Ancient Engineering:

Selective Ceramic Processing in the Middle Balsas Region of Guerrero, Mexico

Jennifer Meanwell

Paris Monographs in American Archaeology 48

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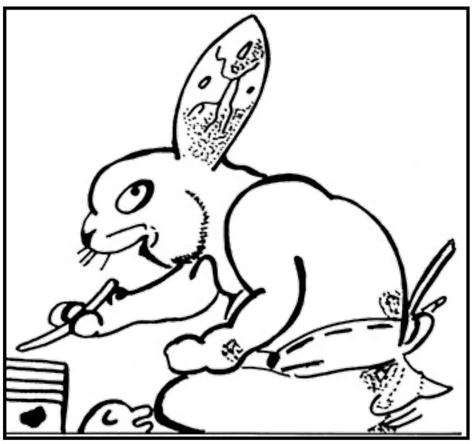

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Chapter 1: Introduction: Problem Statement, Theoretical Underpinnings, and the Ecology of the Middle Balsas Region.

Pottery is a common, usually locally made product that was and is important to the daily lives of many people, because pots are used for the storage or transport of materials and for food preparation, among other functions. Archaeologists often use pottery vessels and sherds in their research, because sherds are durable and are made in various styles that frequently can be identified as indicative of a particular region, culture, and/or time period (whether or not these categories were important to ancient peoples). Studies of pottery typologies and manufacturing methods can offer archaeologists a window into how ancient peoples utilized locally available raw materials to produce functional objects that were particularly suited for certain tasks.

In this introduction, I explain the specific research goals of my project and offer a brief overview of the methods used. I also explain the historical precedents for and the theoretical underpinnings of my research. Next, I provide details on the geography, resources and climate of the Middle Balsas region, which is the geographical focus of the research. I also discuss the documentary evidence for resources that were available to ancient peoples in the Middle Balsas region and that are no longer exploited today. Finally, I provide an overview of the format of the entire publication.

1.1 Problem Statement and Research Goals

Problem Statement

My research focuses on identifying and detailing the pottery production technology developed and used in the Middle Balsas region of Guerrero, Mexico (see Figure 1.1). I chose to investigate pottery production because previous researchers, regardless of the geographic location of their studies, have obtained intriguing results that require further investigation through integration of techniques and concepts from anthropology, archaeology, and materials science. Specifically, how frequently potters changed their production techniques to influence the materials properties of the finished vessel remains an unanswered question.

Several researchers have shown through laboratory studies of samples made using ancient techniques (*e.g.,* Schiffer 1990; Bronitsky and Hamer 1986; Kilikoglou *et al.* 1998) that potters *can* influence the materials properties and behavior of finished pottery vessels by changing certain aspects of production. For example, potters can mix different non-plastic materials (temper) into the raw clays to influence the thermal shock resistance of a vessel (Bronitsky and Hamer 1986; Tite *et al.* 2001) or to change its strength or toughness (Kilikoglou *et al.* 1998). Potters also can change the permeability of the clay walls through burnishing or painting, which affects the vessel's ability to boil water (Schiffer 1990). Various researchers have suggested that potters in North America took advantage of these property differences when producing cooking vessels that needed to be resistant to thermal shock (Bronitsky 1984; Bronitsky and Hamer 1986; Budak 1991). One study of Mesoamerican pottery suggests that potters at La Quemada used a wider range of non-plastic inclusion sizes when making their cooking vessels (as opposed to bowls, which were made with a narrow range of inclusion sizes), possibly for functional reasons (Devereux 1996). Finally, a study of pottery production in India suggests that different clay sources and processing methods were used to make pots intended for distinct functions (Mahias 1993). It is still unclear, however, whether potters from many regions and from many time periods were tailoring their production methods to take advantage of these possible variations in mechanical and physical properties of the materials they used.

FIGURE 1.1: THE LOCATION OF THE STATE OF GUERRERO WITHIN MEXICO AND THE LOCATION OF THE MIDDLE BALSAS REGION WITHIN THE STATE OF GUERRERO.

The Middle Balsas Region and Site Selection

As mentioned previously, I am studying pottery production within the Middle Balsas region. The Middle Balsas region lies adjacent to the location of many ancient state-level societies within Mesoamerica, including Teotihuacán (200 BC-AD 650) and the Mexica (AD 1250-1520) to the north, the Purépecha (AD 1200-1520) to the northwest, and the Zapotecs (500 BC-AD 1520) and Mixtecs (AD 1000-1520) to the southeast. Based on documentary evidence, the Middle Balsas region is thought to have been a border area between the Aztec (Mexica) and Tarascan (Purépecha) Empires during the Late Postclassic period (AD 1350-1520: see Silverstein 2000, 2002; Hernández 1994, 1996; Pollard and Smith 2003). The extent of contact between the Middle Balsas region and its neighbors has not been established, but it is likely that the Middle Balsas interacted with surrounding societies in some fashion (imported vessels were reported by Paradis 1974 and Silverstein 2000).

I chose this area because practically no systematic archaeological investigation has focused on the Middle Balsas (see Chapter 2 for a few exceptions). Thus my research will not only add to a general understanding of how ancient peoples produced and used pottery vessels, but it will also provide a pottery sequence for the Middle Balsas throughout the Classic period (AD 200-800), which currently does not exist. The pottery sequence can then be used by other archaeologists investigating any aspect of the Middle Balsas region.

I focused my investigations on three major sites within the Middle Balsas region: La Quesería, Itzímbaro and Mexiquito (see Figures 1.1 and 1.2). The Middle Balsas is a circumscribed and homogeneous ecological zone. I describe its resources and characteristics in more detail in section 1.3. When selecting the specific sites for my research, the consistent ecology of the Middle Balsas region allowed me to eliminate most environmental factors as sources of variation among the sites. I selected La Quesería, Itzímbaro and Mexiquito because they all appeared to be of similar scale, which was larger than most other sites in the region. This eliminated site size as an additional variable. Based on the results of limited previous research (Hosler 1999a; Meanwell 2001), these three sites all appear to have been occupied during an overlapping period of time extending at least from AD 400 to 900. This time span has not been the focus of investigation for any other researchers working in the Middle Balsas region.

Specific Research Goals

I have two overarching research objectives: establishing a chronology of the Middle Balsas and detailing the region's pottery production methods. I posit that pottery intended for different functions was often deliberately made and/or decorated in ways that were chosen to make the vessels more appropriate for their intended functions. More specifically, in this study I determine whether any of the pottery production patterns I identify in the region are linked to specific constraints imposed by the materials during the process of pottery manufacture. For example, I will show whether variables such as vessel shape and wall thickness correlate with the clay types and processing techniques determined during thin section analysis[1] of the ancient sherds. Additionally, I identify certain production behaviors that are characteristic of the entire region and that can be used as markers of this local tradition. My specific research agenda is four-fold: 1) to identify how pottery was being made at these three sites; 2) to investigate any material constraints that affected why pottery was made in the ways I determined; 3) to establish whether manufacturing methods varied through time or among the three sites; and 4) to clarify the chronology of site occupation and to provide a ceramic sequence for this region.

1 Thin section analysis, which is also known as petrography, is a standard technique used in geology and archaeology to identify minerals and clay textures using a polarizing microscope. The technique is described in more detail in Chapter 3 and Chapter 5.

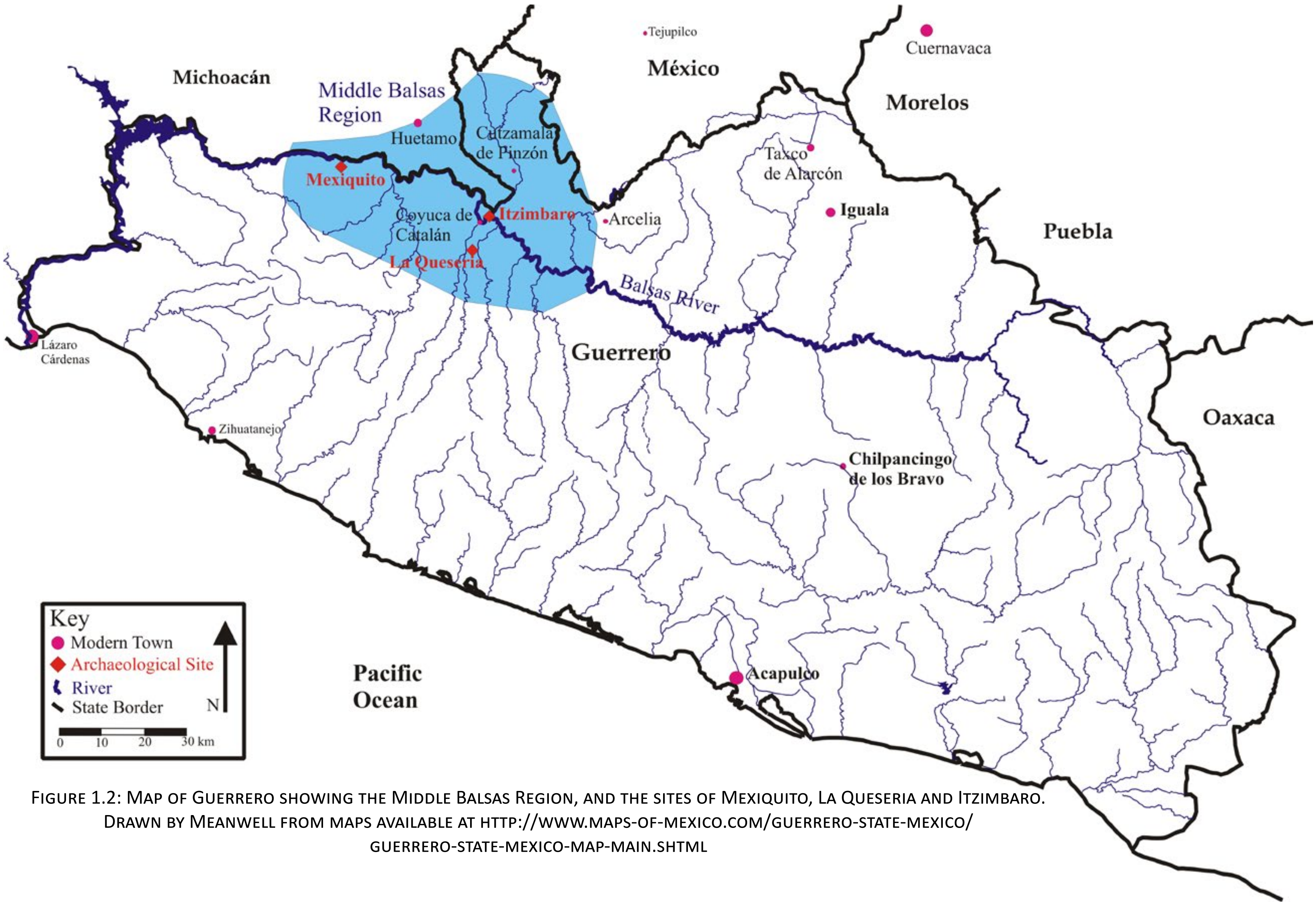


Figure 1.2: Map of Guerrero showing the Middle Balsas Region, and the sites of Mexiquito, La Queseria and Itzimbaro. Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml

Methods Overview

To accomplish these goals, I utilized a variety of methods both in the field and in the laboratory. In the field, I mapped the mounds and other architecture, performed surface collections, and excavated test pits at the three sites to collect pottery, radiocarbon samples, and other cultural materials. I also collected samples of clays from the region to compare with clays that form the fabrics of the ancient sherds. In the laboratory, I identified the vessel shapes and wares that are characteristic of the Middle Balsas region. I examined specific examples of these shape classes through thin section analysis (petrography) to determine some details of the manufacturing process and to identify the clay fabrics used for each vessel. I made two sets of small test briquettes from the local clay samples I collected. One set of briquettes was thin sectioned and compared with the ancient sherds to identify possible clay sources used in ancient times. These thin sections also helped determine which clays could be used as analogues for the ancient sherds in experiments designed to test the properties of clays, specifically their fracture strength. The second set of test briquettes was subjected to three-point bend tests to measure the transverse rupture strength (TRS) of the various clays containing different volume fractions of sand temper. Finally, I analyzed carbon samples collected during excavation to determine the chronology of various stratigraphic levels found during the excavation.

Although this work focuses most heavily on pottery manufacturing technology, evidence from the analysis of other materials including architecture, figurines, and obsidian, will be discussed briefly. The data from these materials help create a more complete picture of the chronology and particular features of the Middle Balsas culture and its interactions with neighboring groups.

1.2 Theoretical Underpinnings and Pottery Production Studies

The types of pottery production choices I am studying are always made from a range of technically feasible options, given the materials available. These choices may be made for practical reasons (to keep the pot from cracking when placed over a fire), for cultural reasons (to make the pot appropriate for use in a specific ritual), or both. This guiding theoretical statement for my research was developed using theories elaborated by a number of scholars who have studied ancient technologies. Several schools of thought on production and ancient technology have contributed to this study, including the anthropology of technology, analytical studies of pottery including experimental replication, and ceramic ecology.

The Anthropology of Technology and the Materials Approach

The theoretical framework behind my Middle Balsas pottery investigation derives primarily from the anthropology of technology and what has been called the ‘materials approach.’ Researchers using the materials approach, as defined by Heather Lechtman, consider the fact that ‘manufacturing an object always involves accommodation between the properties of the material from which the object is made and the object’s design’ (Lechtman 1999: 223). Materials properties are invariant and universal, but human practitioners choose certain properties from among viable technical alternatives when producing objects (Hosler 1986, 1994: 4; Lechtman 1999). Therefore, in order to study how ancient societies produced their tools and other objects, it is vital to analyze in detail the properties of the materials they utilized and their production techniques.

The history of the materials approach can be traced to the pioneering work of Cyril Stanley Smith (1965, 1971, 1973, 1977). He was the first researcher to apply analyses and techniques from materials science to the study of ancient production methods, especially metallurgy. Cyril Smith was a metallurgist and an historian of metallurgy, but he did not carry out his studies from an anthropological perspective.

In the 1970s and 1980s, Heather Lechtman, a student of Cyril Smith, pioneered the integration of anthropological archaeology with materials science, which is concerned with materials properties (Lechtman 1977, 1984a, 1984b; Lechtman and Steinberg 1973). Lechtman's 1977 article was the initial programmatic statement on technological style. She sees technologies as 'totally integrated systems that manifest cultural choices and values' (Lechtman and Steinberg 1973; Lechtman 1977: 3). Therefore, by studying in detail the properties and production methods of various types of objects, a set of characteristic behaviors or ideas is revealed, which represent the technological style of a particular culture. Lechtman compared production techniques of Andean metallurgy and textiles to develop her ideas concerning the technological styles characteristic of Andean cultures (Lechtman 1977).

Dorothy Hosler, a student of C. S. Smith and Lechtman, used the idea of technological style and operationalized it by examining the relationships between artifact design and function based on concepts drawn from materials and mechanical engineering. For example, she used finite element analysis to examine the functionality of two different west Mexican tweezer designs, determining that one of them required the properties of bronze alloys to realize the design and to function successfully (Hosler 1986: 120-209; 1994: 66-73, 145-152). Dewan and Hosler (2008) used MATLAB to model the material properties and behaviors of the variety of materials used to construct ancient Ecuadorian sailing rafts. They determined the limitations of raft size, mast height, sail dimensions, and cargo capacity through these models to evaluate whether, in prehistoric times, these craft could have sailed from Ecuador to west Mexico and back. The issue of maritime voyages between Ecuador and west Mexico is a primary concern in New World archaeology, because metal working technologies were introduced from northern South America to western Mexico, likely via a maritime route (Hosler 1986: 560-567, 1988a, 1994: 99-105). The Dewan and Hosler (2008) research provides direct evidence that vessels of dimensions they determined could have made the long, ocean-going, round-trip voyages successfully.

Hosler emphasized the importance of fundamental limitations and possibilities provided by materials properties (1986, 1994:3-6). This requires identifying the range of technical possibilities allowed by the properties of the specific materials, then identifying where people choose from technically feasible alternatives (Hosler 1986, 1994: 4). As Hosler states:

> 'I can determine *where* aspects of this particular ancient "human fabric" are visible in the selection of raw materials and processing methods and in decisions about object design. This is possible because I can distinguish between those characteristics of the technology that result from technical *choices*, which reflect and express values, interests, and other social variables, and those arising from technical *requirements* imposed by the material's inherent physical and mechanical properties.' (Hosler 1994:3- italics are original)

The significant outcome of this approach was Hosler's establishment of the archaeological chronology for the development of west Mexican metallurgical technology based solely on the engineering design characteristics of the metal artifacts (Hosler 1988b). The design of objects made from bronze alloys during Period 2 of the technology (AD 600 to 1200/1300) could not have been achieved in copper, the metal that characterized Period 1 (AD 1200/1300 to 1520) (Hosler 1994: 134-139).

The materials approach as it is now applied developed mainly using the concepts established by Lechtman (see especially 1977, 1994, 1996a, 1996b, 1999) and Hosler (see especially 1986, 1988a, 1994, 1995, 1996). This approach has been used successfully by Lechtman and Hosler's students and colleagues for a variety of different materials, including metals, polymers, and pottery (*e.g.,* Childs 1986; Devereux 1996; Dewan and Hosler 2008; Meanwell 2001; Reitzel 2007; Tarkanian 2003). The recent article by Dewan and Hosler (2008) mentioned above effectively demonstrates the utility of the materials approach for research questions concerning the use of a specific technology. Other researchers had experimented with balsa raft voyages (Haslett 2006; Heyerdahl 1955), but did not closely simulate the Ecuadorian raft's probable sail design (Dewan and Hosler 2008). Furthermore, Dewan and Hosler (2008) were able to show that certain dimensions of the rafts' centerboards and masts were required to provide safe sailing conditions, and they also demonstrated that a voyage from Ecuador to Mexico and back is feasible. The novelty and strength of the conclusions required consideration of how the materials available affected the design and function of the vessel.

David Braun (1983), in his article 'Pots as Tools,' was the first to articulate a version of the materials approach specifically for pottery. He suggests that because pots are used for different functions, they must also have materials properties that differ according to their function (Braun 1983). Other researchers have expanded on this idea by studying specific materials properties and how they affect pottery functionality (see section 1.2.2).

Beginning in the 1970s, a group of French ethnographers investigating the interactions between society and the production of material culture developed a subtly different model of artifact production known as the *chaîne opératoire* (Leroi-Gourhan 1964, 1965; Lemonnier 1976). This model argues that during the production of any object, choices are made at each step that affect and place limitations on the finished product. These scholars link processing techniques and steps to cultural considerations of the 'correct way' to form material objects, although they do not address the fundamental question of limitations due to inherent material *properties,* which is centrally important to the materials approach.

The *chaîne opératoire* approach has been used to study various classes of material culture, including house shapes, clothing types, and hunting methods in modern Papua New Guinea (Lemonnier 1986, 1990), pottery production (Mahias 1993; van der Leeuw 1993), Neolithic adoption of various pottery, bone, and stone tools (Pétrequin 1993), and modern technology including guns, factories, and transportation systems (Govoroff 1993; Pfaffenberger 1993; Latour 1993). As noted above, however, these researchers do not consider whether materials properties have an effect on production or object design. For example, in her study of pottery production in India, Mahias (1993) assumes that the clays available in all regions have approximately the same material properties, and she does not ask the question of whether varying clay types could have influenced the production methods. Mahias notes that a specific temper type is used only in one geologic area, but she goes on to say that this should not be given much weight in the discussion, because multiple solutions to materials issues are possible (Mahias 1993: 164-165). Mahias does not seek an explicit evaluation of the possible materials limitations imposed by that certain clay type, assuming instead that the clay type available to the potters had little effect on their production methods.

Over the last decade, there have been many theoretical articles written on how materials analysis in archaeology and anthropology can provide insights into the cultures under study (*e.g.* Schiffer 2001; Sillar and Tite 2000; Jones 2004; Ingold 1990, 2007a; Prown 1996; Dobres 1999, 2000; Dobres and Robb 2005; Dobres and Hoffman 1999; Pollard and Bray 2007; Roux 2003; Lechtman 1999). In these articles, the authors discuss various theoretical positions, but most do not provide examples of how they would use their theoretical approach to analyze an archaeological assemblage. An additional set of discussion articles was published recently in *Archaeological Dialogues* (Ingold 2007a, b; Tilley 2007; Knappett 2007; Miller 2007; Nilsson 2007). In these, Ingold (2007a) advocates for more research that explicitly evaluates materials properties. He also suggests that too much emphasis is placed on theoretical dialogues over concepts such as 'materiality' and not enough emphasis is placed on the actual artifacts. The other authors argue that analyses of materials are helpful only when properly placed into a cultural and archaeological context.

Many archaeologists of all theoretical persuasions now use a variety of materials and other physical analyses routinely and profitably to answer a specific set of research questions. Most frequently, these questions address artifact provenience or material systems characterization. Provenience studies, while not the main focus of this research, are crucial to understanding ancient interaction and exchange networks (*e.g*., Fargher 2007; Martineau *et al.* 2007; Tiedemann and Jakes 2006; Abbott and Schaller 1991; Day *et al.* 1999; Rattray and Harbottle 1992). Many materials characterization studies do not consider social factors heavily in their analyses, but generally provide valuable information about the functional possibilities achievable during artifact production (Tite 1987, 1989, 1999; Tite *et al.* 2001; Schiffer 1990; Kilikoglou *et al.* 1998; Vekinis and Kilikoglou 1998; Beck 2002).

I, and other scholars who follow the materials approach, would argue that materials analyses can be used to answer a much broader set of research questions than simply provenience or materials characterization. The materials approach not only asks where or how an object was made, but also considers *why* it was made in a specific manner, and can identify culturally-influenced decisions in the production process.

My research agenda was designed primarily from the theory governing the 'materials approach' as developed and used by Lechtman and Hosler (Lechtman 1977, 1984a, 1984b, 1991, 1993, 1994, 1996a, 1996b, 1999, 2007; Hosler 1986, 1988a, 1998b, 1990, 1994, 1995, 1996, 1999b; Hosler *et al.* 1990; Hosler and Macfarlane 1996). In addition to the materials properties of finished pottery, I consider the limitations and constraints that are placed on pottery production during selected manufacturing steps, including clay selection, tempering, and firing. The importance of studying production techniques and sequences is explicitly developed in the materials approach and is also considered in the concept of the *chaîne opératoire*.

I also analyze a broader set of materials properties in my work than that evaluated previously by most experimental archaeologists (*e.g.,* Schiffer 1990; Kilikoglou *et al.* 1998; Tite *et al.* 2001; Vekinis and Kilikoglou 1998; Schiffer and Skibo 1989). I argue that a thorough understanding of ancient pottery production can be developed only through multiple analyses of ancient sherds, including petrographic, chemical, physical, mechanical, or radiographic techniques, to determine how they were produced (this is discussed in more detail below). This must be followed by experimental replication of ancient pottery production methods using appropriate clays. Finally, a characterization of the materials properties of the experimental product will offer data on the physical limitations (if any) that would have affected production. It is not sufficient to focus exclusively on either the properties or the processing of materials when evaluating pottery production. The information gained by investigating both of those topics can be used to determine how people interacted with their environment to make pottery (see the discussion of ceramic ecology). A determination of the properties of the raw materials and finished products sets limits on what it is physically possible to produce, while an identification of the processing methods can highlight specific culturally inspired choices made by the potters.

My research integrates a thorough understanding of the specific material (the materials properties and processing techniques of the specific clay, water, and temper mixture) with a concern for the social aspects of pottery production.

Replication and Laboratory Analyses of Pottery

The analytical techniques (petrography, ethnographic studies, and experimental replication) I utilize have a long history of use in archaeology. Anna Shepard, who worked primarily in the Southwestern United States and Mesoamerica, did some of the earliest research into pottery production (Shepard 1936, 1940, 1948). Shepard focused primarily on clay source identification via analysis with binocular microscopes and petrographic thin sections, but also investigated stylistic patterns (Shepard 1948, 1964, 1965). Shepard was the first person to introduce the technique of petrography to archaeological research (Shepard 1936).

Beginning primarily in the 1980s, researchers began investigating the functional properties of pottery through experimental replication. David Braun (1983) linked various pottery production changes, including different temper types and variable wall thicknesses, to the introduction and consumption of maize in the Midwestern United States during the Woodland period. Gordon Bronitsky (1984; Bronitsky and Hamer 1986) suggested on the basis of replica testing that shell tempered pottery may be more thermal shock resistant than sand tempered pottery, and that shell temper was preferred in cooking pot production. The theme of sand versus shell temper reoccurs in the archaeological literature, with Michael Budak's study on this topic (Budak 1991). Michael Schiffer and James Skibo also designed a variety of replication experiments to determine how properties, such as porosity, could affect functionality (Schiffer 1990; Skibo *et al*. 1989), and they investigated durability and wear marks in pottery as possible signals of ancient function (Schiffer and Skibo 1989).

Other work has been carried out to determine identifiable and characteristic changes based on firing temperature (*e.g.*, Rice 1987: 80-110; Feathers 1991; Feathers et al. 2003; Tite 1969; Buxeda i Garrigós *et al.* 2001) and to determine firing method and extent. More recently, researchers in Greece have systematically documented changes in the mechanical properties of clays prepared with differing amounts of temper in modern replicas they have made of ancient ceramics (Tite *et al.* 2001; Vekinis and Kilikoglou 1998; Kilikoglou *et al.* 1998). More recently, Kilikoglou and Vekinis (2002) have experimented with finite element analysis as a technique for determining how a specific pottery design will fail. As Kilikoglou and Vekinis are aware, the vessel form[2] can affect the functionality of a certain design. Appendages, such as feet, must be able to support the weight of the vessel and its contents, and the aperture of a vessel neck can make it more convenient in specific applications. The shape of an entire vessel may be designed for a particular application, such as Mediterranean pointed-base amphorae that were tapered to allow dense packing aboard ships (Twede 2002).

Michael Tite (1999) has written a comprehensive summary of research carried out on pottery using methods of the physical sciences. All of these studies, while narrowly focused, are beginning to evaluate which materials properties may have been manipulated by ancient potters in various regions.

A number of scholars working at the Center for Materials Research in Archaeology and Ethnology housed at MIT have analyzed various aspects of pottery production and use using the techniques of materials analysis (Childs 1986; Little 1989; González 1993; Strazicich 1995; Devereux 1996; Meanwell 2001; Reitzel 2007). Mary Hopkins (1996) studied the production of cooking pots from Teotihuacán, in central Mexico. Her analysis focused on how the pots were made (including clay sources), but did not consider how different intended functions might have affected production, as she analyzed cooking pots exclusively. Robin Devereux (1996) investigated how temper size affected functionality in pottery from La Quemada. She determined that a larger range of temper sizes was used in cooking pots than in bowls, and experimentally determined that the larger temper sizes enhanced the thermal shock resistance of the clay vessels. Although her conclusions are qualified, she suggests those temper choices were intentional. All of these studies offer tantalizing glimpses of some of the individual materials properties that can be affected by changes in processing, and I used their results in determining the range of properties I would investigate in this research.

Ceramic Ecology and Ethnography of Pottery Production

An additional group of scholars who influenced my work on pottery production follows what is known as the ceramic ecology and systems approach, which means they look at pottery production within the context of the local environment and available materials (Matson 1965; Arnold 1975). Some researchers

2 Throughout this work I use the word form to refer to the overall shape of a vessel. I also use the phrase 'formal types' to refer to the different shape classes that I identified.

have clarified production details based on the locally available materials and determined consumption and exchange patterns in a small geographical area (*e.g.*, Fry 1980; Langdon and Robertshaw 1985; Rands and Bishop 1980). Dean Arnold (1985) correlated a large number of ethnographic and archaeological studies to look for universal behaviors as related to pottery production. He determined that most potters do not travel far (fewer than 7 km) to obtain their raw materials, except in the exceptional cases where the transport mechanism or rarity of the resource requires or allows longer distance travel (Arnold 1985: 39-50).

A number of recent ethnographic studies of pottery production have investigated some of the standard hypotheses used during archaeological investigation. Bill Sillar (1997) documented a pottery system in highland Bolivia and Peru in which the potters brought clay from their home village to other locations where the pots were actually produced. This pattern is directly opposite from Arnold's (1985) results. Other ethnographic investigations, particularly of modern Kalinga potters in the Philippines, have considered a number of relevant topics, including how political control influences access to clay resources (Neupert 2000), how differing amounts of specialization by potters affect the clay composition (Stark *et al*. 2000), how modern people decide which pottery vessel to purchase (Longacre *et al.* 2000), and whether full-time potters produce vessels that are more standardized in size and shape than part-time potters (Longacre 1999; Deal 1998:31-37; Arnold 2000). Additionally, Dorothy Hosler studied how social categories affected pottery production techniques in the Andean community of Las Ánimas (Hosler 1996).

Mesoamerican Pottery Production Studies

My research is unusual in Mesoamerican pottery production studies, both because I use petrographic analysis, a technique not common to the study of archaeological ceramics, and because I study pottery production unrelated to state-level society. Previous petrographic analyses of Mesoamerican ceramics have focused mainly on pottery production around major sites or on major trade wares including Teotihuacán/Thin Orange ware (Hopkins 1995), Monte Albán (Fargher 2007; Feinman *et al*. 1989; Shepard 1967), the Maya area (Kepecs 1998; Jones 1984, 1986; Rands and Bishop 1980, López 1989), and plumbate ware (Shepard 1948b). These studies fall into two types of investigation: either a determination of the source area for a trade ware or specific ware type (see Shepard 1948b; Fargher 2007; Rands and Bishop 1980; Strazicich 1998; Rattray and Harbottle 1992) or an attempt to determine the level of specialization in pottery production (Kepecs 1998; Jones 1984, 1986; Feinman *et al*. 1989). Studies that attempt to discover the extent to which vessel function had an effect on production techniques are rare (see however Devereux 1996; Meanwell 2001; Reitzel 2007).

My work provides data on pottery chronology, provenience, the level of specialization present in pottery production, and the possible effect of vessel form and function on production techniques among a group of related sites in the Middle Balsas region. Such a comprehensive study, which combines four major features of pottery production, is the first of its kind. Although the methods and theories I employ have been utilized previously by other researchers, this is the first project to use materials analysis of a broad range of pottery vessel types from a wide geographical area to answer anthropological questions, specifically whether potters usually optimize the materials properties of their vessels for various functions.

1.3 Description of the Middle Balsas and its Ecology

The Middle Balsas region is located in a depression formed by the Balsas River and its tributaries in the northwestern corner of Guerrero and small areas of the adjoining states of Michoacán and México (see Figures 1.1 and 1.2). Today this region falls within the area known as the '*Tierra Caliente,*' literally the 'hot lands,' where the average annual temperature (28° C) is among the highest in Mexico, and rainy season temperatures can reach at least 42° C on a regular basis (Piperno *et al*. 2007). The average altitude of the valley is about 300 m above sea level, although isolated hills exist throughout the region. The Sierra Madre del Sur mountain range is to the south, and it divides the area around the Balsas River from the Pacific coastal plain. To the north, the land rises to the Central Plateau of Mexico. The Middle Balsas region has a seasonal rainfall pattern, where heavy rains begin in late May and last until the end of October or early November for an annual total of around 1100 mm (Piperno *et al.* 2007). Rain outside of the rainy season is very rare. Although the climate is very dry outside of the rainy season, the Balsas River system provides a significant source of year-round water for the region's inhabitants.

Recent investigations into the climate history of the Iguala region just to the east of the Middle Balsas (see Figure 1.2) suggest that the climate has fluctuated mildly since the end of the Pleistocene era (around 11,000 BP) when it first approached modern conditions (Piperno *et al*. 2007). The short-term climatic fluctuations between 1800 BP and 900 BP appear to correlate to climatic events that have been linked to the collapse of Maya civilization (Piperno *et al.* 2007). Evidence suggests that during the fluctuations (Piperno *et al*. 2007) the Balsas region became drier than its current conditions. The range of plant and animal species living in the region during the time under study is therefore likely similar to those seen today, although those most dependent on rainfall may have been scarce or absent during the drier periods. Since the Balsas River is a year-round water source, it may have become even more important to people living in the area during the climatic fluctuations.

The vegetation in the Balsas depression falls into the category of *matorral espinoso caducifolío bajo,* which is translated as 'short, deciduous and spiny forest' (Moguel 2002). This category includes mainly short bushes and occasional taller trees, many of which have thorns. These species include mesquite (*Prosopis julifora*), parotas (*Enterolobium cyclocarpum*), cirían (*Crescentia alata),* cuayulote (*Guazuma ulmifolia*), algodón silvestre (*Cochlospermum vitifolium*), and ciruelo (*Spondius purpurea*) (Moguel 2002). A variety of cactus species is also found, including the prickly pear or *nopal (Opuntia sp.)* that provides fruit and tender leaves for food. The character of the region changes dramatically from the grey and brown landscape of the dry season to the lush green of the rainy season (see Figure 1.3). Vines, flowers, and small plants appear almost as soon as the first rain of the season occurs.

Wildlife is fairly abundant, with a number of species still hunted and utilized today. The most common animals include squirrels, rabbits, frogs, scorpions, tarantulas, birds, foxes, lizards, iguanas, coyotes and a number of snake species, including rattlesnakes and coral snakes (Moguel 2002). In the hills and the Sierra Madre del Sur, deer are still found and hunted, and occasional wild pigs (*jabalí*) are also known. According to older residents of the area, deer were more common in the past, but they have been over-hunted.

In addition to water, the Balsas River provides a source of a number of riverine resources, especially fish and shellfish. Fishing for local freshwater species such as *truchas* (trout) and *mojarras* (bass) is common, and they form a significant portion of the local diet. The Balsas River also acts as a transportation route, although fewer vessels are currently found on the Balsas due to the construction of a number of dams. Before the dam construction, however, it was possible to navigate by boat from the mouth of the Balsas across most of the state of Guerrero (see Gorsuch 1966).

The Balsas depression is also rich in mineral resources. The area is dotted with a number of small copper and other mineral deposits (Hosler 1999). In fact, the only documented indigenous smelting site in Mesoamerica is located just south of the Middle Balsas region at the site of El Manchón, Guerrero (Hosler 2005). The Middle Balsas is especially known for gold deposits near the town of Placeres del Oro. Elsewhere in Guerrero, there is evidence of greenstone extraction and exportation, and greenstone of various types may be found near the Middle Balsas (Griffin 1993). Eastern Guerrero is also well known

Figure 1.3: The main pyramid (structure M-1) at La Quesería during the dry season (above) and the wet season (below).

as a source of salt from such places as Ixtapan, although there is no evidence for industrial-level salt production in the Middle Balsas Region.

Today, the agriculture of the region is mainly subsistence farming of corn, beans, chilies, and squash, herding of cattle, pigs, donkeys, or goats, and some cash-cropping of melons, *jícama*, sesame, and tomatoes. Livestock herding is especially important in the western area of the Middle Balsas near the site of Mexiquito. Many of the large fields along the Balsas River are used to produce cash crops, and often irrigation is used during the dry season to increase productivity. Many farmers still plant small plots of corn during the rainy season for their family's tortillas for the year, or to provide extra food for the livestock. Sorghum is also grown as an animal feed. A number of orchards have been planted in the area, especially mango, papaya, banana and *nánche (Byrsonima crassifolia)*.

1.4 Conquest-Era Documentary Evidence of the Middle Balsas and its Resources

A complimentary source of information about the conditions in the Middle Balsas and resources likely available and utilized by ancient peoples are the Conquest-era documents written by both indigenous and Spanish authors. A number of mainly pictorial codices detail the tribute sent from various provinces in the Aztec empire to the capital (Berdan and Anawalt 1997; Clark 1938). Presumably, the majority of the tribute consisted of local products. Another set of codices documents tribute given to Spanish landowners in the area just north of Mexiquito in the sixteenth century (Roskamp 2003). Additionally, multiple editions of a 1577 Spanish geographical survey of Michoacán known as the *Relaciones Geográficas* list the towns found in the region, their populations, and some of their notable characteristics (Paso y Troncoso 1905; Acuña 1987).

The two most relevant codices are the *Matrícula de Tributos* and the *Codex Mendoza,* both of which detail tribute sent annually to the Aztec rulers by various provinces. The *Matrícula de Tributos* appears to be a later copy of a pre-Conquest document, and it was possibly made in the period from 1522 to 1530 (León-Portilla 2003). The *Codex Mendoza* is a larger document that probably used the *Matrícula de Tributos* as a model for the middle section devoted to tribute (Castillo Farreras 2003).

The two Aztec provinces of Tlachco and Tepequacuilco are closest to the Middle Balsas area, and the western edge of the Tepequacuilco province is close to the eastern edge of the Middle Balsas region (see Figure 1.4). According to these documents, the Tepequacuilco province sent cotton *mantas* (a type of women's clothing), gourd bowls, corn, beans, amaranth, copal, honey, copper axes, and greenstone, among other things, to the Aztecs (Berdan and Anawalt 1997: 79). The province of Tlachco, slightly to the north, also sent *mantas*, gourd bowls, corn, and honey (Berdan and Anawalt 1997: 76). The production of *mantas* likely implies that the cotton was locally grown, although it may have been imported for processing from Morelos, for example. The greenstone and copper axes sent by the Tepequacuilco province are noteworthy; Guerrero is the only source of copper noted in the codices, and greenstone comes from a limited number of locations (Castillo Farreras and Sepúlveda y Herrera 1997: 120-122). Both copper and greenstone may have been produced in the Middle Balsas region as well.

In a more recent revision of the Aztec tribute provinces, the closest strategic (non-tribute providing) province to the Middle Balsas region is Tetellan, with the tribute provinces of Tlachco and Tepecuacuilco also nearby (Berdan *et al.* 1996: 112). Other tribute documents confirm the extensive natural products that were sent from the province of Tepecuacuilco to the Aztec empire's heartland (Berdan 1996: 130). These resources included gold, silver, copper, jade, salt, pigments, cotton, cacao, maize, white honey, mats, and chilies (Berdan 1996: 130). At least one scholar has suggested that the abundance of metal resources in the

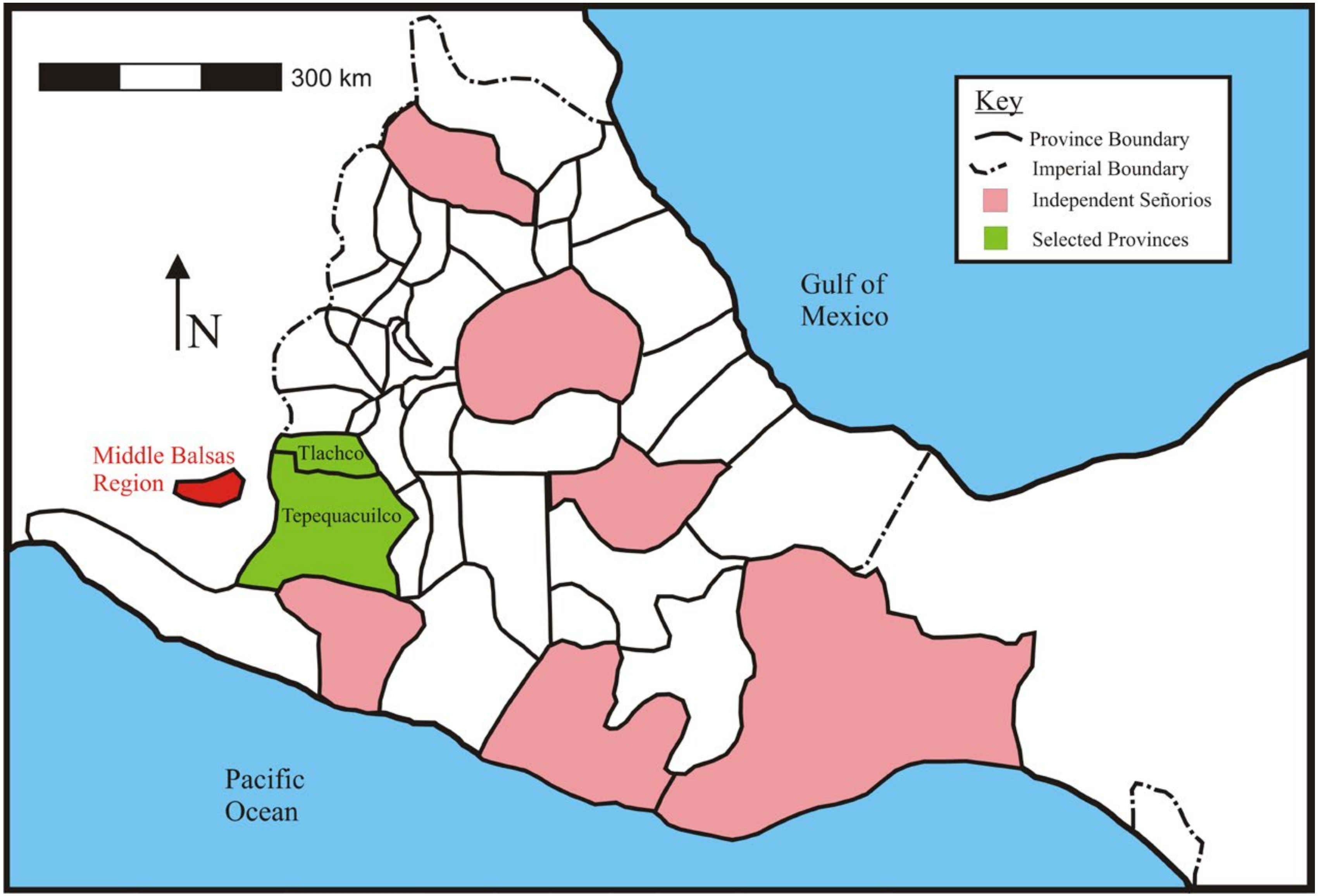


Figure 1.4: Detail of Mexico showing the provinces of the Aztec Empire and the Middle Balsas Region.

