vessel that ferried some of these warriors (Padilla 1955; Priestley 1971a). In this example, the historical and archaeological records seem to enhance and support one another.

Research into the vessel construction techniques of Emanuel Point I in Collis' (2008:144) thesis suggests that the ship was likely designed and outfitted as a warship rather than as a cargo vessel. If Emanuel Point I was a ship of war brought for the defense of the Pensacola colonists, this theory also supports the possibility of armed Native Americans being present, if for no reason other than defending the high-status individual who likely accompanied the Aztec ware ceramics. If archival records can indicate the names of vessels that carried the Native Americans and if sufficient information is available to differentiate the classes of ships, the presence of these unique ceramics may now make it possible to determine or at least narrow the identity of Emanuel Point I.

El Morro Ware

In this instance, El Morro ware ceramic type is exclusive to the ships of Tristán de Luna. Emanuel Point I differs greatly, with 3.85% by weight, from Emanuel Point II at 0.52%. The bulk of ceramics from Emanuel Point I were found in the center and bow. A tight clustering of El Morro sherds in one unit may be part of a single ceramic container, whereas the more scattered bow fragments are likely from several ceramic vessels.

El Morro ware sherds were scattered throughout the remains of the Emanuel Point II vessel. The fact that the sherds are high in count but low in weight and scattered suggests that

the sherds found on Emanuel Point II are from previous voyages, given the relative depths in the amidships and stern units. Both Emanuel Point ships seem to have a significant concentration centered near the deepest portions of the ship near the pumps and mast-step.

Melado Ware

None of the examples of melado ware found on *San Esteban*, Emanuel Point I, and Emanuel Point II contained any decoration. The highest quantity was found on *San Esteban*, with a similar quantity recovered on Emanuel Point II. Emanuel Point I had a very small total quantity. At 1% or less, none of the ships contained a significant proportion of melado ware. With so few found and no obvious relationships or associations, this artifact contributed little to the overall understanding of wrecks from the period except that its presence seems ubiquitous.

Cologne or Rhenish Stoneware

The last category of ceramic is the German-made Cologne ware, also known as Rhenish ware. Large concentrations of this European-manufactured ceramic type were found among the remains of *San Esteban*. Only one Cologne ware sherd was recovered from Emanuel Point I. *San Esteban* was manufactured in the Old World, but the actual identification and location of the manufacture of Emanuel Point I is still unknown. Wood samples indicate a European manufacture (John Bratten 2012, pers. comm.). The presence of the one Cologne ware sherd lends credence to the ship's possible European manufacture, although Emanuel Point I may also have picked up this ceramic type from an exchange of ballast or perhaps even from a previous non-European voyage.

Eliciting usable information from datasets like those from the Padre Island and Emanuel Point ships is no small task. The best and most direct method to understand this information is first to present the data and descriptions and then to ascribe meaning to the findings. This process demonstrated that some ceramic types, like Columbia plain, were particularly useful for interpretation while others, like melado ware, were not as useful. This study was limited because it involved only three vessels of exclusively Spanish origin. A larger and more diverse

collection of shipwrecks could potentially elicit new and interesting spatial, temporal, cultural, and behavioral relationships not investigated in this thesis.

CHAPTER VI

CONCLUSION

Ceramic analysis of three contemporaneous vessels from two fleets provides a unique and controlled look into the provisioning methods of the Spanish in the New World during the mid-16th century. Using a combination of GIS mapping of the Emanuel Point shipwrecks and reanalysis of three ceramic collections, I explored the variability of ceramics not only among the vessel sizes but also among colonial and mercantile missions.

At the very onset of my thesis research, my primary concern was to capture information often overlooked in shipwreck excavations. My hope was that by intensively mapping and analyzing a single material culture class from multiple similar yet distinct shipwrecks, I could elicit new insight into Spanish provisioning methods. This logic is based on the premise that provisioning was a behavior of people in the past. In this instance, anthropologically analyzing the behaviors of Spanish 16th-century sailors differentiates what was a common or normal behavior from what was a unique or unusual behavior. The assumption is that those elements that were dissimilar would directly relate to the specific mission at the time of the ship's sinking. The similar elements likely related to the common ceramic shipboard provisions.

While my thesis was limited to three shipwrecks, many discovered 16th-century Spanish ships can now be analyzed by combining what is known about each and creating a more complete image of 16th-century Spanish shipboard life. My thesis shows that the potential now exists not only to compare these ships but also to expand earlier engineering-focused archaeological research questions to incorporate more anthropologically focused questions. Additionally, a cross-cultural comparison would serve to further refine those elements that are uniquely Spanish from those that may be more reflective of the technology of the period and not cultural in nature. Such a comparison with French ships of the mid-16th century, for example, might prove very useful given the disdain shared between the French and Spanish in the period.

The ceramic analyses were controlled by having one person review and analyze all of the collections of the *San Esteban*, Emanuel Point I, and Emanuel Point II shipwrecks. I obtained permission for the use of documents and materials for analysis from various institutions (Appendix E). I then created GIS-based maps of Emanuel Point I and Emanuel Point II to enhance and elucidate relationships between ceramic types across ships. I excluded *San Esteban* from the mapping because of insufficient information necessary to generate an accurate map. Despite having only two of the three shipwrecks mapped, I extracted many comparisons and details from the ceramic data.

The result of the analysis of the ceramics produced what I believe to be a Spanish ship pattern. This initial patterning, illustrated in Figures 10 and 11, are built around the dense oval-like accumulation of Spanish olive jar or storage jar ceramics near the ballast pile. The result of the analysis of the ceramics produced what I believe to be the start of an archaeological pattern of a Spanish ship. This initial patterning, illustrated in Figures 10 and 11, is built around the dense oval-like accumulation of Spanish olive jar or storage jar ceramics near the ballast pile. Based on the analysis of *San Esteban*, Emanuel Point I and Emanuel Point II, a typical Spanish ship may contain anywhere from 40% to almost 90% storage jar and olive jar ceramics. Non-colonial ships in this analysis contained approximately 50% by weight. Approximately 25% of the olive jar ceramics have a pine-pitch coating. The larger storage jars are found in both glazed and unglazed varieties, but the majority are glazed. Other ceramics found in the pattern should include majolica, likely composed of higher concentrations of Columbia plain and smaller concentrations of Isabela polychrome and yayal blue on white ceramics, primarily concentrated near the bow and stern of the vessels. In addition, other ships are likely to contain both El Morro ware and melado ware ceramics in small proportions in the 1% range. The ceramics with the smaller percentages likely were part of a basic tableware set used onboard or the personal or incidental cargo not relating to the overall pattern. However, it is important to note that each ship contains a ceramic type or artifact unique to itself, a fact which speaks to the diversity of materials which may be found on Spanish ships.

I suspect that ships of other nationalities would emphasize their own perceived provisioning needs and thus produce their own post-depositional patterns. While it does not seem likely that French vessels of the mid-16th century would be filled with Spanish olive jar ceramics or high concentrations of Spanish majolica ceramics, it is unclear how pervasive Spanish ceramic technology or seafaring in general may have been. Since containers like the Spanish olive jar have been in use since the production of the Greco-Roman amphora of the classical period, it would seem likely that other non-Spanish European ships would contain similar contents but likely in different concentrations. Each culture operating in each region would likely reflect access to certain goods but also the culture's own priorities regarding certain goods. I would, however, suspect a strong correlation between Portuguese, Spanish, and even Italian vessel patterning given the strong cultural similarities and interactions between Spain, Portugal, and Italy in the 16th century.

Reanalysis of assemblages revealed and confirmed several relationships among the *San Esteban*, Emanuel Point I, and Emanuel Point II and their artifacts. The research illustrates the disparity between the lower quantities of olive jar on the mercantile-missioned *San Esteban* and the higher quantities found on the colonial-missioned Emanuel Point ships. Furthermore, the highly concentrated Columbia plain ceramics in the bow of Emanuel Point I indicate that it was likely packed for use in the new Pensacola colony. Even the presence of Aztec ware ceramics on Emanuel Point I and their absence from the other ships suggest that the contingent, or a portion, of the Native American warriors may have been transported on that very vessel. The presence of European-manufactured stoneware ceramics on both *San Esteban* and Emanuel Point I indicate that the ships may have been manufactured in the Old World.

I did not seek to redefine or restate what has already been documented and discussed at length in the vast libraries of data and information on ceramic types, but rather to enhance the ongoing discussions of the relationships of peoples in the past. The conversation in the field of maritime archaeology should continue to evolve from the ship-construction-centered investigation to investigations that equalize the important contributions that various artifact

classes offer to the understanding of other contemporaneous vessels and how they relate to one another. As with any scientific endeavor, additional data provides the opportunity for analysis that is more precise, providing for more informed conclusions. The Emanuel Point ships contain an unparalleled glimpse into Spanish colonial life in the 16th century. To have two ships of different sizes preserved from a single expedition is rare in archaeology. Furthermore, to have them excavated with modern professional archaeological techniques and the support of the State of Florida and the local community is nothing less than extraordinary. As Emanuel Point II continues to be excavated, additional discoveries will be made which will require previous conclusions and assumptions about Spanish colonial life to be reexamined and new questions to be addressed.

Bass (1996:9) once asserted that he thought it “impossible to imagine a history of the Americas without ships and boats.” I find it impossible to imagine ships and boats without first thinking about the sailors and intrepid explorers. What makes archaeology special is that in a very tangible way through artifacts, it has the potential to connect the distant lives of people who had the courage to go into unknown or uncertain waters. This conquistador spirit is part of the mystique that surrounds shipwrecks. Maritime archaeologists have a privilege that few can experience. They can be the first humans to touch a literal piece of the past in hundreds or even thousands of years. Throughout the process of writing my thesis, I have tried to remember that each and every artifact I analyzed meant something to very real people who lived, worked, and quite possibly died on the site. In this spirit I sought clues from three wrecks and will continue to search in a lifetime for others.

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APPENDIXES

Appendix A

Ceramic Form Diagrams from the Florida Museum of Natural History

Digital Type Collection

albarello



bacin



bellarmine jug



boit jar



bottle



bowl



brimmed plato



candle holder



cantimplora



chamber pot



cream pan



crock



cup



cuspidor



escudilla



ewer



flower pot



harvest bottle



inkwell



jarro



jug



lebrillo



mortar



mug



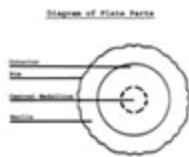
pan



pitcher



plate



plato



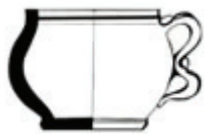
pocillo



porringer



posset cup



pot



punch pot



saucer



shallow bowl



small storage jar



taza



teapot



tureen



vase



Appendix B

Emanuel Point I (8ES1980) Data Table

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,070	Aztec Ware	114N 131E	9.9	1
00,136.01	Aztec Ware	114N 131E	13.0	1
00,136.02	Aztec Ware	114N 131E	3.8	1
00,279	Aztec Ware	114N 131E	40.5	1
01,022	Aztec Ware	112N 131E	4.7	1
01,541	Cologne/Rhenish Stoneware	116N 106E	17.4	1
00,031.05	Indeterminate Coarse Earthenware	114N 131E	0.7	1
00,137	Indeterminate Coarse Earthenware	114N 131E	2.5	1
00,140.01	Indeterminate Coarse Earthenware	114N 131E	3.5	1
00,140.02	Indeterminate Coarse Earthenware	114N 131E	UNKNOWN	1
00,185	Indeterminate Coarse Earthenware	114N 129E	2.4	1
00,262	Indeterminate Coarse Earthenware	114N 131E	UNKNOWN	1
00,288	Indeterminate Coarse Earthenware	114N 127E	11.0	1
00,659.03	Indeterminate Coarse Earthenware	RUDDER GR	1.0	3
00,687.03	Indeterminate Coarse Earthenware	UNKNOWN	UNKNOWN	1
00,763	Indeterminate Coarse Earthenware	114N 135E	542.2	1
00,952	Indeterminate Coarse Earthenware	112N 135E	263.6	1
01,470	Indeterminate Coarse Earthenware	114N 110E	47.5	1
01,530	Indeterminate Coarse Earthenware	112N 110E	UNKNOWN	UNKNOWN
01,592	Indeterminate Coarse Earthenware	112N 110E	UNKNOWN	2
01,901	Indeterminate Coarse Earthenware	114N 110E	18.2	1
01,909	Indeterminate Coarse Earthenware	114N 108E	2.2	5
02,103	Indeterminate Coarse Earthenware	116N 108E	0.7	2
02,348	Indeterminate Coarse Earthenware	118N 108E	5.0	2
02,383	Indeterminate Coarse Earthenware	116N 110E	5.9	1
02,611	Indeterminate Coarse Earthenware	116N 104E	UNKNOWN	19
02,614	Indeterminate Coarse Earthenware	118N 108E	UNKNOWN	5
02,619	Indeterminate Coarse Earthenware	114N 106E	UNKNOWN	1
01,349	Columbia Plain	114N 110E	28.8	1
01,350	Columbia Plain	114N 110E	11.1	1
01,352	Columbia Plain	114N 110E	82.3	1
01,396	Columbia Plain	116N 108E	3.9	1
01,453	Columbia Plain	BOW	6.3	1
01,479	Columbia Plain	114N 110E	86.9	1
01,496	Columbia Plain	114N 110E	43.6	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,506	Columbia Plain	114N 108E	5.3	1
01,667	Columbia Plain	114N 108E	26.8	1
01,700	Columbia Plain	114N 108E	15.6	1
01,777	Columbia Plain	118N 108E	277.7	1
01,860	Columbia Plain	114N 108E	37.7	1
01,861	Columbia Plain	114N 108E	131.8	1
01,862	Columbia Plain	114N 108E	192.1	1
01,890	Columbia Plain	114N 110E	20.2	1
02,104	Columbia Plain	116N 108E	4.5	1
02,116	Columbia Plain	118N 108E	1.9	1
02,123	Columbia Plain	114N 110E	6.0	2
02,136	Columbia Plain	114N 110E	6.8	2
02,159	Columbia Plain	BOW	16.4	2
02,160	Columbia Plain	114N 108E	59.8	1
02,215	Columbia Plain	116N 104E	1.6	1
02,230.00	Columbia Plain	114N 108E	65.5	6
02,245	Columbia Plain	BOW	8.0	1
02,286	Columbia Plain	114N 108E	24.5	2
02,291	Columbia Plain	112N 104E	2.8	1
02,305	Columbia Plain	114N 110E	14.2	3
02,329	Columbia Plain	114N 108E	19.1	5
02,330	Columbia Plain	UNKNOWN	65.5	5
02,362	Columbia Plain	118N 110E	2.1	1
02,367	Columbia Plain	114N 110E	9.1	1
02,368	Columbia Plain	114N 110E	1.0	1
02,389	Columbia Plain	116N 106E	5.9	1
02,398	Columbia Plain	116N 106E	5.0	1
02,418	Columbia Plain	114N 108E	4.4	2
02,428	Columbia Plain	112N 108E	5.3	1
02,429	Columbia Plain	112N 108E	3.0	1
02,430	Columbia Plain	112N 108E	1.6	1
02,431	Columbia Plain	112N 108E	1.9	1
02,432	Columbia Plain	114N 108E	32.2	1
02,433	Columbia Plain	114N 108E	30.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,526	Columbia Plain	116N 104E	5.6	1
02,536	Columbia Plain	114N 108E	4.1	1
02,552	Columbia Plain	BOW	4.0	1
02,638	Columbia Plain	UNKNOWN	54.6	UNKNOWN
02,654	Columbia Plain	114N 108E	18.4	1
07,717.02	Columbia Plain	UNKNOWN	87.0	1
07,717.03	Columbia Plain	UNKNOWN	9.5	1
07,710.1	Olive Jar Glazed	UNKNOWN	2.6	1
07,710.2	Olive Jar Glazed	UNKNOWN	3.4	1
07,718.1	Olive Jar Glazed	UNKNOWN	42.2	1
07,770.2	Olive Jar Glazed	UNKNOWN	20.2	1
08,736.9	Olive Jar Glazed	UNKNOWN	22.5	UNKNOWN
01,963	Olive Jar Glazed	112N 110E	UNKNOWN	1
02,225	Olive Jar Glazed	112N 106E	UNKNOWN	1
07,872.2	Indeterminate Coarse Earthenware	UNKNOWN	2.5	1
08,736.12	Indeterminate Coarse Earthenware	UNKNOWN	1.8	1
01,967	Indeterminate Mexican Coarse Earthenware	112N 110E	54.6	1
02,360	Indeterminate Mexican Coarse Earthenware	118N 110E	11.5	2
02,642	Indeterminate Mexican Coarse Earthenware	UNKNOWN	4.8	UNKNOWN
08,784.01	Indeterminate Mexican Coarse Earthenware	UNKNOWN	13.4	1
08,784.02	Indeterminate Mexican Coarse Earthenware	UNKNOWN	5.0	1
01,508	Isabela Polychrome	116N 106E	643.6	1
00,972	Isabela Polychrome	UNKNOWN	86.1	1
00,605.01	Indeterminate Majolica	114N 133E	17.5	1
00,630.01	Indeterminate Majolica	112N 133E	9.2	1
00,071	Melado Ware	114N 131E	13.9	1
00,109	Melado Ware	114N 129E	1.0	1
01,141	Melado Ware	UNKNOWN	3.4	1
02,542.1	Melado Ware	UNKNOWN	13.7	1
07,793.02	Melado Ware	UNKNOWN	0.4	1
07,839	Melado Ware	UNKNOWN	1.4	1
07,899.1	Melado Ware	UNKNOWN	2.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
08,784.03	Melado Ware	UNKNOWN	4.2	1
08,826	Melado Ware	UNKNOWN	19.5	1
08,826.02	Melado Ware	UNKNOWN	0.2	1
00,128	El Morro Ware	114N 131E	2.5	1
00,298.01	El Morro Ware	114N 127E	4.9	1
00,419	El Morro Ware	UNKNOWN	UNKNOWN	UNKNOWN
01,194	El Morro Ware	114N 108E	2.4	1
01,336	El Morro Ware	114N 110E	23.1	1
01,337	El Morro Ware	114N 110E	52.6	1
01,447	El Morro Ware	114N 110E	36.3	1
01,449	El Morro Ware	114N 110E	89.1	1
01,460	El Morro Ware	114N 110E	37.2	1
01,472	El Morro Ware	BOW	131.4	8
01,476	El Morro Ware	114N 110E	18.1	1
01,482	El Morro Ware	116N 106E	1.6	1
01,489	El Morro Ware	110N 114E	16.0	1
01,502	El Morro Ware	114N 108E	12.9	1
01,521	El Morro Ware	112N 110E	2.9	1
01,524	El Morro Ware	112N 110E	50.8	1
01,527	El Morro Ware	114N 110E	79.3	1
01,529	El Morro Ware	112N 110E	15.6	1
01,584.01	El Morro Ware	114N 108E	3.8	1
01,589	El Morro Ware	112N 108E	22.5	1
01,614	El Morro Ware	114N 110E	2.9	1
01,634	El Morro Ware	114N 110E	6.6	1
01,797	El Morro Ware	114N 108E	6.1	1
01,840	El Morro Ware	114N 108E	27.8	1
01,911.01	El Morro Ware	114N 110E	0.5	1
01,954	El Morro Ware	112N 110E	1.6	1
02,128	El Morro Ware	114N 110E	9.9	4
02,141	El Morro Ware	BOW	27.4	1
02,221	El Morro Ware	112N 110E	2.8	1
02,244	El Morro Ware	BOW	2.1	1
02,277	El Morro Ware	114N 104E	1.6	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,280	El Morro Ware	114N 108E	74.2	17
02,290	El Morro Ware	114N 108E	4.7	1
02,296	El Morro Ware	112N 104E	39.4	5
02,300	El Morro Ware	114N 110E	34.0	5
02,303	El Morro Ware	114N 110E	11.9	2
02,312	El Morro Ware	114N 108E	16.4	1
02,323	El Morro Ware	116N 110E	16.8	1
02,327	El Morro Ware	114N 108E	8.8	1
02,363	El Morro Ware	114N 110E	31.8	7
02,378	El Morro Ware	116N 104E	59.0	15
02,394	El Morro Ware	114N 108E	5.1	1
02,408	El Morro Ware	114N 104E	1.5	1
02,422	El Morro Ware	118N 108E	17.5	1
02,426	El Morro Ware	114N 110E	1.8	3
02,506	El Morro Ware	112N 110E	UNKNOWN	1
02,507	El Morro Ware	112N 108E	56.6	3
02,514	El Morro Ware	112N 108E	2.1	2
02,528.01	El Morro Ware	BOW	1.2	1
02,548	El Morro Ware	112N 104E	3.0	2
02,556	El Morro Ware	BOW	1.1	1
02,557	El Morro Ware	116N 104E	2.1	1
02,558	El Morro Ware	114N 108E	6.2	2
02,559	El Morro Ware	BOW	7.7	1
02,560	El Morro Ware	112N 104E	18.1	3
02,561	El Morro Ware	BOW	1.5	1
02,567	El Morro Ware	112N 108E	66.4	19
02,652	El Morro Ware	BOW	10.0	8
07,788.01	El Morro Ware	UNKNOWN	1.5	1
07,793.01	El Morro Ware	UNKNOWN	5.8	1
07,794.8	El Morro Ware	UNKNOWN	3.9	1
07,827.01	El Morro Ware	UNKNOWN	0.7	1
07,841.01	El Morro Ware	UNKNOWN	0.9	1
00,002.01	Olive Jar Unglazed	114N 131E	9.0	1
00,002.02	Olive Jar Unglazed	114N 131E	1.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,002.03	Olive Jar Unglazed	114N 131E	2.5	1
00,005	Olive Jar Unglazed	114N 131E	21.0	1
00,007	Olive Jar Unglazed	114N 129E	42.0	1
00,009	Olive Jar Unglazed	114N 129E	30.5	1
00,010.01	Olive Jar Unglazed	114N 131E	8.5	1
00,010.02	Olive Jar Unglazed	114N 131E	7.5	1
00,016	Olive Jar Unglazed	114N 131E	12.5	1
00,021	Olive Jar Unglazed	114N 131E	15.5	1
00,023	Olive Jar Unglazed	114N 131E	406.5	1
00,031.01	Olive Jar Unglazed	114N 131E	18.5	1
00,031.02	Olive Jar Unglazed	114N 131E	24.5	1
00,031.03	Olive Jar Unglazed	114N 131E	2.0	1
00,031.04	Olive Jar Unglazed	114N 131E	5.5	1
00,033	Olive Jar Unglazed	114N 129E	46.0	1
00,035	Olive Jar Unglazed	114N 127E	31.0	1
00,037	Olive Jar Unglazed	114N 125E	18.0	1
00,050	Olive Jar Unglazed	114N 129E	26.5	1
00,053	Olive Jar Unglazed	114N 131E	6.5	1
00,060	Olive Jar Unglazed	114N 127E	112.5	1
00,062.01	Olive Jar Unglazed	114N 131E	13.5	1
00,064	Olive Jar Unglazed	114N 131E	111.8	1
00,066	Olive Jar Unglazed	114N 131E	19.2	1
00,068	Olive Jar Unglazed	114N 133E	314.7	1
00,074	Olive Jar Unglazed	114N 133E	13.3	1
00,088	Olive Jar Unglazed	114N 129E	7.9	1
00,094	Olive Jar Unglazed	114N 131E	2.7	1
00,105	Olive Jar Unglazed	114N 129E	20.0	1
00,108	Olive Jar Unglazed	114N 127E	20.5	1
00,110	Olive Jar Unglazed	114N 131E	2.0	1
00,111	Olive Jar Unglazed	114N 127E	21.5	1
00,112	Olive Jar Unglazed	114N 127E	30.5	1
00,113	Olive Jar Unglazed	114N 129E	17.5	1
00,114	Olive Jar Unglazed	114N 129E	22.5	1
00,115.01	Olive Jar Unglazed	114N 129E	21.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,115.02	Olive Jar Unglazed	114N 129E	19.5	1
00,116	Olive Jar Unglazed	114N 129E	4.0	1
00,120	Olive Jar Unglazed	UNKNOWN	12.5	1
00,123	Olive Jar Unglazed	114N 131E	4.0	1
00,129.01	Olive Jar Unglazed	114N 129E	7.0	1
00,129.02	Olive Jar Unglazed	114N 129E	10.0	1
00,130.01	Olive Jar Unglazed	114N 129E	2.0	1
00,130.02	Olive Jar Unglazed	114N 129E	4.0	1
00,132	Olive Jar Unglazed	114N 129E	1.5	1
00,134.01	Olive Jar Unglazed	114N 131E	11.0	1
00,134.02	Olive Jar Unglazed	114N 131E	16.0	1
00,134.03	Olive Jar Unglazed	114N 131E	4.0	1
00,134.04	Olive Jar Unglazed	114N 131E	3.0	1
00,134.05	Olive Jar Unglazed	114N 131E	13.5	1
00,134.06	Olive Jar Unglazed	114N 131E	2.5	1
00,148	Olive Jar Unglazed	114N 131E	5.5	1
00,155	Olive Jar Unglazed	114N 131E	8.5	1
00,161	Olive Jar Unglazed	114N 131E	13.5	1
00,162	Olive Jar Unglazed	114N 129E	6.5	1
00,166	Olive Jar Unglazed	114N 131E	21.0	1
00,167.01	Olive Jar Unglazed	114N 129E	3.5	1
00,167.02	Olive Jar Unglazed	114N 129E	4.0	1
00,167.03	Olive Jar Unglazed	114N 129E	6.4	1
00,169.01	Olive Jar Unglazed	114N 129E	9.0	1
00,169.02	Olive Jar Unglazed	114N 129E	20.5	1
00,172	Olive Jar Unglazed	114N 131E	17.0	1
00,178	Olive Jar Unglazed	UNKNOWN	4.0	1
00,186.01	Olive Jar Unglazed	114N 129E	12.0	1
00,186.02	Olive Jar Unglazed	114N 129E	3.0	1
00,186.03	Olive Jar Unglazed	114N 129E	4.0	1
00,186.04	Olive Jar Unglazed	114N 129E	3.0	1
00,192	Olive Jar Unglazed	UNKNOWN	1.6	1
00,199	Olive Jar Unglazed	114N 129E	7.0	1
00,200.01	Olive Jar Unglazed	114N 129E	2.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,200.02	Olive Jar Unglazed	114N 129E	2.0	1
00,200.03	Olive Jar Unglazed	114N 129E	4.5	1
00,200.04	Olive Jar Unglazed	114N 129E	3.0	1
00,200.05	Olive Jar Unglazed	114N 129E	4.0	1
00,200.06	Olive Jar Unglazed	114N 129E	4.5	1
00,202.01	Olive Jar Unglazed	114N 127E	5.0	1
00,202.02	Olive Jar Unglazed	114N 127E	3.0	1
00,205.01	Olive Jar Unglazed	114N 131E	2.0	1
00,205.02	Olive Jar Unglazed	114N 131E	6.0	1
00,205.03	Olive Jar Unglazed	114N 131E	3.0	1
00,207	Olive Jar Unglazed	114N 131E	22.5	1
00,210	Olive Jar Unglazed	114N 131E	6.0	1
00,211	Olive Jar Unglazed	114N 129E	8.5	1
00,214	Olive Jar Unglazed	114N 127E	5.5	1
00,217	Olive Jar Unglazed	114N 127E	61.0	1
00,221	Olive Jar Unglazed	114N 131E	4.5	1
00,228	Olive Jar Unglazed	114N 131E	2.9	1
00,239.01	Olive Jar Unglazed	114N 127E	39.8	1
00,239.02	Olive Jar Unglazed	114N 127E	18.4	1
00,240	Olive Jar Unglazed	114N 127E	39.2	1
00,244	Olive Jar Unglazed	114N 127E	2.8	1
00,250	Olive Jar Unglazed	UNKNOWN	34.5	1
00,259	Olive Jar Unglazed	114N 133E	24.4	1
00,260	Olive Jar Unglazed	114N 131E	13.0	1
00,261	Olive Jar Unglazed	114N 133E	4.7	1
00,268	Olive Jar Unglazed	114N 131E	7.9	1
00,293.01	Olive Jar Unglazed	114N 131E	0.3	1
00,293.02	Olive Jar Unglazed	114N 131E	0.7	1
00,293.03	Olive Jar Unglazed	114N 131E	0.7	1
00,293.04	Olive Jar Unglazed	114N 131E	3.1	1
00,293.05	Olive Jar Unglazed	114N 131E	1.6	1
00,298.02	Olive Jar Unglazed	114N 127E	1.2	1
00,298.03	Olive Jar Unglazed	114N 127E	2.7	1
00,298.04	Olive Jar Unglazed	114N 127E	0.6	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,298.05	Olive Jar Unglazed	114N 127E	1.2	1
00,329	Olive Jar Unglazed	114N 131E	92.6	1
00,330.01	Olive Jar Unglazed	114N 131E	19.5	1
00,330.02	Olive Jar Unglazed	114N 131E	UNKNOWN	1
00,403.02	Olive Jar Unglazed	114N 127E	14.0	1
00,403.03	Olive Jar Unglazed	114N 127E	7.5	1
00,403.04	Olive Jar Unglazed	114N 127E	12.7	1
00,404	Olive Jar Unglazed	114N 127E	139.5	1
00,405.01	Olive Jar Unglazed	114N 127E	13.6	1
00,405.02	Olive Jar Unglazed	114N 127E	47.8	1
00,405.03	Olive Jar Unglazed	114N 127E	63.5	1
00,407	Olive Jar Unglazed	114N 129E	8.5	1
00,410.01	Olive Jar Unglazed	114N 127E	12.0	1
00,410.03	Olive Jar Unglazed	114N 127E	6.5	1
00,420.01	Olive Jar Unglazed	114N 133E	63.9	1
00,420.02	Olive Jar Unglazed	114N 133E	33.0	1
00,422.01	Olive Jar Unglazed	114N 133E	8.0	1
00,422.02	Olive Jar Unglazed	114N 133E	6.9	1
00,426.01	Olive Jar Unglazed	114N 131E	12.0	1
00,426.02	Olive Jar Unglazed	114N 131E	6.5	1
00,426.03	Olive Jar Unglazed	114N 131E	7.5	1
00,426.04	Olive Jar Unglazed	114N 131E	3.0	1
00,431	Olive Jar Unglazed	114N 133E	16.8	1
00,435.01	Olive Jar Unglazed	114N 129E	9.6	1
00,435.02	Olive Jar Unglazed	114N 129E	6.5	1
00,439.01	Olive Jar Unglazed	114N 133E	31.2	1
00,439.02	Olive Jar Unglazed	114N 133E	2.6	1
00,445.01	Olive Jar Unglazed	114N 131E	4.7	1
00,445.02	Olive Jar Unglazed	114N 131E	5.7	1
00,503	Olive Jar Unglazed	114N 129E	63.8	1
00,603	Olive Jar Unglazed	114N ----	5.5	1
00,605.02	Olive Jar Unglazed	114N 133E	1.4	1
00,616.01	Olive Jar Unglazed	114N ----	3.4	1
00,616.02	Olive Jar Unglazed	114N ----	1.2	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,621.01	Olive Jar Unglazed	112N 131E	0.9	1
00,621.02	Olive Jar Unglazed	112N 131E	0.3	1
00,621.03	Olive Jar Unglazed	112N 131E	1.0	1
00,621.04	Olive Jar Unglazed	112N 131E	3.5	1
00,630.02	Olive Jar Unglazed	112N 133E	5.7	1
00,630.03	Olive Jar Unglazed	112N 133E	7.3	1
00,630.04	Olive Jar Unglazed	112N 133E	1.7	1
00,630.05	Olive Jar Unglazed	112N 133E	2.3	1
00,630.06	Olive Jar Unglazed	112N 133E	1.5	1
00,630.07	Olive Jar Unglazed	112N 133E	0.4	1
00,630.08	Olive Jar Unglazed	112N 133E	0.9	1
00,630.09	Olive Jar Unglazed	112N 133E	1.0	1
00,636.01	Olive Jar Unglazed	114N 131E	4.3	1
00,636.02	Olive Jar Unglazed	114N 131E	0.6	1
00,637.01	Olive Jar Unglazed	112N 131E	15.7	1
00,637.02	Olive Jar Unglazed	112N 131E	18.5	1
00,637.03	Olive Jar Unglazed	112N 131E	9.8	1
00,637.04	Olive Jar Unglazed	112N 131E	7.3	1
00,637.05	Olive Jar Unglazed	112N 131E	4.2	1
00,637.06	Olive Jar Unglazed	112N 131E	4.8	1
00,637.07	Olive Jar Unglazed	112N 131E	7.0	1
00,637.08	Olive Jar Unglazed	112N 131E	2.2	1
00,637.09	Olive Jar Unglazed	112N 131E	1.5	1
00,637.10	Olive Jar Unglazed	112N 131E	2.4	1
00,637.11	Olive Jar Unglazed	112N 131E	2.1	1
00,637.12	Olive Jar Unglazed	112N 131E	1.1	1
00,637.13	Olive Jar Unglazed	112N 131E	0.7	1
00,637.14	Olive Jar Unglazed	112N 131E	1.6	1
00,637.15	Olive Jar Unglazed	112N 131E	2.1	1
00,637.16	Olive Jar Unglazed	112N 131E	1.7	1
00,637.17	Olive Jar Unglazed	112N 131E	2.2	1
00,637.18	Olive Jar Unglazed	112N 131E	1.6	1
00,637.19	Olive Jar Unglazed	112N 131E	1.0	1
00,637.20	Olive Jar Unglazed	112N 131E	1.3	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,637.21	Olive Jar Unglazed	112N 131E	0.6	1
00,637.22	Olive Jar Unglazed	112N 131E	1.5	1
00,637.23	Olive Jar Unglazed	112N 131E	0.9	1
00,637.24	Olive Jar Unglazed	112N 131E	0.7	1
00,637.25	Olive Jar Unglazed	112N 131E	0.9	1
00,637.26	Olive Jar Unglazed	112N 131E	0.5	1
00,637.27	Olive Jar Unglazed	112N 131E	0.6	1
00,637.28	Olive Jar Unglazed	112N 131E	1.1	1
00,637.29	Olive Jar Unglazed	112N 131E	1.0	1
00,637.30	Olive Jar Unglazed	112N 131E	0.8	1
00,637.31	Olive Jar Unglazed	112N 131E	0.8	1
00,637.32	Olive Jar Unglazed	112N 131E	0.5	1
00,637.33	Olive Jar Unglazed	112N 131E	0.3	1
00,637.34	Olive Jar Unglazed	112N 131E	0.4	1
00,648	Olive Jar Unglazed	114N 131E	2.8	1
00,652.01	Olive Jar Unglazed	112N 135E	1.3	1
00,655.01	Olive Jar Unglazed	116N 131E	8.6	1
00,655.02	Olive Jar Unglazed	116N 131E	14.0	1
00,655.03	Olive Jar Unglazed	116N 131E	1.0	1
00,655.04	Olive Jar Unglazed	116N 131E	11.5	1
00,655.05	Olive Jar Unglazed	116N 131E	1.5	1
00,659.01	Olive Jar Unglazed	RUDDER GR	7.3	1
00,659.02	Olive Jar Unglazed	RUDDER GR	1.6	1
00,661.01	Olive Jar Unglazed	114N 133E	3.2	1
00,661.02	Olive Jar Unglazed	114N 133E	1.9	1
00,663.01	Olive Jar Unglazed	112N 131E	19.2	1
00,663.02	Olive Jar Unglazed	112N 131E	27.5	1
00,663.03	Olive Jar Unglazed	112N 131E	9.8	1
00,663.04	Olive Jar Unglazed	112N 131E	7.4	1
00,663.05	Olive Jar Unglazed	112N 131E	8.9	1
00,670	Olive Jar Unglazed	112N 133E	7.8	1
00,672.01	Olive Jar Unglazed	112N 133E	5.0	1
00,672.02	Olive Jar Unglazed	112N 1333	4.5	1
00,672.03	Olive Jar Unglazed	112N 133E	2.1	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,674.01	Olive Jar Unglazed	114N 135E	1.4	1
00,674.02	Olive Jar Unglazed	114N 135E	2.0	1
00,674.03	Olive Jar Unglazed	114N 135E	2.1	1
00,674.04	Olive Jar Unglazed	114N 135E	2.0	1
00,674.05	Olive Jar Unglazed	114N 135E	1.8	1
00,674.06	Olive Jar Unglazed	114N 135E	1.4	1
00,674.07	Olive Jar Unglazed	114N 135E	5.1	14
00,679.01	Olive Jar Unglazed	116N 131E	3.5	1
00,679.02	Olive Jar Unglazed	116N 131E	4.4	1
00,679.03	Olive Jar Unglazed	116N 131E	4.1	1
00,679.04	Olive Jar Unglazed	116N 131E	2.8	1
00,679.05	Olive Jar Unglazed	116N 131E	1.9	1
00,679.06	Olive Jar Unglazed	116N 131E	3.0	1
00,682.01	Olive Jar Unglazed	116N 133E	3.7	1
00,682.02	Olive Jar Unglazed	116N 133E	1.1	1
00,682.03	Olive Jar Unglazed	116N 133E	1.1	1
00,682.04	Olive Jar Unglazed	116N 133E	0.6	1
00,682.05	Olive Jar Unglazed	116N 133E	0.5	1
00,687.01	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
00,687.02	Olive Jar Unglazed	UNKNOWN	29.5	1
00,687.04	Olive Jar Unglazed	UNKNOWN	9.6	1
00,687.05	Olive Jar Unglazed	UNKNOWN	8.5	1
00,687.06	Olive Jar Unglazed	UNKNOWN	5.2	1
00,687.07	Olive Jar Unglazed	UNKNOWN	2.7	1
00,687.08	Olive Jar Unglazed	UNKNOWN	1.6	1
00,687.09	Olive Jar Unglazed	UNKNOWN	2.1	1
00,687.10	Olive Jar Unglazed	UNKNOWN	2.0	1
00,687.11	Olive Jar Unglazed	UNKNOWN	1.4	1
00,687.12	Olive Jar Unglazed	UNKNOWN	1.1	1
00,687.13	Olive Jar Unglazed	UNKNOWN	1.0	1
00,687.14	Olive Jar Unglazed	UNKNOWN	0.9	1
00,687.15	Olive Jar Unglazed	UNKNOWN	0.5	1
00,687.16	Olive Jar Unglazed	UNKNOWN	0.3	1
00,690.01	Olive Jar Unglazed	UNKNOWN	21.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
00,690.02	Olive Jar Unglazed	UNKNOWN	3.6	1
00,690.03	Olive Jar Unglazed	UNKNOWN	3.3	1
00,697.01	Olive Jar Unglazed	112N 131E	4.8	1
00,697.02	Olive Jar Unglazed	112N 131E	4.2	1
00,697.03	Olive Jar Unglazed	112N 131E	2.3	1
00,700	Olive Jar Unglazed	112N 131E	2.7	1
00,762	Olive Jar Unglazed	114N 133E	28.1	1
00,906	Olive Jar Unglazed	112N 135E	80.3	1
00,920.03	Olive Jar Unglazed	UNKNOWN	32.4	1
00,923	Olive Jar Unglazed	112N 133E	32.0	1
00,925	Olive Jar Unglazed	112N 133E	51.2	1
00,951	Olive Jar Unglazed	112N 135E	162.1	1
00,953	Olive Jar Unglazed	114N 133E	81.9	1
00,997	Olive Jar Unglazed	112N 131E	30.0	1
01,003	Olive Jar Unglazed	112N 131E	45.5	1
01,004	Olive Jar Unglazed	112N 131E	45.0	1
01,025.02	Olive Jar Unglazed	114N 131E	UNKNOWN	1
01,049	Olive Jar Unglazed	114N 129E	60.8	1
01,050	Olive Jar Unglazed	114N 127E	160.0	1
01,051	Olive Jar Unglazed	114N 127E	145.5	1
01,053.02	Olive Jar Unglazed	114N 127E	76.1	1
01,060	Olive Jar Unglazed	114N 127E	239.9	1
01,081	Olive Jar Unglazed	114N 127E	55.0	1
01,083.01	Olive Jar Unglazed	114N 127E	37.5	1
01,083.02	Olive Jar Unglazed	114N 127E	34.4	1
01,083.03	Olive Jar Unglazed	114N 127E	45.0	1
01,106.1	Olive Jar Unglazed	UNKNOWN	7.4	1
01,106.2	Olive Jar Unglazed	UNKNOWN	1.0	1
01,106.3	Olive Jar Unglazed	UNKNOWN	7.3	1
01,112	Olive Jar Unglazed	UNKNOWN	3.6	1
01,114.1	Olive Jar Unglazed	UNKNOWN	17.3	1
01,114.2	Olive Jar Unglazed	UNKNOWN	4.3	1
01,114.3	Olive Jar Unglazed	UNKNOWN	2.2	1
01,114.4	Olive Jar Unglazed	UNKNOWN	0.8	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,114.5	Olive Jar Unglazed	UNKNOWN	1.5	1
01,116	Olive Jar Unglazed	UNKNOWN	5.7	9
01,121	Olive Jar Unglazed	UNKNOWN	17.0	1
01,128.01	Olive Jar Unglazed	UNKNOWN	2.1	1
01,128.02	Olive Jar Unglazed	UNKNOWN	2.1	1
01,128.03	Olive Jar Unglazed	UNKNOWN	2.1	1
01,133	Olive Jar Unglazed	UNKNOWN	9.6	4
01,140.1	Olive Jar Unglazed	UNKNOWN	10.8	1
01,140.3	Olive Jar Unglazed	UNKNOWN	2.8	1
01,140.4	Olive Jar Unglazed	UNKNOWN	1.5	1
01,150	Olive Jar Unglazed	UNKNOWN	2.3	1
01,154	Olive Jar Unglazed	UNKNOWN	17.0	1
01,155.1	Olive Jar Unglazed	UNKNOWN	6.8	1
01,155.2	Olive Jar Unglazed	UNKNOWN	4.1	1
01,155.3	Olive Jar Unglazed	UNKNOWN	1.0	1
01,155.4	Olive Jar Unglazed	UNKNOWN	0.6	1
01,159.1	Olive Jar Unglazed	UNKNOWN	0.63	1
01,159.2	Olive Jar Unglazed	UNKNOWN	0.63	1
01,159.3	Olive Jar Unglazed	UNKNOWN	0.63	1
01,159.4	Olive Jar Unglazed	UNKNOWN	0.63	1
01,192	Olive Jar Unglazed	114N 108E	18.8	9
01,195	Olive Jar Unglazed	114N 108E	13.3	5
01,201	Olive Jar Unglazed	114N 108E	14.3	2
01,213	Olive Jar Unglazed	114N 108E	14.9	1
01,217	Olive Jar Unglazed	112N 110E	14.9	1
01,220	Olive Jar Unglazed	114N 108E	62.7	1
01,223	Olive Jar Unglazed	114N 108E	26.2	1
01,226	Olive Jar Unglazed	114N 110E	29.1	1
01,227	Olive Jar Unglazed	114N 110E	94.2	1
01,229	Olive Jar Unglazed	114N 108E	100.1	1
01,230	Olive Jar Unglazed	114N 108E	29.2	1
01,231	Olive Jar Unglazed	114N 110E	142.8	1
01,232	Olive Jar Unglazed	114N 110E	15.7	1
01,234	Olive Jar Unglazed	112N 108E	11.2	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,235	Olive Jar Unglazed	112N 108E	17.9	1
01,238	Olive Jar Unglazed	114N 110E	77.5	2
01,243	Olive Jar Unglazed	112N 110E	4.3	1
01,244	Olive Jar Unglazed	112N 110E	104.2	1
01,245	Olive Jar Unglazed	UNKNOWN	38.6	1
01,247	Olive Jar Unglazed	BOW	57.1	1
01,248	Olive Jar Unglazed	BOW	UNKNOWN	1
01,252	Olive Jar Unglazed	112N 106E	210.7	2
01,253	Olive Jar Unglazed	116N 110E	31.0	1
01,295	Olive Jar Unglazed	114N 108E	14.7	3
01,302	Olive Jar Unglazed	114N 108E	11.0	1
01,303	Olive Jar Unglazed	112N 110E	22.5	1
01,312	Olive Jar Unglazed	114N 108E	130.5	1
01,313	Olive Jar Unglazed	114N 108E	100.1	1
01,315	Olive Jar Unglazed	114N 108E	28.0	1
01,320	Olive Jar Unglazed	114N 110E	303.4	1
01,322	Olive Jar Unglazed	114N 110E	242.2	1
01,323	Olive Jar Unglazed	114N 110E	33.1	1
01,330	Olive Jar Unglazed	112N 110E	9.1	1
01,331	Olive Jar Unglazed	112N 110E	12.1	1
01,332	Olive Jar Unglazed	114N 110E	26.8	2
01,334	Olive Jar Unglazed	114N 110E	60.5	1
01,335	Olive Jar Unglazed	114N 110E	43.7	1
01,340	Olive Jar Unglazed	114N 110E	78.6	1
01,344	Olive Jar Unglazed	114N 110E	31.8	1
01,347	Olive Jar Unglazed	114N 110E	21.8	1
01,348	Olive Jar Unglazed	114N 110E	23.6	1
01,357	Olive Jar Unglazed	BOW	16.4	1
01,361	Olive Jar Unglazed	112N 106E	22.6	1
01,363	Olive Jar Unglazed	116N 110E	28.3	1
01,364	Olive Jar Unglazed	116N 110E	35.8	1
01,385	Olive Jar Unglazed	116N 108E	29.2	1
01,394	Olive Jar Unglazed	116N 108E	16.4	1
01,400	Olive Jar Unglazed	112N 110E	38.8	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,401	Olive Jar Unglazed	112N 110E	71.9	1
01,402	Olive Jar Unglazed	112N 110E	81.7	1
01,407	Olive Jar Unglazed	116N 110E	16.1	1
01,431	Olive Jar Unglazed	116N 110E	16.5	1
01,434	Olive Jar Unglazed	116N 110E	21.3	1
01,436	Olive Jar Unglazed	116N 110E	17.2	1
01,440	Olive Jar Unglazed	114N 110E	21.4	1
01,441	Olive Jar Unglazed	114N 110E	66.4	1
01,448	Olive Jar Unglazed	114N 110E	21.4	1
01,450	Olive Jar Unglazed	114N 110E	78.7	1
01,451	Olive Jar Unglazed	114N 110E	173.3	1
01,454	Olive Jar Unglazed	114N 110E	19.0	1
01,455	Olive Jar Unglazed	114N 110E	36.3	1
01,456	Olive Jar Unglazed	114N 110E	54.0	1
01,464	Olive Jar Unglazed	114N 110E	10.0	1
01,465	Olive Jar Unglazed	114N 110E	20.7	1
01,467	Olive Jar Unglazed	114N 110E	7.1	1
01,468	Olive Jar Unglazed	114N 110E	27.1	1
01,469	Olive Jar Unglazed	114N 110E	37.5	1
01,474	Olive Jar Unglazed	BOW	23.4	1
01,475	Olive Jar Unglazed	114N 110E	25.6	1
01,477	Olive Jar Unglazed	114N 110E	32.7	1
01,478	Olive Jar Unglazed	114N 110E	15.2	1
01,480	Olive Jar Unglazed	114N 110E	44.2	1
01,484	Olive Jar Unglazed	118N 106E	23.1	1
01,486	Olive Jar Unglazed	114N 110E	18.6	1
01,487	Olive Jar Unglazed	114N 110E	70.2	1
01,488	Olive Jar Unglazed	114N 110E	8.6	1
01,490	Olive Jar Unglazed	114N 110E	90.8	1
01,495	Olive Jar Unglazed	114N 110E	28.5	1
01,498	Olive Jar Unglazed	114N 110E	20.0	1
01,499	Olive Jar Unglazed	114N 110E	28.4	1
01,501	Olive Jar Unglazed	116N 106E	113.6	1
01,511	Olive Jar Unglazed	116N 106E	43.2	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,512	Olive Jar Unglazed	116N 106E	88.3	1
01,522	Olive Jar Unglazed	112N 108E	17.7	1
01,523	Olive Jar Unglazed	112N 108E	6.6	1
01,525	Olive Jar Unglazed	112N 110E	11.2	1
01,526	Olive Jar Unglazed	114N 110E	49.1	1
01,532	Olive Jar Unglazed	116N 104E	62.1	2
01,534	Olive Jar Unglazed	116N 104E	404.8	1
01,535	Olive Jar Unglazed	114N 108E	99.9	1
01,540	Olive Jar Unglazed	114N 108E	53.4	1
01,546	Olive Jar Unglazed	112N 110E	28.8	1
01,554	Olive Jar Unglazed	112N 110E	271.0	4
01,555	Olive Jar Unglazed	112N 110E	28.8	1
01,557	Olive Jar Unglazed	112N 110E	18.2	1
01,576	Olive Jar Unglazed	112N 108E	13.8	1
01,584.00	Olive Jar Unglazed	114N 108E	54.6	3
01,586	Olive Jar Unglazed	112N 108E	135.4	1
01,590	Olive Jar Unglazed	112N 110E	357.1	12
01,593	Olive Jar Unglazed	114N 108E	14.7	1
01,594	Olive Jar Unglazed	114N 108E	111.2	1
01,596	Olive Jar Unglazed	114N 101E	59.2	1
01,607	Olive Jar Unglazed	114N 110E	30.4	1
01,608	Olive Jar Unglazed	114N 110E	26.4	2
01,609	Olive Jar Unglazed	114N 110E	10.6	1
01,610	Olive Jar Unglazed	114N 110E	2.1	1
01,611	Olive Jar Unglazed	114N 110E	73.5	2
01,612	Olive Jar Unglazed	114N 110E	3.2	1
01,613	Olive Jar Unglazed	BOW	102.5	3
01,615	Olive Jar Unglazed	114N 110E	54.1	1
01,616	Olive Jar Unglazed	114N 110E	90.2	1
01,626	Olive Jar Unglazed	114N 110E	10.3	1
01,644	Olive Jar Unglazed	114N 110E	39.2	1
01,653	Olive Jar Unglazed	118N 116E	35.5	1
01,659	Olive Jar Unglazed	114N 108E	50.7	1
01,672	Olive Jar Unglazed	112N 110E	60.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,674	Olive Jar Unglazed	112N 110E	102.3	1
01,680	Olive Jar Unglazed	116N 112E	52.6	1
01,681	Olive Jar Unglazed	116N 112E	13.8	1
01,689.00	Olive Jar Unglazed	114N 108E	5.9	1
01,693	Olive Jar Unglazed	116N 112E	2.8	1
01,699	Olive Jar Unglazed	116N 112E	60.2	1
01,706	Olive Jar Unglazed	118N 110E	30.3	1
01,714	Olive Jar Unglazed	116N 112E	11.1	1
01,720	Olive Jar Unglazed	118N 110E	23.9	1
01,721	Olive Jar Unglazed	118N 110E	43.9	1
01,728	Olive Jar Unglazed	118N 110E	17.4	1
01,742	Olive Jar Unglazed	118N 110E	25.1	1
01,747	Olive Jar Unglazed	116N 112E	22.2	1
01,748	Olive Jar Unglazed	116N 112E	261.9	1
01,795	Olive Jar Unglazed	114N 108E	36.0	1
01,813.00	Olive Jar Unglazed	114N 108E	115.4	1
01,830	Olive Jar Unglazed	118N 110E	31.0	1
01,832	Olive Jar Unglazed	116N 112E	8.5	1
01,859	Olive Jar Unglazed	114N 108E	51.4	1
01,863	Olive Jar Unglazed	114N 108E	15.7	1
01,864	Olive Jar Unglazed	114N 108E	428.8	1
01,869	Olive Jar Unglazed	114N 108E	21.0	1
01,874	Olive Jar Unglazed	114N 108E	25.9	1
01,875	Olive Jar Unglazed	114N 108E	5.0	1
01,883	Olive Jar Unglazed	114N 110E	72.8	1
01,897	Olive Jar Unglazed	114N 108E	164.1	1
01,899	Olive Jar Unglazed	114N 108E	79.5	1
01,905	Olive Jar Unglazed	114N 108E	41.3	1
01,911.02	Olive Jar Unglazed	114N 110E	0.9	3
01,913.01	Olive Jar Unglazed	BOW	11.0	3
01,913.02	Olive Jar Unglazed	BOW	0.5	1
01,917	Olive Jar Unglazed	112N 108E	32.4	7
01,922	Olive Jar Unglazed	112N 108E	3.6	6
01,923	Olive Jar Unglazed	114N 106E	1.4	4