Middle Balsas region and surrounding areas may be the major reason that the Tarascans and Aztecs were in conflict over control of this area (Smith 1996: 139).

The codices of Cutzio and Huetamo (see Figure 1.5) detail the tribute and labor given to the Spanish *encomenderos* (land owners) by the local indigenous populations in the mid-sixteenth century (Roskamp 2003). According to these codices, the area was producing honey, salt, turkeys, pottery vessels, cotton clothing of various types, and dried fish (Roskamp 2003: 29-31). This information suggests that small local salt production centers were present, and that cotton was being grown and turned into usable garments in the area. The dried fish are likely a product of the Balsas river system. These products are similar to those mentioned in the Spanish documents detailed below.

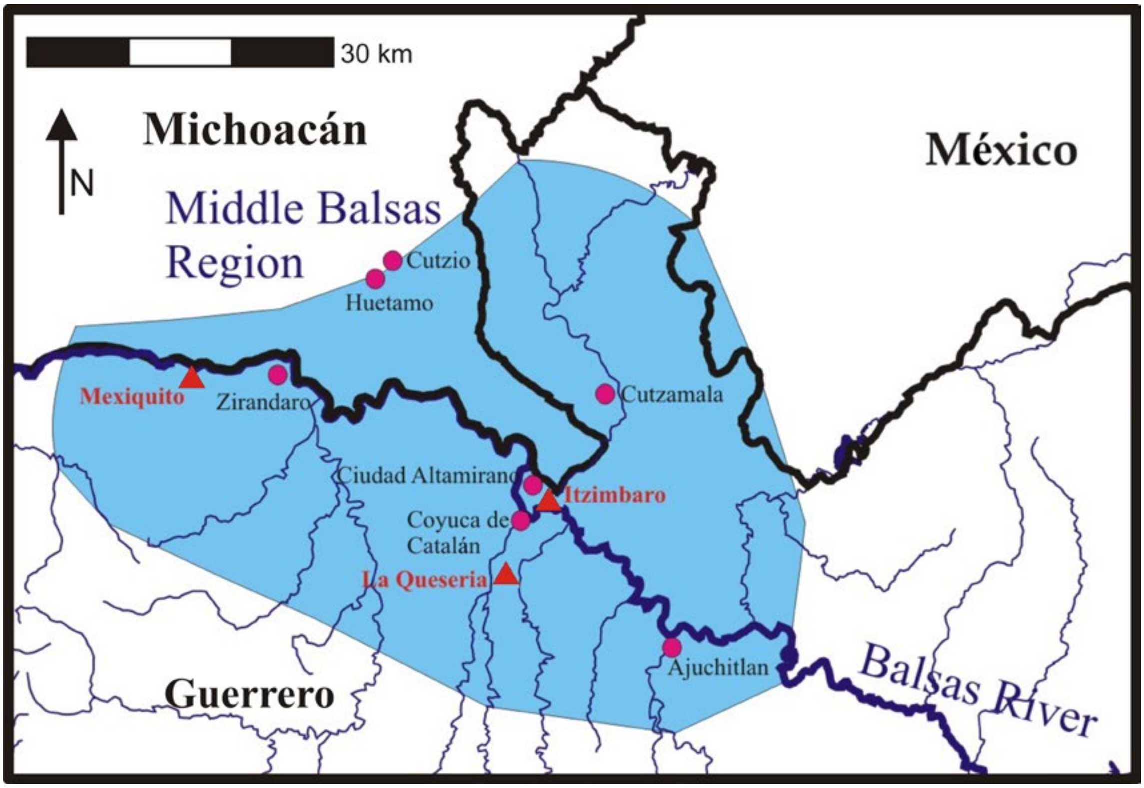


Figure 1.5: The locations of modern towns mentioned in codices and their relations to La Queseria, Itzimbaro and Mexiquito. Refer to the key in Figure 1.2 for the symbols used in this map.

The *Relaciones Geográficas de Michoacán* includes responses to a number of detailed questions about the populations, geography, and characteristics of two towns within the Middle Balsas Region (Acuña 1987). These towns are Ajuchitlán (which also includes Coyuca, Cutzamala, and Pungarabato/Ciudad Altamirano) and Zirándaro (which includes Cutzio). Figure 1.5 indicates the locations of these towns. The descriptions of both towns mention the rainy season from May to October, the extreme heat, the large number of mosquitoes, as well as the extremely fertile soils along the river (Acuña 1987:30-41, 264). Corn, beans, chilies, and squash were the staple foods of the region, and melons from Spain were being successfully grown in the area (Acuña 1987: 38-40, 264-265). River fish and a number of animals including deer, *jabalí*, iguana, and frogs are noted as sources of meat (Acuña 1987: 261). Both Ajuchitlán and Zirándaro had small salt production sources, although these only produced enough for local consumption, and salt was not traded long distances (Acuña 1987: 43, 267). Ajuchitlán is mentioned as producing cacao, and the editor believes that two different species may have been grown in the region (Acuña 1987: 42). Cotton was produced in all towns of the region along the Balsas River. Finally, the Ajuchitlán summary notes that the area was once heavily occupied, although the population had reportedly decreased by 1577 when the survey was conducted (Acuña 1987: 30).

Other documents suggest that the native population dropped from 5468 persons in 1548 to 2300 in 1579, and again to 1175 in 1603 (Gerhard 1972:136). The minimum native population was noted in 1649, when only 416 native tributaries were documented (Gerhard 1972:136). Gerhard (1972: 136) suggests that migration was the main cause for the reduction in population, although disease and an earthquake also had an effect. By 1787, the Middle Balsas Region was located within an administrative division known as Guaymeo and Sirándaro under the control of a mayor in Huetámo (Gerhard 1972: 136).

In short, the sixteenth-century documentary evidence suggests that the climate and products of the Middle Balsas region have not changed significantly over the past five hundred years, although additional agricultural products have been introduced to the area, such as cattle and mangos. The combined documentary evidence suggests that honey, corn, cotton, and beans were important agricultural products of the Middle Balsas region, as they are known from regions to the east and northwest. Greenstone and copper may have been produced in the Middle Balsas region, although there is little direct evidence for this. While these documents do seem to confirm that cotton and cacao *can* be grown in the Middle Balsas region, it does not mean that these *were* being grown there in large volumes before Spanish intervention. The *Relaciones* speak of several Spanish plants that had already been introduced into the area, and it is possible that cotton or cacao was not a common agricultural product in pre-Conquest times.

1.5 Summary of Format

This work will proceed in six additional chapters. In the second chapter, I detail previous archaeological research in the Middle Balsas region. I also describe some studies of the surrounding areas that help define the unique aspects of Middle Balsas culture. The third chapter contains the explanation of the methods and sampling strategies I employed in both the field excavations and the laboratory analyses. In the fourth chapter I present the results from the field excavations at La Quesería, Itzímbaro and Mexiquito, including the radiocarbon analyses that provide absolute dates for the stratigraphic levels discovered during excavation. The fifth chapter contains the results from the laboratory analyses, including the formal studies of pottery sherds, the petrography of ancient sherds and modern clay samples, and the mechanical testing of test briquettes. In the sixth chapter I use the petrographic results, the vessel shapes, and the chronological data to clarify the details of Middle Balsas pottery production through time. Finally, in the last chapter I set forth the general conclusions and explain their implications for pottery production studies in Mesoamerica, as well as directions for further research.

Chapter 2: Previous Work and Contemporary Archaeological Projects in and Surrounding the Middle Balsas Region.

In this chapter, I review the current knowledge and previous research concerning the Middle Balsas region. I begin with a brief summary of the earliest work which first brought archaeological attention to the area. Next, I explain how the area was originally defined via its pottery, architecture, and other traits to be a distinct culture area by such authors as Lister and Armillas. I continue by detailing the small number of more recent investigations in the area, describing how my work fills in temporal and topical gaps in our knowledge of the Middle Balsas region. Finally, I explain in some detail what we currently know about the surrounding geographical regions, and how their cultures exhibit similarities and differences with that of the Middle Balsas culture.

2.1 First Explorers

One of the earliest published explorations of Middle Balsas region in the modern era came from a pair of geographical expeditions in the mid to late nineteenth century (Gorsuch 1966). These two missions were focused on mapping the Balsas River. The publications detail the techniques necessary to accurately map and include some notes on the geography and towns along each stretch of river. For example, Coyuca de Catalán is noted as being abundantly supplied with local iron and gold. The metal was then 'smelted in low ovens … giving the town the appearance of a true inferno' (Comisión Exploradora de Atoyac 1850:17 translation by J. Meanwell in Gorsuch 1966). Additionally, these works highlight the great importance of the Balsas River as a means of transport for goods and people. At least one of these mapping exploratory teams traveled exclusively by boat along the river. The Balsas was likely used as a transport route throughout prehistory and may have been a route for South American traders bringing goods and metallurgical knowledge to Mexico (Hosler 1994:47).

At the end of the nineteenth and the early twentieth century, researchers began investigations in Guerrero and Michoacán, including William Niven, who completed limited excavations east of the Middle Balsas region along the highway between Acapulco and Mexico City in the mid 1890s. His Guerrero work has never been published, but his diaries and some of his finds are housed in the American Museum of Natural History in New York City (Reyna 1997).

The first published archaeological article on the Middle Balsas is from the early twentieth century, and describes a carved stone 'sepulcher' from the area around Placeres del Oro, Guerrero, originally recovered by William Niven in 1910 (Spinden 1911). Placeres del Oro is located within the Middle Balsas region on a major tributary of the Balsas west of Quesería, but east of Mexiquito (see Figure 2.1). The article is brief, but it does provide descriptions of some carved stone work from the area, as well as a sketch map showing a series of sites along the tributary.

A final article by García Vega (1940-41) describes the architectural features of a single interesting archaeological site located near Arcelia, Guerrero (see Figure 2.1). This site has a series of small house structures oriented around a patio. The structures seem to have been made of small stones with a covering of plaster and were decorated with tablular stones and round stones. This technique has been mentioned as a decorative technique at Ajuchitlán within the Middle Balsas region (Lister 1947:69). García Vega notes that the walls seem to have a bit of a *talud* at the bottom (García Vega 1940-41:304). Based on his descriptions and maps, this seems to have been a different construction style than that found at any of the sites I investigate in this project.

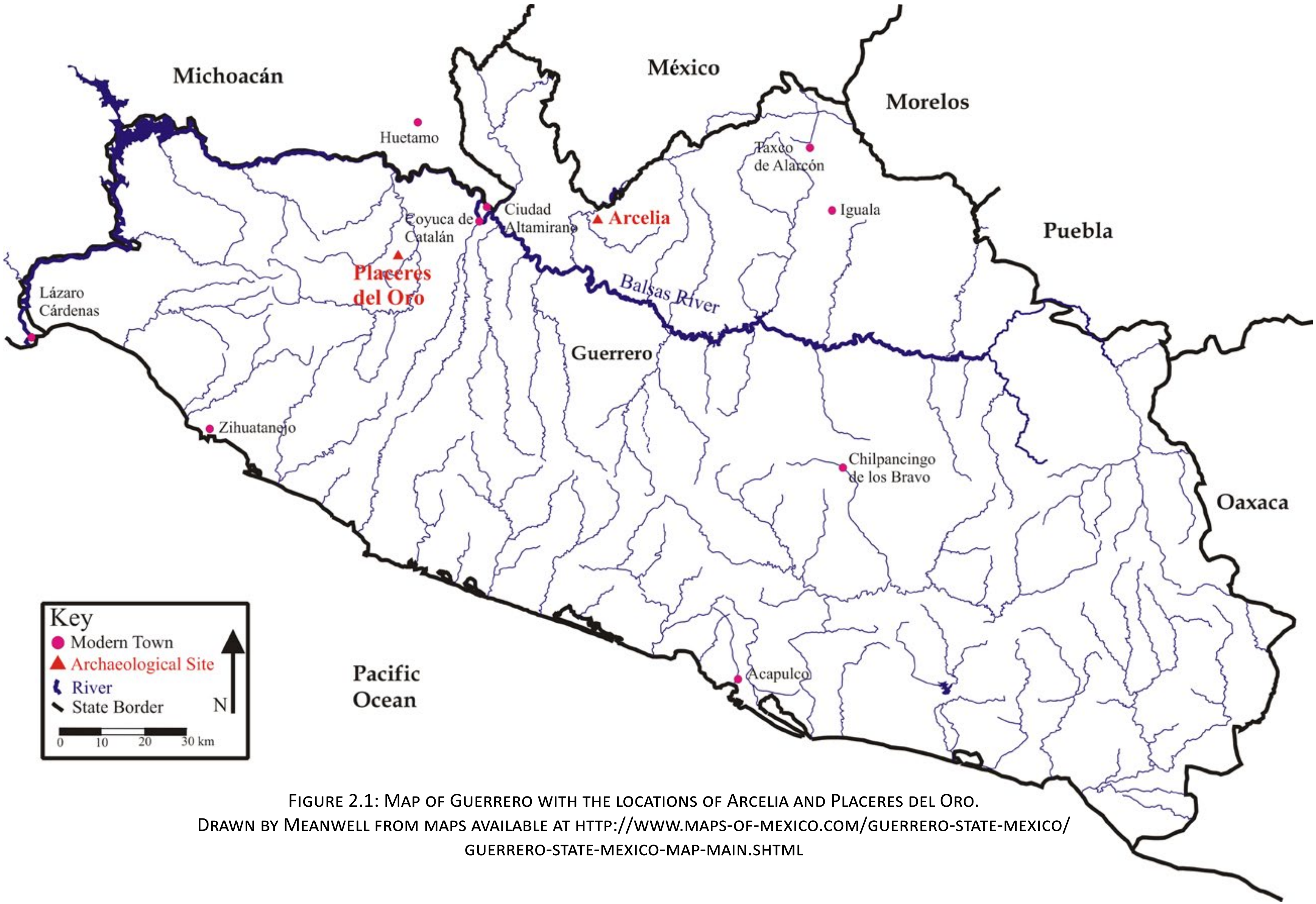


Figure 2.1: Map of Guerrero with the locations of Arcelia and Placeres del Oro. Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml

2.2 Culture History

The bulk of our basic current knowledge on the Middle Balsas region comes from a group of dedicated explorers and researchers who worked in Guerrero and Michoacán in the 1930s and 1940s. A number of publications came out of this period, the culmination of which was the Fourth Mesa Redonda of the Sociedad Mexicana de Antropología, held in Mexico City in 1946 and published in 1948. In fact, two expeditions were organized in 1944 by the Instituto Nacional de Antropología e Historia of Mexico to survey Guerrero and Michoacán specifically in preparation for this Mesa Redonda (Weitlaner and Barlow 1945; Armillas 1945). Each expedition covered a different area of the state, with the Weitlaner party traveling north-south in the eastern half of the state and Armillas' group going east-west along the Balsas River (see Figure 2.2). Pedro Hendrichs, a geologist, also explored much of Guerrero and documented a variety of linguistic, economic, and ethnographic features of the area, including a brief mention of a few archaeological sites (Hendrichs 1944-45).

The goal of these expeditions was to define the cultural traits found in the various areas of Guerrero in different time periods, which falls within the category of 'culture history.' Although many important trait lists were developed during this phase of work, less attention was paid to the general and relative chronology within the state. Most articles mention that traits are probably later than others without linking these traits to broader Mesoamerican time frames.

With respect to the Middle Balsas region, the most informative article was written by Lister (1947), where he defines the Middle Balsas region (see Figure 2.2) as a distinct culture area and lists a number of important traits, including architectural features and pottery types. He further refines his characterization of the area in two later articles (Lister 1955; Lister 1971). Lister's definition of the Middle Balsas region as a culture area was based on his surface survey of 42 sites between Tetetla del Río and San Jerónimo on both sides of the Balsas River (see Figure 2.1), as well as a few test excavations at three of the sites. Architecturally, he frequently observed a truncated pyramid with a lower platform attached to one face (Lister 1947:69), sometimes with adjacent U-shaped courts. Lister does not mention the characteristic 'ball ring' or elongated oblong ball court in this first article, but does add this feature to his description of the area in subsequent articles (Lister 1955; 1971).

Lister defines a number of pottery types from the region, the most abundant of which is known as 'Balsas Red' or 'Balsas *rojo*' (Lister 1947:72). This ware, which exists in both a coarse and fine form, is red to orange, smoothed on the exterior, and the fine wares are generally slipped. Balsas Red occurs in a wide variety of vessel shapes, and commonly has loop handles and feet. Some of his other pottery types include 'Cútzeo Polished Black,' a slipped and burnished thin black ware, and 'La Huichasal Incised Red,' which looks similar to thin Balsas Red ware but with incised decorations (Lister 1947: 72-73). Lister also describes a number of polychrome wares that likely date to the Postclassic, because the polychrome wares were found at the top of his test pits.

Lister concludes his listing of Middle Balsas traits with brief descriptions of other classes of material from the Middle Balsas region, including stone *metates* (generally legless troughs), metal, obsidian, shell, and figurines (Lister 1947; 1955). He also describes a few burial practices, including cremation and burial within a large pottery vessel. He does not offer a detailed relative chronology of the sites he studied, but he does suggest that the majority are older than the time of Aztec-Tarascan interactions (Lister 1947:77).

The other researcher working in the Middle Balsas during this time period was Pedro Armillas. He published two articles about the region, one of which offered some data on the major site of Mexiquito (one of the sites I investigate) where he excavated test pits. Armillas mentions that at least two building phases were found at Mexiquito, and says that the *talud-tablero* form of construction was used for the main mounds

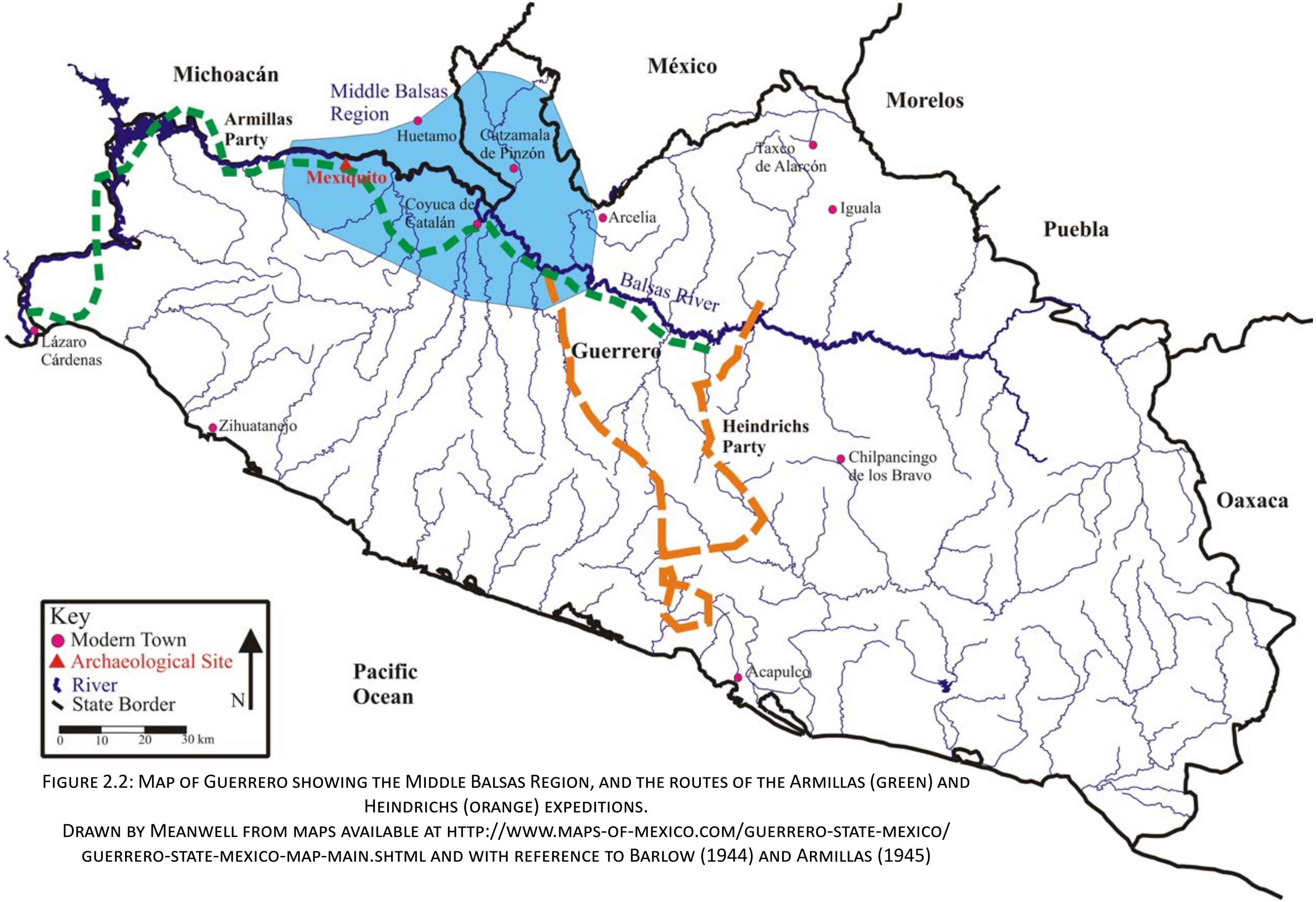


Figure 2.2: Map of Guerrero showing the Middle Balsas Region, and the routes of the Armillas (green) and Heindrichs (orange) expeditions.

Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml and with reference to Barlow (1944) and Armillas (1945)

(Armillas 1944). He also suggests that Mexiquito dates to the Classic period. His assignment of Mexiquito to the Classic period is one of the few definitive chronological statements for the Middle Balsas region.

Armillas' second article focuses on a broader view of the area, and is based on his exploratory survey along the Balsas River from Tetela to Zacatula along the Pacific Coast (Armillas 1945). This article focuses heavily on the geography and linguistics of the area, but he does mention that the section of the route from Coyuca de Catalán to Mexiquito (the main part of the Middle Balsas region) was very densely settled with sites along the Balsas River (Armillas 1945: 77). He also describes the sites in this region as being the most complex and forming large cities and important ceremonial centers (Armillas 1945:78). Both Lister and Armillas note that Mexiquito is the largest and probably most important site in the Middle Balsas region.

2.3 Beyond Culture History in the Middle Balsas Region

After the Middle Balsas region was defined as a culture area, several projects have investigated the area and have asked specific research questions, including a survey of possible metallurgical centers within the region (Hosler 1999a) and excavations of Preclassic settlements and ecological land use (Paradis 1974). At least two researchers have looked at this region as a known border zone between the Aztec and Tarascan empires in the Late Postclassic (Hernández 1994, 1996; Silverstein 2000, 2002). A number of sites in the Middle Balsas region are documented in Spanish-era documents as Aztec or Tarascan centers (as discussed in section 1.4), and this political dynamic likely had an effect on the Middle Balsas inhabitants during this time period. At least two researchers have suggested that the border was not extensively fortified, and that local traditions of architecture and ceramics continued to flourish in the Middle Balsas region during the Postclassic (Hernández 1994, 1996; Silverstein 2000, 2002). This research calls into question the nature of the Aztec-Tarascan border zone interactions.

Jay Silverstein investigated in detail the effect of this Aztec-Tarascan border zone on the pottery styles and architectural features of sites around the modern town of Arcelia (see Figure 2.3). Using surface collections from 126 different sites, Silverstein defines a number of ceramic wares found in the Middle Balsas region, and he identifies three major pottery wares as being diagnostic of the frontier zone in the Postclassic period. These three wares are the Chontal ware called 'Guinda' that is maroon on cream, Yestla-Naranjo pottery from eastern Guerrero that displays black and/or red geometric designs on a white background, and a fine and burnished incised ware that is probably local to the Middle Balsas region. Silverstein believes that this incised ware is a Postclassic phenomenon, although other authors, such as Paradis (1974) suggest a greater time depth. One limitation of the surface collection technique utilized by Silverstein is that it can be difficult to accurately infer time depth to the ceramic types without detailed excavation data. I will demonstrate in later chapters on the basis of my excavations that this ware seems to have a long time depth in the Middle Balsas region.

Louise Paradis (1974) contributed significantly to our knowledge of Middle Balsas chronology and pottery types with her study of the site of Amuco (see Figure 2.3). During the course of her research, which focused on the ecology of the Middle Balsas and Preclassic occupations in the area, she produced a pottery chronology linked to radiocarbon dates. This study is the first to use the radiocarbon dating technique in connection with excavated data. Because Paradis' research questions focused heavily on the Preclassic occupations at Amuco, her ceramic chronology is most detailed for that period. She identifies two major phases, Sesame and Guacamole, which roughly correlate to Early to Mid-Preclassic occupations and Late Preclassic to Classic occupations. Paradis puts the Guacamole phase pottery, which appears to match the pottery I recovered at the sites I investigate here, into six ware types (see Table 2.1). These wares are not divided by the color of the slip or surface finish, with the exception of the white-slipped ware. It is unclear

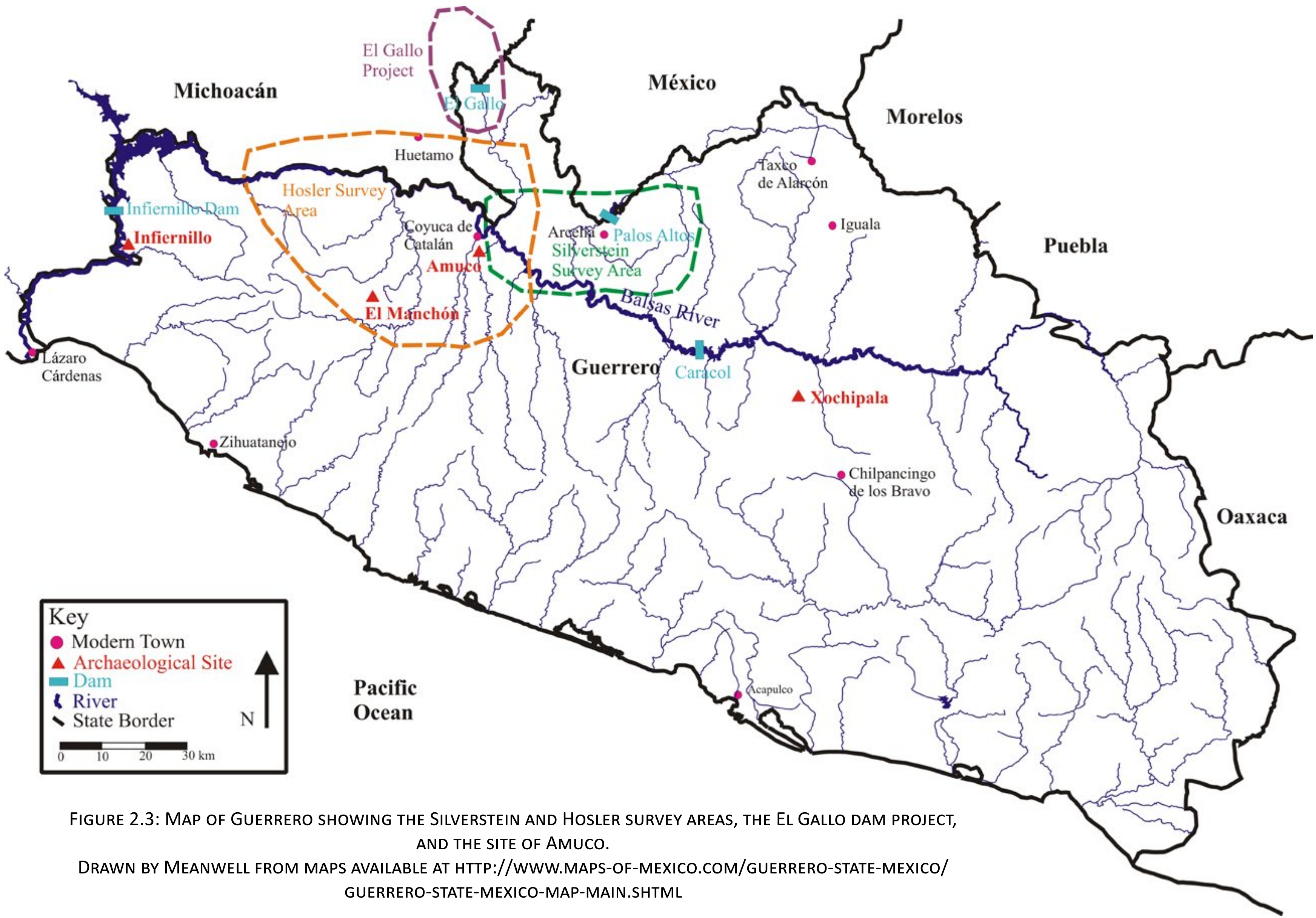


Figure 2.3: Map of Guerrero showing the Silverstein and Hosler survey areas, the El Gallo dam project, and the site of Amuco.

Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml whether the Comba Red ware differs from the Ciruelo ware other than in time period, and both may be coarse Balsas Red pottery, as noted in Table 2.1. Paradis suggests on the basis of her radiocarbon dates that the entire Guacamole phase begins around AD 110 +/- 110 years, although there is no clear ending date for the phase (Paradis 1974:73). Her latest radiocarbon date is a calibrated AD 1120 +/- 50 (Paradis 1974: 68-73).

TABLE 2.1: DESCRIPTIONS AND CORRELATIONS OF CERAMIC TYPOLOGIES FROM PARADIS (1974) AND LISTER (1947).

Paradis Ceramic Type	Lister Ceramic Type	Probable Dates	Characteristics
Chayote Thin	Balsas Red Fine	Late Preclassic to Epiclassic 500 BC-AD 1000	Red-orange ware. Vessels thin and small (Paradis 1974).
Comba Red Paste	Balsas Red Coarse	Late Preclassic to Epiclassic 500 BC-AD 1000	Red paste, sometimes with black firing core (Paradis 1974).
Huisache Burnished Thin?	Cútzeo Polished Black	Classic AD 100-800	Burnished black-slip ware, generally thin with white inclusions (Lister 1947).
Asuchil Slipped	Balsas Red Coarse	Classic AD 100-800	Brown-orange to brown-red paste with orange or black slip on exterior (Paradis 1974).
Ciruelo Roughened	Balsas Red Coarse	Classic AD 100-800	Coarse red paste ware usually used for domestic items (Paradis 1974).
Amapola White Slip	No correlate	Classic AD 100-800	Brown-orange clay with white chalky slip (Paradis 1974).
Huisache Burnished Thin	La Huichasal Orange?	Classic AD 100-800	Burnished thin ware, brown-orange to brown-black with white inclusions (Paradis 1974). Paradis probably combines Lister's Cútzeo Polished Black and Huichasal Orange.
No correlate	Chandio Red-on-white	Late Postclassic AD 1300-1520	Brown clay with white and red slip applied to the surface. Found at Mexiquito (Lister 1947).
No correlate	Zimatepec Black-on-white	Late Postclassic AD 1300-1520	Soft brown paste with thick white slip poorly applied (Lister 1947). Possibly linked to Yestla-Naranjo ware.
No correlate	Totolapan Red-on-Tan	Surface find only	Light brown paste with dark firing core. Designs painted in red paint (Lister 1947).

A third major category of research in the Middle Balsas area has been carried out by Dorothy Hosler, with her investigations into metal production and mining. In a survey carried out in 1998, Hosler was the first to identify and register two of the sites I examine here, Itzímbaro and La Quesería (Hosler 1999a). In this preliminary study, diagnostic pottery was collected from the surface of the sites. Analysis of the pottery suggests that the majority was probably Balsas Red, although a number of nicely made burnished and slipped wares were collected at a number of sites (Hosler 1999a). Since this preliminary study, Hosler's research focus has moved to the mountain site Las Fundiciones del Manchón, where metal smelting was taking place (see Figure 2.3). Pottery analysis at this site is still preliminary, but it appears the pottery was predominantly locally made with only slight formal links to the ceramics in the Middle Balsas valley region (Hosler, personal communication 2007; Reitzel 2007).

Finally, a salvage project was carried out at the northern edges of the Middle Balsas region by personnel from the Instituto Nacional de Antropología e Historia. The INAH archaeologists mapped and excavated test pits at a number of sites that were scheduled to be flooded by the construction of the 'El Gallo' dam (see Figure 2.3). The reports from the El Gallo project suggest cultural continuity of a number of archaeological features from the northern border of Guerrero and part of Michoacán through the entire Middle Balsas region (Moguel 2001, 2002; Moguel and Pulido Méndez 2005). For example, most of the ceramics are monochrome and often slipped or burnished on one or both sides (Moguel 2001). The construction techniques consist of both faced stones and river cobbles and appear very similar to Mexiquito, Itzímbaro, and La Quesería. The site layout of one of the largest sites in this region, La Garra, also bears some resemblance to La Quesería, with a patio near the largest mound (Moguel and Pulido Méndez 2005; Carlos Santos, personal communication 2005).

2.4 Peripheral Zones

In this final section of this chapter, I describe some of the archaeological findings from regions surrounding the Middle Balsas, which include the coast of Guerrero to the south, the Mezcala region to the east, and some projects from Michoacán to the west (see Figure 2.4). My goal is to describe some of the features of these regions that suggest why the Middle Balsas is a distinct cultural area, as well as define those areas where there was possible contact between Middle Balsas people and their neighbors.

Coast of Guerrero

The coast of Guerrero abuts the Pacific Ocean, and stretches more or less east-west for at least 350 miles. Two groups of investigations have focused on this region, mainly on the Costa Grande from Zihuatanejo to Acapulco. The first expedition was by Charles and Ellen Spary Brush, a husband and wife pair who journeyed along the coast in the 1960s (C. Brush 1969; E.S. Brush 1968). They surveyed 70 sites, carrying out detailed excavations at four and surface collections at the rest. Spary Brush's thesis focused exclusively on the figurines recovered from the coast. She was unable to make definite statements about the chronology of the figurine styles, but several of these styles, especially the Pointed Head and Protruding Nose types, seem to be related to figurines recovered in the Middle Balsas region (E.S. Brush 1968). A significant portion of her work focuses on the 'baby face' figurines that are suggested to have links to the Olmec. Few examples of this type have been recovered in the Middle Balsas, and none appear at the sites investigated here. The figurines for all time periods seem to be made by both a hand-modeled and a mold-made technique, although Sparry Brush suggests that the majority of the hand-modeled figurines were earlier than the mold-made figurines (E.S. Brush 1968).

The second major investigation was carried out by Ruben Manzanilla in the late 1990s (Manzanilla 2000), and generally describes the coastal archaeology through different time periods. Manzanilla sees a gradual increase of settlement density through time, although sites are generally isolated until the Classic period (Manzanilla 2000:166). Early coastal Guerrero pottery has links to the rest of the Pacific coast (possibly as far as South America) and to West Mexico. Classic period pottery from the Acapulco area shows Teotihuacán and Monte Albán links (Manzanilla 2000:184), rather than to the Middle Balsas. Late Postclassic coastal pottery may have more links to the Middle Balsas (Manzanilla 2000:215). With respect to stone, Manzanilla suggests that coastal residents may have received some of the basalt used for ground stone implements from the Middle Balsas region beginning in the Middle Preclassic (Manzanilla 2000:127). It seems possible that Middle Balsas people were obtaining shell and other maritime products in return for their basalt.

The coast of Guerrero likely had contact with the Middle Balsas region, based on shell and stone evidence. The figurines also seem to exhibit some links between these two areas. However, multiple distinctions in the ceramics and architecture suggest that these two regions were in fact separate groups.

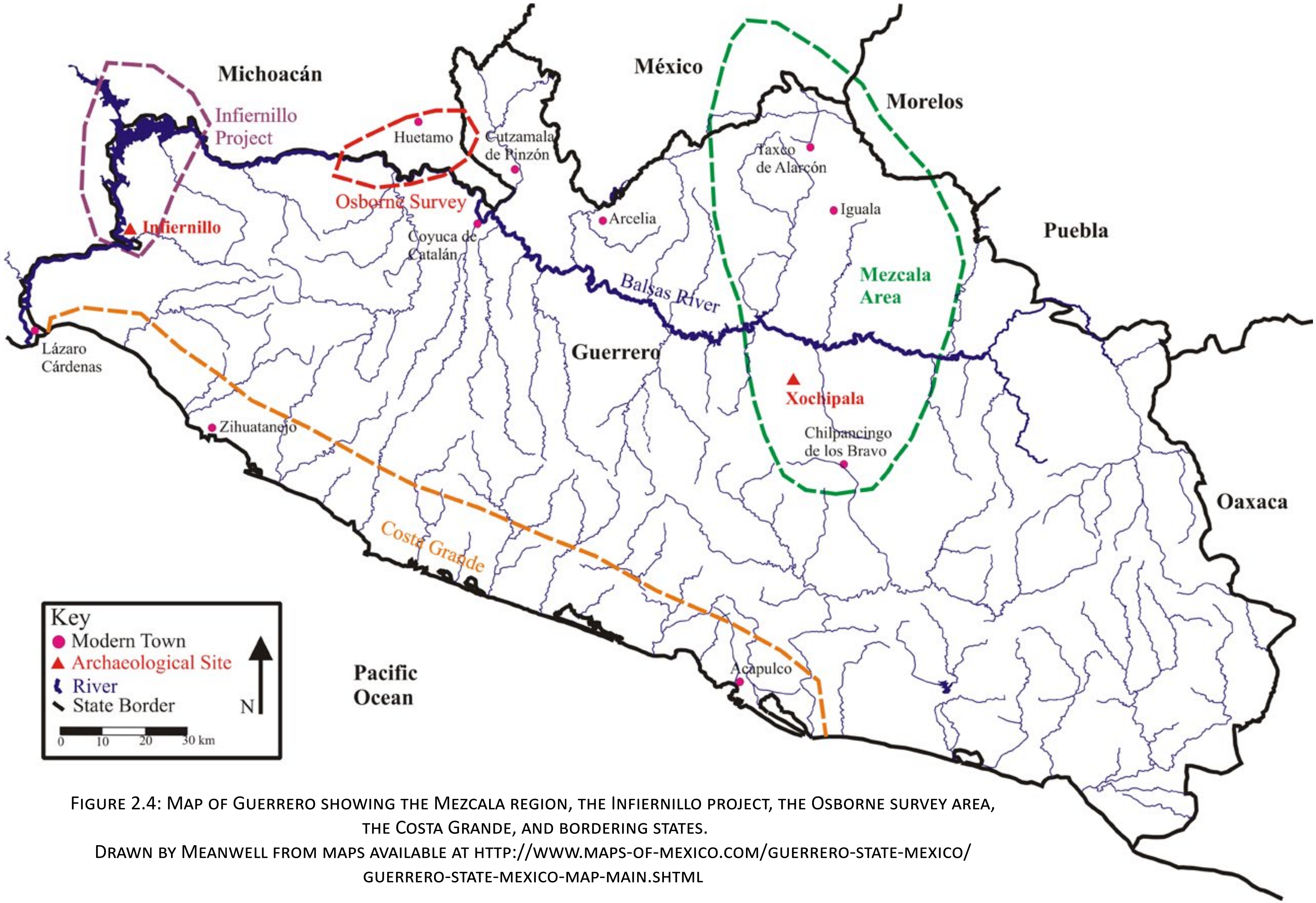


Figure 2.4: Map of Guerrero showing the Mezcala region, the Infiernillo project, the Osborne survey area, the Costa Grande, and bordering states.
Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml

The Mezcala Region of Eastern Guerrero

The eastern portion of the state of Guerrero has been the subject of a significantly larger number of investigations than the western half of the state. Much of eastern Guerrero falls within the region known as 'Mezcala,' originally named for a style of stone carving from this area (see Figure 2.4). In general, a large range of temporal phases of occupation have been investigated in the Mezcala region, although my summary of the area will focus on the Classic to Postclassic periods as they are most directly applicable to my research. The exact geographical limits of the Mezcala region vary by the author, with some placing it just in eastern Guerrero, while others consider the majority of Guerrero, including the entire Middle Balsas region, as part of the larger Mezcala zone (Paradis 2002; Schmidt 1990; Reyna 1997, 2003).

As mentioned previously, researchers such as William Niven and the Weitlaner expedition came through the eastern portion of Guerrero early in the twentieth century. The article by Weitlaner is the first to describe one of the pottery styles typical of the Mezcala region, Yestla-Naranjo, named after the towns where it was first discovered. This ware includes black and/or red geometric decorations painted over a white background, and vessels are often tripod *cajetes* (Weitlaner and Barlow 1945: 365 and 374; Barlow 1946). In later studies, it appears that this ware dates to the Early Postclassic (Schmidt 1990:185). Other pottery styles from this area described by Barlow are the Chontal 'maroon on buff' ware (Barlow 1948: 91), a black on white ware said to be found intrusively at Mexiquito (Barlow 1948: 92), and monochromatic fine wares that were slipped on the interior of the vessel (Barlow 1948: 92-93).

The most detailed work on Classic and Postclassic occupations in the Mezcala area has focused on the site La Organera-Xochipala. La Organera is the largest site in the Mezcala region, and it boasts complex ceremonial architecture including a ball court and a number of large plazas (Reyna 2003; Schmidt 1990). The most famous architectural feature is the corbelled arch, which appears in a number of locations and may show links to the Maya area (Schmidt 1977). The site was primarily constructed of faced stones and was often decorated with round stones (often called *clavos*) (Reyna 2003; Reyna and Trejo 1993). These *clavos* have been described in the Middle Balsas region at Ajuchitlán and Mexiquito (Lister 1947:68). The first modern work at the site was performed by Paul Schmidt, and he offers a detailed analysis of the pottery found at the site through time. He places the main occupation at the site during the Late Classic and Epiclassic (Schmidt 1990). During his work, he also surveyed a number of sites near the modern town of Xochipala and was able to produce a detailed ceramic chronology for the region (Schmidt 1990). One ceramic type found in the Mezcala region at La Organera and sites such as Ahuináhuac (Paradis 2002) is called Blanco Granular. This type is particularly diagnostic of the Mezcala region, and does not seem to appear at all within the Middle Balsas region. It is well-fired, generally of a whitish or cream color, and fractures in an irregular fashion (Reyna 2003: 153).

Two major salvage projects have been completed in eastern Guerrero, both associated with the construction of dams. The first is the Palos Altos project and the second is the Caracol project. To date, the Palos Altos project has not been completely published, but it is clear that the typical loop feet found in Guerrero were found during the investigation (Reyna 1997). The Caracol project is near the town of Tetela del Río, and included the surface analysis of 255 sites and excavations at 49 sites. The ceramics noted from the Caracol project display some features that are common in the Middle Balsas, such as a raised decorative band with fingertip impressions, incised geometric decorations, and loop feet, but also include some ceramic types (Blanco granular) not found in the Middle Balsas (1985).

To conclude, it seems clear that some ceramic features, especially loop feet, were common to the entire state of Guerrero. Other ceramic types, however, differentiate between the Mezcala region in eastern Guerrero and the Middle Balsas region. The architecture is also different, although round decorative stones do seem to have been used in both regions. Further detailed comparisons will clarify the extent of contact and cultural similarities between these two regions.

Michoacán and the Lower Balsas Region

The areas to the west and southwest of the Middle Balsas region include the Lower Balsas region and part of southern Michoacán. The state of Michoacán is large, and therefore I will only discuss the relevant projects in the southern part of the state that may help define this area in the Classic and Postclassic periods. Archaeologists have conducted few projects in this zone, although a number of salvage operations have immensely increased our knowledge of the Lower Balsas and southern Michoacán.

The basic culture history and ceramic types from southern Michoacán were defined by two authors who participated in the expeditions with Lister and Brand in the late 1930s. The first article, by Douglas Osborne (1943) covers the part of Michoacán surrounding the town of Huetámo and that is just adjacent to Guerrero (see Figures 2.2 and 2.4). The ceramics described by Osborne match those described by Lister (1947). Osborne identifies plain wares that match the Balsas red description, as well as a number of incised wares and a black ware (Cútzeo polished) also noted by Lister (Osborne 1943). Although few details are given, Osborne suggests that most of the structures in the area around Huetámo were made from river cobbles and earth, and he did not discover many sites with monumental architecture with the exception of Mexiquito, which has already been mentioned in detail.

The second article deals with an area still within the *tierra caliente* of Michoacán, but which is further west than the Middle Balsas. In this article, Goggin describes the area around the site of Apatzingán, which was also later excavated by Isabel Kelly (1947). The structures in this region are built from a variety of materials, including river cobbles, faced stones, and *tepetate*. Goggin says the pottery is extremely local in this region, and most sites did not have more than one or two wares in common, although a small number of regional wares were detected. These include coarse Apatzingán wares in red and brown types (Goggin 1943: 49-50). He also notes a group of red wares, a group of red on buff, and a group of red on white wares (Goggin 1943:50). A few polychrome vessels were also recovered in the area. Goggin notes that no loop feet were found, and that loop handles were extremely rare. Based on his ceramic descriptions, this region of Michoacán seems to exhibit a completely different pottery tradition than that of the Middle Balsas. Goggin did not recover many figurines, but the more extensive collection of figurines by Kelly suggests that there may be some stylistic links to Middle Balsas figurines (Kelly 1947).

One additional project of significance is the Infiernillo salvage project in the Lower Balsas region. The Infiernillo dam was constructed in the mid 1960s, and a number of archaeologists studied various aspects of the sites that were flooded by the dam. These include González Crespo (1979), who documented settlement patterns, Suárez Díaz (1977), who investigated shell artifact typologies, and Maldonado Cárdenas (1980), who defined burial patterns. While all of these investigations are meticulously researched, not enough information is available on any of these topics from the Middle Balsas region to make a detailed comparison.

The most applicable publication from the Infiernillo dam project was written by Muller (1979), who created a ceramic typology. Muller's work describes a number of pottery types recovered (primarily surface collected) from the Infiernillo region. She puts these wares into chronological categories based on possible links to surrounding regions. She does note the existence of raised decorative bands, which first appear in the Middle Preclassic, as well as a high percentage of incised decorations through all time periods. Both of these features are common in the Middle Balsas. One ware in particular, a red ware with a black stripe along the rim, may be found at Itzímbaro (Muller 1979:23). Muller assigns this ware to the Late Postclassic.

One final project that links the Lower Balsas to the coast of Guerrero was the La Villita dam project, which was published by Rubén Cabrera. In his master's thesis, he notes a variety of features of the region, including a U-shaped structure at one site that may be linked to the U-shaped structures in the Middle Balsas (Cabrera 1976). He also suggests, however, that the people of this region had more contact with the coast than with the Middle and Upper Balsas regions due to the mountain barrier between the coast and the inland river valleys. The ceramic descriptions from La Villita bear little resemblance to the pottery from the Middle Balsas region.

2.5 Conclusions

Based on previous research, both within and near the Middle Balsas region, it seems clear that this area has a unique cultural signature, which consists of a variety of traits, including primarily monochromatic pottery with incised decorations, footless *metates*, truncated pyramids with attached plazas, U-shaped structures, and ring-shaped ball courts. Some of these characteristics are shared by various neighboring groups, but enough differences exist to highlight the fact that the Middle Balsas is a distinct cultural zone. My work goes beyond previous work by clarifying the chronology of the Middle Balsas sites and linking this chronology to the pottery types found in the region.

Chapter 3: Methods

In this chapter, I describe my mapping protocols, surface collection strategy, excavation techniques, and other field activities. I then set out and justify the sampling rationale I employed in selecting archaeological pottery for petrographic analysis. I also discuss, justify, and explain the manufacture of test briquettes from the clays collected locally. Finally, I explain the mechanical testing of the briquettes to determine physical properties of the clay such as fracture strength.

3.1 Field Methods

Mapping

The first step in the research on the three sites in the Middle Balsas was to create a detailed topographic map of each site. Although Mexiquito was partially excavated by researchers in the 1930s and 1940s (Armillas 1945), no published maps of the site exist, and no measured topographic maps of any site in the Middle Balsas are available in the literature. These maps were a crucial first step in understanding site layout and thus in deciding where to excavate given the objectives of this research. I used the site maps to determine the division of quadrants for the surface collection. The mapping was completed in two field seasons in August of 2005 and May of 2006.

I chose to map the ceremonial areas of each site. In mapping the three sites, I included all structures visible on the surface within the densely constructed central or ceremonial areas of the site. At La Quesería, the final map extended beyond the ceremonial center to include a number of presumably domestic structures as well. The boundaries of the sites were difficult to determine due to erosion and human intervention, so the map focused on the clear central zone (see Figures 3.1-3.3). We chose a scale for the finished maps (1:500 or 1:1000) that included the greatest architectural detail possible while keeping the map within a practical size for the field investigations. I took additional measurements of structures or features that fell outside the boundaries of the central area for future reference, but they do not appear on the completed maps.

All three sites were mapped using techniques appropriate to the local topography and vegetation. I used a theodolite with a digital readout and stadia rod for much of the mapping but also took measurements with a compass, a measuring tape, and a hand level where necessary. La Quesería and Itzímbaro were mapped during the rainy season of August 2005, and the vegetation at La Quesería made it impossible to clear certain structures sufficiently to use the theodolite. Mexiquito, which was mapped in May 2006, was also densely overgrown, and the steep sides of several structures made the hand level the most efficient way of measuring those areas.

When using the theodolite, we followed standard mapping procedure by choosing a reference point (point zero) at each site to which all measurements were referenced. The exact location of point zero was marked with a stone pile, and its location and altitude were taken with a handheld global positioning system (GPS). The altitude and location was later checked against the official Instituto Nacional de Estadistica, Geografia e Informatica (INEGI) maps of the area, using the most recent edition (INEGI 2000, 2001a, 2001b). Due to landowner restrictions, I did not install a permanent datum. We used standard mapping protocol with this equipment. At all three sites, we took points to delimit structures: their edges and heights. I also defined straight line transects to record the topography between the mapping station and structures (see Napton and Greathouse 1997: 224).

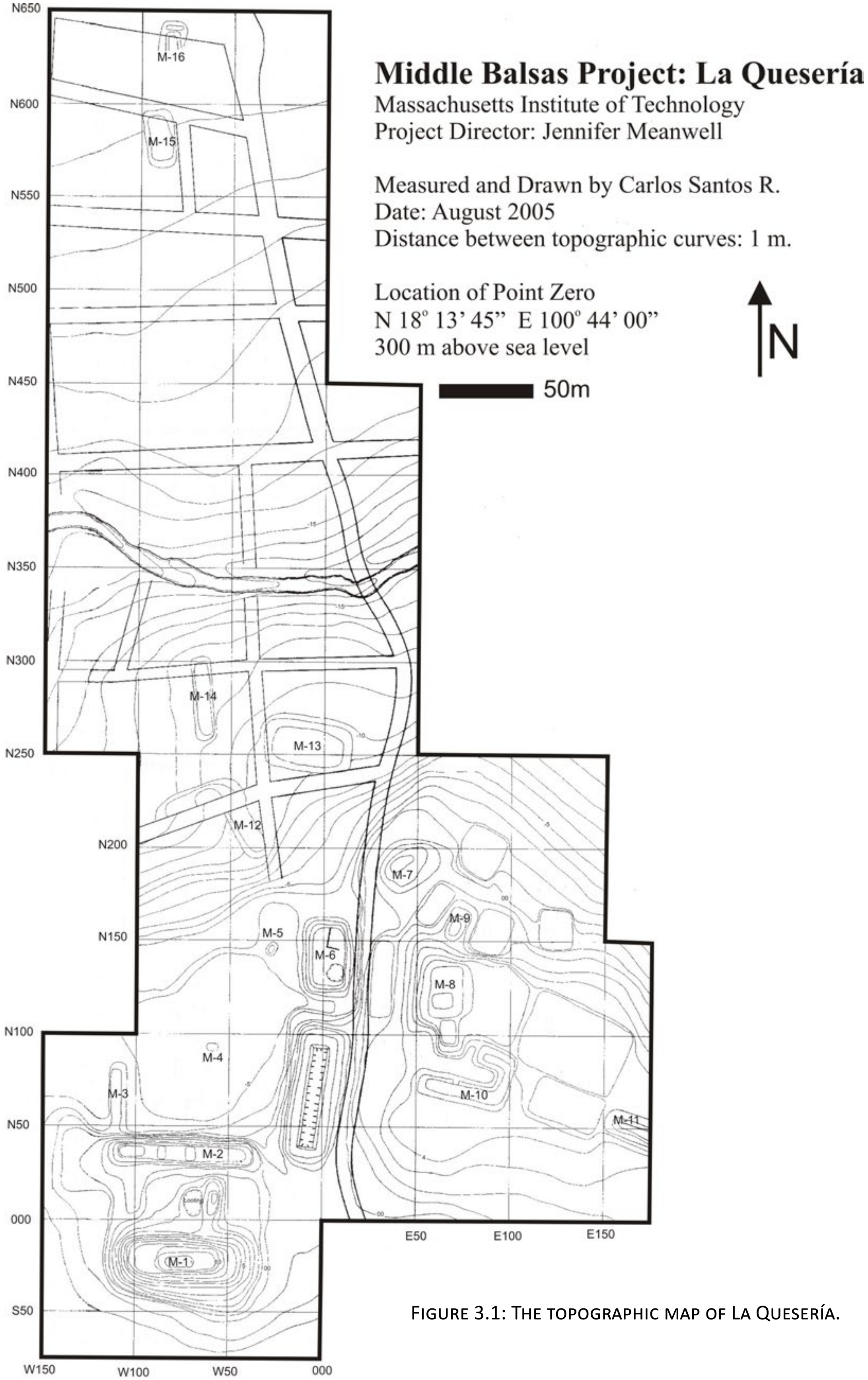


FIGURE 3.1: THE TOPOGRAPHIC MAP OF LA QUESERÍA.

Middle Balsas Project: Itzímbaro
Massachusetts Institute of Technology
Project Director: Jennifer Meanwell

Measurements and Drawing by Carlos Santos R.
Date: August 2005
Distance between topographic lines 50 cm

Coordinates for Point Zero
N 18º 20’ 26”   E 100º 39’ 40”
240 m above sea level

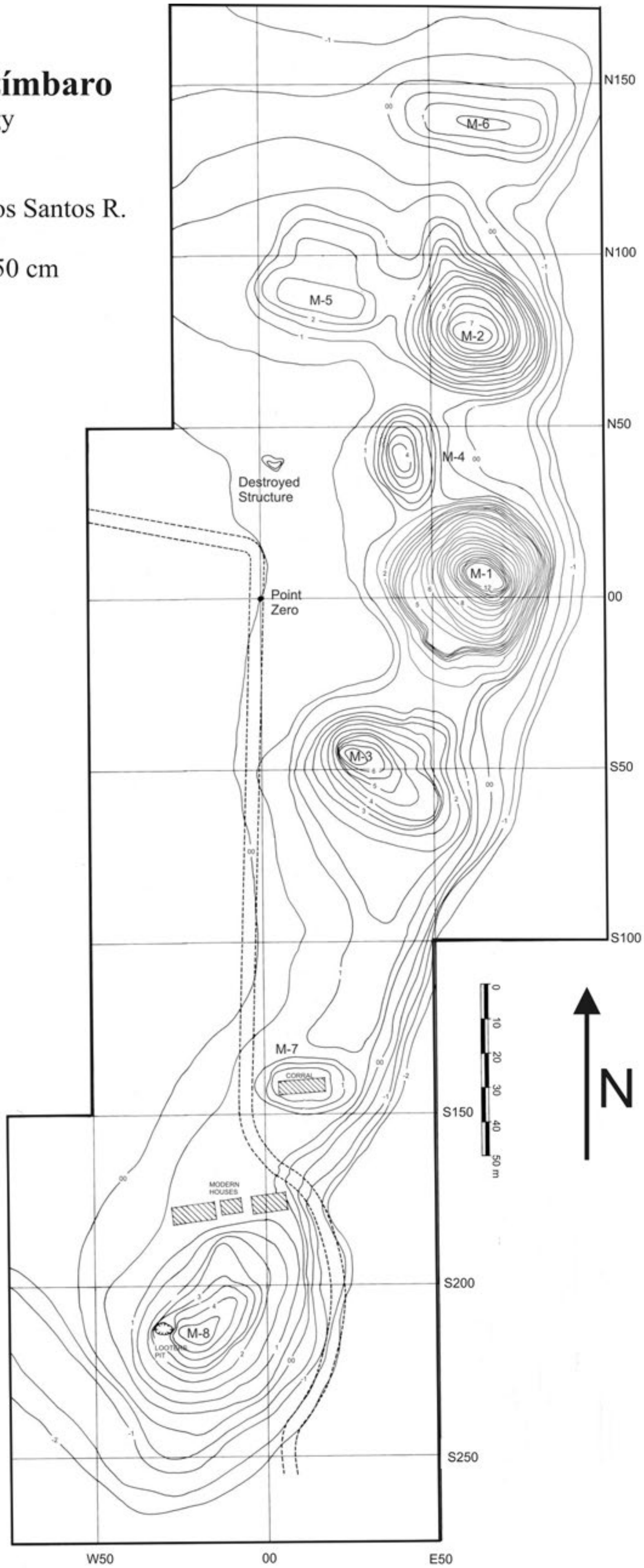


Figure 3.2: The topographic map of Itzímbaro.

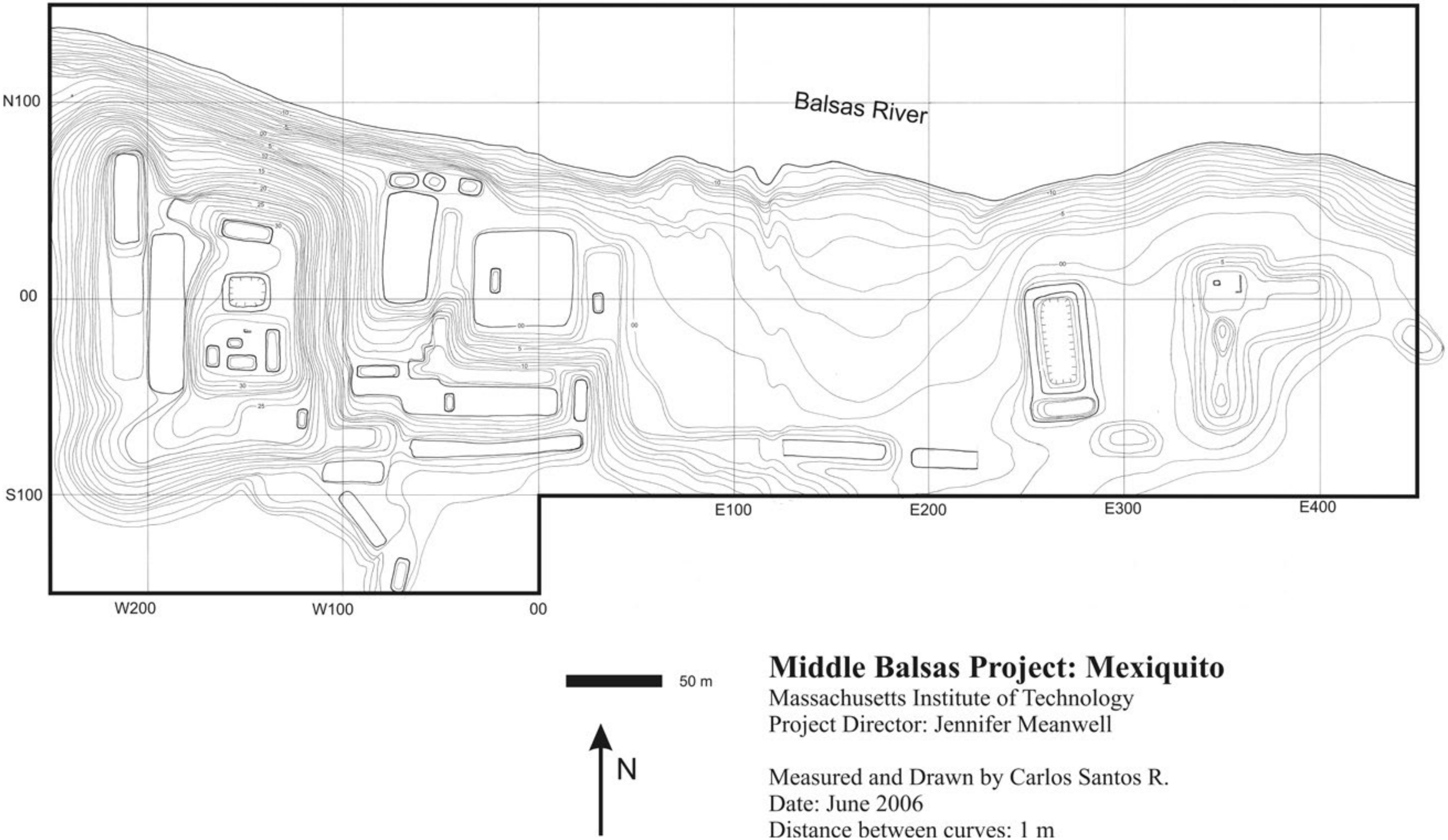


FIGURE 3.3: THE TOPOGRAPHIC MAP OF MEXIQUITO

I followed a similar procedure when using the tape, hand level and compass mapping where the topography, vegetation, or other variables required it. We worked in straight line transects across the given structure or feature and placed these transects at right angles to provide a grid pattern across the area we were mapping. These straight line transects were cleared of vegetation to a width of 1 m, allowing accurate sight lines and measurements in that path.

The eastern side of La Quesería and the western zone of Mexiquito were mapped using the hand level, tape, and compass technique. The western side of La Quesería, all of Itzímbaro, and the eastern portion of Mexiquito were mapped with the theodolite and stadia rod. The maps for La Quesería and Itzímbaro were computer drawn,[1] while the map for Mexiquito was drawn by hand for logistical reasons. We later field checked the maps during the surface collection phase of work at the sites. The final maps conform to the INAH requirement to show sites in their current condition. Therefore, all major architectural features are shown simply as topographic curves (see Figures 3.1 to 3.3).

Surface Collection

Using the maps and starting from the point zero, I divided each site into 50 m x 50 m quadrants. The choice of a 50 m square quadrant was the smallest manageable unit of measurement given the site layout, vegetation, and topography. It also allowed analysis on different distributions of artifacts from quadrants of different functions, such as ceremonial or residential. We gave these quadrants a four character designation, indicating their distance from point zero. For example, point zero was located at the corner of four quadrants, S1W1 to the southwest, S1E1 to the southeast, N1W1 to the northwest, and N1E1 to the northeast (see Figure 3.4 for an example). The three sites had a different number of quadrants based on the total surface area. The point zero for the quadrants was the same one used during mapping.

The initial research design was to perform a complete surface collection on the central areas of each site, although this was not practical in all cases. We walked each quadrant in straight lines (either north to south or east to west, depending on terrain), with a set spacing between each crew member. Each crew member was instructed to collect all pottery, figurines, obsidian, ground stone, and other archaeological (or possibly archaeological) items in their transect, but to avoid collecting items that would require them to leave their straight line path. The crew also disregarded modern glazed pottery and modern ceramic roof tiles during collection.

For the first ten sectors of La Quesería, we collected along transects spaced 2 meters apart. It became apparent that this method was collecting more material than was required for my objectives, so we altered the transect spacing to 3 meters. The 3 meter spacing collected a more appropriate amount of material. We used this 3 meter spacing for the rest of the surface collection at La Quesería, as well as for all surface collection at Itzímbaro and Mexiquito. We used a five person team when possible so we could cover each quadrant in three passes of the team. Each artifact class was placed in a separate bag and registered according to the format seen in Appendix 1.

At La Quesería, we surface collected the entire central area of the site. The modern town of San José de la Quesería is built on top of a portion of the ancient settlement, and due to modern debris and constructions, we selected a total of five quadrants as representative of areas of the site currently beneath the modern settlement. We collected from a total of 40 sectors at La Quesería (see Figure 3.4).

At Itzímbaro, the surface collection followed the same protocol as at La Quesería, and we covered all of the quadrants shown on the map, except portions of quadrants that are inaccessible or beneath the modern road. We collected from a total of 20 sectors at Itzímbaro.

1 The maps were drawn using the Safari program, a standard graphics program.

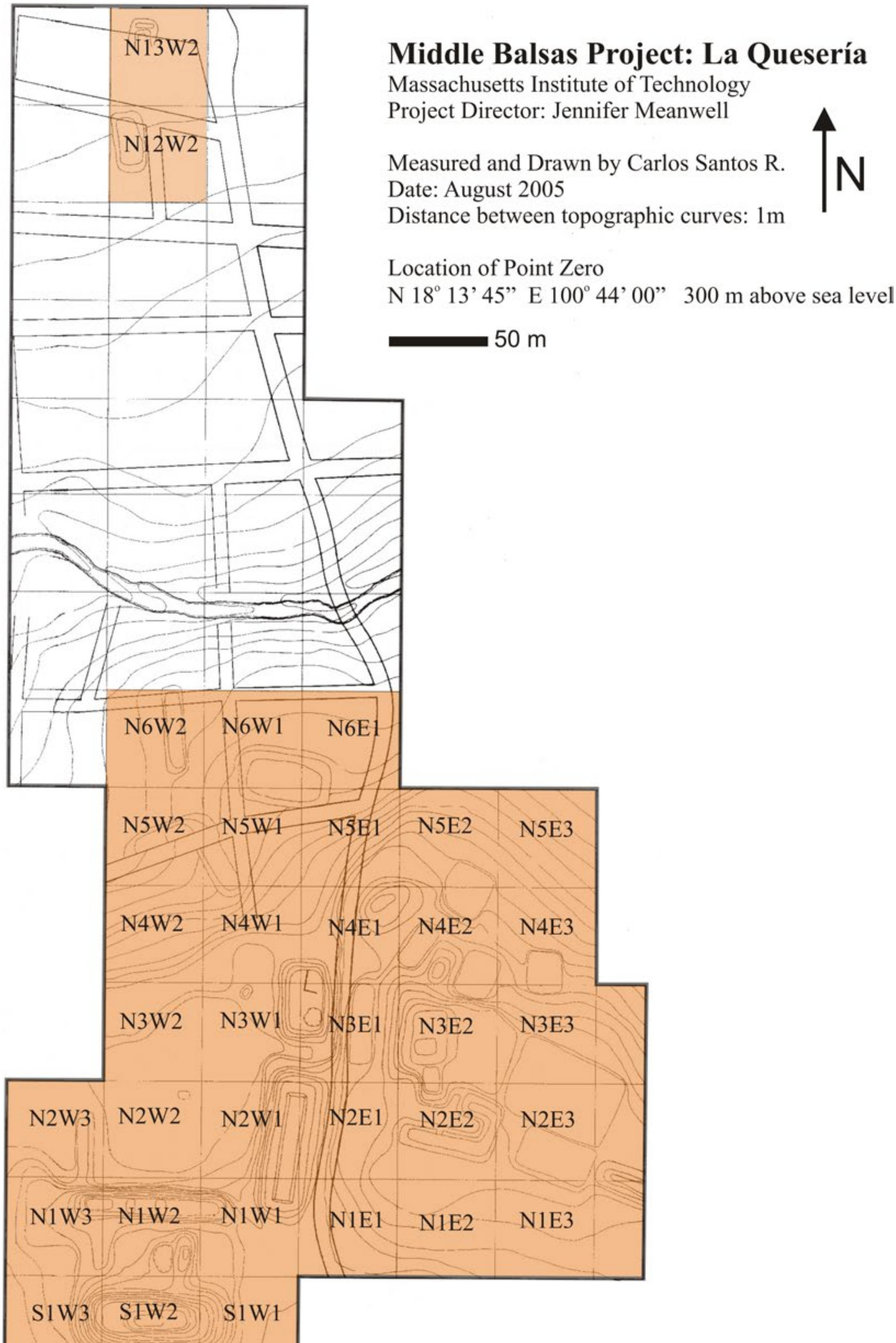


Figure 3.4: The site of La Quesería showing the sectors that were surface collected and sector designations.

At Mexiquito, I chose approximately one third (15 sectors out of 46) of the mapped area of the site for the surface collection. Mexiquito was significantly more overgrown with plant life than either La Quesería or Itzímbaro, and the surface collection was impossible in many areas. In other areas, the structures were steep and unstable and exploration induced landslides and/or significantly damaged the walls of structures. Extensive erosion and looting also contributed to the paucity of surface material at Mexiquito. I selected the quadrants at Mexiquito to represent different sections of the site, including the areas on top of the large structures, the slopes, and the area between the two zones with structures (see Figure 3.5).

Excavation Methods

At all three sites, I excavated test pits of 1 m x 1 m. The material that came from these pits provided sufficient data for the objectives of this project. I selected locations at each site where the soil was deep enough to provide a good stratigraphic sequence and placed the pits in ceremonial and domestic zones and in middens (see Figures 3.6-3.8 for exact locations). The selection of the pit location was limited in many cases because the soil thickness at La Quesería and Mexiquito varied so significantly that the cultural deposits reached only to 20 cm or less in some areas. I proposed to excavate up to five pits at each site, if necessary, in case any of the pits lacked adequate cultural material for the chronology. Four pits at La Quesería and Itzímbaro and three pits at Mexiquito provided sufficient data for the ceramic sequence.

The pits were each laid out with the sides oriented parallel to the magnetic north-south compass direction. In this area of Mexico, true north is only 3^{o} off of magnetic north, so I used magnetic north rather than try to make the correction. We measured in multiple directions (each side and the hypotenuse) to ensure the size was correct and the corners were square. Figure 3.9 illustrates a typical pit layout. Where a shade awning was necessary (see Figure 3.10), we screened the dirt from the post holes and collected any archaeological material.

The pits were excavated in arbitrary 20 cm levels, except in rare cases where I encountered architectural or other stratigraphic features. I adjusted the levels to account for these features when they occurred. I installed a measurement stake 8-15 cm above the surface of the pit, and we made all measurements to that point. In some cases, when the zero point was quite high and the ground was very tough, we combined the first two levels and excavated a 0-40 cm arbitrary level because it was impossible to accurately excavate a 0-20 cm level.

In general, each pit at each site was excavated to sterile soil. Table 3.1 shows the final depths for the pits excavated at La Quesería, Itzímbaro, and Mexiquito. At La Quesería, sterile soil appeared in one pit at 40 cm of depth, and another reached just over 240 cm of depth. All pits at Itzímbaro reached sterile soil. At Mexiquito, work concluded in pit 3 at 280 cm without reaching sterile soil. The soil had become saturated with water during the rains and the walls were too unstable to continue. At each site, at least two pits provided uninterrupted stratigraphy.

Table 3.1: Final excavation depth for all pits.

Site	Pit Number	Final Depth
Quesería	1	245 cm
Quesería	2	150 cm
Quesería	3	40 cm
Quesería	4	120 cm
Itzímbaro	1	100 cm
Itzímbaro	2	80 cm
Itzímbaro	3	240 cm
Itzímbaro	4	300 cm
Mexiquito	1	260 cm
Mexiquito	2	140 cm
Mexiquito	3	280 cm

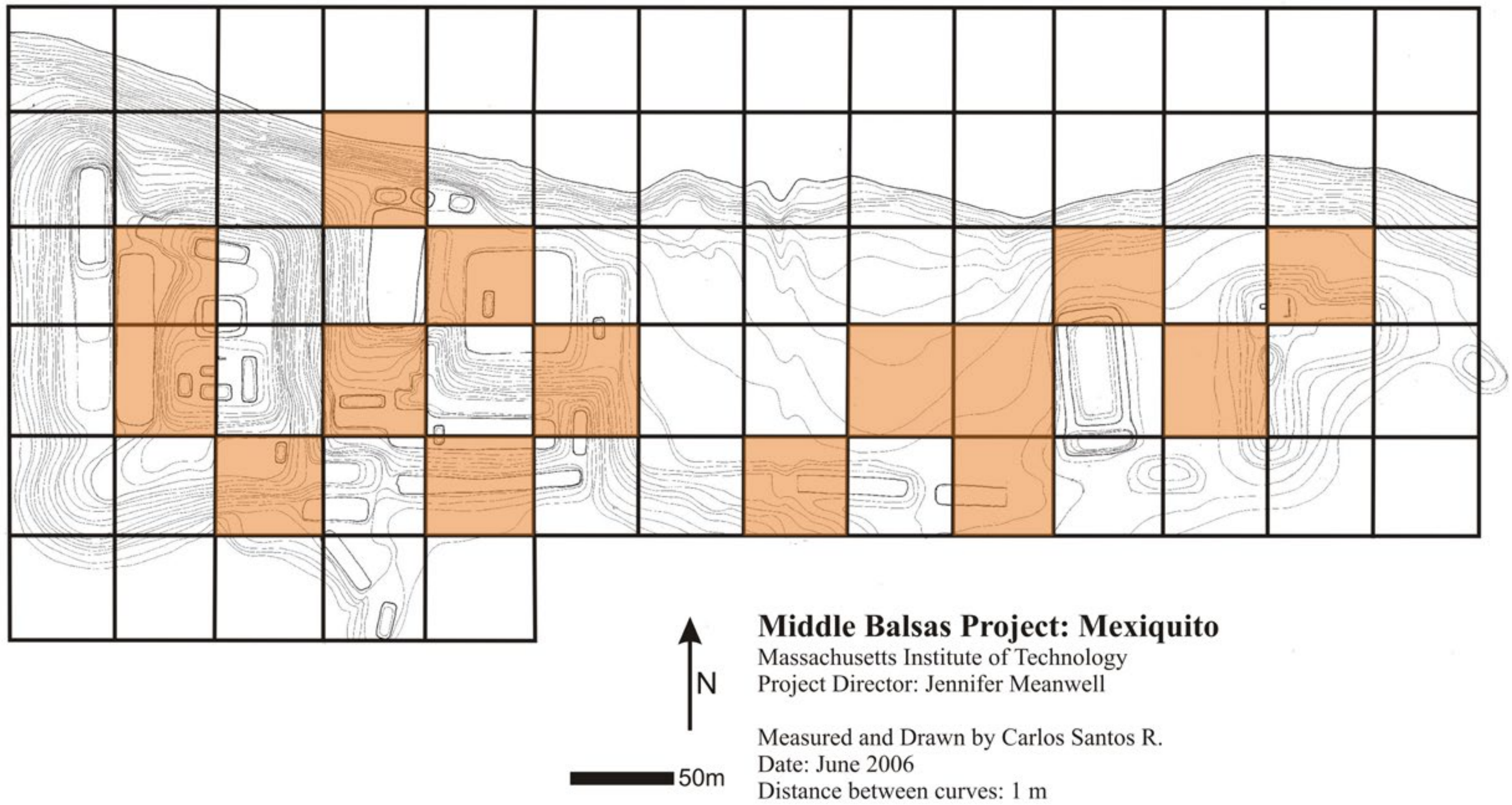


Figure 3.5: The site of Mexiquito showing the sectors that were surface collected.

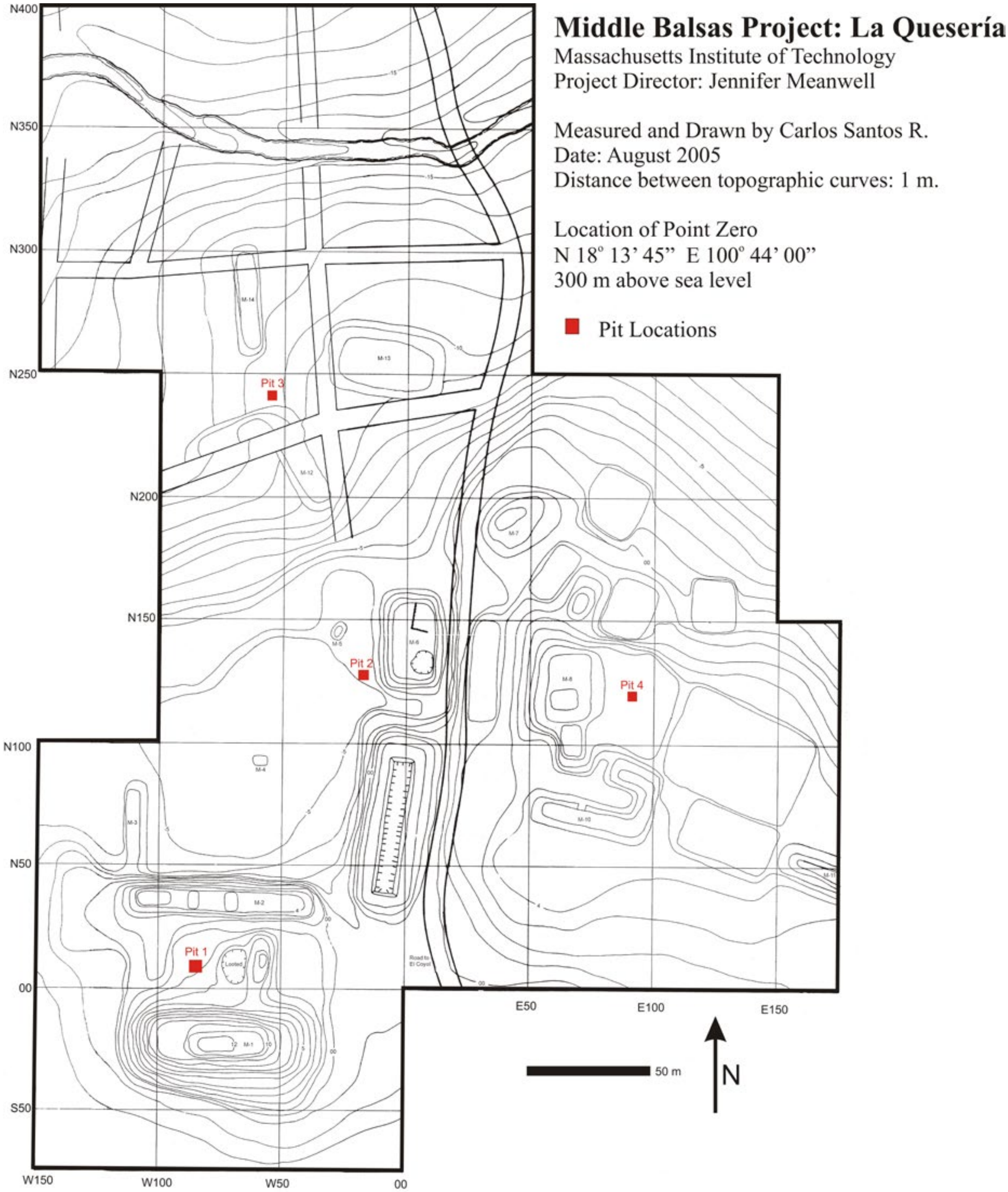


Figure 3.6: Portions of La Quesería with the excavated test pit locations.

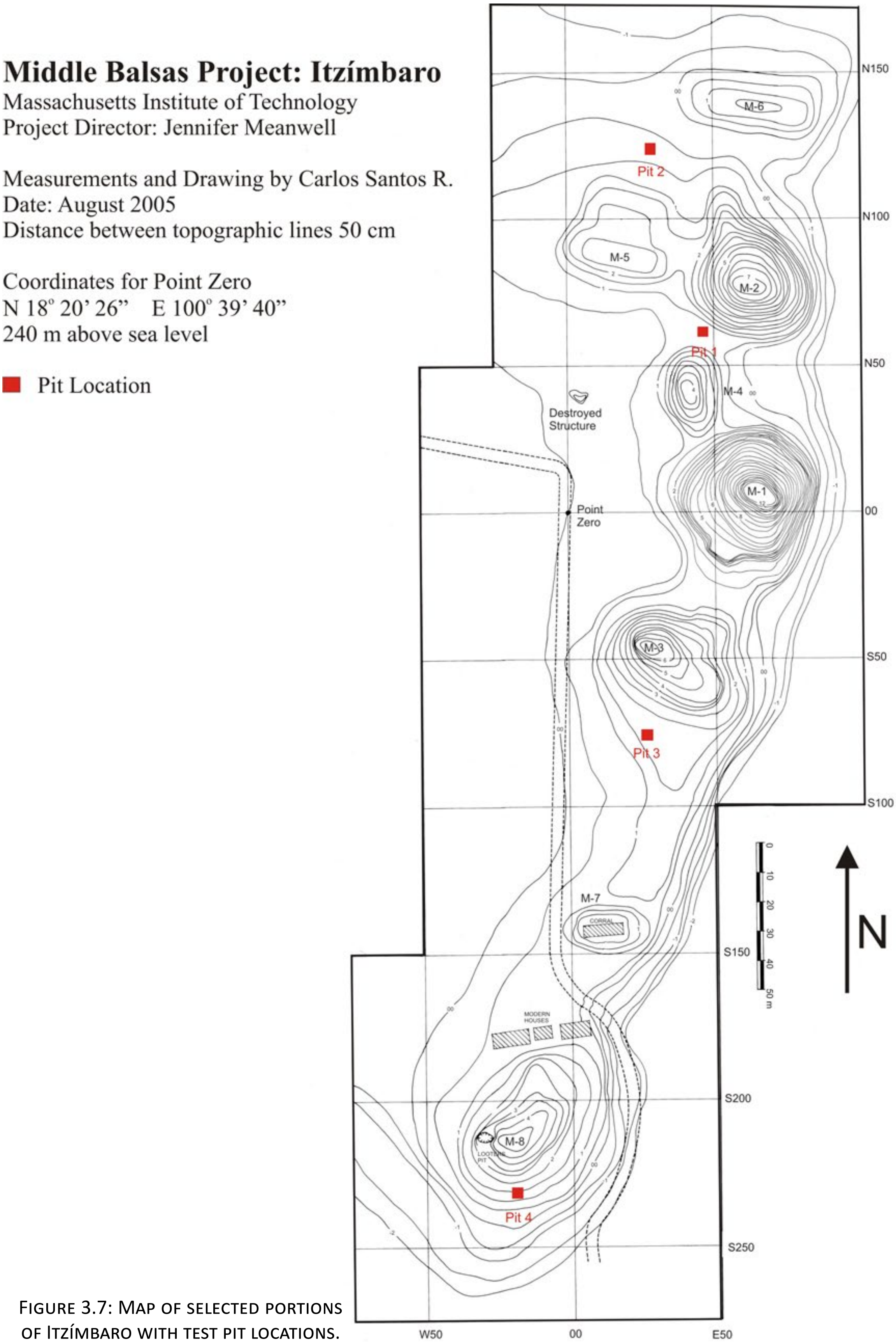


Figure 3.7: Map of selected portions of Itzímbaro with test pit locations.