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,924	Olive Jar Unglazed	112N 108E	3.7	8
01,927	Olive Jar Unglazed	114N 110E	34.5	1
01,928	Olive Jar Unglazed	114N 110E	11.1	1
01,929	Olive Jar Unglazed	112N 108E	36.2	1
01,937	Olive Jar Unglazed	112N 108E	7.3	22
01,938	Olive Jar Unglazed	112N 106E	6.6	7
01,941	Olive Jar Unglazed	114N 110E	6.8	3
01,943	Olive Jar Unglazed	112N 106E	5.5	7
01,944	Olive Jar Unglazed	112N 106E	0.6	4
01,946	Olive Jar Unglazed	112N 106E	0.1	4
01,953	Olive Jar Unglazed	112N 110E	4.2	15
01,958	Olive Jar Unglazed	112N 110E	55.4	56
01,971	Olive Jar Unglazed	112N 110E	14.5	1
01,981	Olive Jar Unglazed	114N 110E	6.8	4
01,982	Olive Jar Unglazed	114N 110E	51.8	12
01,984	Olive Jar Unglazed	112N 110E	55.3	51
01,989	Olive Jar Unglazed	112N 110E	2.9	1
01,994	Olive Jar Unglazed	112N 108E	4.3	6
01,999	Olive Jar Unglazed	112N 108E	13.5	13
02,001	Olive Jar Unglazed	114N 110E	5.9	3
02,003	Olive Jar Unglazed	114N 108E	8.7	4
02,007	Olive Jar Unglazed	112N 106E	1.5	1
02,009	Olive Jar Unglazed	112N 106E	0.5	1
02,015	Olive Jar Unglazed	114N 108E	2.2	3
02,020	Olive Jar Unglazed	114N 108E	1.5	1
02,021	Olive Jar Unglazed	114N 110E	8.4	1
02,022	Olive Jar Unglazed	114N 110E	1.6	4
02,026	Olive Jar Unglazed	114N 108E	6.2	4
02,030	Olive Jar Unglazed	114N 110E	12.0	5
02,034	Olive Jar Unglazed	112N 110E	22.6	1
02,036	Olive Jar Unglazed	114N 110E	11.6	5
02,038	Olive Jar Unglazed	BOW	6.1	2
02,039	Olive Jar Unglazed	114N 108E	3.1	3
02,045	Olive Jar Unglazed	112N 106E	UNKNOWN	2