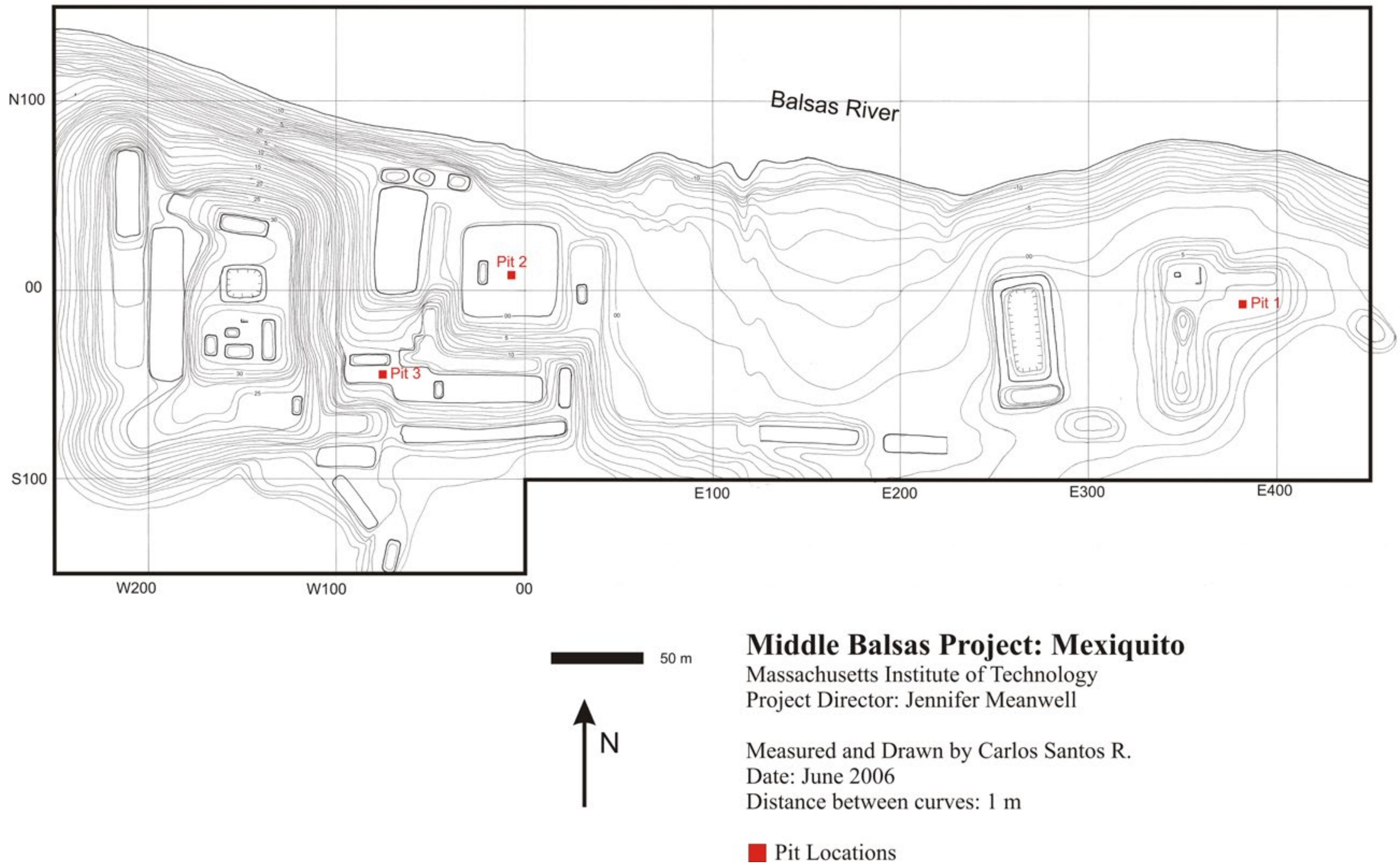


FIGURE 3.8: THE SITE OF MEXIQUITO WITH THE EXCAVATED TEST PIT LOCATIONS

Figure 3.9: Laying out the pit with stakes and string.

Figure 3.10: Pit 1 at La Quesería with awning and support posts.

Excavated material, such as pottery and obsidian, was collected and registered following the same system used to register the surface material (see Appendix 1). A detailed field journal was also kept during excavation where I noted significant finds and stratigraphic features. In addition to the standard registration data, I also recorded the exact depth, relative size, and approximate location in the pit of all radiocarbon samples. Due to the volume of material, the specific location data (apart from level) was not noted for every sherd. However, when we found a larger item, such as a partial *metate* or bone fragment, it was measured, photographed, and sketched in place to record its location.

All soil extracted from each pit was screened with ¼" screen mesh to collect small artifacts, particularly obsidian. In some cases, the rough or clay-like texture of the soil made recovery of cultural material while excavating difficult, so that screening was essential. In other cases, the soil was ashy or sandy, and the screening was less essential since most archaeological material was recovered during excavation. In all cases, I consistently screened all excavated material.

Following the excavation, I mapped all four walls of the pits to graphically demonstrate the stratigraphic levels, such as stones and color changes in the soil, which were often very subtle. Any additional features, such as plaster floors, were also sketched. I also noted the texture, color, and type of soil in each case. After the pit was fully documented, we backfilled each one with the stones and earth removed during excavation (see Figure 3.11), took down the posts for the sunshades, and refilled the post holes.

Clay Collection Methods

I collected a total of ten samples of clays from the Middle Balsas region to compare them to the archaeological pottery in provenience studies. The clay samples are also used for the experimental replication of various firing methods, tempering materials, or finishing treatments, to better understand the material properties and behaviors of the clays available to the potters in a given area. While collecting clays, it is important to be aware of the local geology, as the type of parent rock that can be eroded into clay has a strong impact on the types of clay minerals that form, as well as the natural pieces of mineral temper that can be included in the clay body. As can be seen from Figure 3.12, the Tierra Caliente is divided roughly into three geological zones, each dominated by a different type of rock. I collected clays from the igneous and sedimentary zones that were closest to the Middle Balsas sites I studied.

My goal was not to collect all clays from the region, but to collect clays that are definitely suitable for the production of pottery, although I also brought back a few other clays used for brick manufacture. Therefore, I collected clays from villages where pottery is currently (or was recently) being produced. These towns are Patambo, Changata and Santa Cruz, all within the state of Guerrero (see Figure 3.13). I also collected clays from the area around the site of Mexiquito that is not within a specific village.

At Patambo, Santa Cruz and Changata, I was led to the clay sources by local informants. I then dug into the clay body and tried to avoid the collection of excess plant roots or other contaminants. I collected two gallon-sized bags of clay from each source located. In most cases, two to three clay sources were located near each village (see Table 3.2). The clays were labeled with their source town and given a sample number. The locations were noted on a map or with a GPS device.

At Mexiquito, we collected clays from three different locations near the archaeological site, including two samples that are from areas very close to the ceremonial structures. All clays from this region that we collected were dark (*negro*) clays. According to the local informants, at one time there were also lenses of red clay in the fields bordering the Balsas river to the east of Mexiquito that were used to make *ollas* and *comales*. However, with the modern use of disk plowing with tractors, these lenses of clay have been dispersed within the field, and we were unable to locate any of the red (*rojo*) clay from the area around Mexiquito.

FIGURE 3.11: BACKFILLING PIT 3 AT ITZÍMBARO.

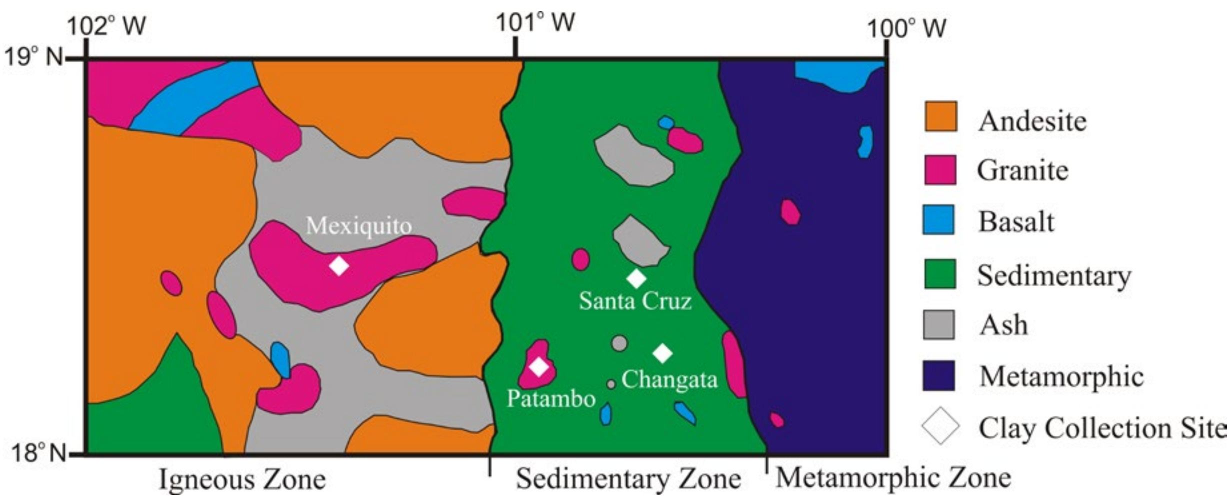


FIGURE 3.12: A SIMPLIFIED MAP OF THE GEOLOGIC ZONES IN THE BALSAS REGION AND THE LOCATIONS AT WHICH I COLLECTED CLAYS.

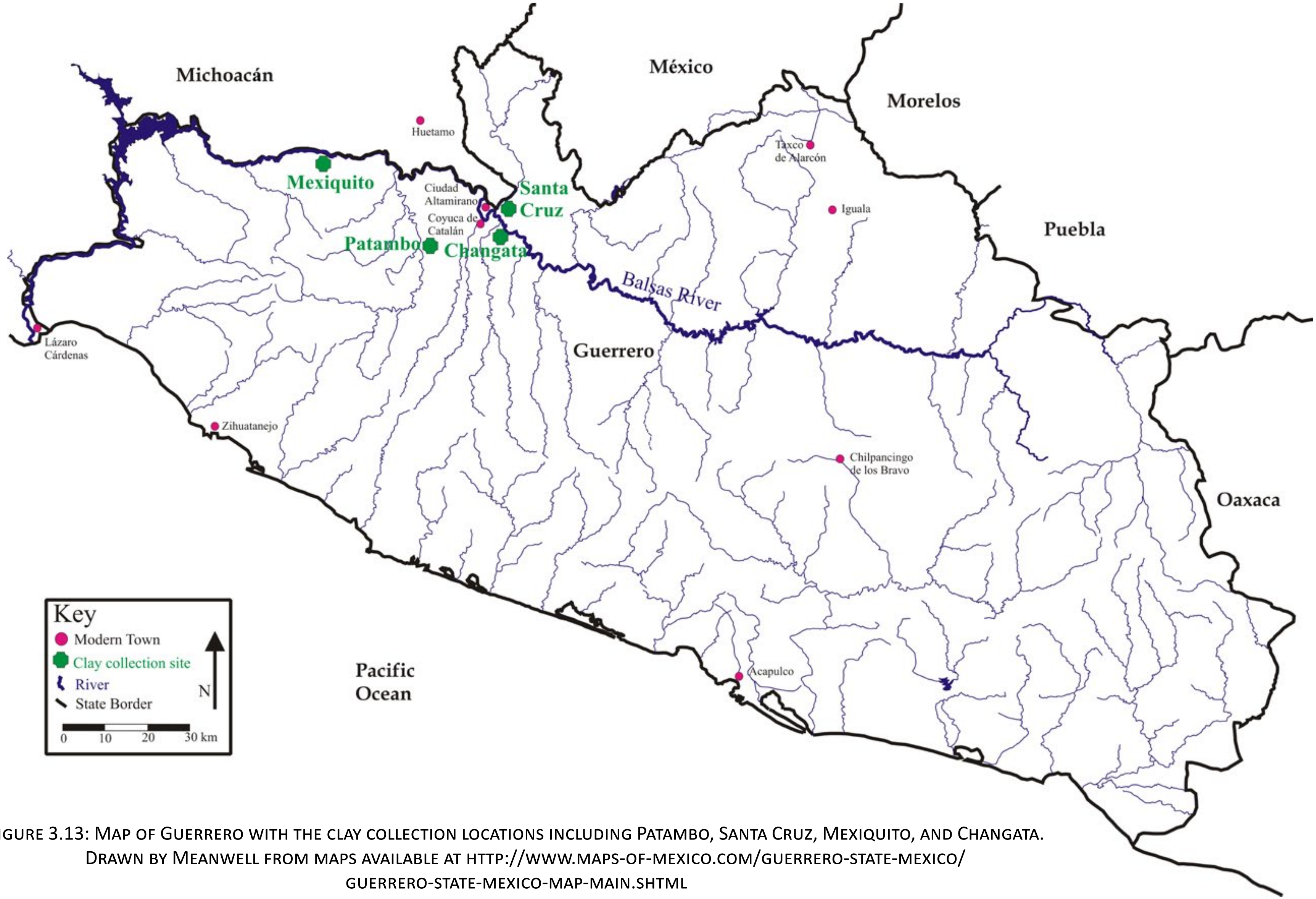


Figure 3.13: Map of Guerrero with the clay collection locations including Patambo, Santa Cruz, Mexiquito, and Changata. Drawn by Meanwell from maps available at http://www.maps-of-mexico.com/guerrero-state-mexico/guerrero-state-mexico-map-main.shtml

During the excavations at La Quesería in 2006, we also encountered a large mass of clay in one of the patios (within Pit 4), and I took an additional sample of this clay without giving it a sample number. Although it is not in use by modern potters, it will provide an idea of the clays types that were likely available very close to the site.

TABLE 3.2: CLAY SAMPLE NUMBERS AND COLLECTION LOCATION.

Clay Number	Collection Location	Local Clay Description
1	Santa Cruz	Tanque
2	Santa Cruz	La Chica
03	Mexiquito	Negro
6	Changata	--
12	Patambo	Rojo
13	Patambo	Negro
18	Santa Cruz	Comal
67	Mexquito	Negro
77	Mexiquito	Negro

3.2 Ceramic Analysis Methods

General Analysis and Data Recording

Each bag of pottery from the surface collection and excavated pits was individually analyzed. Within each bag, I selected the diagnostic sherds for detailed study. The diagnostic sherds included rims, appendages, inflection points (such as curved necks or curved walls changing to flat bases), and sherds with a defined decorative style, such as incised designs, paint, or applied decoration.

I divided the sherds identified as diagnostic into formal types and subtypes that will be explained in detail in Chapter 5. I chose to use formal types for this analysis rather than the more typical ware types used by most archaeologists because of my desire to determine the probable function of the vessel when it was in use. I recorded the number of each formal type (see Appendix 2) and drew rim profiles of both typical and unique sherds. Appendages and sherds with a decorative element (*e.g.,* paint or incised decoration) but no identifiable shape were counted and categorized as such without being put into a formal category. I also sketched these decorative elements. Throughout the analysis, I tried to draw the full range of variation within each formal type and all examples of decoration. I noted any differences in clay type where they could be determined, as the clay source is of the utmost importance in reconstructing the manufacturing methods and techniques of the ancient potters. I also measured the rim diameter and the wall thickness (in three locations) of a representative 10% of the sherds from each of the three sites that were assigned to the five formal types. This data allows me to reconstruct the range of sizes that appear in each formal type. The raw data appears in Appendix 3.

The number of sherds of each formal type was recorded in a database program to produce graphs of the relative frequency of types for each level of each pit and for each sector in the surface collection. I created these graphs, which appear in Chapter 5, to look for variation in the numbers of each formal type that could be linked to chronological changes between levels or sites.

Sample Selection—Pottery for Thin Section Analysis

In my selection of pottery samples for thin section analysis, I chose only diagnostic sherds (therefore, rims and occasionally necks and inflection points) where I could determine the formal type. Because my research objective was to test for the existence of differences in manufacture and use among the various functional categories, I did not choose the sample based solely on the relative percentages of the vessel types at each site. The two most common formal types (*cajetes* or bowls and *tecomates* or globular jars) make up a large percentage (82-86%) of the total number of sherds recovered from the test pits, so a strictly percentage based sample would not provide enough examples of the less frequent formal types. I decided to take a total of 378 samples from the entire excavated collection, which is 10% of the total number of diagnostic sherds recovered from all three sites. The 378 samples were evenly divided among the three sites, so I selected 126 excavated sherds from each site. I did not choose to proportionally allot the test pit sherds by site, as this would have underrepresented sherds from Mexiquito, where the overall volume of sherds collected was lower. This 126 was divided between the main formal types and their subtypes (9 types in total) as shown in Table 3.3. As the table shows, this collection method was modified in the case of Mexiquito, where we recovered few recurved bowls, but instead had many polychrome vessels, which are also of interest for thin section analysis to determine if they were imported or locally produced. I substituted polychrome vessels for recurved vessels at Mexiquito. To arrive at the appropriate number for the various *tecomates* and the open bowls from Mexiquito, I used a few surface collected examples. I semi-randomly selected the sherds in each formal category (vessel shape) to come from a variety of depths within the test pits to allow for chronological differences. I also tried to capture the range of wares (decorative styles) found at each site within each formal category.

Table 3.3: Number of samples chosen from each formal type at each site.

Formal Category	La Quesería	Itzímbaro	Mexiquito
Hemispherical cajete	14	14	14
Straight-walled cajete	14	14	14
Outflaring cajete	14	14	14
Plain tecomate	14	14	14
Round-rim tecomate	14	14	14
Raised-rim tecomate	14	14	14
Recurve bowl	14	14	0
Open bowl	14	14	14
Olla	14	14	14
Polychrome Vessel	0	0	14

Additionally, I deliberately selected 24 samples from the surface collection and/or test pits at each site that demonstrate unusual features. These sherds exhibited formal types (*molcajetes* or grinding bowls, incense burners, inflaring *cajetes*, flare rim *tecomates*, etc.) or clay and finishing techniques (polychrome, grey clay, black band around rim, etc.) that were not common in the overall collection or were found only at one site. These specimens provide a small sample that may identify possible imports. They may also indicate whether unusual forms were also locally produced from the same clays as the more prevalent types I identify and describe in Chapter 5. Due to time constraints, these unusual samples were not analyzed in this work. In total, I selected 150 sherds from each site for exportation and further analysis.

For the thin section analysis, I reduced this number from 150 per site to 45 per site to provide a more manageable sample size. These samples were chosen semi-randomly to come from various pits and levels at each site, although not every level of every pit was necessarily sampled. I made 5 thin sections of each of the nine type and subtype categories described in Chapter 5.

Sample Selection—Radiocarbon Samples

One key objective of my ceramics analysis was to date the changes seen among sites or between levels in the pits and link these to the events elsewhere in Mesoamerica that might have influenced developments in the Middle Balsas region, such as the fall of Teotihuacán or the Aztec/Tarascan border disputes in the Late Postclassic. In total, I have performed 15 radiocarbon analyses to provide absolute dates. I chose to divide this number equally between the three sites, and sent five samples from each location. The samples were spread among the pits at each site to determine the time depth in the pits and to correlate the stratigraphic levels seen in different pits. I chose the largest and best samples from the levels I wished to date to provide the most accurate results possible. All radiocarbon samples were analyzed by Beta Analytic, of Miami, Florida, using standard radiometric analysis or atomic mass spectroscopy (AMS) analysis as appropriate for the sample size and conditions. The full list of radiocarbon samples sent for analysis is shown below in Table 3.4.

Table 3.4: List of radiocarbon samples selected for analysis.

Site	Date Collected	Pit	Bag Number	Level	Actual Depth
Quesería	2 Feb. 2006	1	21	80-100 cm	92 cm
Quesería	1 Mar. 2006	1	115	200-220 cm	211 cm
Quesería	27 Feb. 2006	1	91	160-180 cm	178 cm
Quesería	8 Mar. 2006	2	30	60-80 cm	76 cm
Quesería	15 Mar. 2006	4	15	60-80 cm	63 cm
Itzímbaro	7 Apr. 2006	3	31	80-100 cm	97 cm
Itzímbaro	25 Apr. 2006	3	82	180-200 cm	195 cm
Itzímbaro	12 Apr. 2006	3	54	140-160 cm	153 cm
Itzímbaro	3 May 2006	4	58	120-140 cm	127 cm
Itzímbaro	8 May 2006	4	107	240-260 cm	254 cm
Mexiquito	17 Jun. 2006	3	35	120-140 cm	137 cm
Mexiquito	18 Jun. 2006	3	45	160-180 cm	174 cm
Mexiquito	16 Jun. 2006	3	19	80-100 cm	99 cm
Mexiquito	10 Jun. 2006	1	69	200-220 cm	215-218 cm
Mexiquito	2 Jun. 2006	1	22	80-100 cm	100.5 cm

3.3 Laboratory Methods

Thin Section Preparation

The analytical technique known as petrography or thin section analysis is a standard method used in geology and archaeology (Stoltman 2001; Rice 1987:372-382; Shepard 1965:139; Williams *et al*. 1954). Petrographic analysis involves making a single 30 μm thick cross-section of the desired material and viewing the sample using a petrographic microscope. The samples are analyzed with both plane- and cross-polarized transmitted light to identify the mineral inclusions with a high degree of accuracy, as well as to determine various characteristics of the clay matrix, such as its optical activity. By analyzing both ancient sherds and briquettes made from local clays, one can determine the likely source area for the clays used in pottery manufacture (see Fargher 2007; Rice 1987:372). Petrography can also be used to determine certain aspects of the pottery production techniques, including the general firing temperature range and methods of manufacture, such as the addition of temper[2] (Rice 1987: 379; Stoltman 2001).

I prepared the 45 thin sections of archaeological sherds from each site using a standard protocol. As described above, five examples from the nine most common formal categories were chosen from each site. I documented each sherd with photographs, drawings, and descriptions before sampling. The samples were removed from the larger sherd via a cut perpendicular to the rim, as shown in Figure 3.14. These samples were impregnated with Epotek 301 optical epoxy. The original cutting and grinding took place on a Buehler Petro-thin machine to a thickness of approximately 150 μm, and the final grinding was done by hand using silicon carbide grits to make the final 30 μm thick section. All slides were coverslipped to protect the sample.

As I describe in the next section, test briquettes were also made from local clays for comparison with the ancient sherds. Due to time constraints, these samples were sent out to be professionally sectioned at Spectrum Petrographic in Vancouver, Washington. Their protocol is similar to the one used at MIT, with the addition of a quartz sand to the epoxy, which allows for more even grinding. This leaves a quartz sand matrix that is visible around the sample in photographs. These samples were coverslipped upon their receipt.

2 The topic of temper is very important in pottery analyses. I discuss my precise definition of temper in more detail in section 5.2.2. In short, however, temper is a non-plastic material that is added to clays during manufacturing to reduce shrinkage.

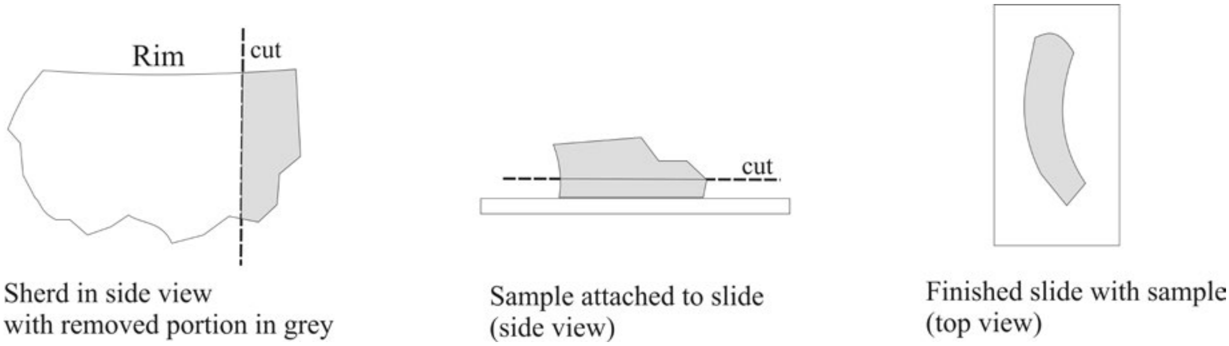


FIGURE 3.14: SCHEMATIC SHOWING THE ORIENTATION OF SEVERAL THIN SECTIONING STEPS.

Test Brick Manufacture and Firing

I made two sets of test briquettes from the clays collected according to the strategy described above. The first set of test briquettes were fired at different temperatures, sectioned by the petrographic techniques above, and compared to the petrographic sections of the ancient sherds. This comparison 1) determined if any of the clays could have been used to make the ancient pottery, and 2) documented any characteristic microstructural changes in the clay matrix induced by the different firing temperatures. This permits determination of an approximate firing temperature of the pottery. The second set was prepared using different temper volume fractions and was used for mechanical testing.

The clays were prepared by manual removal of any organic matter and then were dried and crushed using a ceramic mortar and pestle. The crushed clays for the first briquettes were sieved through a standard USA No. 18 mesh with 1 mm openings, and the clay was then combined with sufficient water to make it plastic and easily workable. The clay was then pressed into molds made of plastic and metal that measured 7.5 cm by 2.5 cm by 1.3 cm. The formed briquettes were inscribed with their identifying clay number and firing batch letter (see Table 3.5) and were left to dry slowly in the lab. Once the bricks had dried, they were removed from the mold and were fired in a small kiln.

I made a set of six bricks from clays 1, 2, 12, 13, 03, 67, and 77, as these seemed closest to the ancient sherds. The firing temperatures for the sets ranged from 500^{o} C to 950^{o} C. I made extra bricks for the temperatures ranging from 650^{o} C to 800^{o} C, which was the most likely firing temperature range of the ancient pottery (Meanwell 2001:46-47). The batch designation and temperature range are noted in Table 3.5.

TABLE 3.5: CORRELATION BETWEEN BATCH DESIGNATION AND FIRING TEMPERATURE

BATCH	A	B	C	D	E	F
TEMPERATURE	500^{o} C	650^{o} C	800^{o} C	950^{o} C	700^{o} C	750^{o} C

These test briquettes were ideal for thin section analysis, as they offered an appropriately sized piece of fired clay for the sectioning technique. However, the molding method and (relatively) rapid drying time did cause many of them to crack. Most of these cracks were not catastrophic failures of the material, but they could weaken the briquettes. In order to have good specimens for later mechanical testing of the clays, I also made thinner test samples (1 cm x 1 cm x 10 cm) that did not crack, and that were appropriately sized for the three-point bending test described later. The same seven clays were used to make the briquettes for mechanical testing as were used for the firing tests. The briquettes for mechanical testing were made from clays that were sieved using a USDA 60 mesh, and then had fine sand (0.1-0.2 mm diameter) added in volume fractions from 0 to 40%. The briquettes were fired at 700° C for one hour before being used for the mechanical testing. I chose to fire these samples at 700° C, because this temperature is in the middle of the likely firing temperature range of the ancient sherds. I made the test briquettes to replicate the mechanical properties of the ancient sherds as closely as possible.

Point Counting and Fabric Description

Once the thin sections of the ancient sherds and the test briquettes were completed, a detailed analysis of both materials was necessary to reach conclusions about the clay sources and the firing and processing regimes utilized by Middle Balsas potters. This analysis consisted of two separate but complimentary steps. First, each sample (sherd or test briquette) was carefully studied under plane and cross-polarized transmitted light to get a sense of the mineralogy and clay matrix characteristics of the sample. These qualitative impressions about the relative frequency and texture (how rounded or angular the inclusion grains are) of the inclusion grains, the shapes of the voids, and the clay matrix behavior were recorded for each sample. Although this data cannot easily be quantified, the texture, void shape, and behavior (optical activity) of the clay matrix are very important to grouping the sherds accurately into groups called fabrics. I use the word fabric throughout this publication to define a specific combination of clay matrix, mineral inclusions, and overall texture of the sample.

Then, the sherds were subjected to a point-count analysis, which provides a quantitative measure (percentage of overall surface area) of the surface area of the sample covered by each material (see Stoltman 2001: 305-307 for a discussion of various point counting techniques). During the process, a mechanical device is used to move the stage and sample 1 mm along a horizontal row each time. At the end of each horizontal row, the device is moved vertically down 1 mm and back to the beginning of the row, and the next row is begun. The composition of the material found directly under the cross-hairs is recorded (specific mineral, void, clay matrix) at each 1 mm interval, and minerals also have their size recorded (the Glagolev-Chayes method – Stoltman 2001: 306). I chose to record 300 points of inclusions and voids, with an unlimited number of clay matrix points. From experience with the technique during a previous study, this number appears to give an accurate evaluation of the relative frequency of the minerals (Meanwell 2001). The point count data can also be used to look for tempering, which is the deliberate addition of non-plastic inclusions to the clay during the forming process. Tempering can be hard to identify, but it is most often accompanied by a bimodal distribution of grain size or a different suite of minerals in the fine and coarse fractions of the inclusions (Rice 1987: 407-411).

Using a combination of the qualitative description and the quantitative point count data, I grouped the sherds into fabrics. A clay fabric is a recurring combination of mineral inclusion (or temper, which is a deliberately added inclusion), void type, clay matrix, and other features, such as texture. These fabrics are generally manufactured from similar clays and using similar firing and forming techniques, and are therefore indicative of different manufacturing processes. In defining my fabric types, I first looked only at sherds from a single site, before expanding the fabric groups across sites. These fabrics are described in Chapter 5.

Mechanical Testing

I used standard engineering mechanical tests to measure various properties of the clays that may have been useful to ancient potters. Specifically, I performed a standard three-point bend procedure to measure the Young's modulus (a material property that relates stress and strain) and the fracture strength (stress at which the material fractures catastrophically) of the clays (see Kilikoglou *et al*. 1998 for a similar testing process). I tested the same seven clays (1, 2, 12, 13, 03, 77 and 67) that were used for the petrographic test brick analysis. As described in section 3.3.2, I made a set of beam-shaped briquettes (approximately 1 cm x 1 cm x 10 cm) with different proportions of sand temper to test with three-point bending. These multiple briquettes allowed me to test several examples of each clay. This is particularly important when testing brittle materials such as clay, because the fracture strength is very dependent on small irregularities or flaws present in the material (Chiang *et al*. 1997: 478-486). Smaller beams, by definition, have smaller flaws. The use of multiple samples allows for the calculation of an average fracture strength for each clay, which is more accurate than any single measurement (Chiang *et al*. 1997: 485-486).

These beams were loaded into a specially designed rig and tested using the Instron model 1321 machine. The rig was composed of a metal block that held two metal cylinders at a specific distance to support the test briquettes. A second metal block holding a third metal cylinder was placed on top. The load effectively presses down at the location of the third cylinder (see Figure 3.15). I used a load cell of 1 kN, as this was sufficient to break my small beams. The Instron machine measures load versus displacement, which can be converted into stress-strain curves via simple algebra to produce the yield strength and the elastic modulus. The results will be discussed in Chapter 5.

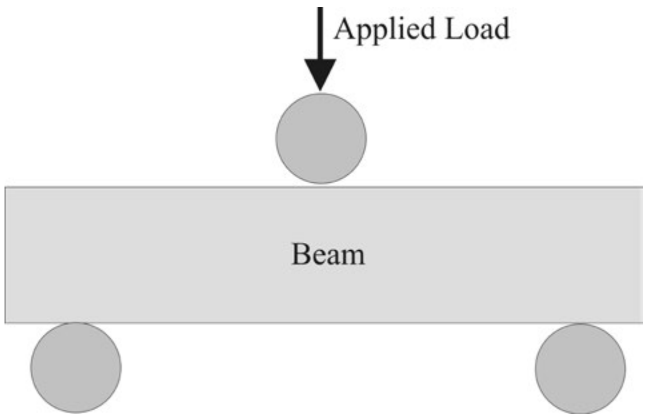


FIGURE 3.15: SCHEMATIC OF A TYPICAL THREE-POINT BEND TEST.

Chapter 4: Field Results from the Sites of La Quesería, Itzímbaro and Mexiquito.

I argue in this book that the Middle Balsas region is a distinct cultural area with its own unique traits and history. Several notable features of the area can be seen in its architectural style, which uses elements from the greater Mesoamerican tradition in specific local ways. In this chapter, I describe the evidence collected during excavations and describe the architectural features of the Middle Balsas region that I noted during my mapping, surface collection, and excavations at La Quesería, Itzímbaro and Mexiquito. I also introduce observations from several other sites in the Middle Balsas region that I visited over the course of this work. The evidence for construction techniques was clearest at Mexiquito, where the large number of looters' pits exposed a number of architectural details.

This chapter presents the field data from my surface collection and excavations at the sites of La Quesería, Itzímbaro and Mexiquito. I will first describe the current conditions of each site and provide the detailed geographical location. I will then present the significant results from the surface collection and the test pits at each site, including the probable dating of the stratigraphic layers obtained from radiocarbon analyses. I will conclude the chapter with a description of the architectural and other characteristics of the Middle Balsas region that I noted during the project using the data collected at all three sites. The architecture found in the Middle Balsas region provides several of the characteristic traits that set this region apart from the surrounding culture areas, namely truncated pyramids with attached plazas, and ring-shaped ball courts.

4.1 Field Investigations at La Quesería, Guerrero

Description of La Quesería

The site of La Quesería is perhaps incompletely named, as it lies underneath and to the southern side of the modern town of San José de la Quesería within the *municipio* (township) of Coyuca de Catalán (See Figure 4.1). Another town called simply 'La Quesería' is located several kilometers further south. According to local residents, the site got the name Quesería when an eagle holding a snake landed on the top of the largest mound and people said '*Que sería*?' which in Spanish means 'What could that be?'

The presumably ceremonial sectors of the site, whose structures include a 12m tall pyramid mound, a large open plaza, and a ball court, are found on both sides of the main north-south highway linking San José to the town of Coyuca de Catalán (see Figure 4.2). This ceremonial zone is south of the domestic zone. The UTM coordinates of the site are 14QLR168163 (INEGI 2001a).

The plots of land comprising the ceremonial sectors are owned by Sr Pedro Flores and Sr Florencio Delgato. These areas of the site are periodically planted with corn by their owners, although they do not use mechanical planting or harvesting techniques, so the structures remain basically intact. The domestic zone of the site is divided into small house plots that are owned by a number of families.

One rather remarkable feature of La Quesería is that the ceremonial sectors of the site are practically untouched by looting or other major modern alterations. The central area of the site is cut in two by the highway and one section of the site was damaged by heavy machinery during the construction and installation of a system of running water (see Figure 4.3). This damage, however, is fairly superficial, and the original form of most of the structures is fairly easy to determine. The landowners of the ceremonial sectors are interested in keeping the site intact and in good condition, and have reportedly kept looters from excavations at the site.

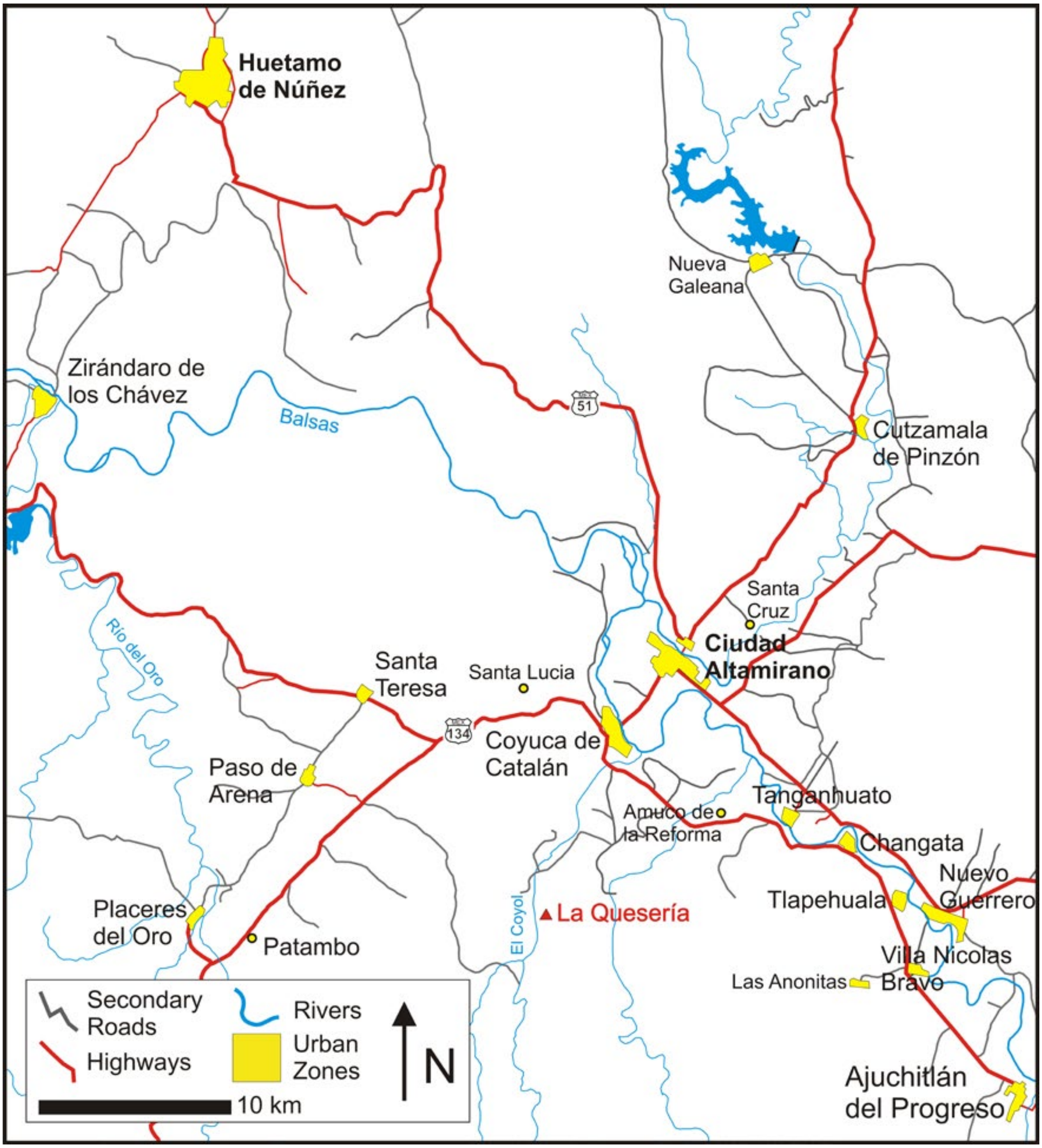


FIGURE 4.1: THE LOCATION OF THE SITE OF LA QUESERÍA NEAR CIUDAD ALTAMIRANO AND COYUCA DE CATALÁN. ADAPTED FROM INEGI MAP E14-4 (1997). ORIGINAL SCALE IS 1:250,000.

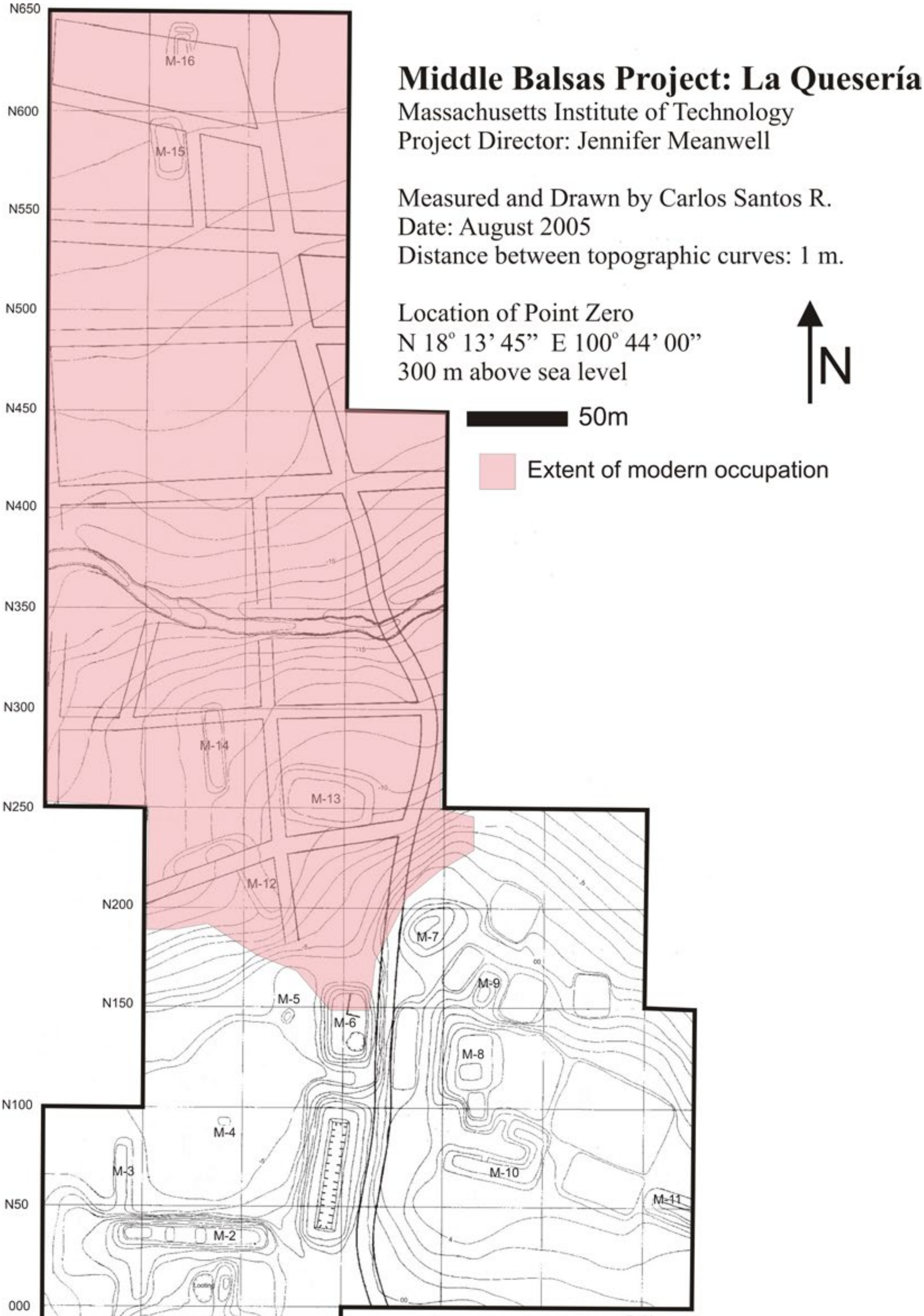


FIGURE 4.2: THE TOPOGRAPHIC MAP OF LA QUESERÍA.
THE DOMESTIC ZONE IS NORTH OF M-13.

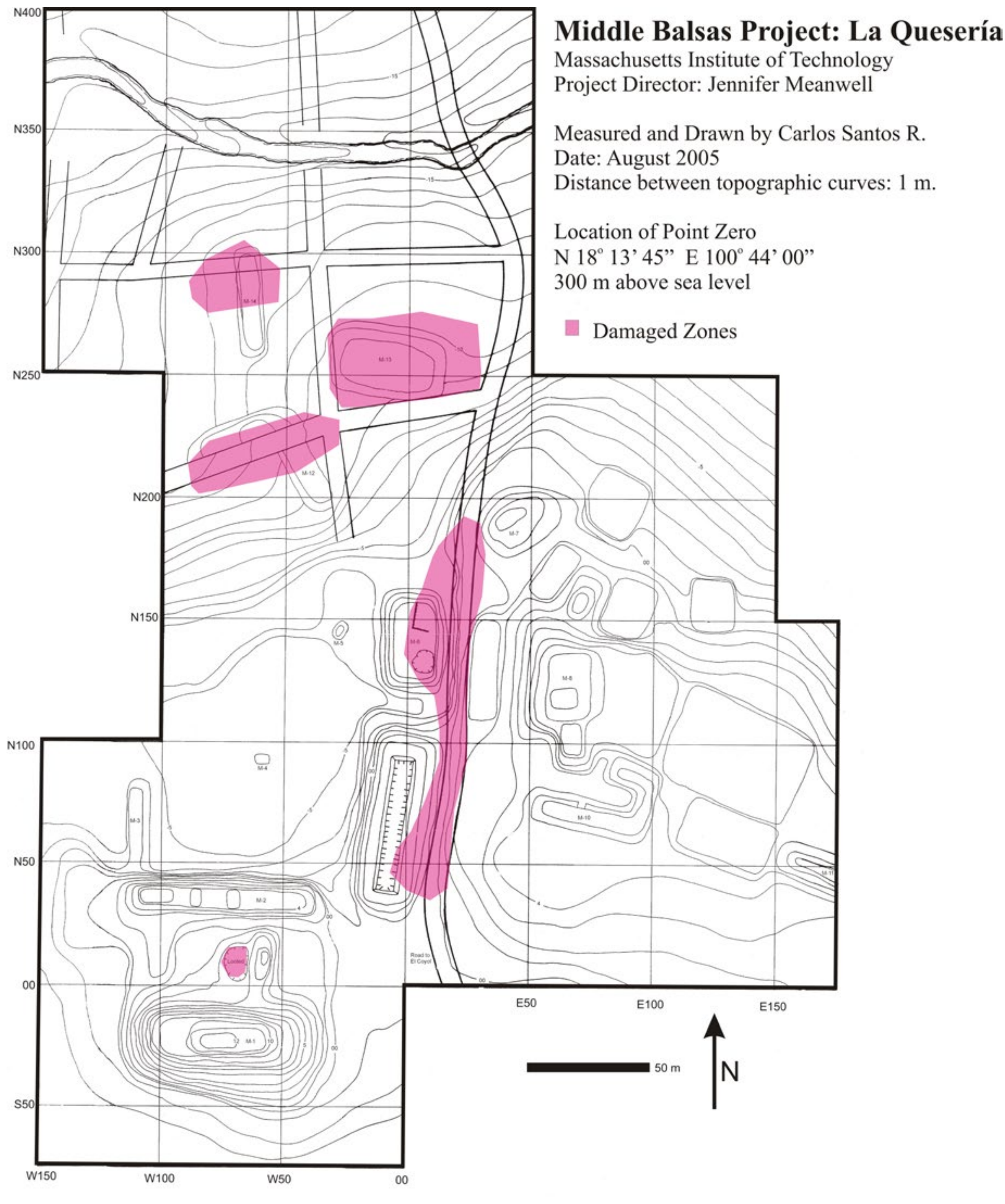


Figure 4.3: Portions of La Quesería showing areas with heavy modern damage.

The ceremonial structures of La Quesería seem to have been built mainly of rounded river cobbles and earth (see Figure 4.4). I did not see any evidence on the surface of a faced stone façade to any of the structures. The damage from the road construction exposed a section of the ball court, where the river cobbles were placed with much care during construction, and were not simply piled together as sometimes occurs with rubble-filled structures (see Figure 4.4). The area damaged by the machinery exposed a plaster floor, so plaster was likely in use as a surfacing material for patios and plazas, if not structures.

The northern area of the site, which appears to have been the domestic zone of the ancient settlement, is beneath the modern town. Unsurprisingly, the remarkable preservation of the ceremonial sector is not found in the domestic zone. Several houses and other structures, including the secondary school, are built on top of probable house mounds. In several cases, the stones from house mounds have been removed and reused as building material for the foundations of houses.

The residents of San José are generally aware of the archaeological nature of the mounds on the southern side of town, but many residents are unaware that archaeological objects and structures are found within the town itself. For example, one resident uses ancient *metate* fragments to give salt to his cattle. Many people in town did mention, however, that at least two burials in large pottery jars were discovered in 2004 during a construction project at the secondary school. These burials reportedly contained a few grave goods, including a small *cajete* and a few shell beads (see Figure 4.5). One resident kept the beads and *cajete*, but the bones were taken by the project engineer, who reportedly took them to Mexico City. During the surface collection of sector N6W1, we recovered the largest fragments of the burial jar and collected them in a separate bag.

Surface Collection Results at La Quesería

As described in section 3.1.2, a total of 40 quadrants (50 m x 50 m) were surface collected at La Quesería (see Figure 4.6). During the course of the collection we recovered a wide variety of materials, including pot sherds, obsidian, stone tools (grinding stones called *manos* and *metates* and other tools), figurines, a greenstone bead, and a decorative incised stone. The total numbers of items recovered in various categories is found in Table 4.1. The raw data are found in Appendices 2, 4 and 5.

Table 4.1: Numbers[1] of various artifact types recovered from La Quesería during surface collection.

Artifact Type	**Number of Bags**	**Number of Objects**
Pottery	243	9035 diagnostic sherds
Obsidian	58	1264 fragments
Manos and *Metates*	56	50 *metate* and 68 *mano* fragments
Figurines	79	332 figurine fragments

During the surface collection phase, we noted that certain sectors were particularly rich in materials. Sectors N1W3 and N1W2 that were located where the adjoining mound (M-2) had been cut by machinery (see Figures 4.3 and 4.7) were rich in obsidian. The sector with the highest obsidian concentration was N6E1, where the school is located (see Figure 4.7). The diagnostic ceramics were particularly concentrated near the ball court ring and mounds M-1 and M-2 within sectors S1W2, N2W1, N1W2 and N3W1 (see Figure 4.8). A particularly high number of sherds were also recovered from sector N4W1 (see Figure 4.8). It seems possible that erosion might have washed some items into this sector due to the sloping of the site. Alternatively, the high concentration may be due to some ancient activity, such as trash disposal in this area. It is important to remember that the number of materials recovered from sectors using the 2 m spacing protocol (*i.e.,* S1W2) cannot be directly compared to the remaining sectors.

1 The total number of sherds recovered was approximately 35,000.

Figure 4.4: Photographs showing construction details of the ball ring at La Quesería. The top figure shows the construction technique within the structure that was exposed by road construction. The bottom figure shows the stone alignments on the western side of the structure. This stone construction was presumably the finished surface. Photographs taken by Meanwell on 25 February 2004.

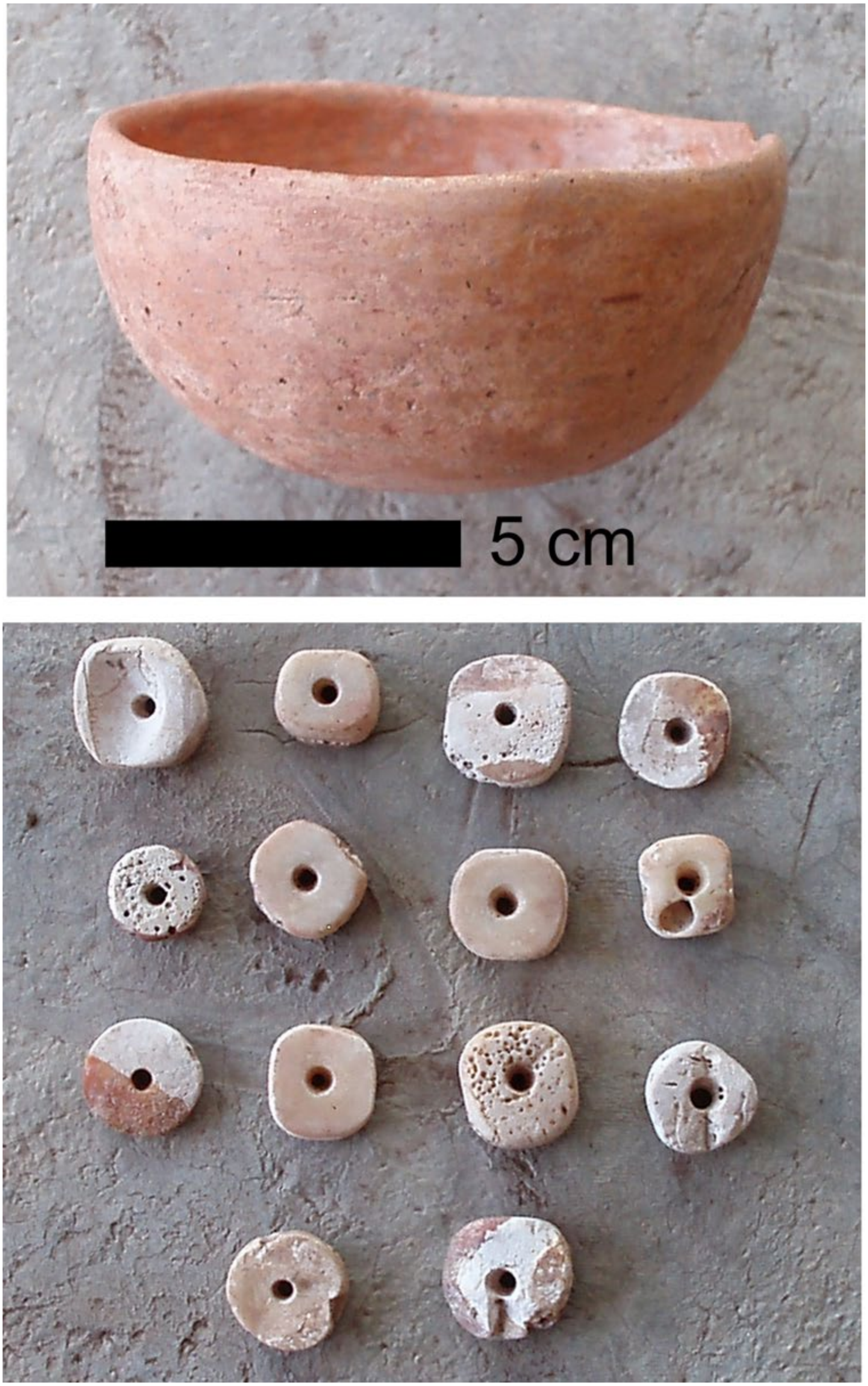
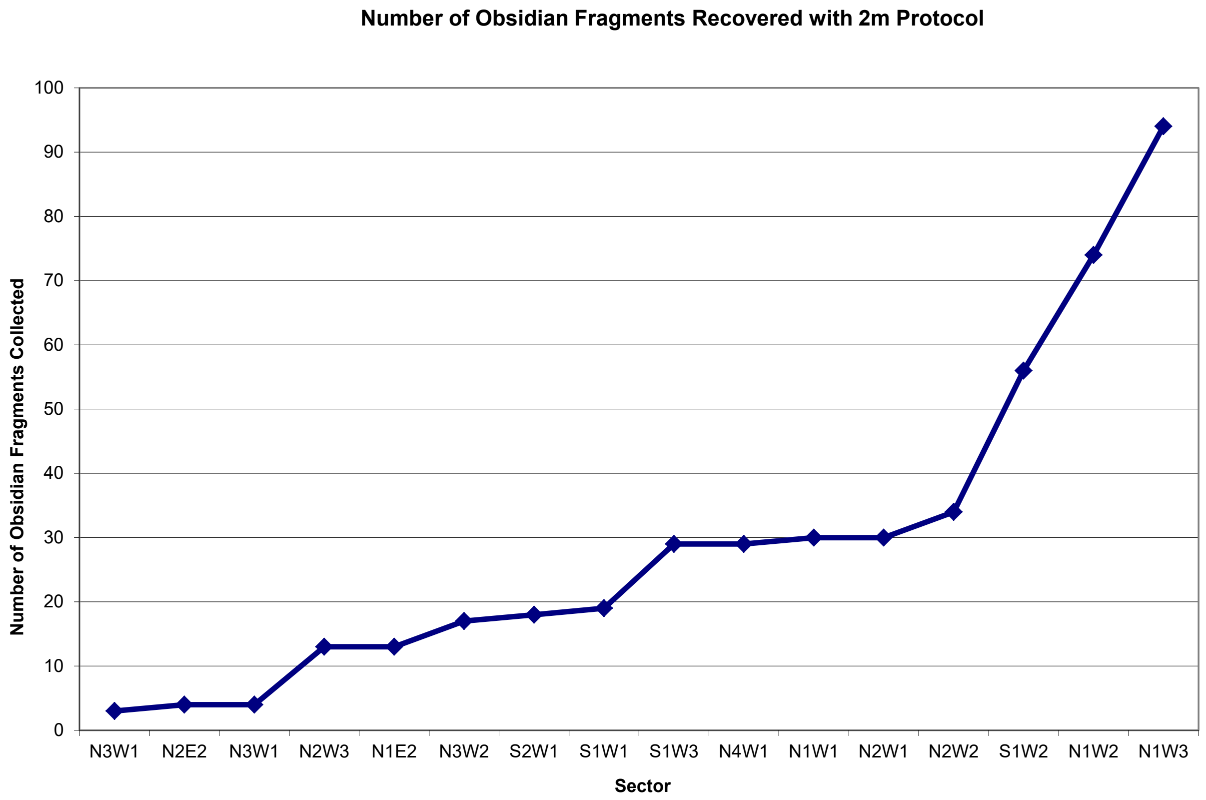


Figure 4.5: Small hemispherical cajete and shell beads recovered from burial in Sector N5W1. (note - scale is the same for both photographs).

Figure 4.6: The site of La Quesería showing the sectors that were surface collected and sector designations.



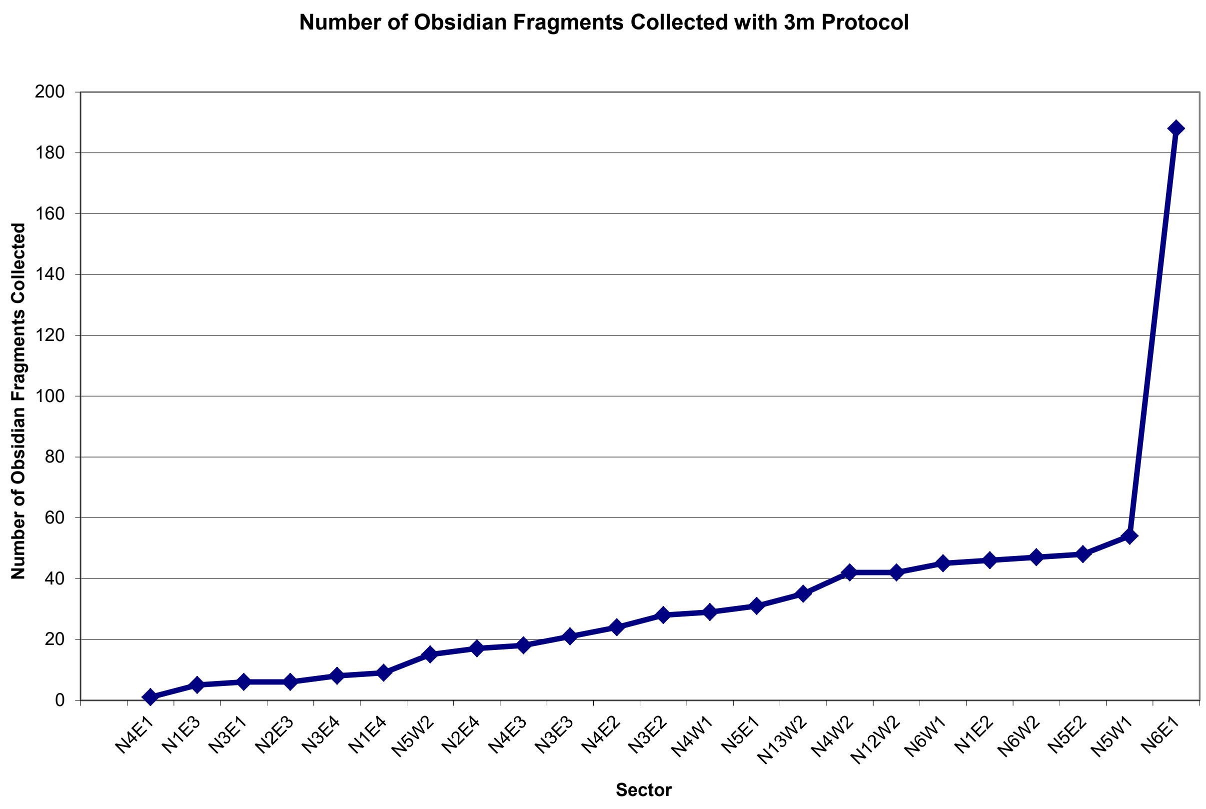
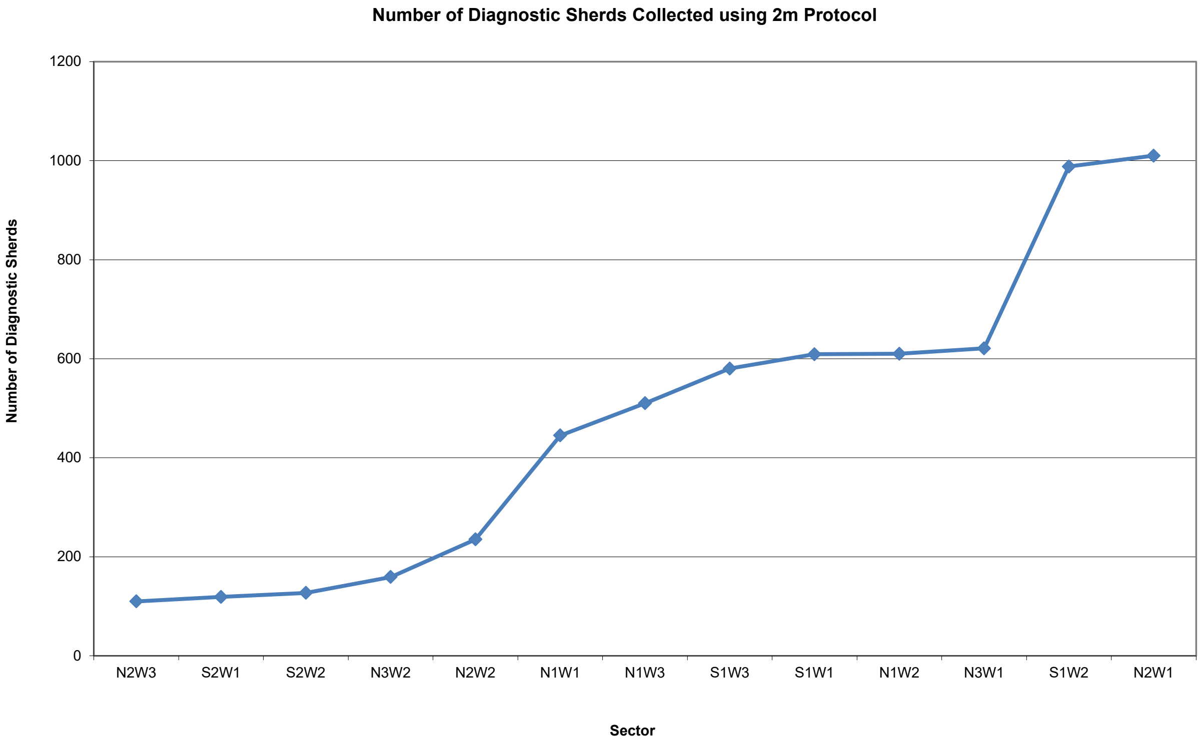


FIGURE 4.7: THE NUMBER OF OBSIDIAN FRAGMENTS RECOVERED BY SECTOR AT LA QUESERÍA. THESE NUMBERS CANNOT BE DIRECTLY COMPARED DUE TO THE DIFFERENCE IN COLLECTION STRATEGY.



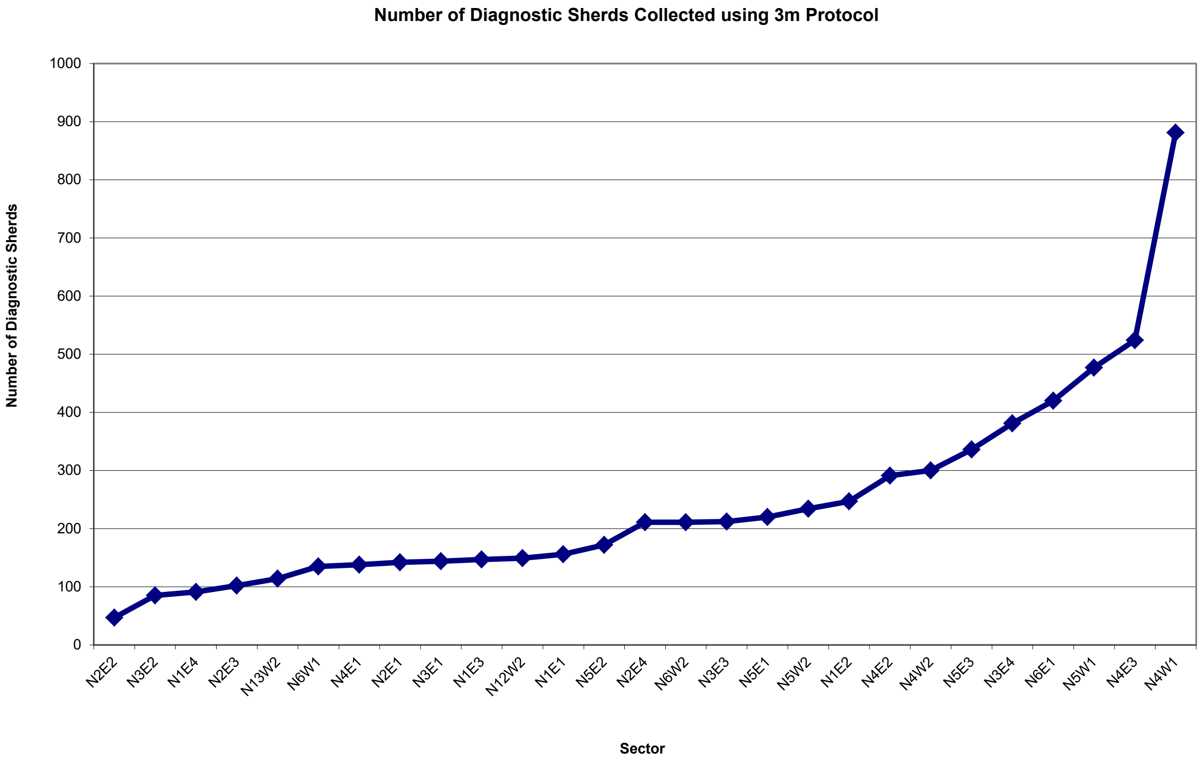


Figure 4.8: Number of diagnostic sherds recovered per sector during surface collection. the upper graph shows materials collected near mound M-1 with the 2m spacing, while the lower graph shows materials collected from the rest of the site.

Excavations at Pit 1, La Quesería

Pit 1 was located north of the largest mound (M-1) at La Quesería (see Figure 4.9). The pit was centered in a small patio that was surrounded by structures on all sides. One major objective of the excavations was to find deep deposits that could contain construction fill or midden debris to provide layered stratigraphic profiles, charcoal samples for radiocarbon dating, and pot sherds. By placing Pit 1 near the largest ceremonial structures on the site, I intended to encounter deposits that would provide data on the probable construction date of the largest mounds.

Pit 1 provided extensive data for analysis and reached sterile soil at a depth of 240 cm. As can be seen in the profiles, the patio appeared to have been built in stages, with alternating levels of large stone and earth (see Figure 4.10). These levels were generally around 40 cm deep. It is likely that a thin plaster floor originally covered the surface of the patio, as a large number of tiny fragments of plaster were recovered in the top 20 cm of the pit. This probable floor was no longer intact; the combination of years of planting and erosion could have caused its disintegration.

The earth used in the construction appeared to be fill dirt with midden material, as a high density of sherds, obsidian, and other materials was recovered. In total, I recovered 28 bags of pottery containing 845 diagnostic sherds, 124 pieces of obsidian, 35 figurine fragments, and a few small bone and tooth fragments from Pit 1. Additionally, at a depth of 220 cm, I recovered a large, stone, footless *metate* fragment (see Figures 4.11 and 4.12). Several *metate* fragments were collected during the surface collection. These *metate* fragments appear to have been reused as construction material after they were broken or worn out by use.

A large number of charcoal pieces were recovered from Pit 1 to provide samples for radiocarbon analysis. All of the samples came from below 80 cm of depth, because we did not find any carbon in the top layers. Since Pit 1, which reached a depth of 240 cm, was the deepest pit from La Quesería, I analyzed three radiocarbon samples from this pit to get an idea of the range of occupation dates. The details of the sample levels and the results are found in Table 4.2 below. I believe that the radiocarbon results suggest that the earliest construction levels of this patio were begun in the Early Classic period, with a rebuilding of the ceremonial area taking place in the Late Classic or Epiclassic period. Bag numbers 67 and 91 appear to be inverted, with the younger sample beneath the older. It seems likely that both were within fill material used for the construction of the main group sometime in the Epiclassic, and that the construction technique caused the transposition of these two samples.

Table 4.2: Pit 1 radiocarbon sample results and excavation details.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Calibrated (2-sigma) Dates
67	23 Feb. 2006	156 cm	1350 +/- 50 BP	Cal AD 620-770
91	27 Feb. 2006	178 cm	1230 +/- 40 BP	Cal AD 680-890
115	1 Mar. 2006	211 cm	1900 +/- 50 BP	Cal AD 10-230

Excavations at Pit 2, La Quesería

Pit 2 was located on the eastern side of the large plaza just to the north of the ball court (see Figure 4.9). This area appeared to have thick deposits of soil, the top layers of which might have eroded from the patio, ball court, and other structures in the area and been deposited in that location. The plaza also appeared to have been built up from the level of the natural bedrock, so I intended to look for construction fill in this area.

Pit 2 was extremely rich in pottery sherds, and also provided obsidian, figurines, ground stone, and other materials for study. The levels from 40-80 cm in Pit 2 provided the densest concentration of sherds found

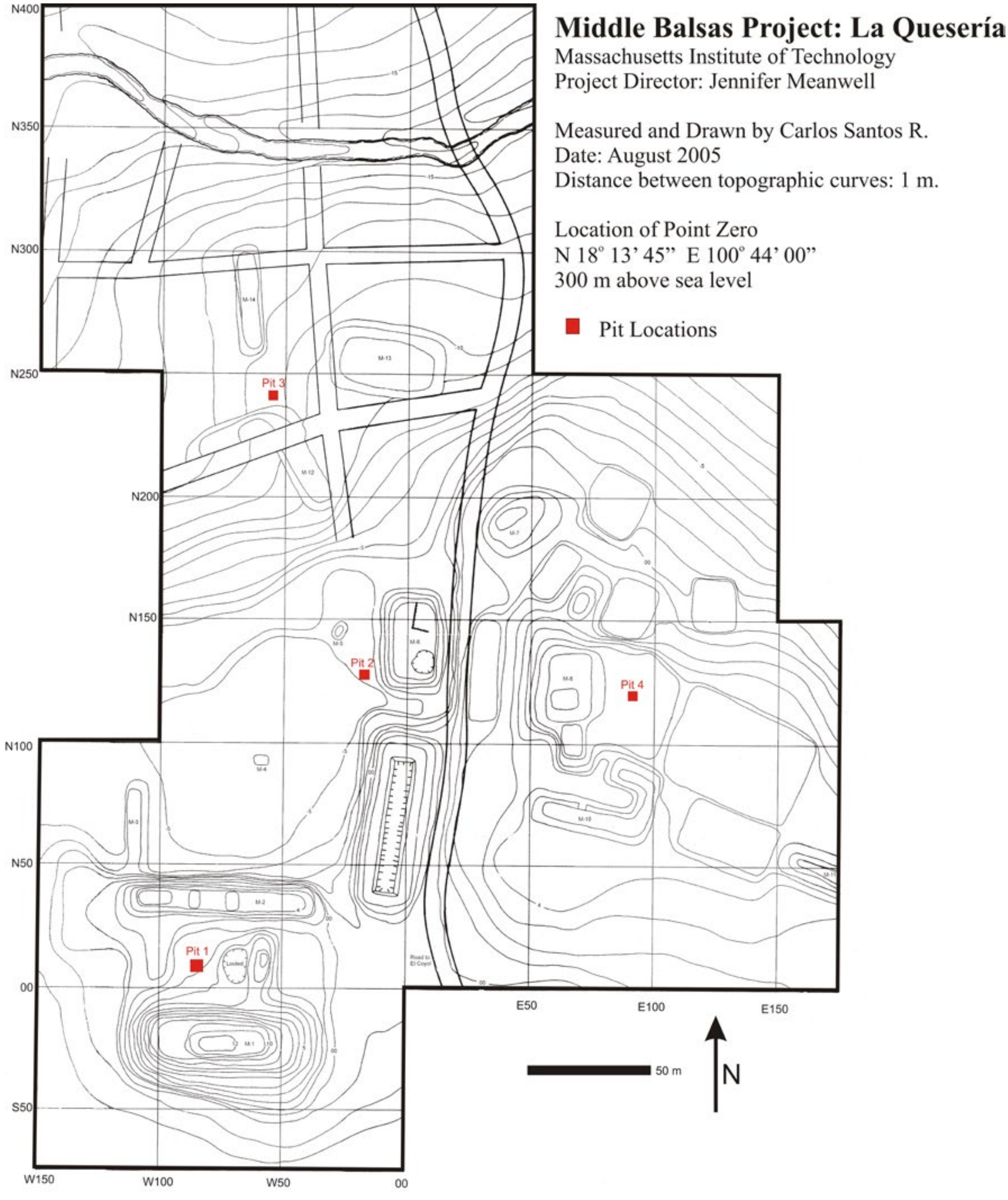


Figure 4.9: Portions of La Quesería with the excavated test pit locations.

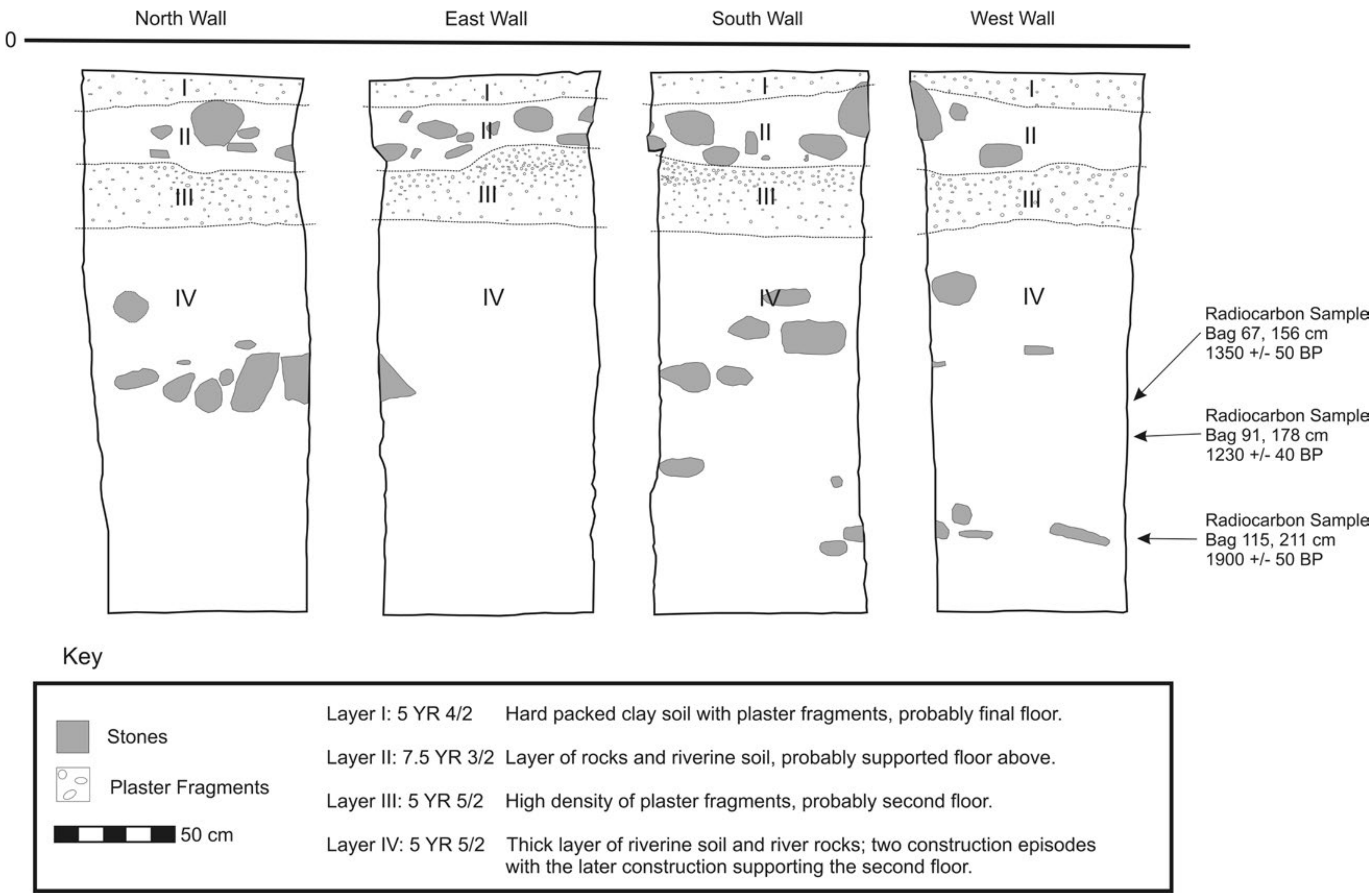


FIGURE 4.10: PROFILES OF THE FOUR WALLS OF PIT 1, LA QUESERÍA.
DRAWN BY MEANWELL ON 7 MARCH 2006.

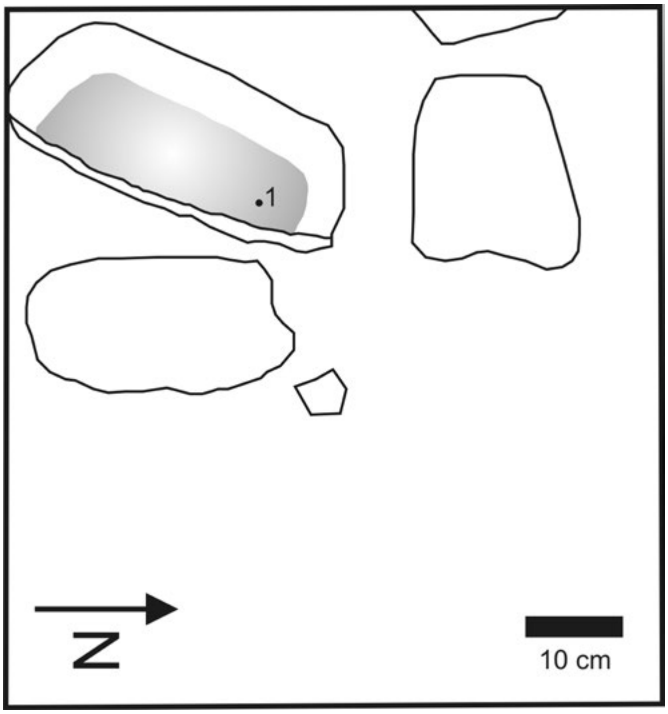


FIGURE 4.11: *METATE* FOUND IN PIT 1, LA QUESERÍA. ALL MEASUREMENTS TAKEN FROM SW CORNER. DEPTH AT POINT 1 IS 210 CM.