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,057	Olive Jar Unglazed	116N 108E	5.0	4
02,061	Olive Jar Unglazed	112N 106E	6.5	4
02,065	Olive Jar Unglazed	116N 108E	12.0	3
02,068	Olive Jar Unglazed	112N 108E	4.4	1
02,070	Olive Jar Unglazed	112N 108E	2.5	1
02,072	Olive Jar Unglazed	116N 110E	18.0	2
02,074	Olive Jar Unglazed	112N 108E	4.6	1
02,076	Olive Jar Unglazed	116N 110E	0.7	1
02,078	Olive Jar Unglazed	116N 106E	4.4	2
02,080	Olive Jar Unglazed	116N 110E	9.9	7
02,083	Olive Jar Unglazed	116N 106E	1.7	2
02,088	Olive Jar Unglazed	116N 110E	22.7	2
02,089	Olive Jar Unglazed	116N 108E	24.9	4
02,092	Olive Jar Unglazed	114N 108E	1.9	1
02,096	Olive Jar Unglazed	116N 110E	25.0	6
02,101	Olive Jar Unglazed	116N 108E	0.7	1
02,109	Olive Jar Unglazed	116N 110E	3.5	1
02,110	Olive Jar Unglazed	116N 110E	3.2	1
02,114	Olive Jar Unglazed	114N 110E	1.3	2
02,115	Olive Jar Unglazed	118N 108E	3.1	1
02,118	Olive Jar Unglazed	118N 110E	3.6	1
02,122	Olive Jar Unglazed	118N 110E	2.1	3
02,129	Olive Jar Unglazed	114N 110E	41.6	14
02,130	Olive Jar Unglazed	116N 110E	9.1	4
02,133	Olive Jar Unglazed	118N 108E	10.0	2
02,137	Olive Jar Unglazed	114N 110E	1.4	1
02,146	Olive Jar Unglazed	114N 108E	0.3	1
02,152	Olive Jar Unglazed	116N 110E	3.4	6
02,153	Olive Jar Unglazed	116N 112E	6.8	1
02,154	Olive Jar Unglazed	116N 112E	1.7	1
02,163	Olive Jar Unglazed	116N 104E	39.8	1
02,165	Olive Jar Unglazed	118N 106E	6.8	1
02,172	Olive Jar Unglazed	112N 108E	3.9	3
02,175	Olive Jar Unglazed	118N 110E	18.0	4

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,179	Olive Jar Unglazed	114N 108E	3.6	3
02,183	Olive Jar Unglazed	114N 108E	8.1	1
02,190	Olive Jar Unglazed	112N 108E	2.8	1
02,194	Olive Jar Unglazed	BOW	8.3	3
02,200	Olive Jar Unglazed	116N 106E	26.3	1
02,202	Olive Jar Unglazed	116N 108E	1.5	1
02,212	Olive Jar Unglazed	116N 104E	20.0	2
02,216	Olive Jar Unglazed	116N 104E	2.6	1
02,220	Olive Jar Unglazed	112N 110E	19.4	3
02,231	Olive Jar Unglazed	114N 108E	36.9	8
02,240	Olive Jar Unglazed	112N 108E	2.0	2
02,243	Olive Jar Unglazed	BOW	31.1	5
02,252	Olive Jar Unglazed	112N 110E	7.8	1
02,254	Olive Jar Unglazed	116N 108E	4.7	2
02,266	Olive Jar Unglazed	118N 108E	2.2	1
02,270	Olive Jar Unglazed	114N 108E	31.0	2
02,271	Olive Jar Unglazed	114N 108E	2.8	3
02,276	Olive Jar Unglazed	118N 110E	3.2	2
02,278	Olive Jar Unglazed	114N 104E	12.0	5
02,285	Olive Jar Unglazed	114N 108E	7.9	1
02,292	Olive Jar Unglazed	112N 104E	7.6	4
02,298	Olive Jar Unglazed	114N 110E	23.2	5
02,310	Olive Jar Unglazed	116N 112E	13.6	1
02,311	Olive Jar Unglazed	114N 108E	65.4	2
02,315	Olive Jar Unglazed	114N 104E	13.9	1
02,324	Olive Jar Unglazed	116N 110E	5.6	1
02,326	Olive Jar Unglazed	114N 108E	UNKNOWN	1
02,340	Olive Jar Unglazed	114N 108E	5.1	1
02,344	Olive Jar Unglazed	114N 106E	17.8	1
02,353	Olive Jar Unglazed	110N 112E	3.5	2
02,354	Olive Jar Unglazed	118N 104E	2.6	2
02,359	Olive Jar Unglazed	118N 110E	17.9	4
02,364	Olive Jar Unglazed	114N 110E	38.6	8
02,369	Olive Jar Unglazed	118N 108E	4.7	3