FIGURE 4.12: PHOTOGRAPH OF *METATE* FOUND IN PIT 1, LA QUESERÍA

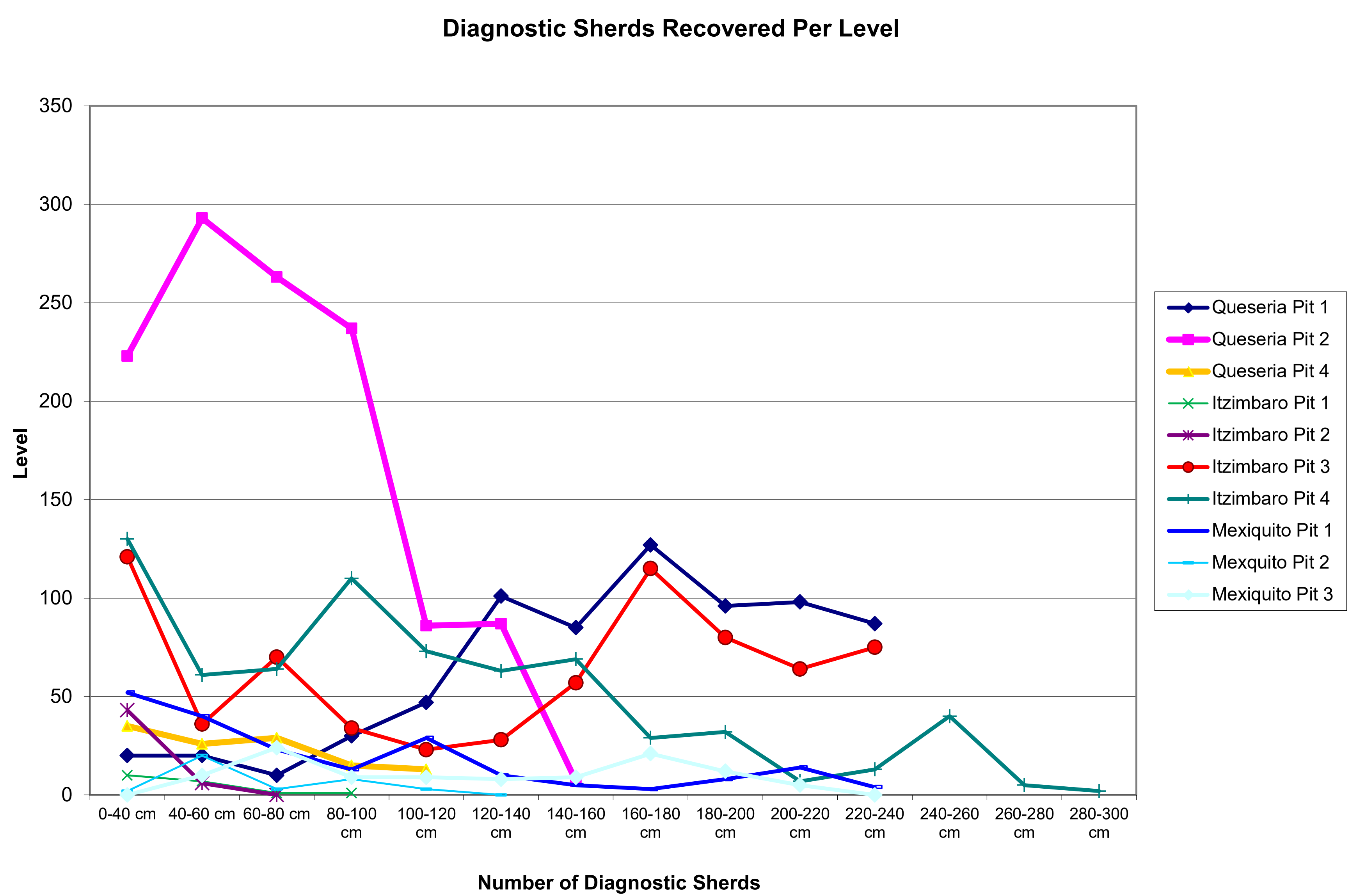


FIGURE 4.13: NUMBER OF SHERDS RECOVERED FOR EACH LEVEL OF TEST PIT EXCAVATION. THE HIGH DENSITY OF SHERDS IN PIT 2 AT LA QUESERIA IS IMMEDIATELY NOTICEABLE.

at La Quesería, or indeed during the entire Middle Balsas Project (see Figure 4.13). These levels yielded five to six bags of sherds each. In total, 28 bags of pottery with 1042 sherds were recovered from Pit 2. This number is much higher than the number recovered from Pit 1, which was almost 1 m deeper. Additionally, 41 pieces of obsidian, 30 figurine fragments, one *mano*, and one large *metate* fragment were recovered from Pit 2. We reached sterile soil in Pit 2 at a depth of 150 cm (see Figure 4.14).

A number of carbon samples were recovered from Pit 2, and the largest sample was sent for analysis. The results are presented in Table 4.3 below. This sample confirms that the materials from Pit 2 are also from the Late Classic to Epiclassic periods and are approximately contemporaneous with the materials recovered from most of Pit 1.

TABLE 4.3: PIT 2 RADIOCARBON SAMPLE RESULTS AND EXCAVATION DETAILS.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Calibrated (2-sigma) Dates
30	8 Mar. 2006	76 cm	1370 +/- 40 BP	Cal AD 610-690

Excavations at Pit 3, La Quesería

Pit 3 was located between a number of probable domestic structures in sector N5W2 (see Figure 4.9). I placed this pit to look for domestic midden areas to see if the pottery recovered from domestic zones was different from that recovered near the ceremonial structures. Since most of the domestic structures are beneath the modern town of San José, the pit was placed in an area that was unused by inhabitants.

Pit 3 reached bedrock at 30 cm of depth, although the rock was very soft and we continued excavations until 40 cm to confirm that bedrock had been reached (see Figure 4.15). We recovered a fair amount of material from the first 30 cm, although modern material was mixed throughout this layer, so the dating of anything from Pit 3 is highly problematic. The soils in this area seem to have been largely disturbed by the modern activity.

Due to the shallow depth of the pit, significantly fewer materials were recovered: a total of six bags of pottery containing 131 diagnostic pieces, 66 pieces of obsidian, and thirteen figurine fragments. During further analysis, I considered the material from Pit 3 as equivalent to surface collected material, due to the disturbance of the soil layers and the modern material found in each level. No radiocarbon samples were collected or analyzed from Pit 3.

Excavations at Pit 4, La Quesería

Pit 4 was located in the center of a small patio in the eastern part of the ceremonial zone (see Figure 4.9). This patio was surrounded on all sides by low mounds made of river cobbles. The location of Pit 4 was selected to provide dates and material from a sector of the site representative of the series of patios found in the eastern part of La Quesería. During excavation we noted that the soil in Pit 4 was very clay-like. Consequently, it was difficult to excavate and screen the dirt, because it was so plastic and sticky.

Pit 4 reached a sterile clay level at 120 cm of depth. Due to the hardness of the soil, the first excavation level was 0-40 cm, rather than the more typical 0-20 cm. During excavation, we noted levels that contained a number of small plaster fragments, although these levels were not flat (see Figure 4.16). It is possible that the patio was covered with a plaster floor at one time that has since disintegrated.

In addition to the plaster fragments, we recovered six bags of sherds containing 98 diagnostics, nine pieces of obsidian, six figurines, and ten radiocarbon samples. Due to the sticky nature of the clay, we may have missed some obsidian fragments, as the clay would not pass through the screen without assistance,

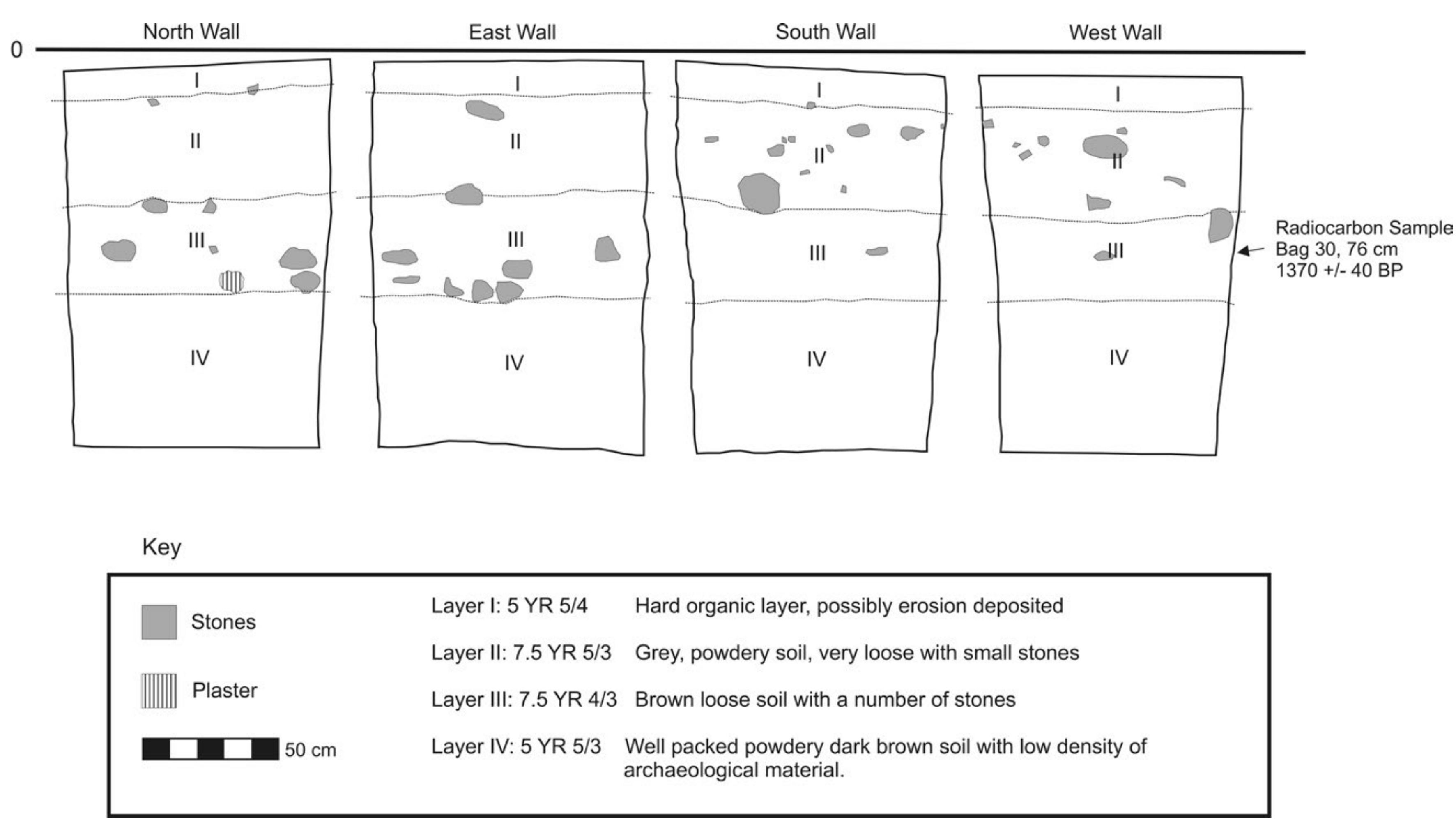


Figure 4.14: Profiles of the four walls of Pit 2, La Quesería.
Drawn by Meanwell on 13 March 2006.

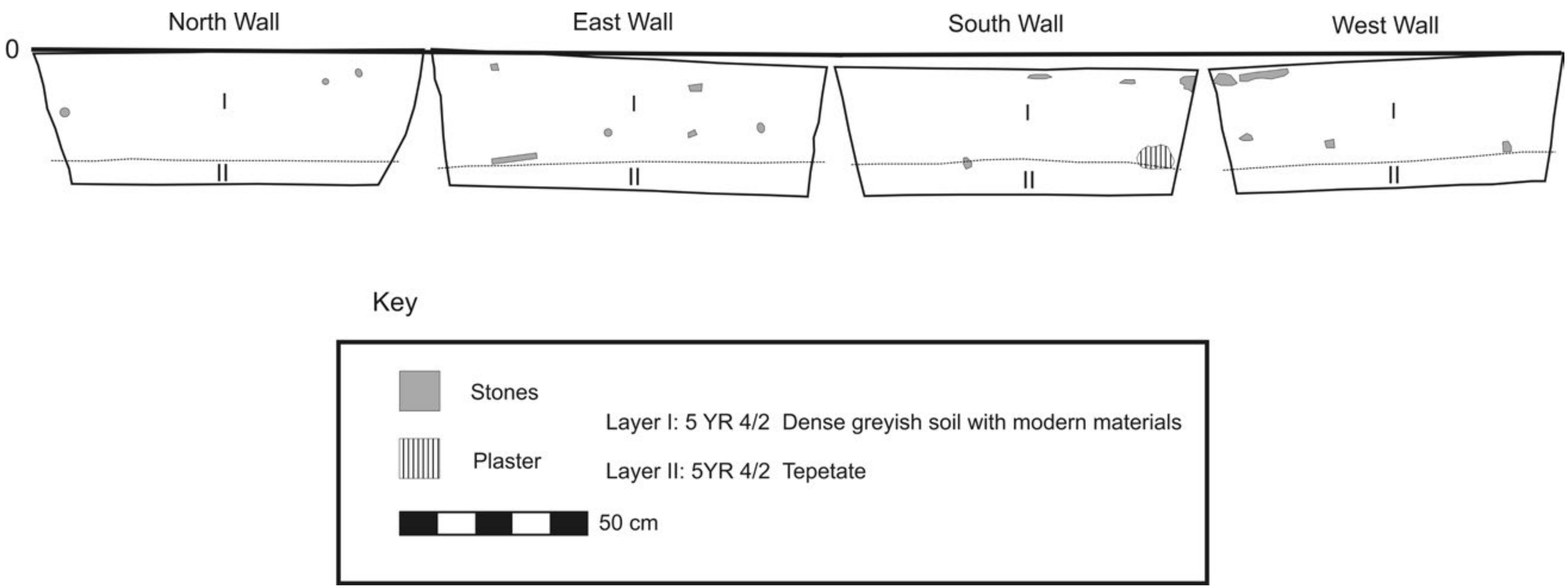


Figure 4.15: Profiles of the four walls of Pit 3, La Quesería.
Drawn by Meanwell on 13 March 2006.

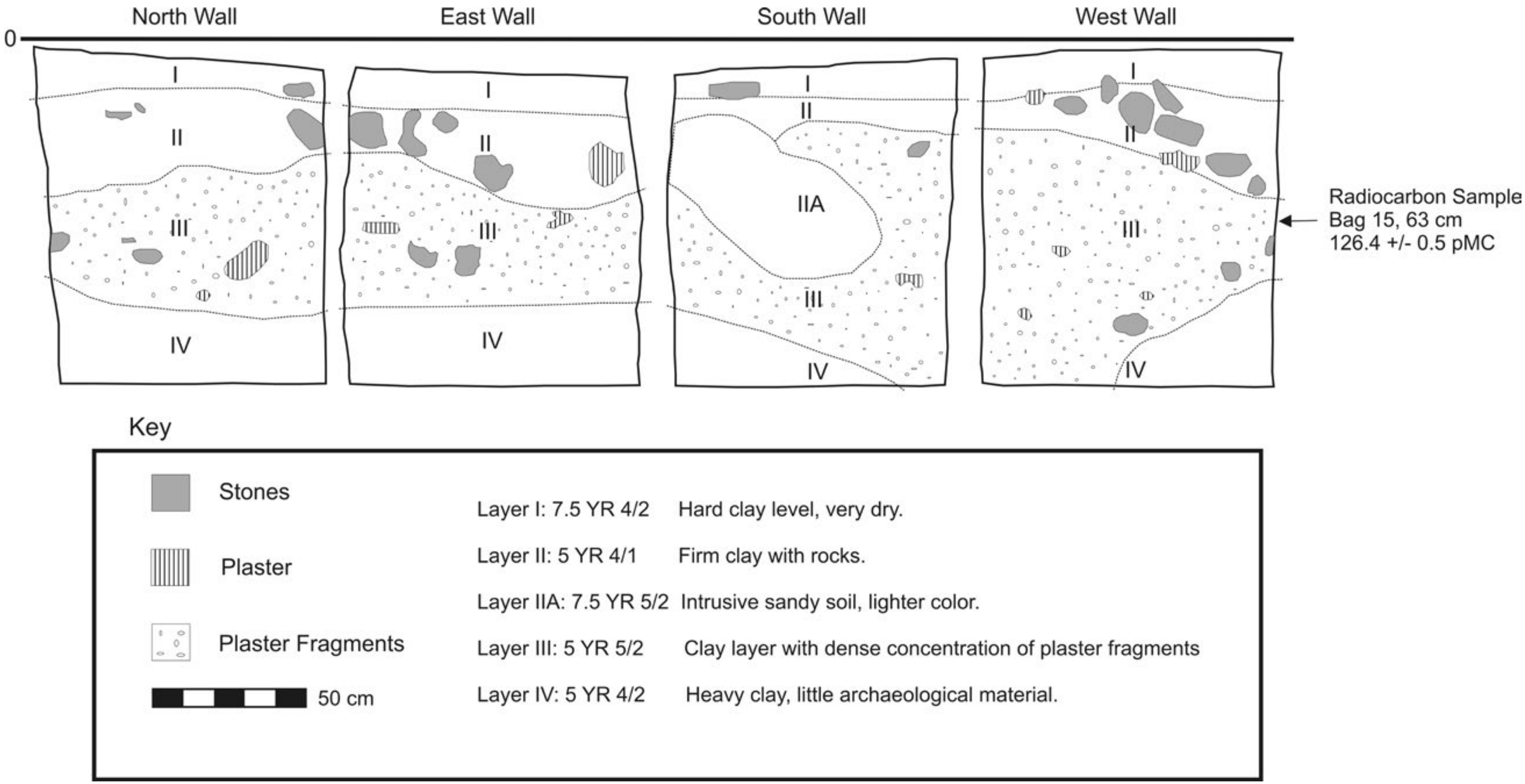


Figure 4.16: Profiles of the four walls of Pit 4, La Quesería.
Drawn by Meanwell on 20 March 2006.

and much of the screening involved manual searches for material. The largest radiocarbon sample was submitted for analysis to determine how the material from Pit 4 and the surrounding structures relate chronologically to the material from Pit 1 and Pit 2. The results are shown below in Table 4.4. The sample was determined to be modern, and this charcoal was likely worked into the soil due to the modern slash and burn agricultural techniques practiced in the area.

Table 4.4: Pit 4 radiocarbon sample results and excavation details.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Percent Modern Carbon (pMC)
15	15 Mar. 2006	63 cm.	0 BP (living within last 50 years)	126.4 +/- 0.5 pMC

4.2 Field Investigations at Itzímbaro, Guerrero

Description of Itzímbaro

The site of Itzímbaro is located along the Balsas River in an area known as Tierra Blanca south of Ciudad Altamirano (see Figure 4.17) within the *municipio* of Pungarabato. The access road to Itzímbaro turns east off of the main highway between Ciudad Altamirano and Coyuca de Catalán. The majority of the site is within a test farm owned by the Instituto Tecnológico Agropecuario No. 25, a local agricultural and technical college in Ciudad Altamirano. The material scatter for the site and a few structures extend into the adjoining landowners' territories to the north and west (see Figure 4.18). The UTM coordinates for the site are 14QLR227265 (INEGI 2000).

The main area of Itzímbaro consists of a series of large mounds, the tallest of which reaches 12 m in height (see Figure 4.19). On the exterior, these mounds seem to be constructed of river cobbles and earth, like many structures in the Middle Balsas region. Evidence from one looters' trench suggests that the structures may have had plaster coverings or floors in earlier construction episodes. The site is located on the banks of the Balsas in a bend of the river and the water surrounds Itzímbaro to the east and south. Changes in the river course seem to have damaged and/or washed away some of the structures, especially mound M-9, which the river seems to have cut in half (see Figure 4.19). No ball court structure has been located at Itzímbaro, although it is possible that the river changed course and damaged or destroyed such a structure.

The structures at Itzímbaro have been fairly extensively looted. Each mound had at least one pit in it, although the looting did not appear to be professional. Most of the looters pits were fairly small, around 2 m in diameter, and many did not appear to have been planned as rectangular excavations. The largest mound also had a large trench cut into the side facing the Balsas River, which exposed earlier constructions. By 2005, when we mapped the site, this trench had begun to erode, and the entire east side of the structure was unstable. It seems unlikely that the looters discovered many saleable artifacts, as most of the pits are 1 m or less in depth, and they seem to have been abandoned quickly. The looting activity was first noted in 1998 by Prof. Dorothy Hosler (1999a), and no new pits have been dug since that date to my knowledge. Hosler also spoke to area residents who said that some metal objects had been recovered in the looting at Itzímbaro (Hosler, personal communication 2005).

The portions of the site that fall within the control of the Instituto are federal land, and will be protected. The remainder of the site is on private property. The workers at the Instituto test farm told us that the adjoining property owner had brought in a bulldozer at one point to level some mounds. He reportedly was considering continuing this destruction to build houses on the land.

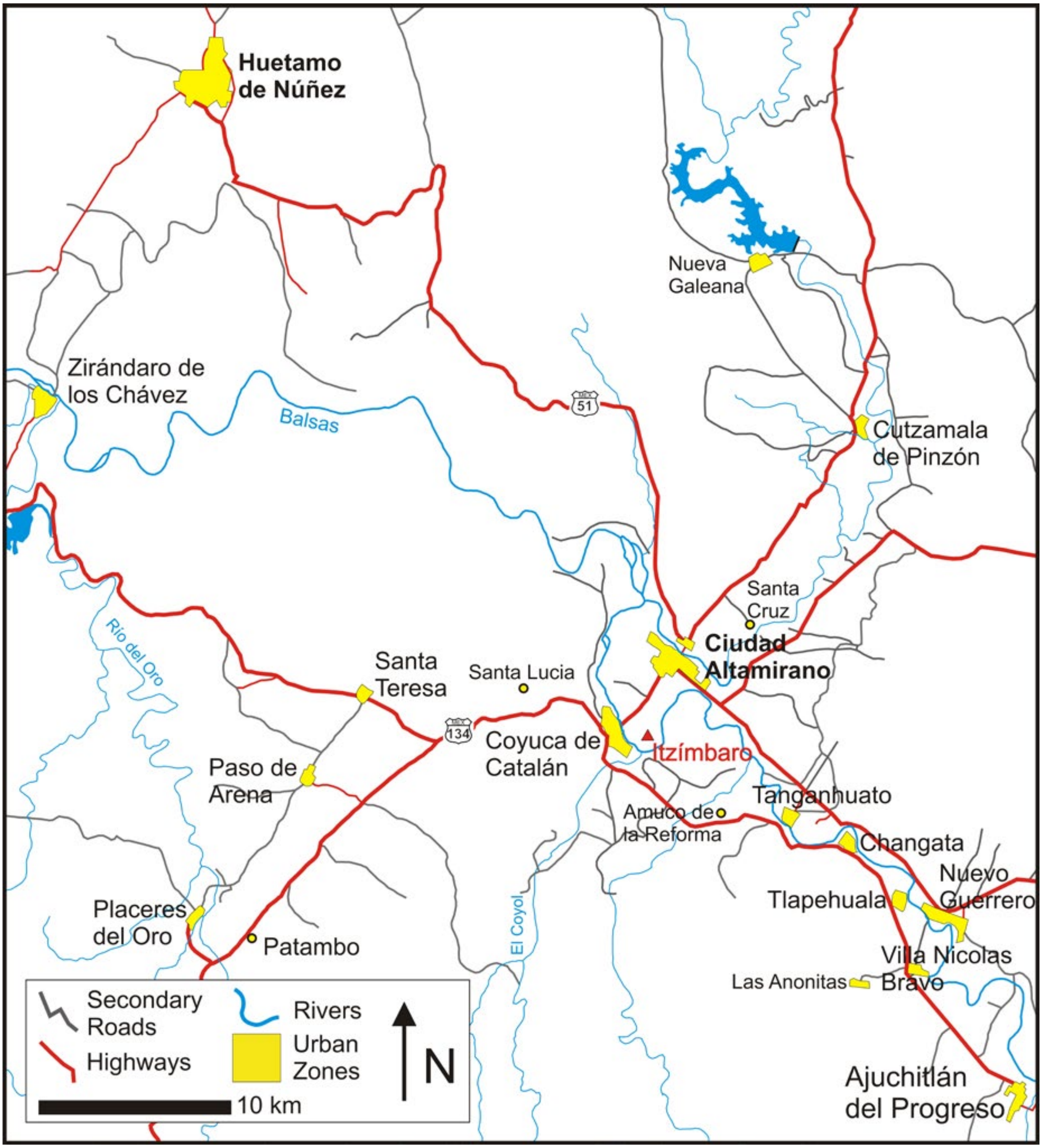


FIGURE 4.17: THE LOCATION OF THE SITE OF ITZÍMBARO NEAR CIUDAD ALTAMIRANO AND COYUCA DE CATALÁN. ADAPTED FROM INEGI MAP E14-4 (1997). ORIGINAL SCALE IS 1:250,000.

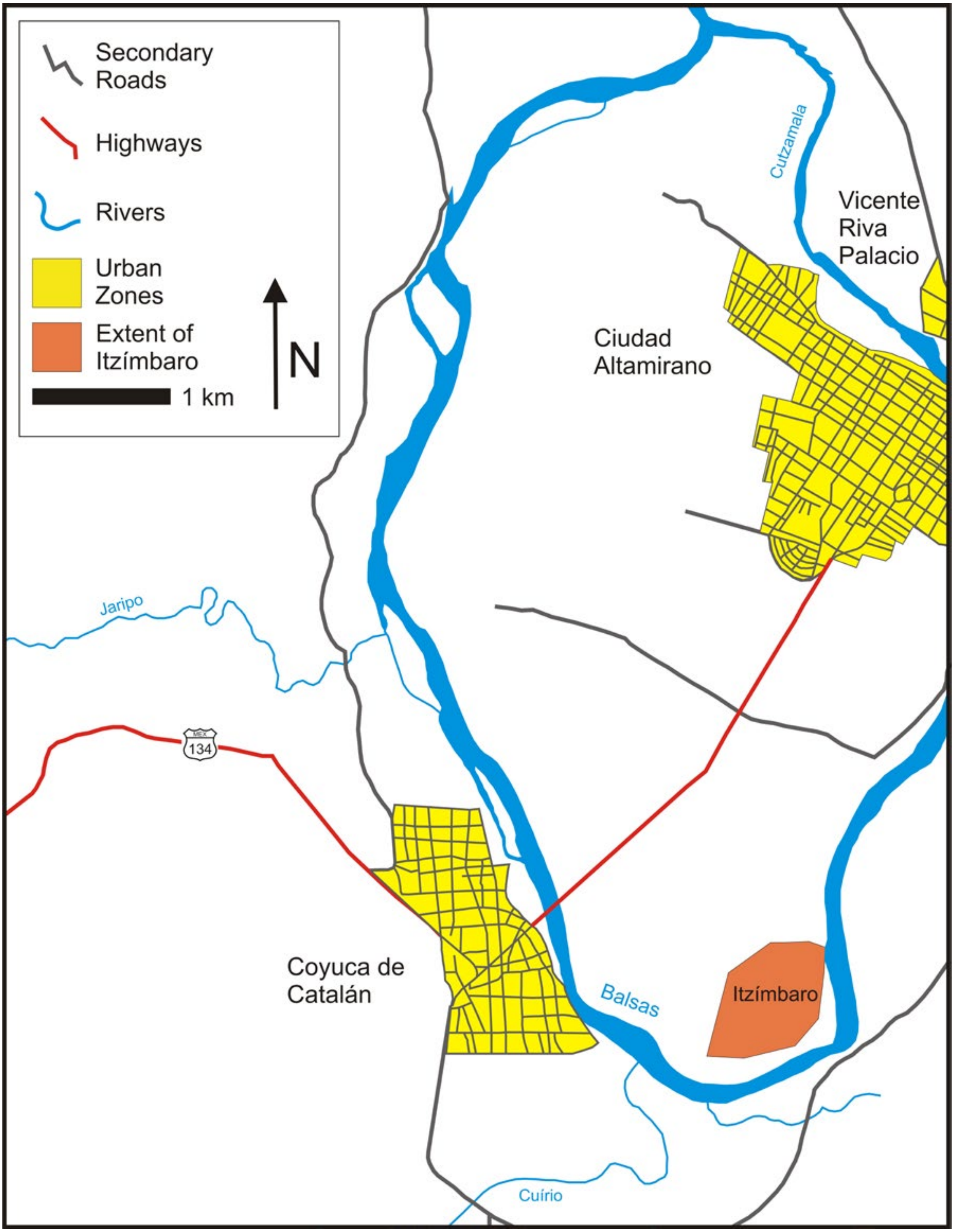


FIGURE 4.18: EXTENT OF THE SITE OF ITZÍMBARO BY SHERD SCATTER.
FIGURE IS DRAWN FROM THE INEGI TOPOGRAPHIC MAP E14A74 (2001).
ORIGINAL SCALE IS 1:50,000.

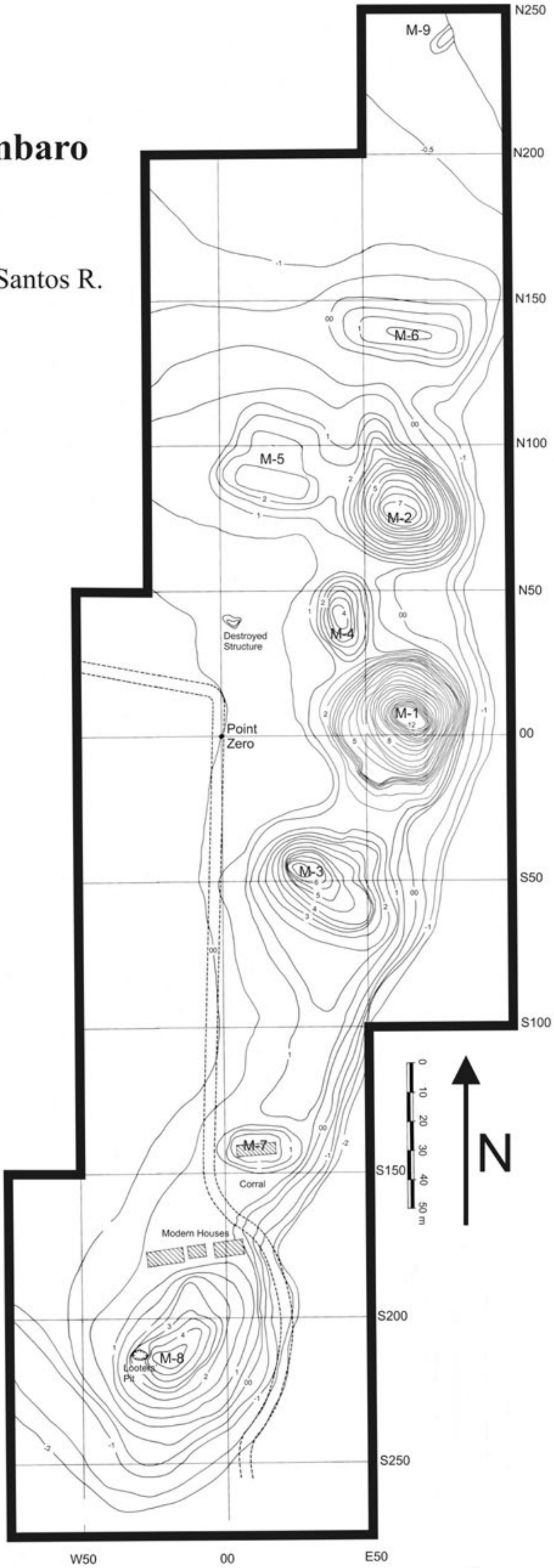


FIGURE 4.19: THE TOPOGRAPHIC MAP OF ITZÍMBARO.

Surface Collection Results at Itzímbaro

The surface collection proceeded quickly and easily at Itzímbaro, as most of the land is used for agricultural activities, and was therefore clear of heavy brush or other vegetation. Since we collected at the end of the dry season, the crops had been harvested and the next set of plantings had not yet been attempted, leaving most of the land bare. As mentioned in the methods section, we surface collected a total of 20 sectors that were 50 m x 50 m in area. We recovered a large variety of materials, including pot sherds, obsidian, ground stone tools, figurines, and a *malacate* (ceramic disk used for spinning thread). The total number of each type of material is noted below in Table 4.5, and the raw data are found in Appendices 2, 4 and 5.

Table 4.5: Numbers[2] of various artifact types recovered from Itzímbaro during surface collection.

Artifact Type	Number of Bags	Number of Objects
Pottery	73	2095 diagnostic sherds
Obsidian	20	216 fragments
Manos and *Metates*	15	15 *metate* and 12 *mano* fragments
Figurines	17	63 figurine fragments

As mentioned previously, the site of Itzímbaro is located on the banks of the Balsas River. In some areas the river directly adjoins the site, and seems to have contributed to the erosion of certain structures. However, in other areas of the site, the river has left a wide flood plain adjoining the structures that is several meters below the level of the site. We walked over large areas of this flood plain, and were unable to find any archaeological material. It seems likely that the river either washed away any material that was present, or buried it beneath layers of silt. We did, however, find a large number of sherds and figurines in the slope leading up from the flood plain to the site that were likely exposed by erosion. We were also told by land owners that a number of burials had been exposed in the slope over the years.

The number of diagnostic sherds collected per sector at Itzímbaro never reached the levels at La Quesería (see Figure 4.20), although the density was similar at both sites. The sectors furthest north that were away from the major structures of Itzímbaro generally had fewer items. It is possible that the mechanical plowing that occurs on a yearly basis between mounds distributed the sherds and other material more evenly than in their original distribution. The only major concentrations of sherds were found on top of mounds in the soil discarded by looters as they dug their pits.

Excavations at Pit 1, Itzímbaro

Pit 1 was located in between structures M-1 and M-3 at Itzímbaro (see Figure 4.21). This pit was placed between the structures to see if any construction remnants would be recovered, such as plaster floors or stone courses. The soil within Pit 1 was quite powdery and appeared to be mainly fine silt deposits left by the Balsas River. We did not find evidence of any construction technique within Pit 1.

During our excavations in Pit 1, few materials were recovered. We found 15 diagnostic sherds, 19 pieces of obsidian, two figurine fragments, and one partial *mano* grinding stone. We did not encounter any charcoal pieces for radiocarbon dating in Pit 1. We did recover a large number of shell fragments, most of which appeared to be snails or some type of freshwater mollusk. These shells were most likely naturally deposited with the river sediments. We discontinued excavations in Pit 1 at a depth of 1 m, when it was apparent that no concentrated material deposits or construction evidence were likely to be discovered. This level, while not bedrock, did appear to be sterile soil (see Figure 4.22). The majority of the material recovered from Pit 1 was found at depths from 20-80 cm.

2 The total number of sherds recovered was approximately 11,000.

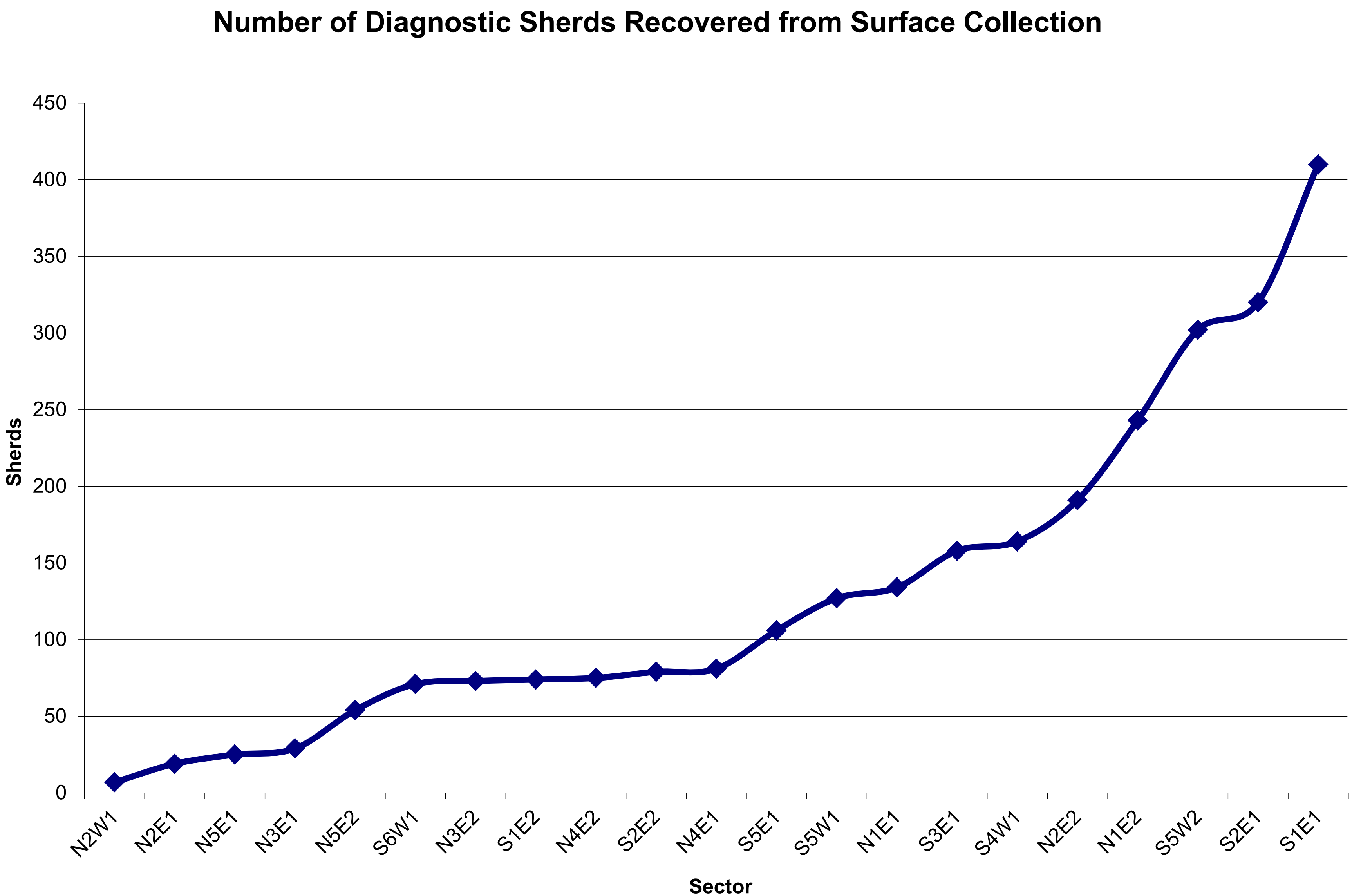


FIGURE 4.20: GRAPH DISPLAYING THE NUMBER OF DIAGNOSTIC SHERDS RECOVERED FROM THE VARIOUS SECTORS DURING SURFACE COLLECTION AT ITZÍMBARO. MOST SECTORS CONTAINED 50-250 SHERDS, WITH A FEW SECTORS BEING PARTICULARLY RICH OR POOR IN SHERDS.

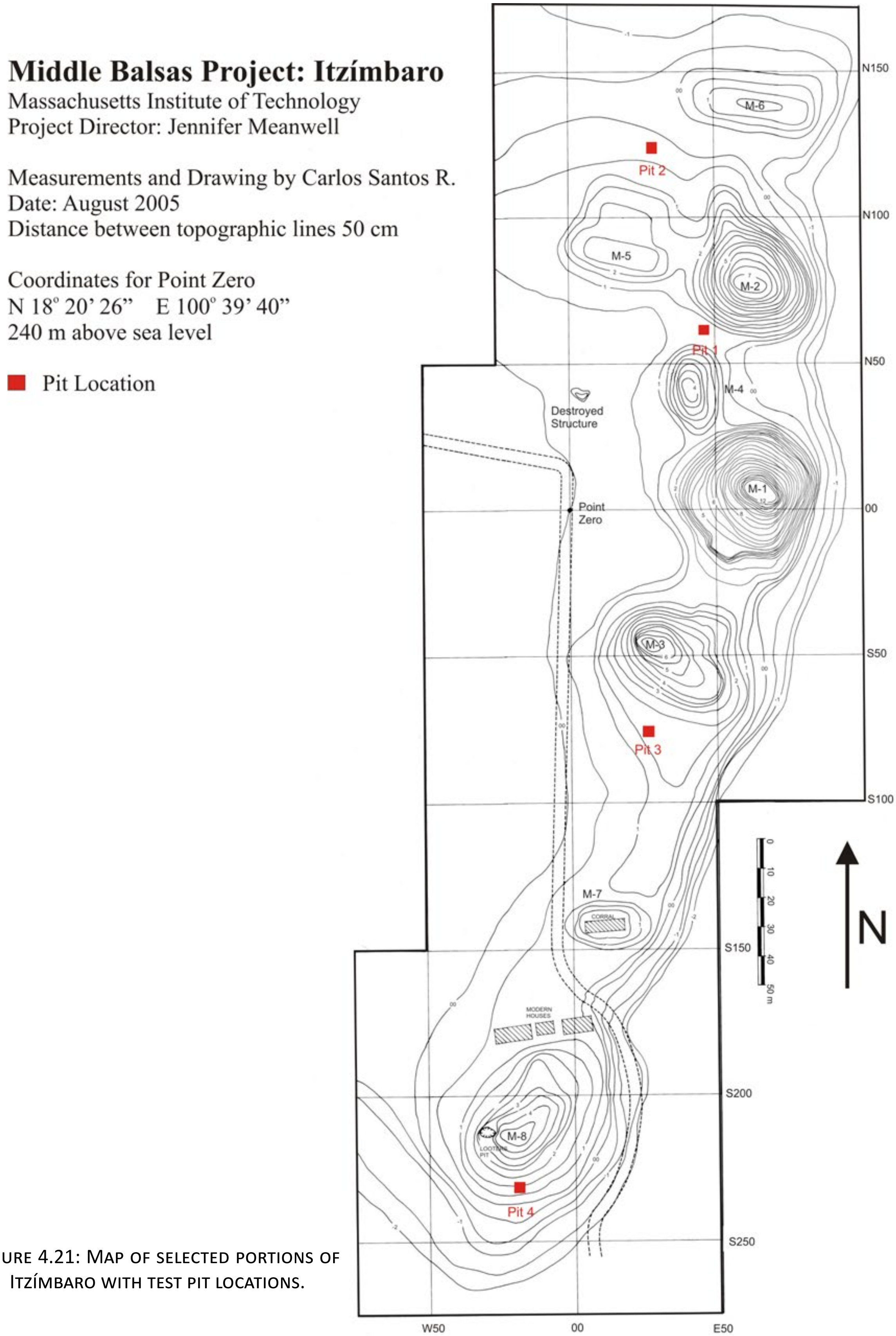


Figure 4.21: Map of selected portions of Itzímbaro with test pit locations.

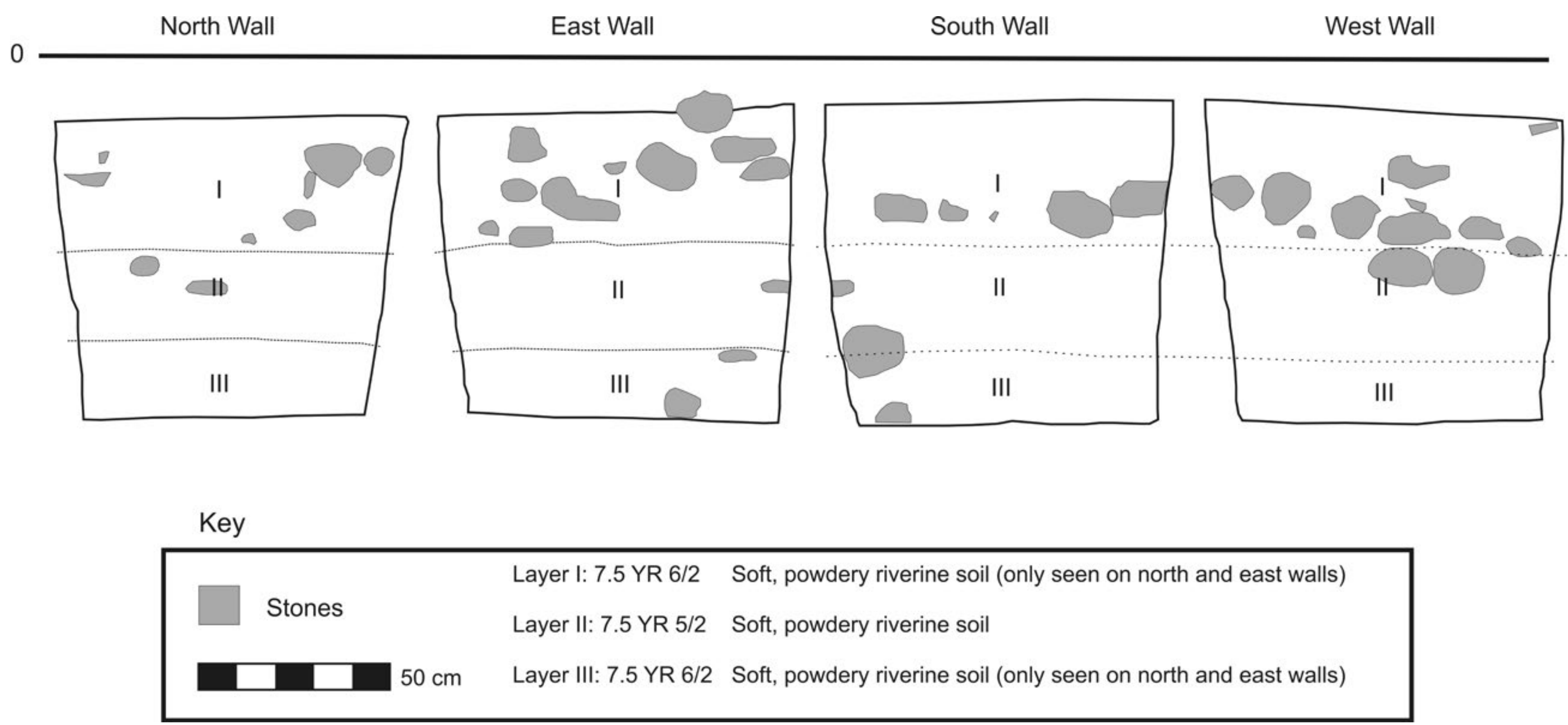


FIGURE 4.22: PROFILES OF THE FOUR WALLS OF PIT 1, ITZÍMBARO. THE SLIGHT COLOR CHANGE BETWEEN LAYERS I, II AND III WAS NOTED ONLY ON THE NORTH AND EAST WALLS OF THE PIT. LAYERS I AND II APPEARED TO BE THE SAME COLOR AS LAYER II ON THE SOUTH AND WEST WALLS.
DRAWN BY MEANWELL ON 27 APRIL 2006.

Excavations at Pit 2, Itzímbaro

Pit 2 was placed in a large open patio area surrounded by three mounds (M-2, M-5 and M-6). I selected this location to determine if the patio was deliberately constructed and finished with a plaster surface, as well as to look for deep deposits with many sherds for analysis (see Figure 4.21). The soil in Pit 2 was very similar to that in Pit 1, although it possibly had more clay. The silt found in both pits is easy to excavate and screen, although it did seem to have whitish accumulations of salts in many locations. We did not see any significant stratigraphic levels in Pit 2 (see Figure 4.23). Pit 2 was excavated to a depth of 80 cm, where we reached sterile soil.

We did recover more material from Pit 2 than Pit 1, although the density of finds was still quite low. In Pit 2 we found 42 diagnostic sherds, 14 pieces of obsidian, and two small fragments of charcoal for radiocarbon analyses. The sherd density was fairly high in the 20-30 cm level, and then dropped off. No figurines or other materials were found in Pit 2. The carbon samples were not analyzed, due to the low amounts of material recovered from the pit.

Excavations at Pit 3, Itzímbaro

I chose the location of Pit 3 to investigate the construction methods and deposits within the large flat patio extending south from the southern face of mound M-3 (see Figure 4.21). The pit was located approximately in the center of the patio within a field that was heavily plowed and planted by the agricultural college, and that had been replanted with fruit trees. This repeated plowing made the surface very uneven, so we excavated a 0-40 cm level at the top of the pit rather than the more typical 0-20 cm. We also selected the exact location of Pit 3 to avoid damaging any of the trees and so as not to encounter their roots during excavation.

The soil in Pit 3 is similar to other areas of Itzímbaro, and is fairly powdery and appears to be mainly made of river silt. We reached sterile soil at a level of 240 cm (see Figure 4.24). In the first 60 cm of Pit 3, we encountered a number of pieces of probable plaster flooring. These fragments were smoothed on one side, and were likely part of the plaster surface once covering this patio. Due to the plowing and other disturbances, we were not able to determine the level of the plaster surface. The upper levels of Pit 3 (down to approximately 80 cm of depth) contained a high number of sherds that were oriented vertically in the pit, rather than the more common horizontal orientation seen in other pits. I suspect this may be related to plowing, as this was not noted in any other location or deeper in the same pit.

We did not encounter the alternating levels of stone and earth in Pit 3 as we did in Pit 1 at La Quesería. In fact, the soil changes within Pit 3 were very slight (see Figure 4.24), and mainly consisted of a change from a more packed to a looser consistency. We also encountered humid levels at the base of the pit. We stopped excavating at 240 cm, after encountering a well-packed soil level beginning at 230 cm that did not contain any sherds.

We recovered a large amount of material from Pit 3, including 21 bags of pottery containing 721 diagnostic sherds, 148 pieces of obsidian, 28 figurines, 26 carbon samples for radiocarbon analysis, two incised sherds, beads, and shell. The shell is likely mainly from river mollusks, but some appears to be thicker marine shell. One shell may even have been carved into some sort of decorative piece. The beads appear to be ceramic, although one may be greenstone. Additionally, we recovered what looks like a bone needle, an obsidian projectile point, and a possible obsidian core fragment. The incised sherds are very well made with detailed pictorial designs deeply incised on the exterior surface. Both the incised sherds are black in color. In the deepest levels of the pit, we encountered a fairly intact long bone that did not appear to be human (see Figure 4.25).

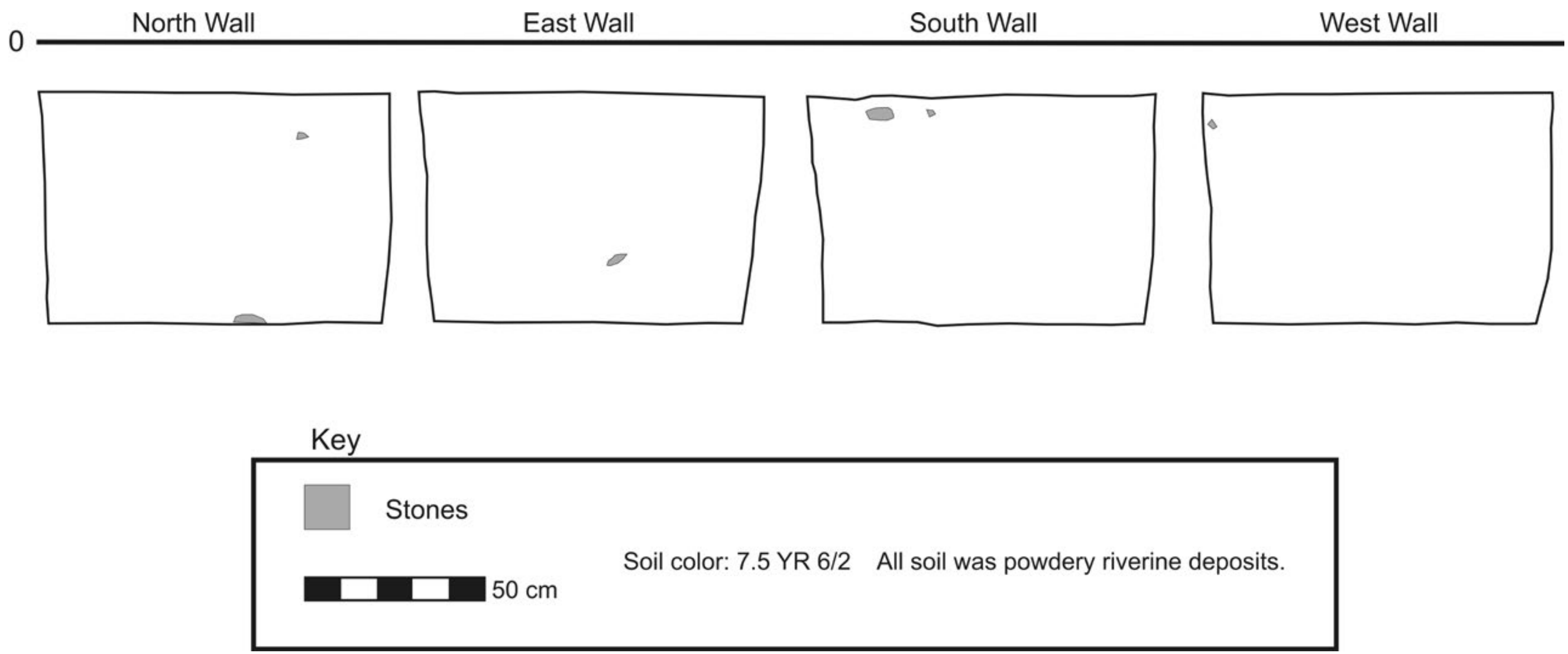


Figure 4.23: Profiles of the four walls of Pit 2, Itzímbaro.
Drawn by Meanwell on 4 April 2006.

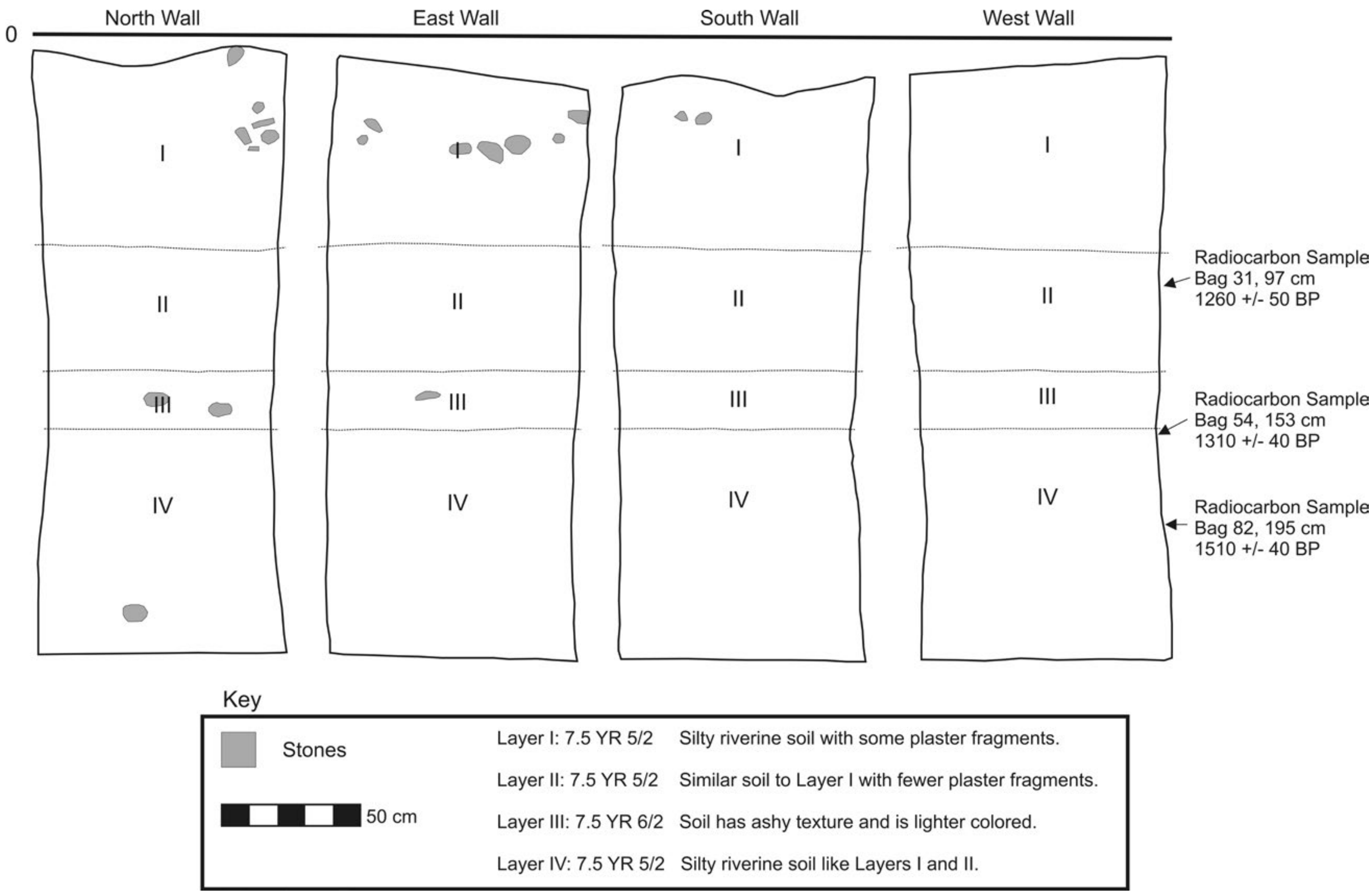


Figure 4.24: Profiles of the four walls of Pit 3, Itzímbaro.
Drawn by Meanwell on 27 April 2006.

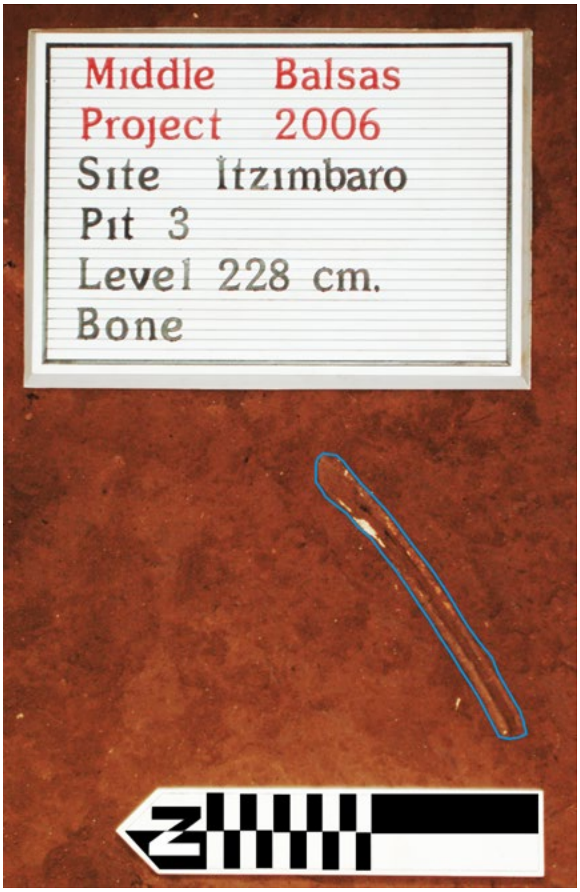


FIGURE 4.25: PHOTOGRAPH OF THE LARGE BONE FRAGMENT RECOVERED FROM PIT 3, ITZÍMBARO AT A DEPTH OF 228 CM

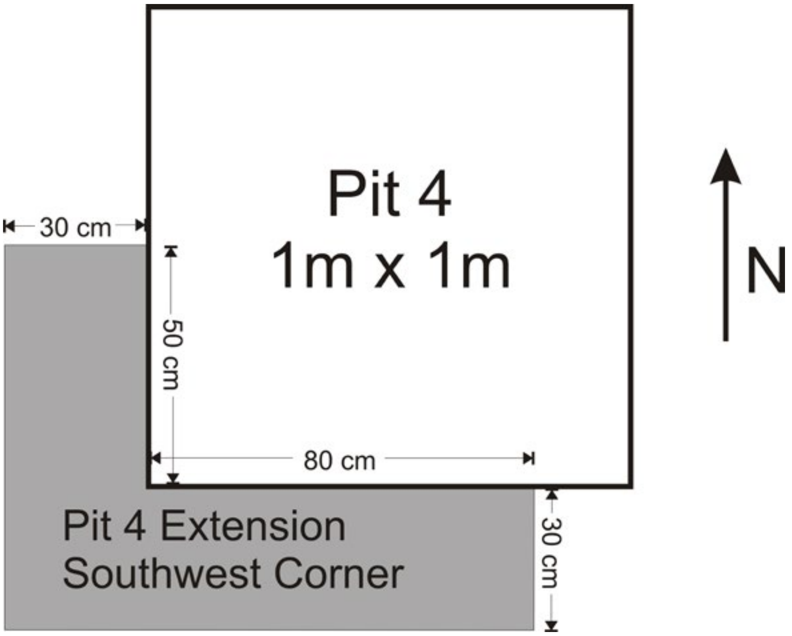


FIGURE 4.26: SKETCH OF THE DIMENSIONS OF THE EXTENSION TO PIT 4, ITZÍMBARO.

A total of three charcoal samples from Pit 3 were analyzed to determine the age of the soil deposits. These samples were among the largest and were selected to come from different levels to determine the length of occupation in Pit 3. The results are found in Table 4.6. The results suggest that the platform was constructed during the Classic period, with the later levels falling within the Late Classic period.

Table 4.6: Pit 3 radiocarbon sample results and excavation details.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Calibrated (2-sigma) Dates
31	7 Apr. 2006	97 cm	1260 +/- 50 BP	Cal AD 660-890
54	12 Apr. 2006	153 cm	1310 +/- 40 BP	Cal AD 650-780
82	25 Apr. 2006	195 cm	1510 +/- 40 BP	Cal AD 440-640

Excavations at Pit 4, Itzímbaro

I placed Pit 4 along the slope of mound M-8 (see Figure 4.21). During mapping, we assumed that this mound was probably a natural hill that had been modified by human activity. Our excavations later determined this to be at least partially untrue. With Pit 4, I hoped to determine the extent of modification to the natural landform, as it was impossible to determine this via surface investigations.

The surface of Pit 4 was strongly inclined, so we began our excavations with a 0-40 cm level. The southwest corner was at a level of 23 cm below the datum, making a 0-20 cm level impractical. The first level of the pit contained a number of modern materials (glass, roof tiles), but as the pit reached the 40 cm level, we encountered a large concentration of sherds in the southwest corner. These sherds were large, and in many cases represented a significant portion of whole vessels. To fully investigate this concentration, I opened an extension to Pit 4 along the southern and western sides of the pit (see Figure 4.26). In both the main pit and the extension, the sherds were oriented parallel to the ground and were found in a dense cluster (see Figure 4.27). The majority of these sherds seem to have come from large utilitarian vessels, such as *ollas* and *tecomates* (see Section 5.1 for descriptions of formal types). We found the original concentration between 30-60 cm. When we reached 60 cm, the concentration appeared to have ended, and the extension was left excavated to a depth of 60 cm.

In the main pit area, we found a second concentration of large ceramic sherds beginning around 80 cm of depth. These sherds were not as densely packed or organized as the earlier concentration (see Figure 4.28). We also discovered a rock concentration following the slope of the hill around the 80 cm depth. At 270 cm, we reached a level of darker soil that was harder to excavate and contained no cultural material. A small area of the original soil continued in the southwestern corner, which is where we eventually excavated to a depth of 300 cm before hitting the darker sterile soil (see Figure 4.29). Our original hypothesis that mound M-8 was a modified natural hill was at least partially mistaken, as the area around Pit 4 was clearly constructed.

The soil in Pit 4 was a mixture of dry and powdery soils and densely compacted soils, although there was no color or other visible difference between them. The soil also contained a high number of mollusk fragments, likely riverine creatures, and it seems probable that the soil is primarily river silt, like the other pits at Itzímbaro. We also encountered a few lenses of what appeared to be ash, although no analyses have been done on the soil samples to confirm this speculation.

We recovered a wide variety of materials from Pit 4, including eight bags of large sherds from the ceramic concentrations, 36 bags of sherds containing 699 diagnostic sherds, 64 obsidian fragments, 24 figurines, a fragment of a metate, and eleven charcoal samples for radiocarbon dating. The large sherds found in the ceramic concentrations are the best sherds for determining vessel forms from the entire Middle Balsas Project.

Figure 4.27: Concentration of utilitarian sherds in the southwestern corner of Pit 4 and Pit 4-extension.

FIGURE 4.28: CONCENTRATION OF SHERDS AT 85 CM OF DEPTH IN PIT 4, ITZIMBARO.

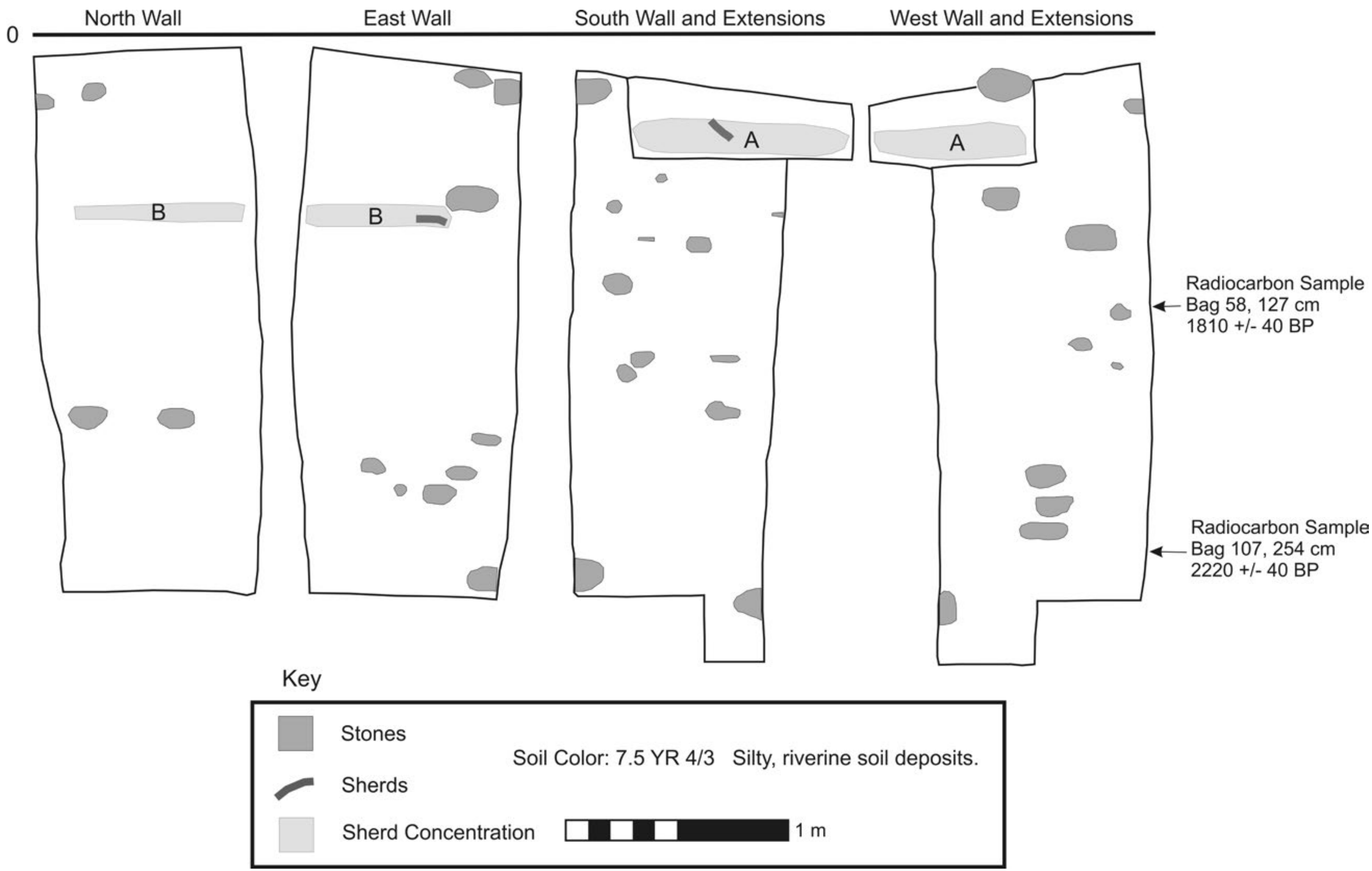


Figure 4.29: Profiles of the four walls of Pit 4, Itzímbaro.
The approximate locations of sherd concentrations A and B are also drawn on the appropriate walls.
Drawn by Meanwell on 9 May 2006.

In order to cross-date the levels found in Pit 3 with those from Pit 4, I sent two radiocarbon samples for analysis from Pit 4. One sample comes from the deepest levels of Pit 4, and the other from the middle. We did not recover any samples above the 80 cm level in Pit 4. The samples and their results are shown below in Table 4.7. These results suggest that the mound excavated with Pit 4 is among the earliest structures at Itzímbaro, and construction appears to have begun as early as the Late Preclassic and continued into the Early Classic period.

Table 4.7: Pit 4 radiocarbon sample results and excavation details.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Calibrated (2-sigma) Dates
58	3 May 2006	127 cm	1810 +/- 40 BP	Cal AD 120-260 AND Cal AD 280-330
107	8 May 2006	254 cm	2220 +/- 40 BP	Cal 390-180 BC

4.3 Field Investigations at Mexiquito, Guerrero

Description of Mexiquito

The site of Mexiquito is built into a large L-shaped hill on the banks of the Balsas River within the *municipio* of Zirándaro (see Figure 4.30). The nearest towns, Quiringucua de los Díaz and La Parota, are located south of the river and the site. Across the river in Michoacán, the town of Santa Rita is almost directly opposite Mexiquito. Mexiquito can be reached from small access roads either east or west of the site, although the western road requires a hike over the hill to reach the site. Mexiquito is rumored to be one of the sites where the Mexica stopped on their way to found their capital city of Tenochtitlán. Local residents explain the name of Mexiquito, which literally translates as 'little Mexico,' as being related to the fact that Mexiquito was a resting place for the Mexica during their journey. Mexiquito is the largest known site in the Middle Balsas region, and likely in all of western Guerrero. It is very well known by archaeologists and by local people as a major site, although no scientific investigations at the site have been published since the 1940s (see section 2.2). The UTM coordinates of the site are 14QLR227265.

The site of Mexiquito is divided into two major zones. Zone 1 is on the western side of the large plaza and consists of a number of long structures, patios, and the largest mound, which reaches 30 m in height (see Figure 4.31). This area is at least partially built into the natural hillside, although it is difficult to tell where the modifications to the landscape begin and end. The second zone consists of smaller mounds and appears to include some residential structures and the ball court (see Figure 4.31). A number of additional structures, both small residential platforms and larger mounds, are located along the Balsas River in to both the east and to the west, as well as south away from the river toward the modern towns. It will require a more extensive survey of the entire area to fully define the boundaries of Mexiquito.

The main area of the site is divided between two landowners: Sr Margarito Diaz owns Zone 1, and Sr Eulogio Olmos owns Zone 2. A portion of the large plaza between the two zones appears to be communal land. A number of modern structures, including a large irrigation pipe and a pier, were built in this area reaching down to the Balsas River. Local residents come to this area to access the river for fishing, bathing, and washing laundry. The pipe system was built in the 1980s as part of a possible irrigation system to bring river water to the adjoining fields for melon production. The project was soon abandoned, and the pipe system is no longer intact. During the pipe installation, the workers cut through a structure at Mexiquito (see Figure 4.32).

Mexiquito has been extensively looted over the years, and active looting continues. Almost every structure and patio contains a number of excavated large pits. Most of these pits appear to have been excavated by professional looters, as they are laid out in precise rectangles and are excavated in a conscientious manner (see Figure 4.33). These pits have exposed what appear to be earlier construction phases in a number of

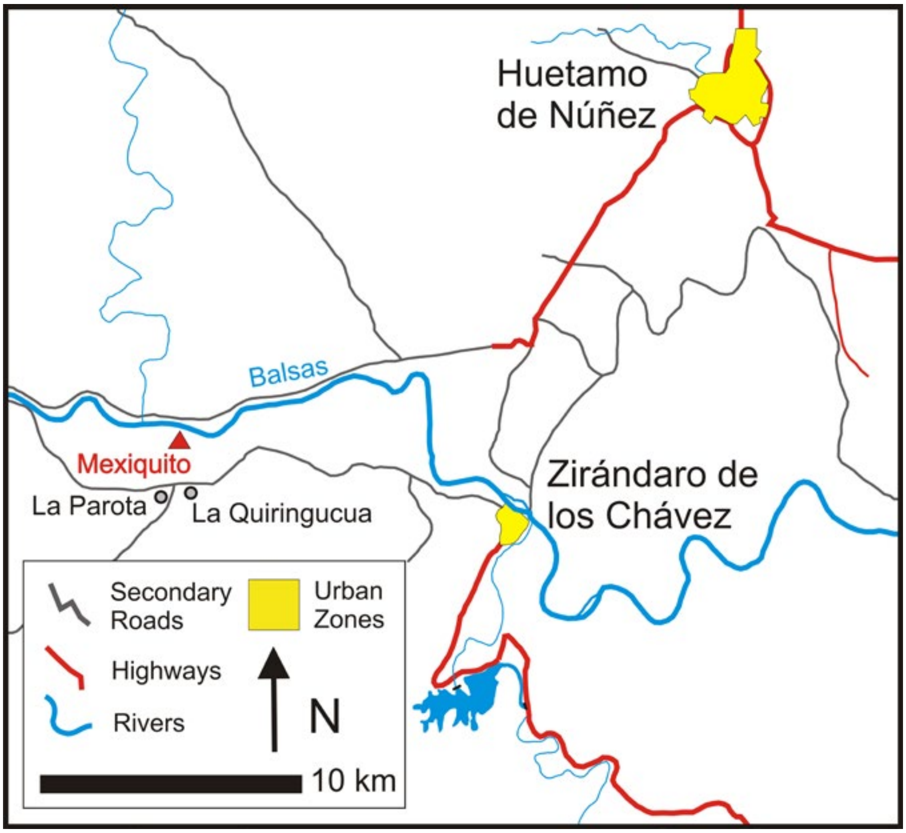


FIGURE 4.30: THE SITE OF MEXIQUITO AND ITS LOCATION NEAR ZIRÁNDARO AND HUETAMO. ADAPTED FROM INEGI MAP E14-4 (1997). ORIGINAL SCALE IS 1:250,000.

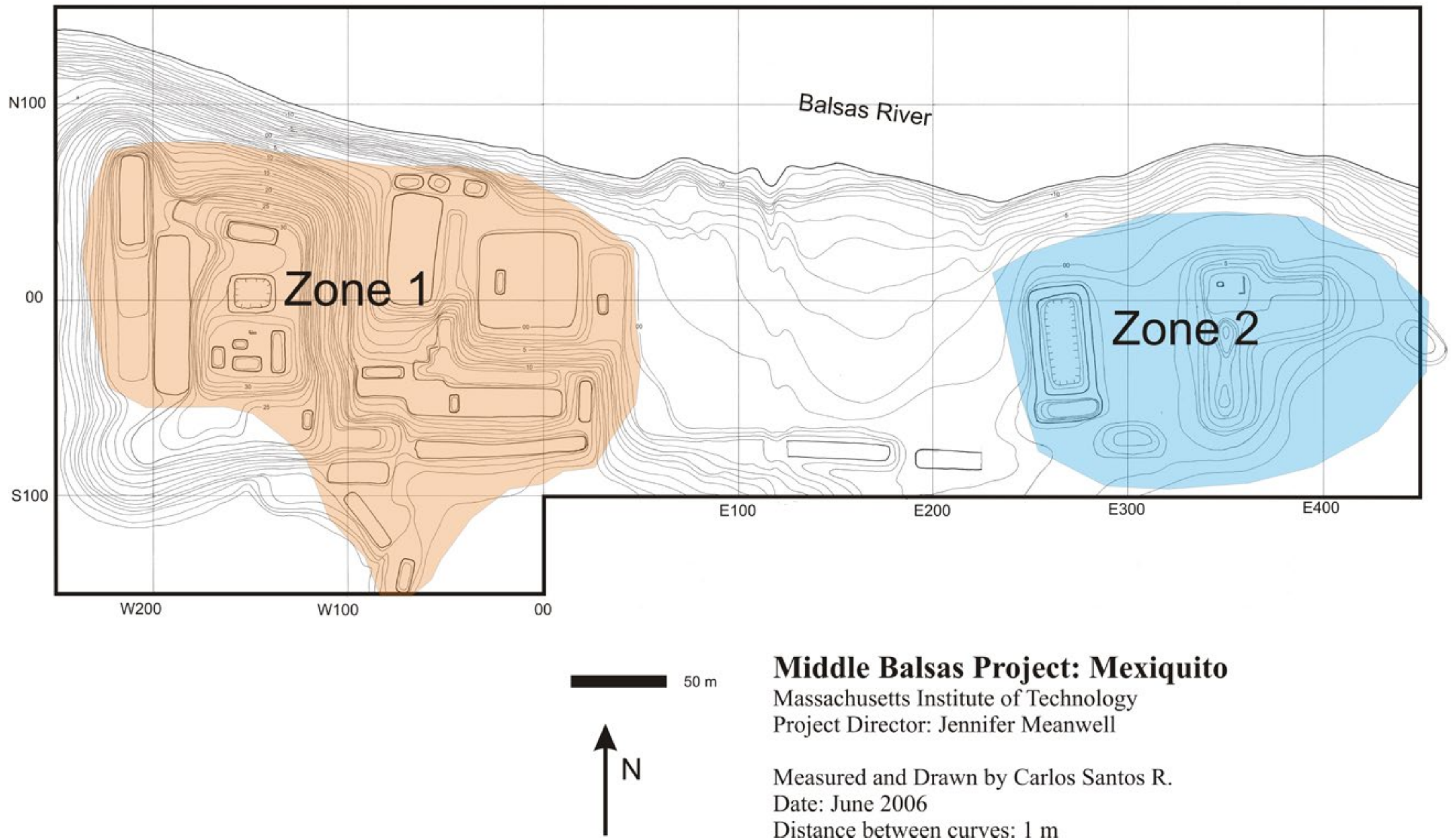


FIGURE 4.31: THE TOPOGRAPHIC MAP OF MEXIQUITO SHOWING THE AREAS DESIGNATED ZONE 1 AND ZONE 2

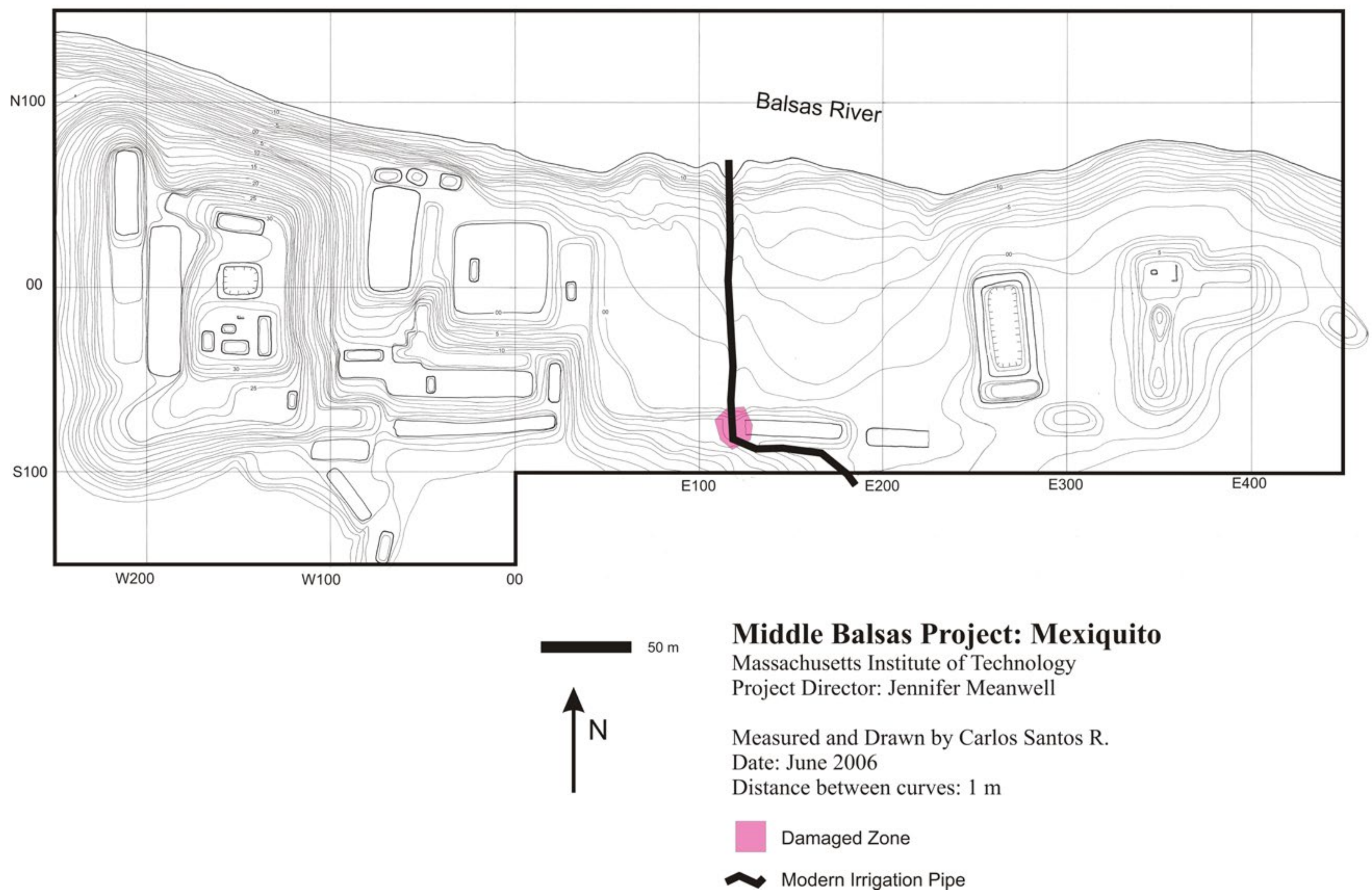


FIGURE 4.32: LOCATION OF THE MODERN IRRIGATION PIPE AT MEXIQUITO.

locations. In contrast to La Quesería and Itzímbaro, the structures in both zones at Mexiquito are built primarily with partially faced and cut stones. From the areas exposed by looters' pits, it seems that well-constructed façades were likely placed on many of the structures, and plaster floors were found in patios. More detail will be given about the construction techniques at Mexiquito in section 4.4.

The active looting at Mexiquito is focused on recovering grave goods for sale to collectors. According to local informants, an extremely high flood of the Balsas in the mid 1960s eroded part of the river bank and exposed part of a mass burial within the large plaza at Mexiquito. Since that time, the original excavation has been expanded to an enormous pit within the plaza (approximately 50 m x 20 m). Once that area was fully exploited, the looters moved on to other areas of the site. The damage to the site is considerable, and we encountered one structure that was so cratered with small pits that it appeared to have been used as a target for bombing. Several times when I visited the site in 2006, we encountered people excavating small pits in the structures at Mexiquito, although the current landowner of Zone 1 appears to be discouraging the larger excavations in his land.

The material recovered by Mexiquito looters is spectacular. I was shown a large greenstone carved head with inlaid obsidian eyes and shell teeth, a number of greenstone bead necklaces, incised shell armbands and shell necklaces, and incised tripod cajetes. The man who looted those objects had not been able to find a buyer for them at the price he desired, and was waiting for a better offer. Reportedly, a number of metal artifacts have been recovered from Mexiquito, although I have not personally seen any of these items. The looters focus on grave sites to the exclusion of all else, and my workers had a difficult time adjusting to the slow excavation techniques used by archaeologists. I was also approached a number of times by local people to find out if I would be interested in purchasing the items they had looted, or if I could put them into contact with buyers in the United States.