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,370	Olive Jar Unglazed	112N 104E	4.1	2
02,371	Olive Jar Unglazed	118N 106N	0.9	1
02,375	Olive Jar Unglazed	112N 106E	9.0	2
02,388	Olive Jar Unglazed	116N 106E	6.4	1
02,395	Olive Jar Unglazed	114N 108E	9.0	1
02,399	Olive Jar Unglazed	116N 106E	3.4	1
02,401	Olive Jar Unglazed	114N 108E	5.8	2
02,405	Olive Jar Unglazed	118N 108E	2.0	2
02,407	Olive Jar Unglazed	114N 104E	10.6	1
02,409	Olive Jar Unglazed	118N 110E	4.1	1
02,414	Olive Jar Unglazed	114N 110E	3.0	2
02,421	Olive Jar Unglazed	114N 108E	8.9	2
02,423	Olive Jar Unglazed	118N 108E	3.4	1
02,425	Olive Jar Unglazed	114N 110E	9.3	2
02,500	Olive Jar Unglazed	114N 110E	12.6	1
02,501	Olive Jar Unglazed	118N 106E	3.6	1
02,502	Olive Jar Unglazed	114N 110E	106.7	1
02,503	Olive Jar Unglazed	114N 108E	216.8	1
02,504	Olive Jar Unglazed	118N 108E	8.6	2
02,505	Olive Jar Unglazed	118N 110E	1.5	1
02,520	Olive Jar Unglazed	112N 108E	105.7	35
02,525	Olive Jar Unglazed	114N 108E	20.5	1
02,527	Olive Jar Unglazed	114N 108E	32.3	12
02,528.00	Olive Jar Unglazed	BOW	11.0	3
02,529	Olive Jar Unglazed	118N 110E	12.2	1
02,531	Olive Jar Unglazed	116N 104E	1.0	1
02,537	Olive Jar Unglazed	112N 110E	19.9	2
02,540	Olive Jar Unglazed	114N 108E	30.0	2
02,541	Olive Jar Unglazed	BOW	8.2	1
02,542	Olive Jar Unglazed	BOW	17.3	1
02,544	Olive Jar Unglazed	112N 108E	181.4	7
02,545	Olive Jar Unglazed	112N 114E	83.4	2
02,547	Olive Jar Unglazed	112N 104E	34.1	9
02,549	Olive Jar Unglazed	114N 110E	36.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
02,550	Olive Jar Unglazed	116N 112E	30.3	1
02,555	Olive Jar Unglazed	BOW	26.2	7
02,563	Olive Jar Unglazed	116N 112E	159.0	14
02,594	Olive Jar Unglazed	112N 104E	3.8	1
02,600	Olive Jar Unglazed	114N 104E	UNKNOWN	1
02,608.01	Olive Jar Unglazed	114N 104E	UNKNOWN	2
02,626	Olive Jar Unglazed	114N 108E	67.2	4
02,628	Olive Jar Unglazed	BOW	16.5	1
02,629	Olive Jar Unglazed	114N 110E	7.8	1
02,634	Olive Jar Unglazed	116N 112E	598.7	6
02,635	Olive Jar Unglazed	UNKNOWN	70.0	11
02,643	Olive Jar Unglazed	114N 110E	5.8	1
02,653	Olive Jar Unglazed	BOW	25.0	3
04,257	Olive Jar Unglazed	112N 110E	6.6	1
04,258	Olive Jar Unglazed	112N 110E	82.9	1
04,263	Olive Jar Unglazed	114N 108E	39.2	1
04,265	Olive Jar Unglazed	114N 108E	24.4	1
04,267	Olive Jar Unglazed	114N 110E	UNKNOWN	1
04,292	Olive Jar Unglazed	114N 108E	UNKNOWN	4
07,708.1	Olive Jar Unglazed	UNKNOWN	28.7	1
07,708.2	Olive Jar Unglazed	UNKNOWN	72.7	1
07,708.3	Olive Jar Unglazed	UNKNOWN	33.4	1
07,709	Olive Jar Unglazed	UNKNOWN	247.4	1
07,711.1	Olive Jar Unglazed	UNKNOWN	4.3	1
07,712.1	Olive Jar Unglazed	UNKNOWN	17.5	1
07,712.2	Olive Jar Unglazed	UNKNOWN	118.0	1
07,713.1	Olive Jar Unglazed	UNKNOWN	41.2	1
07,713.2	Olive Jar Unglazed	UNKNOWN	10.5	1
07,713.3	Olive Jar Unglazed	UNKNOWN	9.0	1
07,713.4	Olive Jar Unglazed	UNKNOWN	46.5	1
07,714.1	Olive Jar Unglazed	UNKNOWN	47.1	1
07,714.2	Olive Jar Unglazed	UNKNOWN	41.3	1
07,714.3	Olive Jar Unglazed	UNKNOWN	24.9	1
07,715.02	Olive Jar Unglazed	UNKNOWN	7.7	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,715.1	Olive Jar Unglazed	UNKNOWN	6.5	1
07,716.1	Olive Jar Unglazed	UNKNOWN	8.5	1
07,719.1	Olive Jar Unglazed	UNKNOWN	17.5	1
07,719.2	Olive Jar Unglazed	UNKNOWN	40.3	1
07,720.1	Olive Jar Unglazed	UNKNOWN	15.6	1
07,720.2	Olive Jar Unglazed	UNKNOWN	16.0	1
07,720.3	Olive Jar Unglazed	UNKNOWN	8.0	1
07,721.1	Olive Jar Unglazed	UNKNOWN	150.1	1
07,722.01	Olive Jar Unglazed	UNKNOWN	95.6	1
07,723.1	Olive Jar Unglazed	UNKNOWN	150.5	1
07,725.01	Olive Jar Unglazed	UNKNOWN	40.5	1
07,734.1	Olive Jar Unglazed	UNKNOWN	10.0	1
07,735.1	Olive Jar Unglazed	UNKNOWN	4.8	1
07,740.1	Olive Jar Unglazed	UNKNOWN	4.0	1
07,740.2	Olive Jar Unglazed	UNKNOWN	2.0	1
07,741.1	Olive Jar Unglazed	UNKNOWN	13.7	1
07,752.1	Olive Jar Unglazed	UNKNOWN	2.6	1
07,760.1	Olive Jar Unglazed	UNKNOWN	4.4	1
07,760.2	Olive Jar Unglazed	UNKNOWN	1.0	1
07,761.1	Olive Jar Unglazed	UNKNOWN	1.0	1
07,761.2	Olive Jar Unglazed	UNKNOWN	5.0	1
07,762.1	Olive Jar Unglazed	UNKNOWN	24.5	1
07,764.1	Olive Jar Unglazed	UNKNOWN	0.5	1
07,765.1	Olive Jar Unglazed	UNKNOWN	7.5	1
07,766.1	Olive Jar Unglazed	UNKNOWN	6.5	1
07,768.1	Olive Jar Unglazed	UNKNOWN	7.5	1
07,771.1	Olive Jar Unglazed	UNKNOWN	1.6	1
07,771.2	Olive Jar Unglazed	UNKNOWN	1.5	1
07,771.3	Olive Jar Unglazed	UNKNOWN	5.0	1
07,771.4	Olive Jar Unglazed	UNKNOWN	6.0	1
07,771.5	Olive Jar Unglazed	UNKNOWN	7.0	1
07,771.6	Olive Jar Unglazed	UNKNOWN	6.0	1
07,771.7	Olive Jar Unglazed	UNKNOWN	6.0	1
07,771.8	Olive Jar Unglazed	UNKNOWN	36.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,772.1	Olive Jar Unglazed	UNKNOWN	17.5	1
07,774.1	Olive Jar Unglazed	UNKNOWN	11.5	1
07,774.2	Olive Jar Unglazed	UNKNOWN	14.5	1
07,774.3	Olive Jar Unglazed	UNKNOWN	1.5	1
07,774.4	Olive Jar Unglazed	UNKNOWN	11.0	1
07,775.1	Olive Jar Unglazed	UNKNOWN	1.0	1
07,775.10	Olive Jar Unglazed	UNKNOWN	7.5	1
07,775.11	Olive Jar Unglazed	UNKNOWN	2.5	1
07,775.12	Olive Jar Unglazed	UNKNOWN	3.0	1
07,775.14	Olive Jar Unglazed	UNKNOWN	7.2	1
07,775.2	Olive Jar Unglazed	UNKNOWN	1.2	1
07,775.3	Olive Jar Unglazed	UNKNOWN	1.5	1
07,775.4	Olive Jar Unglazed	UNKNOWN	3.0	1
07,775.5	Olive Jar Unglazed	UNKNOWN	2.5	1
07,775.6	Olive Jar Unglazed	UNKNOWN	2.0	1
07,775.7	Olive Jar Unglazed	UNKNOWN	3.5	1
07,775.8	Olive Jar Unglazed	UNKNOWN	5.5	1
07,775.9	Olive Jar Unglazed	UNKNOWN	5.5	1
07,776.1	Olive Jar Unglazed	UNKNOWN	81.2	1
07,780.1	Olive Jar Unglazed	UNKNOWN	35.0	1
07,780.2	Olive Jar Unglazed	UNKNOWN	28.0	1
07,780.3	Olive Jar Unglazed	UNKNOWN	3.0	1
07,782.02	Olive Jar Unglazed	UNKNOWN	1.8	1
07,785.07	Olive Jar Unglazed	UNKNOWN	18.3	1
07,785.1	Olive Jar Unglazed	UNKNOWN	40.5	1
07,785.10	Olive Jar Unglazed	UNKNOWN	9.3	1
07,785.11	Olive Jar Unglazed	UNKNOWN	3.3	1
07,785.12	Olive Jar Unglazed	UNKNOWN	1.4	1
07,785.13	Olive Jar Unglazed	UNKNOWN	4.0	1
07,785.14	Olive Jar Unglazed	UNKNOWN	2.5	1
07,785.15	Olive Jar Unglazed	UNKNOWN	2.5	1
07,785.16	Olive Jar Unglazed	UNKNOWN	3.5	1
07,785.17	Olive Jar Unglazed	UNKNOWN	1.5	1
07,785.18	Olive Jar Unglazed	UNKNOWN	8.8	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,785.2	Olive Jar Unglazed	UNKNOWN	8.0	1
07,785.20	Olive Jar Unglazed	UNKNOWN	3.5	1
07,785.21	Olive Jar Unglazed	UNKNOWN	9.1	1
07,785.22	Olive Jar Unglazed	UNKNOWN	2.1	1
07,785.23	Olive Jar Unglazed	UNKNOWN	2.5	1
07,785.24	Olive Jar Unglazed	UNKNOWN	1.5	1
07,785.25	Olive Jar Unglazed	UNKNOWN	2.5	1
07,785.3	Olive Jar Unglazed	UNKNOWN	17.0	1
07,785.4	Olive Jar Unglazed	UNKNOWN	20.4	1
07,785.6	Olive Jar Unglazed	UNKNOWN	12.4	1
07,785.8	Olive Jar Unglazed	UNKNOWN	21.7	1
07,785.9	Olive Jar Unglazed	UNKNOWN	7.7	1
07,788.11	Olive Jar Unglazed	UNKNOWN	5.0	1
07,788.13	Olive Jar Unglazed	UNKNOWN	2.5	1
07,788.14	Olive Jar Unglazed	UNKNOWN	2.5	1
07,788.2	Olive Jar Unglazed	UNKNOWN	11.0	1
07,788.26	Olive Jar Unglazed	UNKNOWN	4.0	1
07,788.4	Olive Jar Unglazed	UNKNOWN	13.0	1
07,788.6	Olive Jar Unglazed	UNKNOWN	2.5	1
07,788.7	Olive Jar Unglazed	UNKNOWN	2.0	1
07,788.8	Olive Jar Unglazed	UNKNOWN	2.5	1
07,794.2	Olive Jar Unglazed	UNKNOWN	38.4	1
07,794.3	Olive Jar Unglazed	UNKNOWN	5.2	1
07,794.4	Olive Jar Unglazed	UNKNOWN	7.2	1
07,804.1	Olive Jar Unglazed	UNKNOWN	33.0	1
07,805.1	Olive Jar Unglazed	UNKNOWN	4.0	1
07,805.2	Olive Jar Unglazed	UNKNOWN	5.0	1
07,805.3	Olive Jar Unglazed	UNKNOWN	4.0	1
07,809.1	Olive Jar Unglazed	UNKNOWN	4.5	1
07,809.2	Olive Jar Unglazed	UNKNOWN	5.5	1
07,809.3	Olive Jar Unglazed	UNKNOWN	3.5	1
07,809.4	Olive Jar Unglazed	UNKNOWN	5.0	1
07,811.1	Olive Jar Unglazed	UNKNOWN	12.5	1
07,811.2	Olive Jar Unglazed	UNKNOWN	2.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,811.3	Olive Jar Unglazed	UNKNOWN	3.5	1
07,811.4	Olive Jar Unglazed	UNKNOWN	3.9	1
07,811.5	Olive Jar Unglazed	UNKNOWN	4.0	1
07,811.6	Olive Jar Unglazed	UNKNOWN	3.5	1
07,811.7	Olive Jar Unglazed	UNKNOWN	12.6	1
07,811.8	Olive Jar Unglazed	UNKNOWN	40.0	1
07,811.9	Olive Jar Unglazed	UNKNOWN	14.0	1
07,813.1	Olive Jar Unglazed	UNKNOWN	19.5	1
07,813.2	Olive Jar Unglazed	UNKNOWN	17.5	1
07,817.1	Olive Jar Unglazed	UNKNOWN	14.5	1
07,817.2	Olive Jar Unglazed	UNKNOWN	7.0	1
07,819.3	Olive Jar Unglazed	UNKNOWN	9.0	1
07,822.1	Olive Jar Unglazed	UNKNOWN	1.0	1
07,822.2	Olive Jar Unglazed	UNKNOWN	17.0	1
07,823.1	Olive Jar Unglazed	UNKNOWN	0.5	1
07,831.1	Olive Jar Unglazed	UNKNOWN	3.0	1
07,831.2	Olive Jar Unglazed	UNKNOWN	0.5	1
07,831.3	Olive Jar Unglazed	UNKNOWN	1.5	1
07,834.1	Olive Jar Unglazed	UNKNOWN	5.0	1
07,834.2	Olive Jar Unglazed	UNKNOWN	0.5	1
07,834.3	Olive Jar Unglazed	UNKNOWN	3.5	1
07,834.4	Olive Jar Unglazed	UNKNOWN	8.0	1
07,835.1	Olive Jar Unglazed	UNKNOWN	14.4	1
07,835.2	Olive Jar Unglazed	UNKNOWN	53.7	1
07,837.1	Olive Jar Unglazed	UNKNOWN	21.5	1
07,841.02	Olive Jar Unglazed	UNKNOWN	1.5	1
07,841.03	Olive Jar Unglazed	UNKNOWN	6.5	1
07,844.1	Olive Jar Unglazed	UNKNOWN	102.0	1
07,844.2	Olive Jar Unglazed	UNKNOWN	20.5	1
07,844.3	Olive Jar Unglazed	UNKNOWN	3.0	1
07,848	Olive Jar Unglazed	UNKNOWN	1.0	1
07,853	Olive Jar Unglazed	UNKNOWN	3.5	1
07,855.02	Olive Jar Unglazed	UNKNOWN	4.0	1
07,855.03	Olive Jar Unglazed	UNKNOWN	21.4	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,859.1	Olive Jar Unglazed	UNKNOWN	8.0	1
07,859.2	Olive Jar Unglazed	UNKNOWN	6.5	1
07,859.3	Olive Jar Unglazed	UNKNOWN	2.0	1
07,859.4	Olive Jar Unglazed	UNKNOWN	1.5	1
07,859.5	Olive Jar Unglazed	UNKNOWN	1.5	1
07,867.1	Olive Jar Unglazed	UNKNOWN	2.0	1
07,867.2	Olive Jar Unglazed	UNKNOWN	7.0	1
07,867.3	Olive Jar Unglazed	UNKNOWN	5.0	1
07,872.1	Olive Jar Unglazed	UNKNOWN	7.5	1
07,873.1	Olive Jar Unglazed	UNKNOWN	6.5	1
07,873.2	Olive Jar Unglazed	UNKNOWN	10.5	1
07,874.1	Olive Jar Unglazed	UNKNOWN	3.5	1
07,874.2	Olive Jar Unglazed	UNKNOWN	3.5	1
07,874.3	Olive Jar Unglazed	UNKNOWN	31.4	1
07,876.1	Olive Jar Unglazed	UNKNOWN	9.0	1
07,876.2	Olive Jar Unglazed	UNKNOWN	5.0	1
07,879	Olive Jar Unglazed	UNKNOWN	564.1	1
07,880.05	Olive Jar Unglazed	UNKNOWN	16.0	1
07,880.06	Olive Jar Unglazed	UNKNOWN	161.3	1
07,880.1	Olive Jar Unglazed	UNKNOWN	9.3	1
07,880.2	Olive Jar Unglazed	UNKNOWN	25.0	1
07,880.3	Olive Jar Unglazed	UNKNOWN	25.0	1
07,880.4	Olive Jar Unglazed	UNKNOWN	37.0	1
07,882	Olive Jar Unglazed	UNKNOWN	543.6	1
07,882.10	Olive Jar Unglazed	UNKNOWN	63.2	1
07,882.8	Olive Jar Unglazed	UNKNOWN	10.0	1
07,882.9	Olive Jar Unglazed	UNKNOWN	33.0	1
07,884.01	Olive Jar Unglazed	UNKNOWN	19.8	1
07,884.02	Olive Jar Unglazed	UNKNOWN	19.8	1
07,884.04	Olive Jar Unglazed	UNKNOWN	19.8	1
07,884.3	Olive Jar Unglazed	UNKNOWN	40.0	1
07,889.1	Olive Jar Unglazed	UNKNOWN	3.0	1
07,889.2	Olive Jar Unglazed	UNKNOWN	3.5	1
07,889.3	Olive Jar Unglazed	UNKNOWN	5.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
07,889.4	Olive Jar Unglazed	UNKNOWN	10.0	1
07,890.2	Olive Jar Unglazed	UNKNOWN	1.5	1
07,890.3	Olive Jar Unglazed	UNKNOWN	8.5	1
07,890.4	Olive Jar Unglazed	UNKNOWN	5.5	1
07,890.5	Olive Jar Unglazed	UNKNOWN	4.0	1
07,893.3	Olive Jar Unglazed	UNKNOWN	2.5	1
07,894.1	Olive Jar Unglazed	UNKNOWN	19.5	1
07,894.2	Olive Jar Unglazed	UNKNOWN	21.5	1
07,894.3	Olive Jar Unglazed	UNKNOWN	8.5	1
07,899.2	Olive Jar Unglazed	UNKNOWN	12.2	1
07.785.19	Olive Jar Unglazed	UNKNOWN	2.5	1
07.785.5	Olive Jar Unglazed	UNKNOWN	1.7	1
08,702.1	Olive Jar Unglazed	UNKNOWN	10.0	1
08,702.2	Olive Jar Unglazed	UNKNOWN	21.5	1
08,708.02	Olive Jar Unglazed	UNKNOWN	16.0	1
08,708.3	Olive Jar Unglazed	UNKNOWN	101.3	1
08,708.5	Olive Jar Unglazed	UNKNOWN	11.0	1
08,708.6	Olive Jar Unglazed	UNKNOWN	37.0	1
08,708.7	Olive Jar Unglazed	UNKNOWN	5.5	1
08,719.1	Olive Jar Unglazed	UNKNOWN	2.7	1
08,719.10	Olive Jar Unglazed	UNKNOWN	19.8	1
08,719.11	Olive Jar Unglazed	UNKNOWN	5.9	1
08,719.12	Olive Jar Unglazed	UNKNOWN	1.2	1
08,719.13	Olive Jar Unglazed	UNKNOWN	2.3	1
08,719.14	Olive Jar Unglazed	UNKNOWN	1.4	1
08,719.15	Olive Jar Unglazed	UNKNOWN	1.1	1
08,719.16	Olive Jar Unglazed	UNKNOWN	2.0	1
08,719.17	Olive Jar Unglazed	UNKNOWN	1.4	1
08,719.18	Olive Jar Unglazed	UNKNOWN	1.7	1
08,719.19	Olive Jar Unglazed	UNKNOWN	2.5	1
08,719.20	Olive Jar Unglazed	UNKNOWN	1.0	1
08,719.21	Olive Jar Unglazed	UNKNOWN	0.9	1
08,719.22	Olive Jar Unglazed	UNKNOWN	0.4	1
08,719.23	Olive Jar Unglazed	UNKNOWN	0.9	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
08,719.24	Olive Jar Unglazed	UNKNOWN	0.9	1
08,719.25	Olive Jar Unglazed	UNKNOWN	0.9	1
08,719.26	Olive Jar Unglazed	UNKNOWN	0.9	1
08,719.27	Olive Jar Unglazed	UNKNOWN	0.9	1
08,719.3	Olive Jar Unglazed	UNKNOWN	5.4	1
08,719.4	Olive Jar Unglazed	UNKNOWN	8.0	1
08,719.5	Olive Jar Unglazed	UNKNOWN	9.0	1
08,719.6	Olive Jar Unglazed	UNKNOWN	5.6	1
08,719.7	Olive Jar Unglazed	UNKNOWN	3.4	1
08,719.8	Olive Jar Unglazed	UNKNOWN	7.0	1
08,719.9	Olive Jar Unglazed	UNKNOWN	3.4	1
08,729.1	Olive Jar Unglazed	UNKNOWN	7.1	1
08,729.2	Olive Jar Unglazed	UNKNOWN	2.0	1
08,729.3	Olive Jar Unglazed	UNKNOWN	0.5	1
08,729.4	Olive Jar Unglazed	UNKNOWN	0.5	1
08,729.5	Olive Jar Unglazed	UNKNOWN	2.0	1
08,729.6	Olive Jar Unglazed	UNKNOWN	1.5	1
08,730.2	Olive Jar Unglazed	UNKNOWN	2.5	1
08,730.3	Olive Jar Unglazed	UNKNOWN	1.0	1
08,730.5	Olive Jar Unglazed	UNKNOWN	7.0	1
08,736.3	Olive Jar Unglazed	UNKNOWN	16.0	1
08,736.7	Olive Jar Unglazed	UNKNOWN	23.1	1
08,737.1	Olive Jar Unglazed	UNKNOWN	10.0	1
08,737.2	Olive Jar Unglazed	UNKNOWN	3.0	1
08,745.1	Olive Jar Unglazed	UNKNOWN	29.5	1
08,745.2	Olive Jar Unglazed	UNKNOWN	3.2	1
08,751	Olive Jar Unglazed	UNKNOWN	133.4	1
08,755	Olive Jar Unglazed	UNKNOWN	9.5	1
08,757.1	Olive Jar Unglazed	UNKNOWN	2.9	1
08,757.2	Olive Jar Unglazed	UNKNOWN	2.6	1
08,759.1	Olive Jar Unglazed	UNKNOWN	4.5	1
08,759.2	Olive Jar Unglazed	UNKNOWN	3.5	1
08,765	Olive Jar Unglazed	UNKNOWN	2.3	1
08,782	Olive Jar Unglazed	UNKNOWN	1.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
08,785.01	Olive Jar Unglazed	UNKNOWN	4.0	1
08,785.02	Olive Jar Unglazed	UNKNOWN	11.0	1
08,785.03	Olive Jar Unglazed	UNKNOWN	4.0	1
08,785.04	Olive Jar Unglazed	UNKNOWN	2.0	1
08,785.05	Olive Jar Unglazed	UNKNOWN	1.5	1
08,785.06	Olive Jar Unglazed	UNKNOWN	4.0	1
08,785.07	Olive Jar Unglazed	UNKNOWN	3.7	1
08,785.08	Olive Jar Unglazed	UNKNOWN	2.0	1
08,785.09	Olive Jar Unglazed	UNKNOWN	3.5	1
08,785.10	Olive Jar Unglazed	UNKNOWN	3.0	1
08,785.11	Olive Jar Unglazed	UNKNOWN	2.0	1
08,785.12	Olive Jar Unglazed	UNKNOWN	1.0	1
08,789.04	Olive Jar Unglazed	UNKNOWN	1.1	1
08,789.05	Olive Jar Unglazed	UNKNOWN	2.5	1
08,789.06	Olive Jar Unglazed	UNKNOWN	4.0	1
08,789.07	Olive Jar Unglazed	UNKNOWN	0.5	1
08,789.08	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
08,789.1	Olive Jar Unglazed	UNKNOWN	2.5	1
08,789.2	Olive Jar Unglazed	UNKNOWN	4.5	1
08,799.01	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
08,799.02	Olive Jar Unglazed	UNKNOWN	3.6	1
08,799.03	Olive Jar Unglazed	UNKNOWN	3.0	1
08,799.04	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
08,799.05	Olive Jar Unglazed	UNKNOWN	2.5	1
08,799.07	Olive Jar Unglazed	UNKNOWN	27.0	1
08,799.08	Olive Jar Unglazed	UNKNOWN	3.5	1
08,801	Olive Jar Unglazed	UNKNOWN	5.3	1
08,805.1	Olive Jar Unglazed	UNKNOWN	9.0	1
08,806	Olive Jar Unglazed	UNKNOWN	5.8	1
08,807.1	Olive Jar Unglazed	UNKNOWN	3.5	1
08,807.2	Olive Jar Unglazed	UNKNOWN	8.0	1
08,808	Olive Jar Unglazed	UNKNOWN	6.5	1
08,810	Olive Jar Unglazed	UNKNOWN	11.5	1
08,812.1	Olive Jar Unglazed	UNKNOWN	12.0	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
08,813.1	Olive Jar Unglazed	UNKNOWN	3.5	1
08,814	Olive Jar Unglazed	UNKNOWN	29.0	1
08,815.1	Olive Jar Unglazed	UNKNOWN	0.9	1
08,815.2	Olive Jar Unglazed	UNKNOWN	0.9	1
08,816	Olive Jar Unglazed	UNKNOWN	41.0	1
08,817.1	Olive Jar Unglazed	UNKNOWN	186.0	1
08,818.1	Olive Jar Unglazed	UNKNOWN	34.5	1
08,848	Olive Jar Unglazed	UNKNOWN	31.5	1
08.736.6	Olive Jar Unglazed	UNKNOWN	2.5	1
00,313	Olive Jar Unglazed	114N 133E	40.8	1
00,402.01	Olive Jar Unglazed	114N 127E	40.4	1
00,402.02	Olive Jar Unglazed	114N 127E	23.7	1
00,402.03	Olive Jar Unglazed	114N 127E	9.4	1
00,402.04	Olive Jar Unglazed	114N 127E	51.8	1
00,624	Olive Jar Unglazed	114N 131E	87.0	1
00,641	Olive Jar Unglazed	114N 131E	7.0	1
00,798	Olive Jar Unglazed	112N 135E	76.5	1
01,221	Olive Jar Unglazed	114N 108E	77.0	1
01,236	Olive Jar Unglazed	114N 110E	75.2	1
01,246	Olive Jar Unglazed	UNKNOWN	38.2	1
01,298	Olive Jar Unglazed	UNKNOWN	29.8	1
01,333	Olive Jar Unglazed	114N 110E	119.0	1
01,351	Olive Jar Unglazed	114N 110E	59.0	1
01,368	Olive Jar Unglazed	116N 110E	209.8	1
01,442	Olive Jar Unglazed	114N 110E	162.5	1
01,444	Olive Jar Unglazed	114N 110E	168.6	1
01,481	Olive Jar Unglazed	114N 110E	56.0	1
01,497	Olive Jar Unglazed	114N 110E	30.5	1
01,520	Olive Jar Unglazed	112N 110E	102.3	1
01,528	Olive Jar Unglazed	112N 110E	101.8	1
01,563	Olive Jar Unglazed	UNKNOWN	146.9	2
01,620	Olive Jar Unglazed	114N 110E	159.5	2
01,625	Olive Jar Unglazed	114N 110E	48.8	1
01,630	Olive Jar Unglazed	114N 108E	115.4	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
01,632	Olive Jar Unglazed	114N 110E	74.7	1
01,666	Olive Jar Unglazed	114N 108E	52.9	1
01,698	Olive Jar Unglazed	116N 106E	17.6	1
01,886	Olive Jar Unglazed	114N 110E	177.8	1
01,918	Olive Jar Unglazed	112N 108E	2.2	1
01,959	Olive Jar Unglazed	112N 110E	20.5	2
02,119	Olive Jar Unglazed	114N 110E	5.1	1
07,770.1	Olive Jar Unglazed	UNKNOWN	22.0	1
07,776.2	Olive Jar Unglazed	UNKNOWN	20.1	1
07,782.01	Olive Jar Unglazed	UNKNOWN	4.0	1
07,788.10	Olive Jar Unglazed	UNKNOWN	1.8	1
07,788.12	Olive Jar Unglazed	UNKNOWN	1.5	1
07,788.15	Olive Jar Unglazed	UNKNOWN	4.0	1
07,788.16	Olive Jar Unglazed	UNKNOWN	5.0	1
07,788.17	Olive Jar Unglazed	UNKNOWN	19.5	1
07,788.3	Olive Jar Unglazed	UNKNOWN	8.0	1
07,788.5	Olive Jar Unglazed	UNKNOWN	9.5	1
07,788.9	Olive Jar Unglazed	UNKNOWN	6.5	1
07,791.01	Olive Jar Unglazed	UNKNOWN	13.5	1
07,791.02	Olive Jar Unglazed	UNKNOWN	4.9	1
07,791.03	Olive Jar Unglazed	UNKNOWN	9.7	1
07,794.1	Olive Jar Unglazed	UNKNOWN	21.5	1
07,794.5	Olive Jar Unglazed	UNKNOWN	13.6	1
07,794.6	Olive Jar Unglazed	UNKNOWN	36.9	1
07,794.7	Olive Jar Unglazed	UNKNOWN	11.1	1
07,804.2	Olive Jar Unglazed	UNKNOWN	52.0	1
07,827.02	Olive Jar Unglazed	UNKNOWN	17.0	1
07,890.1	Olive Jar Unglazed	UNKNOWN	3.2	1
08,730.04	Olive Jar Unglazed	UNKNOWN	4.7	1
08,730.1	Olive Jar Unglazed	UNKNOWN	2.0	1
08,734	Olive Jar Unglazed	UNKNOWN	4.5	1
08,736.1	Olive Jar Unglazed	UNKNOWN	7.5	1
08,736.11	Olive Jar Unglazed	UNKNOWN	8.7	1
08,789.3	Olive Jar Unglazed	UNKNOWN	3.5	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
08,799.06	Olive Jar Unglazed	UNKNOWN	23.0	1
08,847	Olive Jar Unglazed	UNKNOWN	51.7	1
01,053.01	Olive Jar Glazed	114N 127E	151.0	1
01,508.01	Olive Jar Glazed	116N 106E	93.7	1
01,510	Olive Jar Glazed	116N 106E	137.4	1
01,689.01	Olive Jar Glazed	114N 108E	8.8	1
02,235	Olive Jar Glazed	114N 108E	93.2	7
02,436	Olive Jar Glazed	114N 108E	2.0	1
02,532	Olive Jar Glazed	112N 108E	8.9	1
02,535	Olive Jar Glazed	118N 108E	3.5	1
02,539	Olive Jar Glazed	114N 108E	33.0	1
02,138	Indeterminate Coarse Earthenware	114N 110E	8.1	1
00,125	Storage Jar	114N 129E	38.0	1
00,403.01	Storage Jar	114N 127E	60.0	1
00,410.02	Storage Jar	114N 127E	17.5	1
01,509	Storage Jar	116N 106E	86.1	1
07,708.4	Storage Jar	UNKNOWN	16.0	1
07,734.2	Storage Jar	UNKNOWN	32.0	1
02,178	Storage Jar Glazed	116N 110E	27.2	2
02,593	Storage Jar Glazed	112N 104E	60.3	1
01,836	Yayal Blue On White	114N 108E	14.5	1
02,305.001	Yayal Blue On White	114N 110E	5.0	1

Appendix C

Emanuel Point II (8ES3345) Data Table

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0008	Olive Jar Unglazed	91N 490E	87.10	1
0040	Olive Jar Unglazed	90N 490E	6.50	1
0041	Olive Jar Unglazed	90N 490E	6.50	1
0053	Olive Jar Unglazed	96N 491E	12.90	1
0054	Olive Jar Unglazed	96N 491E	13.50	1
0055	Olive Jar Unglazed	96N 491E	4.90	1
0056	Olive Jar Unglazed	96N 491E	106.20	2
0057	Olive Jar Unglazed	96N 491E	4.10	1
0061	Columbia Plain	96N 491E	5.20	1
0063	Olive Jar Unglazed	96N 491E	12.60	1
0064	Olive Jar Unglazed	96N 491E	30.00	3
0069	Olive Jar Unglazed	96N 491E	28.40	2
0072	Olive Jar Unglazed	90N 490E	6.70	1
0074	Olive Jar Unglazed	90N 490E	48.80	4
0078	Olive Jar Unglazed	UNKNOWN	UNKNOWN	3
0079	Olive Jar Unglazed	96N 491E	52.30	1
0080	Olive Jar Unglazed	96N 491E	2.90	1
0081	Olive Jar Unglazed	96N 491E	4.00	1
0083	Olive Jar Unglazed	90N 490E	3.50	1
0084	Olive Jar Unglazed	90N 490E	7.00	1
0085	Olive Jar Unglazed	90N 490E	59.20	1
0098	Olive Jar Unglazed	90N 490E	27.90	1
0102	Olive Jar Unglazed	96N 491E	2.00	3
0109	Olive Jar Unglazed	90N 490E	34.70	3
0112	Olive Jar Unglazed	96N 491E	2.40	1
0114	Olive Jar Unglazed	96N 491E	56.10	1
0115	Olive Jar Unglazed	96N 491E	8.80	1
0120	Olive Jar Unglazed	96N 491E	6.00	1
0123	Olive Jar Unglazed	96N 491E	28.70	4
0126	Olive Jar Unglazed	96N 491E	7.60	1
0129	Olive Jar Unglazed	90N 490E	29.80	4
0131	Olive Jar Unglazed	96N 491E	22.90	1
0133	Olive Jar Unglazed	96N 491E	39.10	5
0137	Olive Jar Unglazed	96N 491E	10.90	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0139	Olive Jar Unglazed	96N 491E	11.00	1
0141	Olive Jar Unglazed	96N 491E	3.60	1
0145	Olive Jar Unglazed	96N 491E	12.80	1
0147	Olive Jar Unglazed	96N 490E	30.60	1
0149	Olive Jar Unglazed	96N 490E	85.60	1
0150	Olive Jar Unglazed	96N 490E	30.70	1
0151	Olive Jar Unglazed	96N 490E	149.70	1
0153	Olive Jar Unglazed	96N 490E	153.10	1
0160	Olive Jar Unglazed	90N 490E	4.10	2
0161	Olive Jar Unglazed	90N 490E	10.20	1
0162	Olive Jar Unglazed	96N 491E	5.60	1
0168	Olive Jar Unglazed	96N 491E	161.50	1
0169	Olive Jar Unglazed	90N 490E	202.30	1
0170	Olive Jar Unglazed	90N 490E	45.90	1
0172	Olive Jar Unglazed	96N 490E	12.80	1
0174	Olive Jar Unglazed	90N 490E	25.40	2
0175	Olive Jar Unglazed	96N 491E	8.20	1
0181	Olive Jar Unglazed	90N 490E	3.50	1
0185	Olive Jar Unglazed	96N 490E	3.50	1
0189	Olive Jar Unglazed	96N 490E	44.10	1
0194	Olive Jar Unglazed	96N 490E	8.50	1
0195	Olive Jar Unglazed	96N 490E	40.20	1
0199	Olive Jar Unglazed	90N 490E	8.70	1
0204	Olive Jar Unglazed	96N 490E	52.20	1
0205	Columbia Plain	96N 490E	40.10	1
0207	Olive Jar Unglazed	96N 490E	3.90	1
0211	Olive Jar Unglazed	96N 490E	25.80	1
0212	Olive Jar Unglazed	96N 490E	6.40	1
0213	Olive Jar Unglazed	96N 490E	73.50	1
0215	Olive Jar Unglazed	96N 490E	36.20	1
0216	Olive Jar Unglazed	96N 490E	18.40	1
0217	Olive Jar Unglazed	96N 490E	26.70	1
0219	Olive Jar Unglazed	96N 490E	76.70	1
0220	Olive Jar Unglazed	90N 490E	0.60	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0221	Olive Jar Unglazed	90N 490E	1.70	1
0223	Olive Jar Unglazed	96N 491E	80.80	1
0224	Olive Jar Unglazed	96N 490E	7.30	1
0230	Olive Jar Unglazed	96N 490E	1.70	1
0234	Olive Jar Unglazed	90N 490E	13.80	1
0235	Olive Jar Unglazed	96N 490E	4.00	1
0238	Olive Jar Unglazed	96N 490E	11.50	1
0244	Olive Jar Unglazed	96N 488E	6.00	1
0245	Olive Jar Unglazed	90N 490E	71.30	2
0247	Olive Jar Unglazed	96N 490E	13.90	1
0248	Olive Jar Unglazed	96N 490E	45.30	1
0251	Olive Jar Glazed	96N 490E	0.80	1
0252	Olive Jar Unglazed	96N 490E	27.30	3
0258	Olive Jar Unglazed	96N 490E	197.00	1
0267	Olive Jar Unglazed	90N 490E	196.20	1
0268	Olive Jar Unglazed	90N 490E	UNKNOWN	2
0269	Olive Jar Unglazed	96N 490E	82.00	1
0270	Olive Jar Unglazed	96N 490E	93.20	1
0271	Olive Jar Unglazed	90N 490E	41.20	1
0275	Olive Jar Unglazed	96N 490E	0.20	1
0279	Olive Jar Unglazed	90N 490E	46.00	1
0288	Olive Jar Unglazed	96N 490E	14.70	3
0289	Olive Jar Unglazed	96N 490E	59.00	2
0292	Olive Jar Unglazed	90N 490E	56.60	3
0297	Olive Jar Unglazed	90N 490E	102.90	1
0300	Olive Jar Unglazed	96N 490E	13.00	1
0303	Olive Jar Unglazed	90N 490E	19.70	1
0304	Olive Jar Unglazed	90N 490E	8.50	1
0305	Olive Jar Unglazed	90N 490E	UNKNOWN	1
0306	Olive Jar Unglazed	96N 490E	28.20	1
0313	Olive Jar Unglazed	96N 490E	UNKNOWN	7
0316	Olive Jar Unglazed	90N 490E	32.00	2
0320	Olive Jar Unglazed	96N 490E	11.00	1
0321	Olive Jar Unglazed	96N 490E	18.30	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0322	Olive Jar Unglazed	96N 490E	43.50	1
0323	Olive Jar Unglazed	96N 490E	81.20	4
0326	Olive Jar Unglazed	96N 490E	60.40	2
0327	Olive Jar Unglazed	96N 490E	9.40	1
0328	Olive Jar Unglazed	96N 490E	9.40	3
0331	Olive Jar Unglazed	90N 490E	17.00	3
0332	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
0334	Olive Jar Unglazed	90N 490E	8.50	4
0337	Olive Jar Unglazed	90N 490E	9.90	1
0339	Olive Jar Unglazed	96N 490E	4.10	2
0344	Olive Jar Unglazed	90N 490E	31.90	1
0345	Olive Jar Unglazed	UNKNOWN	UNKNOWN	6
0346	Olive Jar Unglazed	96N 490E	33.70	3
0354	Olive Jar Unglazed	96N 490E	6.30	1
0355	Olive Jar Unglazed	96N 490E	12.70	1
0356	Olive Jar Unglazed	96N 490E	12.70	1
0357	Olive Jar Unglazed	96N 490E	24.20	1
0359	Olive Jar Unglazed	96N 490E	19.80	4
0360	Olive Jar Unglazed	UNKNOWN	UNKNOWN	15
0364	Olive Jar Unglazed	96N 490E	20.90	1
0365	Olive Jar Unglazed	96N 490E	24.40	1
0366	Olive Jar Unglazed	96N 490E	35.10	1
0368	Olive Jar Unglazed	96N 490E	139.20	1
0370	Olive Jar Unglazed	91N 490E	104.40	1
0371	Olive Jar Unglazed	91N 490E	6.60	2
0374	Olive Jar Unglazed	90N 490E	13.00	1
0375	Olive Jar Unglazed	91N 490E	27.50	1
0377	Columbia Plain	100N 488E	16.70	1
0378	Olive Jar Unglazed	96N 490E	164.10	1
0379	Olive Jar Unglazed	91N 490E	25.40	1
0380	Olive Jar Unglazed	91N 490E	194.60	2
0382	Olive Jar Unglazed	100N 485E	6.50	1
0383	Olive Jar Unglazed	96N 489E	3.50	1
0384	Olive Jar Unglazed	96N 490E	16.60	2

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0389	Olive Jar Unglazed	91N 490E	16.20	2
0390	Olive Jar Unglazed	96N 489E	31.30	2
0394	Olive Jar Unglazed	96N 489E	144.00	1
0395	Olive Jar Unglazed	91N 490E	284.10	1
0396	Olive Jar Unglazed	91N 490E	74.30	1
0397	Olive Jar Unglazed	91N 490E	122.40	1
0398	Olive Jar Unglazed	91N 490E	809.10	1
0399	Olive Jar Unglazed	91N 490E	162.50	1
0400	Olive Jar Unglazed	91N 490E	5.10	1
0408	Olive Jar Unglazed	91N 490E	38.20	1
0409	Olive Jar Unglazed	91N 490E	2.30	1
0411	Olive Jar Unglazed	91N 490E	4.40	2
0414	Olive Jar Unglazed	91N 490E	380.50	1
0418	Olive Jar Unglazed	96N 489E	13.80	1
0420	Olive Jar Unglazed	91N 490E	71.80	2
0424	Olive Jar Unglazed	96N 489E	8.20	1
0426	Olive Jar Unglazed	91N 490E	24.70	1
0427	Olive Jar Unglazed	91N 490E	173.90	1
0429	Olive Jar Unglazed	96N 489E	103.60	1
0430	Olive Jar Unglazed	91N 490E	53.30	1
0431	Olive Jar Unglazed	91N 490E	404.70	1
0436	Olive Jar Unglazed	96N 489E	353.20	2
0437	Olive Jar Unglazed	91N 490E	62.40	1
0438	Olive Jar Unglazed	91N 490E	47.90	1
0442	Olive Jar Unglazed	96N 489E	1.90	1
0444	Olive Jar Unglazed	96N 488E	19.40	1
0446	Olive Jar Unglazed	104N 483E	17.10	1
0447	Olive Jar Unglazed	91N 490E	30.90	1
0448	Olive Jar Unglazed	91N 490E	9.70	1
0451	Olive Jar Unglazed	91N 490E	23.20	1
0460	Olive Jar Unglazed	91N 490E	2.20	1
0463	Olive Jar Unglazed	91N 490E	13.30	1
0464	Olive Jar Unglazed	91N 490E	7.60	1
0466	Olive Jar Unglazed	10N 482E	227.60	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0467	Olive Jar Unglazed	91N 490E	1475.50	1
0468	Olive Jar Unglazed	91N 490E	194.20	1
0469	Olive Jar Unglazed	91N 490E	54.60	1
0470	Olive Jar Unglazed	91N 490E	2.60	1
0471	Olive Jar Unglazed	96N 489E	20.20	1
0472	Olive Jar Unglazed	96N 489E	90.50	1
0474	Olive Jar Unglazed	96N 489E	27.30	1
0475	Olive Jar Unglazed	91N 490E	14.30	1
0483	Olive Jar Unglazed	96N 489E	5.60	1
0484	Olive Jar Unglazed	96N 489E	24.00	1
0485	Olive Jar Unglazed	96N 489E	60.80	1
0486	Olive Jar Unglazed	96N 489E	73.80	1
0488	Olive Jar Unglazed	91N 490E	86.80	1
0489	Olive Jar Glazed	91N 490E	13.70	1
0491	Olive Jar Glazed	91N 490E	22.90	2
0492	Olive Jar Unglazed	91N 490E	8.10	3
0493	Olive Jar Unglazed	96N 489E	579.10	22
0494	Olive Jar Unglazed	96N 489E	814.40	1
0495	Olive Jar Unglazed	96N 489E	73.60	1
0496	Olive Jar Unglazed	91N 490E	35.60	1
0497	Olive Jar Unglazed	96N 489E	44.40	2
0500	Green Lead-Glazed Coarse Earthenware	94N 491E	921.30	1
0501	El Morro Ware	94N 491E	16.00	1
0502	Olive Jar Unglazed	101N 482E	8.60	4
0504	Olive Jar Unglazed	91N 490E	187.70	1
0507	Olive Jar Unglazed	10N 482E	46.00	1
0508	Olive Jar Unglazed	96N 489E	29.90	1
0509	Olive Jar Unglazed	96N 489E	55.30	1
0517	Olive Jar Unglazed	96N 489E	22.50	1
0519	Olive Jar Unglazed	91N 490E	48.80	3
0520	Olive Jar Unglazed	96N 489E	64.70	2
0521	Olive Jar Unglazed	96N 489E	115.00	2
0523	Olive Jar Unglazed	91N 490E	31.20	2
0526	Olive Jar Unglazed	96N 489E	301.50	7

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0527	Olive Jar Unglazed	96N 489E	52.50	3
0530	Olive Jar Unglazed	96N 489E	14.10	3
0531	Olive Jar Unglazed	96N 489E	187.50	9
0532	Olive Jar Unglazed	96N 489E	169.80	16
0534	Olive Jar Unglazed	96N 489E	15.30	1
0537	Columbia Plain	96N 489E	2.40	1
0538	Olive Jar Unglazed	96N 489E	157.80	2
0546	Olive Jar Unglazed	96N 489E	33.30	10
0553	Columbia Plain	96N 489E	5.50	1
0558	Olive Jar Unglazed	102N 482E	60.50	2
0560	Olive Jar Unglazed	96N 489E	150.70	11
0562	Olive Jar Unglazed	96N 489E	138.90	7
0566	Olive Jar Unglazed	96N 489E	167.60	11
0575	Olive Jar Unglazed	102N 482E	501.10	5
0578	Olive Jar Unglazed	79N 501E	23.00	6
0583	Olive Jar Unglazed	96N 489E	455.00	1
0585	Olive Jar Unglazed	96N 488E	38.90	1
0590	Olive Jar Unglazed	96N 488E	17.90	2
0596	Olive Jar Unglazed	96N 488E	39.20	1
0602	Olive Jar Unglazed	96N 488E	9.00	2
0606	Melado Ware	96N 488E	15.50	2
0607	Olive Jar Unglazed	96N 488E	630.60	2
0613	Olive Jar Unglazed	96N 488E	16.60	1
0623	Olive Jar Unglazed	96N 488E	50.40	1
0637	Olive Jar Unglazed	101N 485E	14.80	2
0645	Olive Jar Unglazed	96N 488E	164.40	2
0648	Olive Jar Unglazed	96N 488E	5.30	1
0650	Olive Jar Unglazed	96N 488E	20.00	2
0652	Olive Jar Unglazed	90N 490E	20.60	2
0653	Olive Jar Unglazed	91N 490E	222.50	3
0659	Olive Jar Unglazed	96N 490E	9.10	1
0667	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
0676	Olive Jar Unglazed	100N 483E	27.70	1
0679	Olive Jar Unglazed	96N 488E	25.70	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0680	Olive Jar Unglazed	96N 488E	66.60	1
0687	Olive Jar Unglazed	101N 482E	56.70	1
0688	Olive Jar Unglazed	101N 482E	47.30	1
0689	Olive Jar Unglazed	97N 491E	107.20	1
0690	Olive Jar Unglazed	97N 491E	5.50	1
0693	Olive Jar Unglazed	101N 484E	250.40	1
0697	Olive Jar Unglazed	101N 484E	30.40	1
0699	Olive Jar Unglazed	97N 491E	28.00	6
0704	Olive Jar Unglazed	96N 490E	6.90	1
0707	Olive Jar Unglazed	96N 490E	10.70	2
0709	Olive Jar Unglazed	96N 489E	22.50	1
0710	Olive Jar Unglazed	96N 488E	77.40	1
0712	Olive Jar Unglazed	95N 488E	8.60	1
0715	Olive Jar Unglazed	95N 488E	4.60	2
0719	Olive Jar Unglazed	95N 488E	24.20	1
0720	Olive Jar Unglazed	95N 488E	2.90	1
0722	Olive Jar Unglazed	95N 488E	120.20	2
0723	Olive Jar Unglazed	95N 488E	102.40	2
0724	Olive Jar Unglazed	95N 488E	7.50	1
0726	Olive Jar Unglazed	95N 488E	9.00	1
0730	Olive Jar Unglazed	95N 488E	29.70	1
0732	Olive Jar Unglazed	95N 488E	19.20	1
0733	Olive Jar Unglazed	95N 488E	9.40	1
0738	Olive Jar Unglazed	95N 488E	20.40	2
0744	Olive Jar Unglazed	95N 488E	105.60	1
0745	Olive Jar Unglazed	95N 488E	21.20	1
0748	Olive Jar Unglazed	95N 488E	164.60	1
0752	Olive Jar Unglazed	95N 488E	61.10	3
0754	Olive Jar Unglazed	95N 488E	32.40	4
0760	Olive Jar Unglazed	95N 488E	0.50	1
0768	Olive Jar Unglazed	95N 489E	442.60	1
0770	Olive Jar Unglazed	95N 488E	11.30	1
0837	Olive Jar Unglazed	96N TRENCH	172.40	4
0838	Olive Jar Unglazed	96N TRENCH	117.20	3

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0841	Olive Jar Unglazed	97N 491E	1.10	1
0844	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
0902	Olive Jar Unglazed	96N 489E	4.70	1
0903	Columbia Plain	96N 489E	3.30	1
0904	Olive Jar Unglazed	91N 490E	4.10	1
0908	Olive Jar Unglazed	96N 491E	18.40	1
0909	Olive Jar Unglazed	96N 490E	8.70	1
0914	Columbia Plain	96N 488E	8.80	2
0915	Olive Jar Unglazed	96N 488E	3.70	1
0917	Olive Jar Unglazed	96N 498E	33.80	1
0923	Olive Jar Unglazed	96N 489E	11.20	2
0924	Columbia Plain	91N 490E	1.00	1
0925	Olive Jar Unglazed	96N 490E	38.00	2
0929	Olive Jar Unglazed	90N 490E	2.70	1
0930	Columbia Plain	90N 490E	0.50	1
0932	Olive Jar Unglazed	96N 490E	7.10	1
0933	Olive Jar Unglazed	91N 490E	17.60	1
0934	Olive Jar Unglazed	91N 490E	0.40	1
0935	Olive Jar Unglazed	96N 491E	1.60	2
0937	Olive Jar Unglazed	96N 488E	9.30	1
0938	Olive Jar Unglazed	96N 488E	26.90	1
0939	Olive Jar Unglazed	96N 488E	2.20	1
0940	Olive Jar Unglazed	96N 488E	8.40	1
0941	Olive Jar Unglazed	96N 488E	6.20	1
0942	Olive Jar Unglazed	95N 492E	8.10	2
0943	Olive Jar Unglazed	96N 488E	4.60	1
0984	Columbia Plain	96N 488E	14.80	3
0985	Olive Jar Unglazed	95N 488E	1.60	1
0987	Columbia Plain	96N 488E	14.80	1
0989	Olive Jar Unglazed	96N 488E	10.80	1
0990	Olive Jar Unglazed	96N 488E	2.20	1
0991	Olive Jar Unglazed	90N 490E	24.10	1
0992	Olive Jar Unglazed	96N 490E	43.40	1
0993	Olive Jar Unglazed	96N 489E	15.90	2

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
0994	Olive Jar Unglazed	96N 489E	29.50	4
0995	Olive Jar Unglazed	96N 489E	66.40	6
0996	Olive Jar Unglazed	96N 489E	32.50	5
0997	Olive Jar Unglazed	96N 489E	129.00	1
0998	Columbia Plain	91N 490E	59.90	1
1098	El Morro Ware	100N 486E	1.10	1
1101	Coarse Earthenware	UNKNOWN	UNKNOWN	1
1111	Olive Jar Unglazed	100N 486E	12.10	1
1112	Olive Jar Unglazed	100N 486E	1.90	1
1114	Olive Jar Unglazed	100N 486E	2.60	1
1120.001	Olive Jar Unglazed	100N 486E	2.30	1
1120.002	Indeterminate Majolica	100N 486E	1.80	1
1120.003	Melado Ware	100N 486E	1.10	1
1120.004	El Morro Ware	100N 486E	0.80	1
1122	El Morro Ware	100N 486E	6.10	1
1125	Olive Jar Unglazed	100N 486E	29.00	1
1135	Melado Ware	100N 486E	3.40	1
1139.001	Olive Jar Unglazed	100N 486E	16.70	4
1139.002	Melado Ware	100N 486E	0.90	1
1150	Green Lead-Glazed Coarse Earthenware	100N 486E	10.50	1
1151	Olive Jar Unglazed	100N 486E	8.20	1
1154	Olive Jar Unglazed	100N 486E	28.30	1
1155	El Morro Ware	100N 486E	8.50	1
1156.001	Olive Jar Unglazed	100N 486E	18.20	5
1156.002	El Morro Ware	100N 486E	4.80	2
1156.003	Isabela Polychrome	100N 486E	3.10	1
1156.004	Green Dipped Columbia Plain	100N 486E	2.40	2
1156.005	Indeterminate Glazed Coarse Earthenware	100N 486E	10.70	1
1166.001	El Morro Ware	87N 497E	2.60	1
1166.002	Columbia Plain	87N 497E	0.20	1
1181	Columbia Plain	100N 486E	14.60	1
1183	Olive Jar Unglazed	87N 497E	33.10	1
1240.001	Melado Ware	87N 497E	5.50	1
1240.002	El Morro Ware	87N 497E	0.30	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1240.003	Columbia Plain	87N 497E	0.80	1
1252.001	Columbia Plain	87N 497E	1.00	1
1252.002	El Morro Ware	87N 497E	1.90	3
1252.003	Olive Jar Unglazed	87N 497E	2.00	1
1252.004	Green Lead-Glazed Coarse Earthenware	87N 497E	0.40	1
1270	Olive Jar Unglazed	101N 486E	13.30	1
1276.001	Columbia Plain	86N 497E	0.60	1
1276.002	Storage Jar	86N 497E	68.50	1
1281	Olive Jar Unglazed	101N 485E	12.60	1
1288	Indeterminate Majolica	101N 485E	1.00	1
1290	Olive Jar Unglazed	486N 497E	57.60	1
1294	Storage Jar	86N 497E	50.00	1
1297	El Morro Ware	100N 485E	4.30	1
1312	Olive Jar Unglazed	87N 498E	0.04	1
1313	Indeterminate	99N 486E	0.70	1
1325	Olive Jar Unglazed	87N 498E	1.50	1
1329	Olive Jar Glazed	99N 486E	11.30	1
1134.001	El Morro Ware	100N 486E	0.40	1
1134.002	Melado Ware	100N 486E	0.20	1
1313	Melado Ware	99N 485E	1.20	1
1339	Olive Jar Unglazed	87N 498E	10.60	1
1347	Olive Jar Unglazed	87N 498E	13.60	1
1354	Melado Ware	87N 498E	1.00	1
1359.001	Columbia Plain	93N 491E	7.80	1
1359.002	Olive Jar Glazed	93N 491E	2.50	1
1359.003	Olive Jar Unglazed	93N 491E	22.0	3
1366	El Morro Ware Ware	87N 498E	1.50	2
1367.001	Columbia Plain	93N 491E	13.90	2
1367.002	El Morro Ware	93N 491E	1.90	1
1367.003	Indeterminate Mexican Lead-Glazed Coarse Earthenware	93N 491E	2.50	1
1372	Black Lead-Glazed Coarse Earthenware	87N 498E	3.20	1
1374	Olive Jar Unglazed	93N 491E	21.80	1
1375	El Morro Ware	87N 498E	4.30	2
1387	Green Lead-Glazed Coarse Earthenware	93N 491E	260.80	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1390	Green Lead-Glazed Coarse Earthenware	93N 491E	80.20	1
1392.001	Olive Jar Unglazed	93N 491E	10.20	3
1392.002	El Morro Ware	93N 491E	4.10	2
1392.003	Green Lead-Glazed Coarse Earthenware	93N 491E	1.00	1
1392.004	El Morro Ware	93N 491E	3.80	1
1392.005	Columbia Plain	93N 491E	1.00	1
1400.001	Olive Jar Unglazed	93N 491E	14.60	3
1400.002	Columbia Plain	93N 491E	1.00	1
1401.001	Indeterminate Coarse Earthenware	87N 498E	8.10	1
1401.002	Green Lead-Glazed Coarse Earthenware	87N 498E	8.30	1
1401.003	El Morro Ware	87N 498E	4.90	1
1401.004	Melado Ware	87N 498E	3.50	1
1401.005	Green Lead-Glazed Coarse Earthenware	87N 498E	0.70	1
1408	Olive Jar Unglazed	86N 497E	111.20	1
1411	Olive Jar Unglazed	75N 497E	7.70	3
1414	Olive Jar Unglazed	87N 497E	39.60	4
1421	Olive Jar Unglazed	87N 497E	15.50	1
1427	Olive Jar Unglazed	86N 497E	111.40	1
1433	Olive Jar Unglazed	93N 491E	0.70	1
1436	Columbia Plain	86N 497E	9.800	2
1442	Olive Jar Unglazed	87N 497E	2.70	1
1447	Olive Jar Unglazed	86N 497E	2.90	2
1448	Green Lead-Glazed Coarse Earthenware	93N 491E	75.10	1
1455.001	El Morro Ware	86N 497E	2.80	1
1455.002	Melado Ware	86N 497E	1.10	1
1459.001	Olive Jar Unglazed	93N 491E	51.30	7
1459.002	Olive Jar Glazed	93N 491E	5.10	1
1459.003	Columbia Plain	93N 491E	1.60	1
1460	Olive Jar Unglazed	93N 491E	1.00	1
1462	El Morro Ware	93N 491E	6.20	3
1465.001	Olive Jar Unglazed	87N 497E	8.20	5
1465.002	Olive Jar Unglazed	87N 497E	3.30	1
1465.003	Melado Ware	87N 497E	4.10	2
1465.004	Columbia Plain	87N 497E	11.50	5

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1465.005	Indeterminate Black Lead-Glazed Coarse Earthenware	87N 497E	0.30	1
1465.006	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
1473	Melado Ware	87N 497E	1.70	1
1480.001	Olive Jar Unglazed	86N 497E	80.80	1
1480.002	Olive Jar Unglazed	86N 497E	1.10	1
1482	Green Lead-Glazed Coarse Earthenware	93N 491E	278.80	1
1484	Olive Jar Unglazed	86N 497E	19.10	1
1504.001	Green Lead-Glazed Coarse Earthenware	93N 491E	101.30	1
1504.002	Olive Jar Unglazed	93N 491E	30.20	1
1504.003	Olive Jar Unglazed	93N 491E	8.40	1
1504.004	Olive Jar Unglazed	93N 491E	11.00	1
1504.005	Olive Jar Unglazed	93N 491E	7.60	1
1504.006	Green Lead-Glazed Coarse Earthenware	93N 491E	3.10	1
1504.007	Olive Jar Unglazed	93N 491E	1.10	1
1504.008	Olive Jar Unglazed	93N 491E	3.30	1
1504.009	El Morro Ware	93N 491E	0.40	1
1504.010	Olive Jar Unglazed	93N 491E	0.40	1
1504.011	Olive Jar Unglazed	93N 491E	1.60	1
1504.013	El Morro Ware	93N 491E	0.60	1
1504.014	Olive Jar Unglazed	93N 491E	0.20	1
1504.015	Columbia Plain	93N 491E	0.40	1
1504.016	Indeterminate Coarse Earthenware	93N 491E	0.60	1
1504.017	Olive Jar Unglazed	93N 491E	1.00	1
1508.001	Indeterminate Coarse Earthenware	93N 491E	27.90	1
1508.002	Olive Jar Unglazed	93N 491E	1.30	1
1508.003	Olive Jar Unglazed	93N 491E	1.80	1
1508.004	Olive Jar Unglazed	93N 491E	0.50	1
1532.001	El Morro Ware	87N 497E	0.50	1
1532.002	El Morro Ware	87N 497E	1.00	1
1537	El Morro Ware	FLUFF	2.40	1
1541	Indeterminate Black Lead-Glazed Coarse Earthenware	87N 498E	6.10	2
1542	Melado Ware	87N 498E	11.40	1
1545	Olive Jar Unglazed	87N 498E	3.10	1
1546	Olive Jar Unglazed	87N 498E	1.60	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1550	Olive Jar Glazed	87N 498E	6.70	1
1553	Columbia Plain	87N 498E	1.50	1
1559	Olive Jar Unglazed	100N 486E	3.00	1
1560	Indeterminate Coarse Earthenware	100N 486E	1.40	2
1562	El Morro Ware	87N 490E	6.500	1
1617.001	Indeterminate Coarse Earthenware	93N 491E	1.70	1
1623	Olive Jar Unglazed	93N 490E	113.10	1
1624	Olive Jar Unglazed	93N 490E	71.20	1
1631	Olive Jar Unglazed	93N 490E	149.30	1
1632	Olive Jar Unglazed	93N 490E	72.90	1
1633	Olive Jar Unglazed	93N 490E	75.40	1
1634.001	Olive Jar Unglazed	93N 490E	17.70	1
1634.002	Olive Jar Unglazed	93N 490E	55.10	2
1634.003	Olive Jar Unglazed	93N 490E	28.50	1
1635	Olive Jar Glazed	93N 490E	15.40	1
1636	Olive Jar Unglazed	93N 490E	59.40	1
1639	Olive Jar Unglazed	93N 490E	44.20	1
1640	Olive Jar Unglazed	93N 490E	48.10	1
1642.001	Olive Jar Unglazed	93N 490E	5.40	1
1642.002	Olive Jar Unglazed	93N 490E	100.20	1
1644	Olive Jar Unglazed	93N 490E	40.20	1
1645	Olive Jar Unglazed	93N 490E	86.70	1
1646	Olive Jar Unglazed	93N 490E	64.40	1
1649	Olive Jar Unglazed	93N 490E	35.50	1
1650	Olive Jar Unglazed	93N 490E	92.40	1
1651	Olive Jar Unglazed	93N 490E	20.60	1
1653	Olive Jar Unglazed	93N 490E	28.10	1
1657	Green Lead-Glazed Coarse Earthenware	85N 499E	119.40	1
1658	Olive Jar Unglazed	93N 490E	89.40	1
1659	Olive Jar Unglazed	96N 490E	32.80	1
1660	Olive Jar Unglazed	93N 490E	17.10	1
1663	Olive Jar Unglazed	93N 490E	70.10	1
1664	Melado Ware	85N 499E	63.00	1
1667	Olive Jar Unglazed	93N 490E	84.50	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1669.001	Olive Jar Unglazed	93N 490E	46.40	1
1669.002	Olive Jar Unglazed	93N 490E	20.00	2
1670	Olive Jar Unglazed	93N 490E	75.80	2
1671	Olive Jar Unglazed	93N 490E	27.80	1
1672	Olive Jar Unglazed	93N 490E	37.40	1
1674	Olive Jar Unglazed	93N 490E	15.00	1
1682	Olive Jar Unglazed	93N 490E	79.10	1
1686	Black Lead Glazed Coarse Earthenware	93N 490E	412.00	1
1689	Olive Jar Unglazed	93N 490E	94.00	2
1690	Olive Jar Unglazed	93N 490E	27.80	1
1691	Olive Jar Unglazed	93N 490E	17.40	1
1693	Olive Jar Unglazed	93N 490E	22.60	1
1695	Olive Jar Unglazed	93N 490E	2.20	1
1698	Olive Jar Unglazed	92N 490E	114.50	1
1699	Melado Ware Ware	93N 490E	10.30	1
1715	Green Lead-Glazed Coarse Earthenware	93N 490E	321.50	1
1728	Olive Jar Unglazed	93N 490E	69.50	1
1729	El Morro Ware	84N 499E	11.80	1
1741	Olive Jar Unglazed	93N 491E	61.80	1
1903	Green Lead-Glazed Coarse Earthenware	SURFACE	18.30	1
1913	Olive Jar Unglazed	93N 490E	21.30	1
1914	Black Lead Glazed Coarse Earthenware	85N 498E	6.00	1
1917	El Morro Ware	85N 498E	17.20	1
1918	Columbia Plain	93N 491E	1.00	1
1924	Columbia Plain	93N 490E	1.10	1
1931	El Morro Ware	85N 498E	1.30	1
1932	Olive Jar Unglazed	93N 91E	17.20	1
1933	Olive Jar Unglazed	93N 491E	10.30	1
1941	Olive Jar Unglazed	93N 490E	0.20	1
1942	Olive Jar Glazed	93N 490E	0.30	1
1943	Olive Jar Unglazed	93N 490E	7.60	1
1944	Olive Jar Unglazed	93N 490E	12.00	2
1945	Olive Jar Unglazed	93N 490E	10.10	1
1946	Olive Jar Unglazed	93N 490E	20.70	2

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
1947	Olive Jar Unglazed	93N 490E	36.20	2
1950	Olive Jar Unglazed	93N 490E	32.60	3
1953	Olive Jar Unglazed	93N 490E	6.90	1
1954	Olive Jar Unglazed	93N 490E	2.70	1
1955	Olive Jar Unglazed	93N 490E	4.80	1
1956	Olive Jar Unglazed	93N 490E	2.90	1
1957	El Morro Ware	93N 490E	1.10	1
1965	Olive Jar Unglazed	85N 498E	16.80	2
1971	Melado Ware	93N 490E	6.50	1
1972	Olive Jar Unglazed	93N 490E	9.40	1
1976	Columbia Plain	85N 498E	4.90	1
1986	Olive Jar Unglazed	93N 490E	9.00	1
1988	Olive Jar Unglazed	93N 490E	5.30	1
1991	Olive Jar Unglazed	93N 490E	7.10	1
1998	Olive Jar Unglazed	85N 499E	0.20	1
2028	Olive Jar Unglazed	93N 490E	15.40	1
2029	Olive Jar Unglazed	93N 490E	1.20	1
2030	El Morro Ware	93N 490E	0.70	1
2036	Olive Jar Unglazed	93N 490E	4.80	1
2037	Olive Jar Unglazed	93N 490E	30.80	1
2038	Olive Jar Glazed	93N 490E	13.50	1
2049	Olive Jar Unglazed	85N 499E	11.00	1
2050	Olive Jar Unglazed	93N 490E	4.00	1
2051	El Morro Ware	85N 499E	1.70	1
2055	Black Lead-Glazed Coarse Earthenware	85N 499E	1.10	1
2057	Columbia Plain	85N 499E	0.40	1
2061	Olive Jar Unglazed	93N 490E	1.30	1
2089	Olive Jar Unglazed	93N 490E	1.60	2
2091	Columbia Plain	93N 490E	2.20	1
2092	Olive Jar Unglazed	93N 490E	12.40	2
2102	Olive Jar Glazed	UNKNOWN	10.50	2
2103	Olive Jar Unglazed	93N 490E	3.40	1
2116	Indeterminate Majolica	93N 490E	5.10	1
2118	Olive Jar Unglazed	93N 490E	1.70	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
2153	Olive Jar Unglazed	85N 499E	1.00	1
2156	Olive Jar Unglazed	93N 490E	10.50	1
2158	Olive Jar Unglazed	93N 490E	2.10	1
2159	Columbia Plain	93N 490E	0.20	1
2171	Olive Jar Unglazed	93N 490E	10.70	1
2174	Olive Jar Unglazed	93N 490E	5.60	1
2202	Olive Jar Unglazed	93N 490E	4.90	2
2208	Yayal Blue on White	93N 490E	9.20	1
2209	Olive Jar Unglazed	93N 490E	4.50	1
2211	Olive Jar Unglazed	93N 490E	15.30	2
2212	Olive Jar Unglazed	93N 490E	1.60	2
2221	Indeterminate Coarse Earthenware	85N 499E	3.80	5
2222	Melado Ware	85N 499E	9.60	3
2224	Olive Jar Unglazed	85N 499E	1.60	3
2225	Olive Jar Unglazed	85N 499E	0.10	1
2236	Columbia Plain	85N 499E	0.40	1
2246	Melado Ware	93N 490E	9.10	2
2250	Olive Jar Unglazed	93N 490E	18.90	1
2254	Indeterminate Majolica	85N 499E	4.50	1
2255	El Morro Ware	85N 499E	1.30	1
2256.001	Olive Jar Unglazed	85N 499E	3.60	2
2256.002	Columbia Plain	85N 499E	1.60	1
2257	Columbia Plain	85N 499E	3.50	5
2258	Melado Ware Ware	85N 499E	2.20	1
2259	Melado Ware Ware	85N 499E	7.60	1
2260	Melado Ware Ware	85N 499E	5.10	1
2261	Olive Jar Unglazed	85N 499E	6.50	1
2276	Olive Jar Glazed	84N 499E	34.50	1
2278	Indeterminate Coarse Earthenware	84N 499E	6.10	1
2281	Olive Jar Unglazed	84N 499E	0.20	1
2324	Olive Jar Unglazed	84N 499E	0.20	1
2326	Columbia Plain	93N 490E	2.70	4
2329	Olive Jar Unglazed	93N 490E	8.50	1
2330	Olive Jar Unglazed	93N 490E	7.60	2

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
2333	Olive Jar Unglazed	93N 490E	0.70	2
2334	Olive Jar Unglazed	93N 490E	4.10	2
2338	Olive Jar Unglazed	84N 499E	2.30	2
2345	Columbia Plain	93N 490E	9.90	2
2349	Olive Jar Unglazed	84N 499E	1.30	1
2352	Olive Jar Unglazed	93N 490E	32.10	1
2355	Olive Jar Unglazed	83N 500E	0.60	1
2356	Olive Jar Unglazed	83N 500E	0.50	1
2358	Olive Jar Unglazed	93N 490E	52.10	5
2363	Olive Jar Unglazed	83N 499E	0.40	1
2369	Olive Jar Unglazed	83N 499E	4.20	1
2374	Olive Jar Unglazed	96N 477E	0.70	1
2376	Olive Jar Unglazed	83N 499E	2.00	1
2377	Olive Jar Unglazed	83N 499E	0.10	1
2402	Olive Jar Unglazed	83N 500E	0.20	1
2403	Melado Ware Ware	83N 500E	0.10	1

Appendix D

San Esteban (41KN10) Data Table

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
KN10-107.5	Olive Jar Unglazed	UNKNOWN	8.6	1
KN10-122.13	Cologne/Rhenish Stoneware	UNKNOWN	4.8	1
KN10-122.16	Indeterminate Majolica	UNKNOWN	5.9	2
KN10-122.4	Olive Jar Unglazed	UNKNOWN	7.6	2
KN10-122.9a	Lead-Glazed Coarse Earthenware	UNKNOWN	8.8	1
KN10-122.9b	Olive Jar Unglazed	UNKNOWN	12.3	1
KN10-129.14	Olive Jar Unglazed	UNKNOWN	125.4	5
KN10-129.14a	Olive Jar Glazed	UNKNOWN	18.8	1
KN10-129.15a	Olive Jar Glazed	UNKNOWN	UNKNOWN	1
KN10-129.15b	Olive Jar Glazed	UNKNOWN	UNKNOWN	1
KN10-129.15c	Olive Jar Unglazed	UNKNOWN	9.0	1
KN10-129.16a	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
KN10-129.16b	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
KN10-129.16c	Olive Jar Unglazed	UNKNOWN	3.3	2
KN10-129.16d	Olive Jar Unglazed	UNKNOWN	6.3	3
KN10-129.17	Olive Jar Unglazed	UNKNOWN	40.3	6
KN10-129.17a	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
KN10-129.17b	Olive Jar Unglazed	UNKNOWN	UNKNOWN	1
KN10-129.18	Olive Jar Unglazed	UNKNOWN	16.1	1
KN10-129.19	Olive Jar Glazed	UNKNOWN	39.2	1
KN10-129.20	Indeterminate Coarse Earthenware	UNKNOWN	19.9	3
KN10-129.21	Indeterminate	UNKNOWN	28.1	2
KN10-129.22	Columbia Plain	UNKNOWN	19.5	2
KN10-129.23	Columbia Plain	UNKNOWN	28.3	8
KN10-129.24	Columbia Plain	UNKNOWN	24.3	1
KN10-129.25	Olive Jar Unglazed	UNKNOWN	8.7	3
KN10-129.26	Olive Jar Unglazed	UNKNOWN	4.4	1
KN10-129.27	Olive Jar Unglazed	UNKNOWN	3.7	1
KN10-129.28	Columbia Plain	UNKNOWN	12.5	3
KN10-129.29	Indeterminate Coarse Earthenware	UNKNOWN	1.5	1
KN10-129.30	Isabela Polychrome	UNKNOWN	6.8	1
KN10-129.31	Olive Jar Unglazed	UNKNOWN	15.0	2
KN10-129.32	Isabela Polychrome	UNKNOWN	19.2	1
KN10-129.33	Isabela Polychrome	UNKNOWN	55.9	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
KN10-129.34	Columbia Plain	UNKNOWN	28.6	2
KN10-129.35	Olive Jar Glazed	UNKNOWN	86.7	2
KN10-132.1	Indeterminate Coarse Earthenware	UNKNOWN	13.6	1
KN10-132.12	Indeterminate Majolica	UNKNOWN	30.8	1
KN10-145.10	Indeterminate Coarse Earthenware	UNKNOWN	5.4	1
KN10-150.3	Olive Jar Unglazed	UNKNOWN	25.5	1
KN10-150.4	Olive Jar Unglazed	UNKNOWN	27.7	1
KN10-156.18a	Olive Jar Unglazed	UNKNOWN	54.4	4
KN10-156.18b	Indeterminate Coarse Earthenware	UNKNOWN	3.4	1
KN10-156.22	Olive Jar Glazed	UNKNOWN	25.6	1
KN10-157.150	Olive Jar Glazed	UNKNOWN	5.6	1
KN10-157.166	Olive Jar Glazed	UNKNOWN	37.6	1
KN10-157.33	Olive Jar Unglazed	UNKNOWN	33.9	2
KN10-157.46	Olive Jar Unglazed	UNKNOWN	7.1	1
KN10-157.56	Indeterminate Coarse Earthenware	UNKNOWN	6.5	1
KN10-161.17a	Olive Jar Glazed	UNKNOWN	47.2	3
KN10-161.17c	Columbia Plain	UNKNOWN	0.8	1
KN10-161.17b	Olive Jar Unglazed	UNKNOWN	34.3	4
KN10-161.25a	Olive Jar Unglazed	UNKNOWN	11.2	1
KN10-161.25b	Olive Jar Glazed	UNKNOWN	12.7	1
KN10-161.27	Olive Jar Unglazed	UNKNOWN	62.4	3
KN10-161.51a	Columbia Plain	UNKNOWN	1.8	1
KN10-161.51b	Olive Jar Glazed	UNKNOWN	4.3	2
KN10-161.59	Olive Jar Glazed	UNKNOWN	19.9	5
KN10-162	Storage Jar	UNKNOWN	UNKNOWN	1
KN10-182.10	Indeterminate Coarse Earthenware	UNKNOWN	6.9	1
KN10-182.2	Columbia Plain	UNKNOWN	5.2	1
KN10-188.1	Olive Jar Unglazed	UNKNOWN	30.5	2
KN10-200.1	Isabela Polychrome	UNKNOWN	15.2	2
KN10-200.1a	Isabela Polychrome	UNKNOWN	26.36	1
KN10-200.2	Olive Jar Unglazed	UNKNOWN	14.4	1
KN10-308.3	Indeterminate Coarse Earthenware	UNKNOWN	15.0	2
KN10-308.8	Indeterminate Coarse Earthenware	UNKNOWN	22.3	4
KN10-49.5	Olive Jar Unglazed	UNKNOWN	25.3	3

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
KN10-5.39	Olive Jar Glazed	UNKNOWN	7.2	1
KN10-5.53	Olive Jar Unglazed	UNKNOWN	27.0	1
KN10-52.2a	Indeterminate Majolica	UNKNOWN	6.1	2
KN10-52.2b	Olive Jar Unglazed	UNKNOWN	25.7	1
KN10-77	Olive Jar Unglazed	UNKNOWN	32.6	2
KN10-79.38	Storage Jar Glazed	UNKNOWN	1091.5	2
KN10-79.39	Indeterminate Stoneware	UNKNOWN	11.3	5
KN10-79.40	Indeterminate Coarse Earthenware with Slip	UNKNOWN	33.5	2
KN10-79.41a	Olive Jar Unglazed	UNKNOWN	69.2	3
KN10-79.41b	Indeterminate Coarse Earthenware	UNKNOWN	112.3	1
KN10-79.43	Olive Jar Unglazed	UNKNOWN	118.3	6
KN10-79.44	Olive Jar Unglazed	UNKNOWN	104.6	4
KN10-79.45	Olive Jar Unglazed	UNKNOWN	43.8	1
KN10-79.46	Storage Jar Glazed	UNKNOWN	144.6	1
KN10-79.50	Olive Jar Unglazed	UNKNOWN	36.0	1
KN10-79.51	Olive Jar Unglazed	UNKNOWN	34.7	2
KN10-79.9	Olive Jar Unglazed	UNKNOWN	33.6	1
KN10-81.108	Olive Jar Unglazed	UNKNOWN	23.8	1
KN10-81.1111a	Olive Jar Unglazed	UNKNOWN	209.2	34
KN10-81.1111b	Olive Jar Unglazed	UNKNOWN	495.9	13
KN10-81.113	Storage Jar Glazed	UNKNOWN	17.2	2
KN10-81.13	Storage Jar Glazed	UNKNOWN	48.0	1
KN10-81.21	Indeterminate Coarse Earthenware	UNKNOWN	43.9	1
KN10-81.23	Melado Ware	UNKNOWN	26.6	3
KN10-81.32	Olive Jar Unglazed	UNKNOWN	12.1	1
KN10-81.55	Olive Jar Glazed	UNKNOWN	111.8	4
KN10-81.69	Olive Jar Unglazed	UNKNOWN	14.0	1
KN10-81.85a	Olive Jar Unglazed	UNKNOWN	1.3	1
KN10-81.85b	Columbia Plain	UNKNOWN	1.9	1
KN10-81.99	Olive Jar Unglazed	UNKNOWN	82.8	2
KN10-83.1	Olive Jar Unglazed	UNKNOWN	13.9	1
KN10-83.3	Olive Jar Glazed	UNKNOWN	25.9	1
KN10-98.1	Olive Jar Unglazed	UNKNOWN	9.9	3
KN10-157.84	Indeterminate Coarse Earthenware	UNKNOWN	9.9	1

Artifact No.	Ceramic Type	Provenience	Weight (g)	Count
KN11.1	Olive Jar Unglazed	UNKNOWN	89.5	1
KN10-213.2	Olive Jar Unglazed	UNKNOWN	56.03	1

Appendix E
Copyright Permission Letters

Scott Sorset

██████████
Pensacola, FL 32503
850-287-██████████

1 November, 2010

Dear Amy Borgens
Texas State Marine Archaeologist,

I am completing a master's thesis at The University of West Florida entitled *Two Fleets, Two Missions, One End: A Brief Comparison of the Padre Island and Emanuel Point Shipwrecks*. I am writing to request your permission to reprint the following material in my thesis:

From:

Arnold III, J. Barto

1979 *Documentary Sources for the Wreck of the New Spain Fleet of 1554*,
David Mc Donald Translator. Texas Antiquities Committee Publication No. 8.
Austin, TX.

Specifically:

Maps 1 & 2 on page xi

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Thank you for your attention and assistance in this matter.

Sincerely,

Scott Sorset

PERMISSION GRANTED FOR THE USE AS REQUESTED ABOVE:

By: 
Amy Borgens, Texas State Marine Archaeologist

Date: November 11, 2010

Scott Sorset

██████████
Mandeville, Louisiana 70448
850-287-██████████

15 August 2012

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A print copy of my thesis/dissertation will be archived in the John C. Pace Library at The University of West Florida in Pensacola. An electronic version will be archived at the Florida Center for Library Automation (FCLA). Your signing of this letter will confirm that you own [or your company owns] the copyright to the above-described material.

Thank you for your attention in this matter.

Sincerely,

Scott Sorset

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By: _____

Date: 05-10-2012





Florida Museum of Natural History
 Registrar's Office, Anthropology Division
 Department of Natural History
 P.O. Box 117800
 Gainesville, FL 32611-7800

Tel: (352) 273-1925
 Fax: (352) 392-3698

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 FLORIDA MUSEUM OF NATURAL HISTORY
 IMAGE USE/REPLICATION AGREEMENT**

The undersigned: Scott Sorset

of: [REDACTED] Mandeville, LA 70448
 TEL: 850-287-[REDACTED]; Email: srs32@students.uwf.edu

agrees to the following conditions regarding images taken of the collections of the Anthropology Division of the Florida Museum of Natural History:

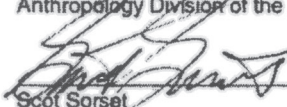
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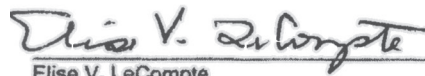
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 Scot Sorset
 Graduate Researcher
 University of West Florida

28/Sept/2012
 Date


 Elise V. LeCompte
 Registrar
 Anthropology Division
 Dept. of Natural History
 Florida Museum of Natural History

Oct 2, 2012
 Date

Items Used/Referenced:

FLMNH CATALOGUE NO.	DESCRIPTION
	Ceramic Vessel Forms from the Florida Museum of Natural History's Digital Type Collection Webpage, < http://www.flmnh.ufl.edu/histarch/gallery_types/glossary/vessel_forms.htm >



Florida Museum of Natural History
 Anthropology Division
 Department of Natural History
 P.O. Box 117800
 Gainesville, FL 32611-7800

Contact Person: Elise V. LeCompte _____
 Tel: (352) 273-1925 _____
 Fax: (352) 392-3698 _____
 Email: _lecompte@flmnh.ufl.edu _____

CAR No.: 2012-21

**ANTHROPOLOGY DIVISION
 FLORIDA MUSEUM OF NATURAL HISTORY
 COLLECTIONS ACCESS/USE REQUEST**

Request is for use of collections within the Anthropology Division of the Florida Museum of Natural History (hereafter ADFLMNH):

NAME OF APPLICANT: Scott Sorset **FACULTY ADVISOR (if applicable):** N/A
POSITION/TITLE: Graduate Researcher (Master's Candidate)

INSTITUTION/AFFILIATION: University of West Florida

ADDRESS: [REDACTED] Mandeville, LA 70448

TELEPHONE: 850-287-[REDACTED] **FAX:** [REDACTED] **E-MAIL:** srs32@students.uwf.edu

PURPOSE OF REQUEST/VISIT:

Research publication Class project Exhibit Other (describe)

DATE OF REQUEST: 9/24/12

DESIRED DATE(S) OF VISIT: N/A
 (Requests for access should be made at least one month in advance.)

COLLECTIONS TO BE USED:

Bioarchaeology Ethnographic Latin Amer. Archaeology N. Florida Archaeology
 S. Florida Archaeology Historical Archaeology Caribbean Archaeology

SPECIFY MATERIAL TO BE USED OR EXAMINED (e.g., Collection name, site number, site name, materials(s), etc.; attach additional page if necessary):

Ceramic Vessel Forms from the Florida Museum of Natural History's Digital Type Collection Webpage:
 <http://www.flmnh.ufl.edu/histarch/gallery_types/glossary/vessel_forms.htm>

Proposed Activities:

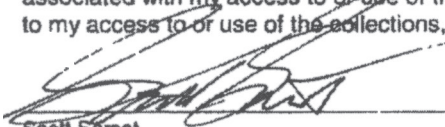
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- Identification/comparison with other material
- Other (describe-attach proposed scope of work for any collections access, use, or information)
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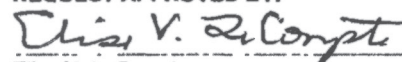


 Scott Sorset
 Graduate Researcher
 University of West Florida

28/Sept/2012

 Date

REQUEST APPROVED BY:



 Elise V. LeCompte
 Registrar
 Division of Anthropology
 Department of Natural History
 Florida Museum of Natural History

Oct. 2, 2012

 Date

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Inventory of items (attach if necessary; include catalogue numbers): _____

Forms needed (attach if necessary; cross reference loan number, TADS form number, etc. when applicable):

Image Use/Replication Agreement form and Image Use/Replication Agreement Policy _____

FLMNH Staff associated with this request: Elise V. LeCompte and Gifford Waters, Collections Manager, Historic Archaeology