Surface Collection at Mexiquito

As mentioned in the methods chapter, we collected materials from approximately one third of the mapped area of Mexiquito for a total of 15 sectors (see Figure 4.34). We recovered a wide variety of materials, including sherds, obsidian, ground stone, and a copper ring. The number of materials recovered in different artifact categories is shown in Table 4.8. Interestingly, we did not recover any figurines during the surface collection. The surface collection at Mexiquito was particularly difficult in Zone 1, due to the dense cover of vegetation and the risk of landslides and other erosion due to unstable structures and rain damage. Zone 2 had significantly less vegetation.

Table 4.8: Numbers[3] of various artifact types recovered from Mexiquito during surface collection.

Artifact Type	Number of Bags	Number of Objects
Pottery	33 bags	527 diagnostic sherds
Obsidian	15 bags	580 fragments
Figurines	0 bags	None Recovered
Manos and *Metates*	8 bags	10 *metate* and 5 *mano* fragments

While performing the surface collection, we noted that Mexiquito had a much lower density of sherds and most other materials on the surface than La Quesería or Itzímbaro. The densities of diagnostic sherds, figurines, and obsidian are shown in Table 4.9. As can be seen in the table, the major exception to this lower amount of material was in the obsidian density, where Mexiquito registered highest. A high number of obsidian fragments were recovered at Mexiquito, and the majority came from sectors surrounding the large plaza between Zone 1 and Zone 2 (see Figure 4.31). The lower density of other materials may be related to the erosion or other environmental factors at the site, or perhaps due to higher levels of skilled looting.

3 The total number of sherds recovered was approximately 5,000.

Figure 4.33: Looters' pit at Mexiquito. The pit was 3 m on each side.

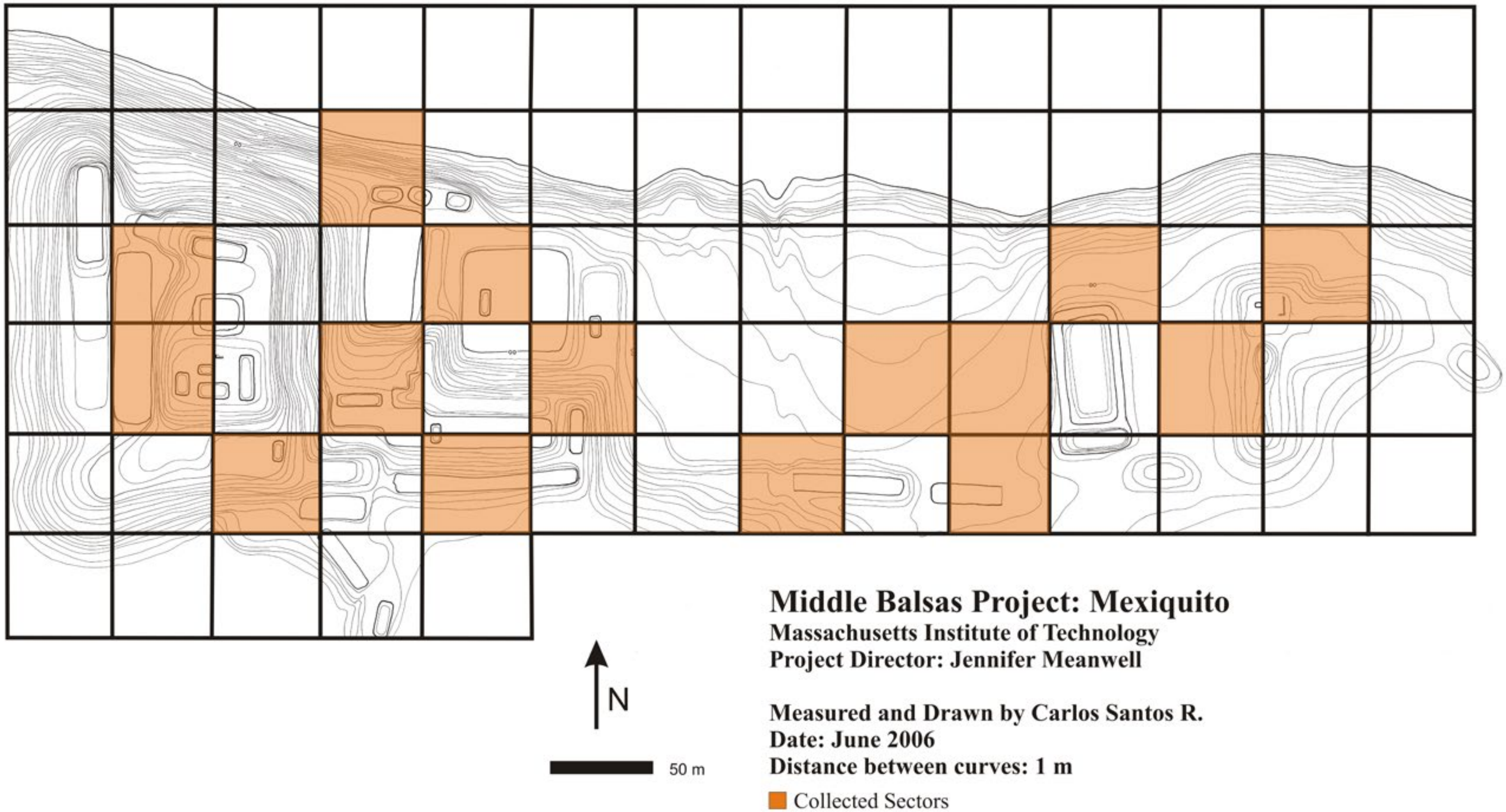


Figure 4.34: The site of Mexiquito showing the sectors that were surface collected.

TABLE 4.9: DENSITY OF SURFACE COLLECTED MATERIALS AT LA QUESERÍA, ITZÍMBARO AND MEXIQUITO. THE LARGEST NUMBER IN EACH CATEGORY IS IN BOLD.[4]

Material	La Quesería	Itzímbaro	Mexiquito
Pottery	**232** diagnostics/sector	105 diagnostics/sector	35 diagnostics/sector
Obsidian	32.4 pieces/sector	10.8 pieces/sector	**38.7** pieces/sector
Figurines	2.03 figurines/sector	**3.15** figurines/sector	None Recovered

Excavations at Pit 1, Mexiquito

Pit 1 at Mexiquito was placed in a patio to one side of smaller raised structures within Zone 2, where the structures more closely match the architecture at La Quesería and Itzímbaro (see Figure 4.35). This patio had been built up to a level above the natural topography, and it offered an opportunity to look for construction debris and fill. I expected that this area of the site was possibly older than parts of Zone 1, and would have been occupied and used by elite inhabitants of Mexiquito.

Pit 1 began with a layer of organic material (Layer I), although below approximately 40 cm, the soil changed to a powdery silt like that found at Itzímbaro. As excavation continued, we encountered a series of at least eight plaster floors, some more intact than others. The first partial floor was at a level of 68 cm, and the series continued until we found an intact floor at 215-218 cm of depth (see Figure 4.36). Other than the final floor, these pieces were fragmentary and usually did not cover the entire area of the pit. Where possible, we separated the collection of levels from above and below the floors. Additionally, we also encountered a number of fragments vertically oriented within the pit, possibly either fragments from the floors or plaster that had covered adobe walls (see Figures 4.36 and 4.37). We reached sterile soil beneath the intact floor at 240 cm, where we encountered pure river silt sediment with no archaeological material.

We recovered a variety of material from Pit 1, including 18 bags of pottery containing 202 diagnostic sherds, 82 fragments of obsidian, 3 figurine fragments, 14 bags of shell, and a number of large bone fragments. The density of material was not high. Pit 1 reached a depth of 240 cm, like Pit 1 at La Quesería and Pit 3 at Itzímbaro, but although the amount of obsidian recovered was comparable among the three sites, the relative number of diagnostic sherds and figurines was much lower at Mexiquito than at the other two sites (see Table 4.10). We also collected eleven carbon samples for radiocarbon analyses. The results from the two samples analyzed are found in Table 4.11. These results suggest that the entire series of plaster floors underlying the patio were constructed rather quickly one after another in the Classic period, or were constructed with fill containing only Classic period charcoal.

TABLE 4.10: NUMBER OF MATERIALS RECOVERED FROM PITS REACHING 240 CM AT LA QUESERÍA, ITZÍMBARO, AND MEXIQUITO TO COMPARE THE RELATIVE DENSITY OF MATERIAL.

Site and Pit Number	**Ceramics**	**Obsidian**	**Figurines**
Pit 1, La Quesería	845 diagnostics	124 fragments	34 figurine fragments
Pit 3, Itzímbaro	721 diagnostics	148 fragments	28 figurine fragments
Pit 1, Mexiquito	202 diagnostics	82 fragments	3 figurine fragments

TABLE 4.11: PIT 1 RADIOCARBON RESULTS AND EXCAVATION DETAILS.

Bag Number	**Date Collected**	**Actual Depth**	**Conventional Radiocarbon Age**	**Calibrated (2-sigma) Dates**
22	2 Jun. 2006	100.5 cm	1660 +/- 50 BP	Cal AD 250-540
69	10 Jun. 2006	215-218 cm	1620 +/- 40 BP	Cal AD 350-540

Excavations at Pit 2, Mexiquito

Pit 2 was located approximately in the center of the largest plaza in Zone 1 at Mexiquito (see Figure 4.35).

4 These numbers should not be directly compared to the numbers from Itzímbaro and Mexiquito, since the collection strategy was different at La Quesería for half of the sectors.

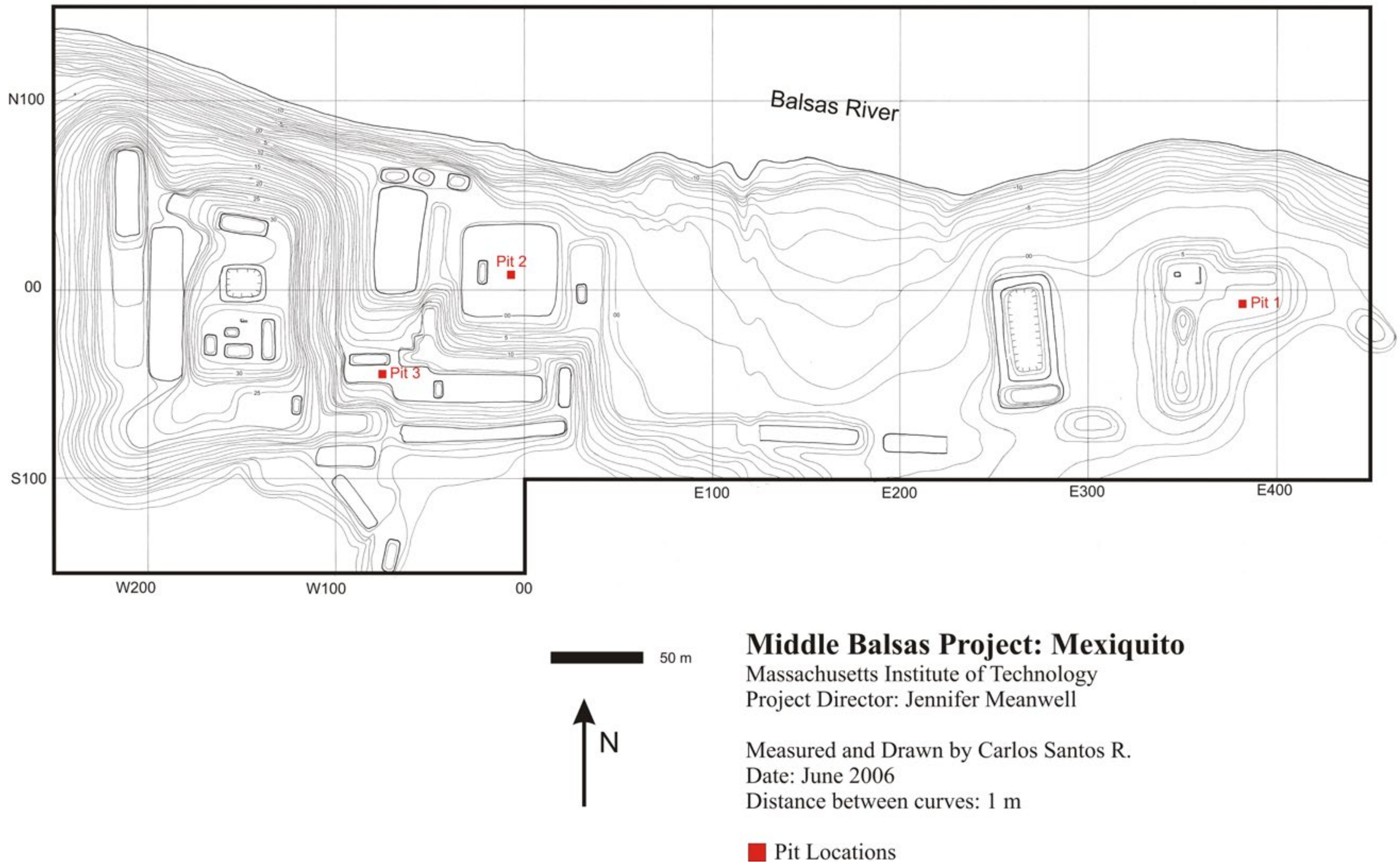


FIGURE 4.35: THE SITE OF MEXIQUITO WITH THE EXCAVATED TEST PIT LOCATIONS.

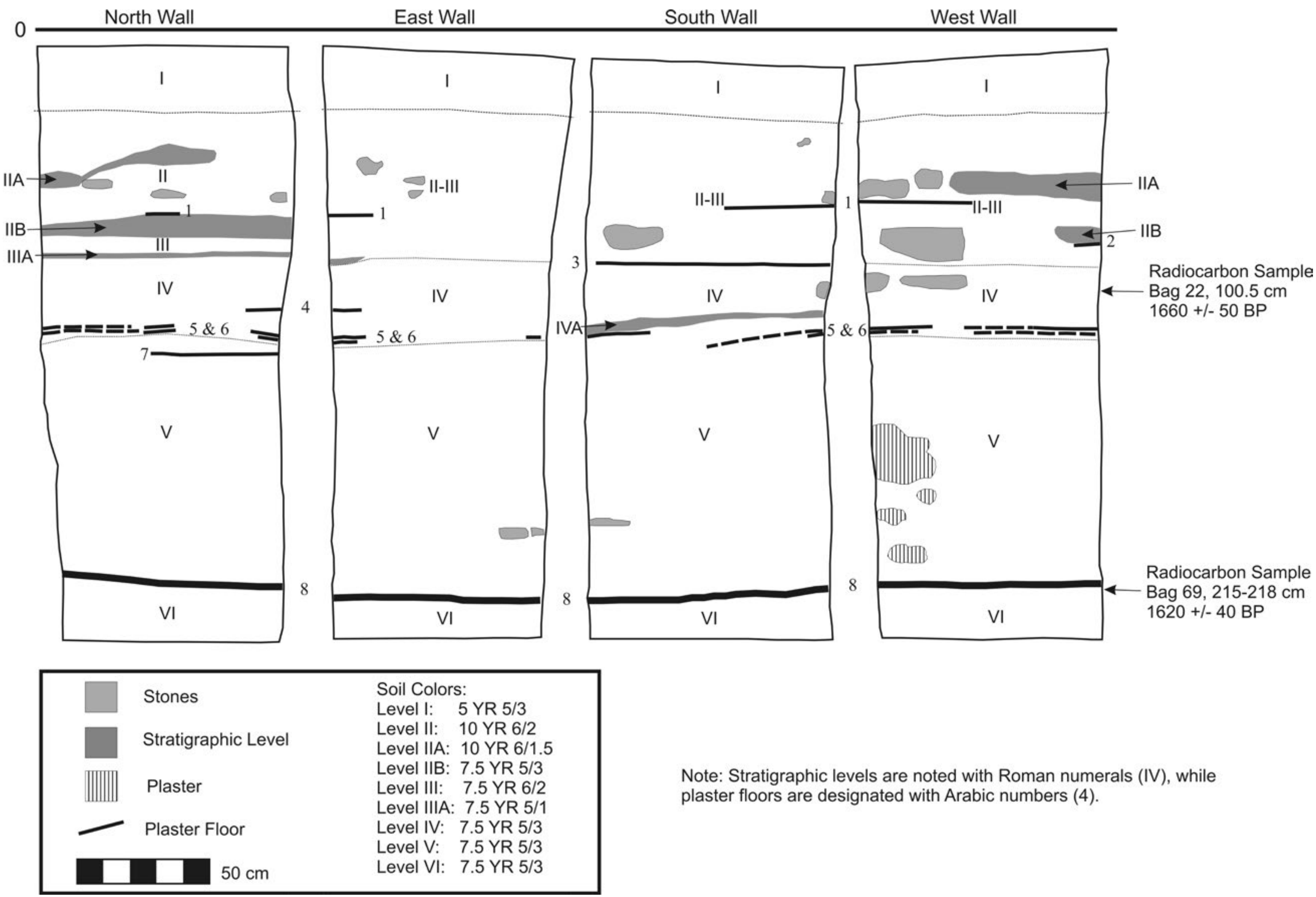


FIGURE 4.36: PROFILES OF THE FOUR WALLS OF PIT 1, MEXIQUITO.

Figure 4.37: Detailed photograph of the plaster discovered on the west wall of Pit 1, Mexiquito.

This plaza contained a few low structures that had been excavated by looters, although no pits had been dug directly into the plaza itself. Again, I was looking for construction methods and radiocarbon evidence to determine if Zone 1 and Zone 2 were constructed in the same time period.

The first 20 cm of Pit 2 were basically devoid of materials, but the density increased as we continued with the excavation. When we reached the 60-80 cm level, we encountered a layer of large stones, likely used in the construction of the plaza. Beneath the level of stones, the soil contained fragments of calcareous material, likely small pieces of plaster. We excavated Pit 2 to a level of 130 cm, where we reached totally sterile soil that was very well-packed and difficult to excavate (see Figure 4.38).

The most interesting feature in Pit 2 was a concentration of bone in the southeastern corner, which included a large fragment of a human cranium. The bone fragments were all very fragile and difficult to identify, but the top of the skull remained fairly intact. I consolidated the skull with some dilute white glue and hoped to find additional intact material. Unfortunately, if this was a deliberate burial, it was impossible to determine the orientation of the body. We did not encounter any intact grave goods.

We also recovered other archaeological material from Pit 2, including nine bags of pottery with 36 diagnostics, 28 pieces of obsidian, and three radiocarbon samples. A few polychrome sherds were recovered from all levels of Pit 2, and these suggest that the construction levels we encountered date mainly to the Postclassic period. Due to the scarcity of material and the shallow depth of the pit, the radiocarbon samples were not analyzed.

Excavations at Pit 3, Mexiquito

Pit 3 at Mexiquito was located in a flat patio among a number of structures, east of the largest mound at Mexiquito (see Figure 4.35). This pit was located quite close to a deep looters' trench that exposed the façade of the long structure to the northeast of Pit 3. I selected this location, which was slightly lower than

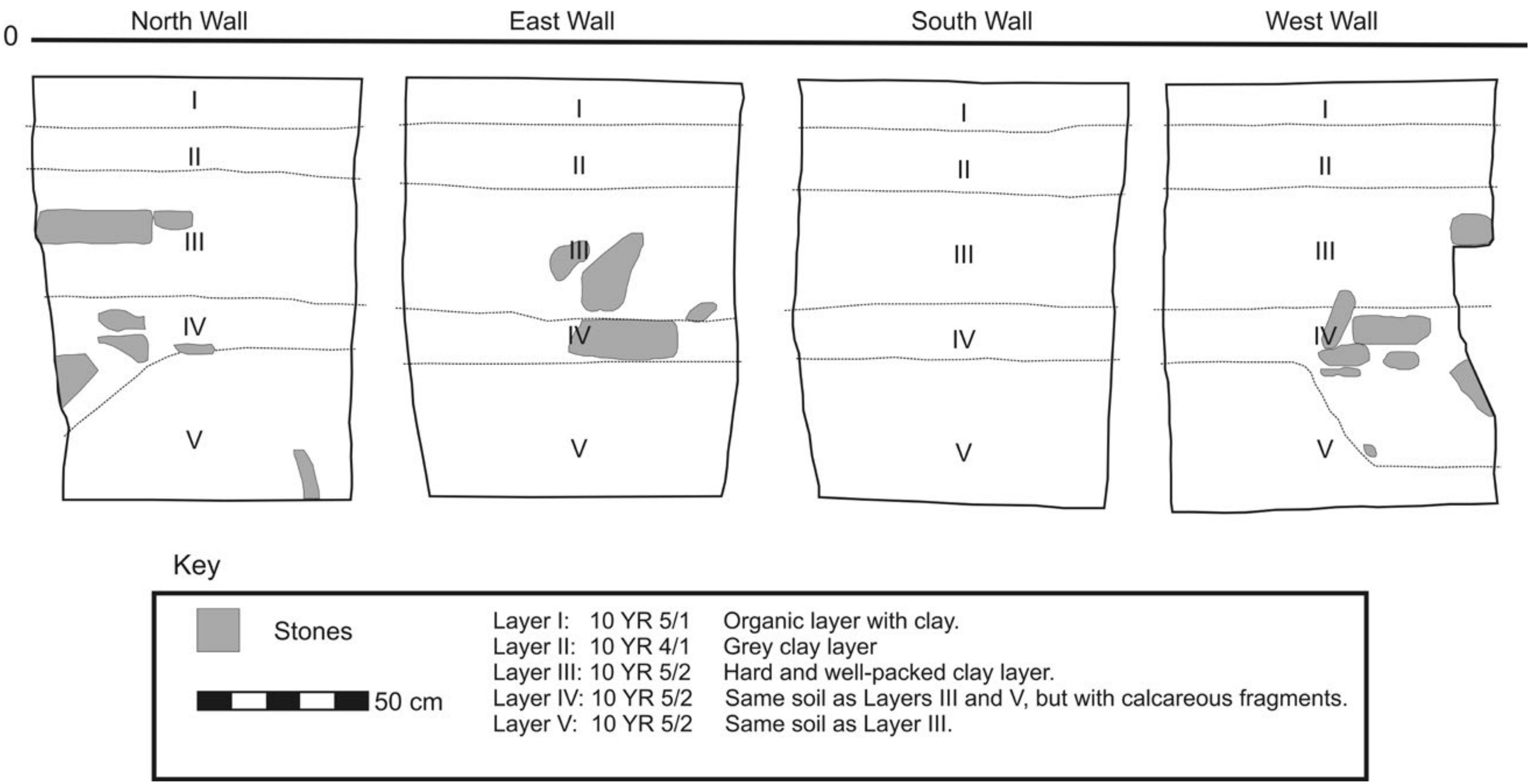


FIGURE 4.38: PROFILES OF THE FOUR WALLS OF PIT 2, MEXIQUITO.
DRAWN BY MEANWELL ON 14 JUNE 2006.

the surrounding area, because it seemed likely to contain construction fill from the patio or sherds and material that had eroded out of the other structures and deposited in the patio.

Like Pit 2, the first 20 cm level of Pit 3 was an organic layer practically devoid of archaeological material. Below this level, however, we encountered a moderate density of sherds within a sandy soil. The pit was eventually excavated to a depth of 230 cm (see Figure 4.39). The 60-80 cm level also had a high density of obsidian, with 45 fragments coming from this level.

Around 80 cm of depth we encountered a stratigraphic level with a high density of calcareous material, as well as ash and charcoal. I believe this feature is the remnants of some sort of oven, possibly for making lime. No evidence for firing of pottery or metal smelting exists in the area. We did not encounter an actual kiln -- just the thick ash and large charcoal deposits probably left from such an operation. At 150 cm, the soil changed again to a well-packed reddish soil. We encountered a partial plaster floor at 185-190 cm of depth that covered a series of flat stones. This appears to have been a well-constructed floor with a plaster layer above supporting stones. We halted excavations at a depth of 230 cm for two reasons. First, the density of sherds and other material had greatly decreased from earlier levels, and second, the walls of the pit were becoming unstable with the rains, and I considered it too dangerous to continue.

We recovered a fair amount of material from Pit 3, including 14 bags of sherds containing 108 diagnostics, 102 pieces of obsidian, 1 figurine fragment, 1 *mano*, *malacate* fragments, and twelve charcoal samples for radiocarbon analysis. Several of these charcoal samples were very large, due to the dense concentrations within the oven levels. In total, three carbon samples from Pit 3 were dated by radiocarbon analysis. The results are found in Table 4.12. These results suggest that the oven dates to the Postclassic period, and that the layers below the oven were probably Late Classic to Epiclassic. The oven may have been covered by fill containing slightly earlier charcoal samples. The ceramic analysis offers confirmation that these layers are from different time periods, with a number of Postclassic markers, including polychrome sherds and a *malacate* (used for spinning thread) found above 160 cm. The lower levels contain the same Classic period pottery types found in Pit 1 at Mexiquito. All of the pottery recovered at Itzímbaro and La Quesería matches the earlier phase at Mexiquito.

Table 4.12: Pit 3 radiocarbon results and excavation details.

Bag Number	Date Collected	Actual Depth	Conventional Radiocarbon Age	Calibrated (2-sigma) Dates
19	16 Jun. 2006	99 cm	780 +/- 40 BP	Cal AD 1200-1280
35	17 Jun. 2006	137 cm	590 +/- 30 BP	Cal AD 1300-1420
45	18 Jun. 2006	174 cm	1270 +/- 50 BP	Cal AD 660-880

4.4 Architectural and construction details from the Middle Balsas Region.

In this section, I will note the architectural features that have been described in the literature as being present in the Middle Balsas region. I will also describe the evidence I collected from surface investigations and from looters' pits about the construction techniques and architectural forms common to the Middle Balsas. Although none of the structure types and features are without precedent in Mesoamerica, the specific grouping of pyramids with attached plazas and ovaloid ball courts was suggested by Lister (1955, 1971) as being characteristic of this region. The architectural features chosen by the Middle Balsas inhabitants may also suggest contacts with other Mesoamerican culture areas.

Most of the Middle Balsas structures with visible construction appear to have been built from local stone held together with clay and earth. The stone portion of the construction can be rounded river cobbles or roughly rectangular faced stones. La Quesería appears to have been constructed exclusively from the rounded stones, which were sometimes laid in orderly courses like bricks (see Figure 4.4). Mexiquito, in contrast, appears to be mainly constructed out of faced and irregular stones (see Figure 4.40). Most other

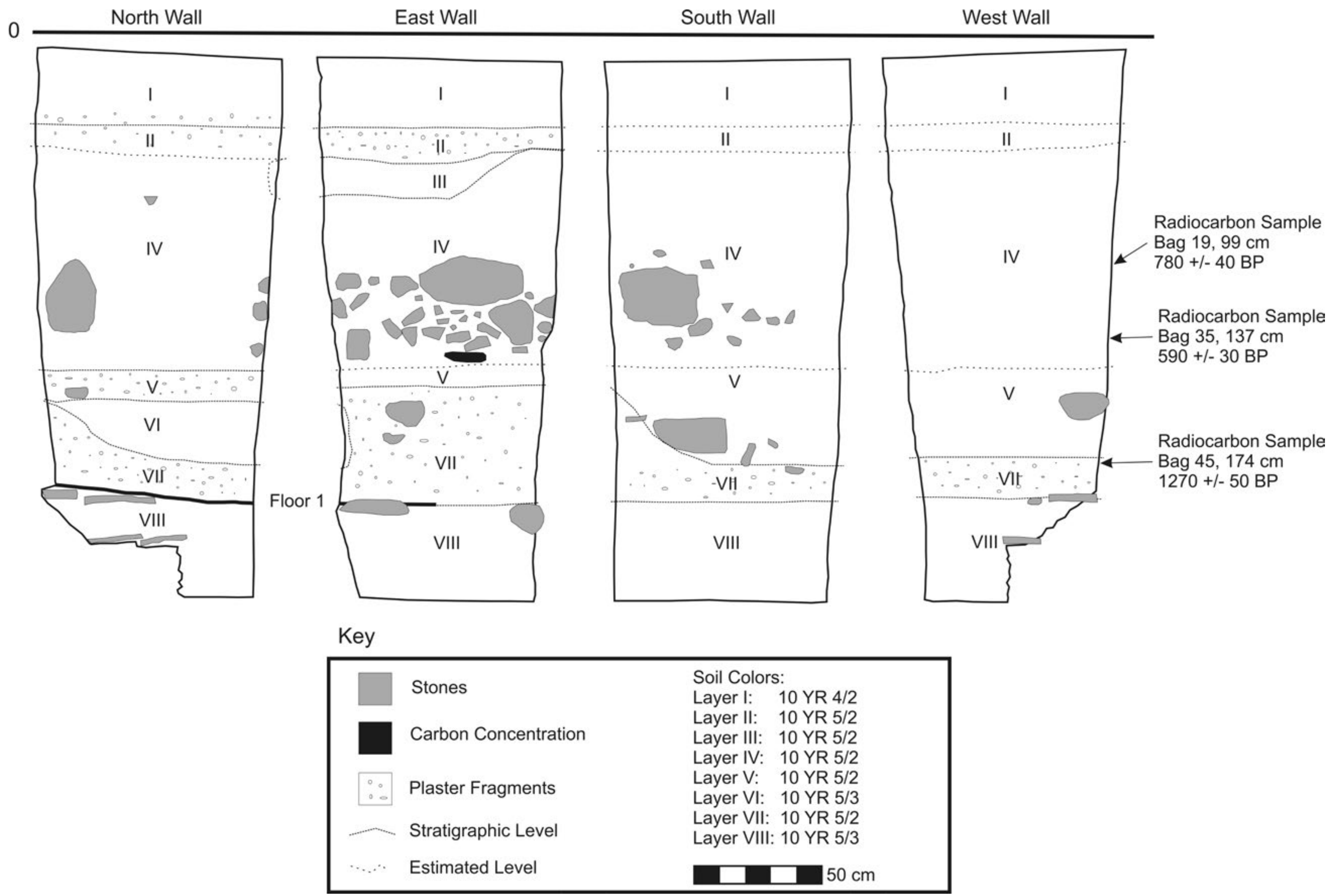


Figure 4.39: Profiles of the four walls of Pit 3, Mexiquito. Note that the top levels of the south and west walls are only estimates, due to water damage. Drawn by Meanwell on 19 June 2006.

Figure 4.40: Construction at Mexiquito exposed by a looter's pit. The right side of the photograph shows a flat wall with faced stones, while the left side shows the more irregular stones used as fill.

sites, including Itzímbaro and Santa Lucia (a looted Middle Balsas site I visited in 2003), appear to have had faced stone structures within mounds that were later expanded using rounded stones (see Figure 4.41). As is frequently found in Mesoamerica, I encountered a number of plaster floors during the excavations at Mexiquito, as well as evidence for floors within looters' pits at La Quesería and Itzímbaro. It is possible that plaster was used as a decorative surface covering for walls, based on the fragments found in Pit 1 at Mexiquito, although I have not encountered this in other contexts.

One architectural feature noted by Lister in his articles on the Middle Balsas is that of a 'truncated pyramid' (Lister 1947:69) sometimes in combination with 'a much lower platform built on to the eastern, western, or northern side of the pyramid' (Lister 1947:69). Lister does not define exactly what he means by 'truncated,' although descriptions and illustrations suggest that he is speaking of the traditional Mesoamerican pyramid mound that does not come to a sharp point like an ancient Egyptian pyramid. I encountered this combination of a pyramid and an attached raised platform at all three sites. Although Mesoamerican pyramids and other structures frequently face a flat area (plaza, patio, or platform), these are infrequently raised above the natural ground level.

Another feature of the Middle Balsas is its particular form of ball court. Lister does not mention many ball courts in the area in his original article (1947), and they do not seem to be common. When they are found, however, these structures include a flat, rectangular playing court that is fully surrounded by 1-2 m high walls to form a closed, oblong structure. Lister calls these structures 'ball court rings' (Lister 1971:630), due to their rounded oblong shape, but they should not be confused with the stone rings installed in many ball courts as part of the game. I found these Middle Balsas style ball courts at La Quesería and at Mexiquito, and they appear to be similar in overall size and design in both cases (see Figure 4.42). Taladoire suggests in one article that various forms of the ball game (*ullamaliztli* versus *pelota mixteca*) may have required a different court design called a *palangana* court (Taladoire 2003:332). His description of the dimensions of the *palangana* variant of the ball game court appears similar those of the Middle Balsas[5], although much more investigation will be needed to confirm this possible link (Taladoire 2003). The *palangana* courts are concentrated in Oaxaca, Chiapas, and Guatemala (Taladoire 2003), although it seems possible that inhabitants of the Middle Balsas region slightly further to the west may have played the same version of the ball game.

The largest structure at Mexiquito preserves small areas where a possible vertical or sloping wall construction is visible. In Mesoamerica, a series of sloping and straight walls is known as *talud-tablero* construction, and it is common at the major Classic period center of Teotihuacán, and sites with Teotihuacán contacts, such as Monte Albán in the state of Oaxaca and Kaminaljuyú, in Guatemala. Armillas (1944:254) encountered *talud-tablero* architecture within the largest mound or acropolis structure during his excavations in the 1940s. To my eye, small and damaged sections of the exterior of M-1 still preserve sections of vertical and sloping wall construction (see Figure 4.43). No strong evidence for *talud-tablero* architecture was encountered at La Quesería or Itzímbaro, although mound M-1 at La Quesería did appear to have been constructed in stepped layers that could be possible remnants of *talud-tablero*.

Most sites in the Middle Balsas I visited have one singular large pyramid that is surrounded by a number of lower structures, including house mounds and patios. The series of mounds found at Itzímbaro does not have direct correlates at the other two sites. It is possible that Itzímbaro exhibits an earlier construction style, as the oldest radiocarbon dates come from that site. It is also possible that some ceremonial structures such as a ball court were washed away by the Balsas River at some point in the last millennium. Further excavations and area surveys will provide more information on this question.

5 Taladoire mentions a fully enclosed rectangular court of 10-12m wide and usually 30m long with no end zone, although the courts reach up to 91m in length (Taladoire 2003:333-334). The courts at La Quesería and Mexiquito measure 9m x 65m and 15m x 40m respectively.

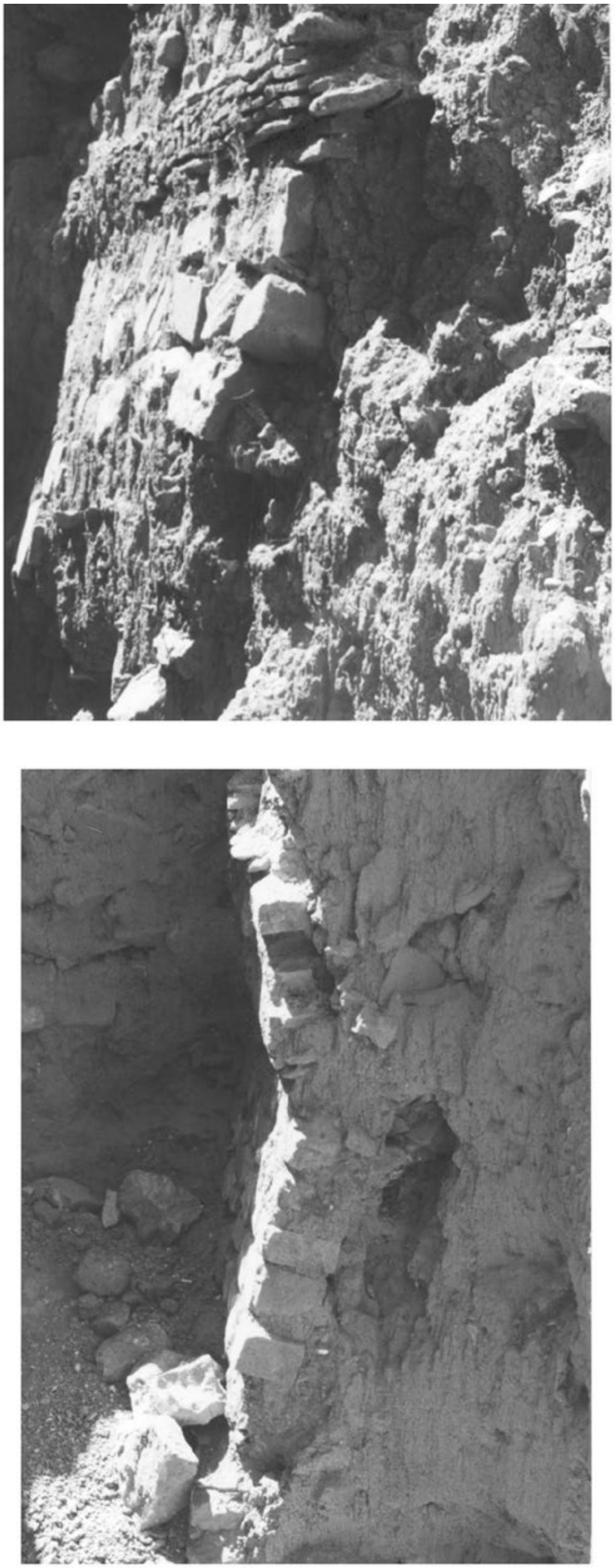


FIGURE 4.41: TWO PHOTOGRAPHS FROM THE LOOTERS' PIT AT SANTA LUCIA, GUERRERO. BOTH SHOW FACED STONES BEING USED TO CONSTRUCT VERTICAL WALLS.

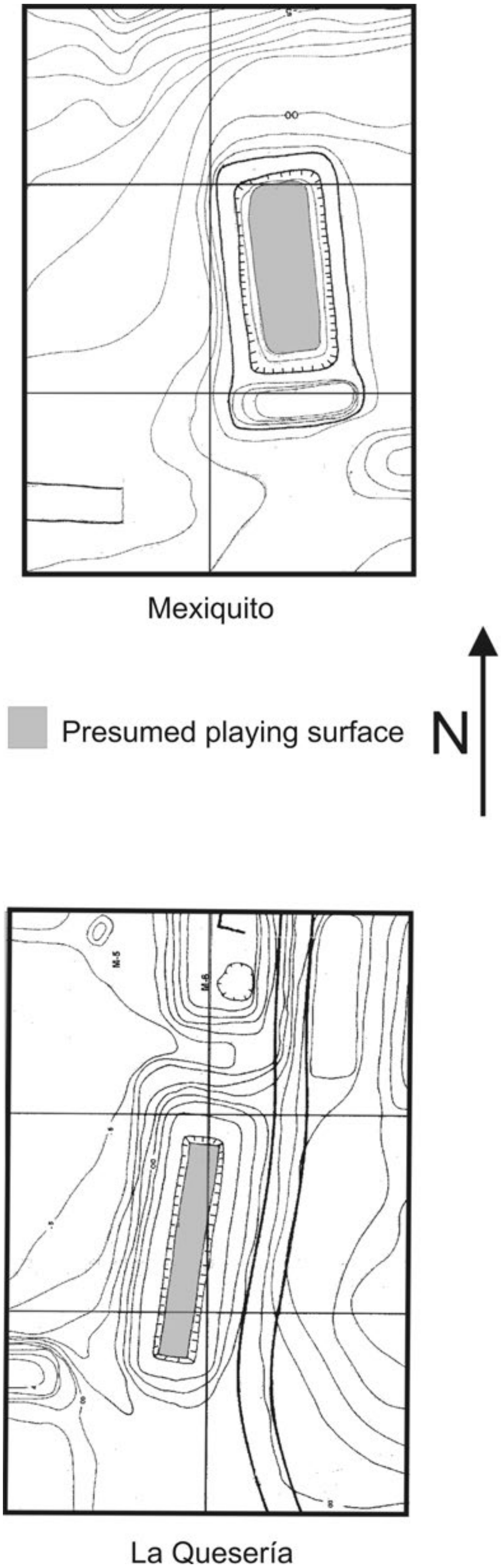


FIGURE 4.42: THE BALL COURTS AT LA QUESERÍA AND MEXIQUITO DRAWN TO THE SAME SCALE (50 M GRIDS) AND ORIENTATION, SHOWING THE CONSISTENCY OF SIZE AND SHAPE. PRESUMABLY THE SUNKEN AREA IN THE CENTER WOULD BE THE PLAYING COURT.

FIGURE 4.43: PHOTOGRAPHS OF POSSIBLE REMNANTS OF *TALUD-TABLERO* CONSTRUCTION AT MEXIQUITO. THE TOP PHOTOGRAPH HIGHLIGHTS A VERTICAL WALL MADE OF FACED STONES, AND THE BOTTOM PHOTOGRAPH SHOWS THE PROBABLE SLOPE OF A *TALUD*.

La Quesería and Mexiquito seem to exhibit many similar architectural features. Much of the architecture found at these sites shows distinct links to other cultural groups within Mesoamerica, but it was built with local materials and construction techniques. At La Quesería and Mexiquito, it appeared that smaller structures or rooms may have been built on the top of the large pyramid mound. In the case of Mexiquito, we encountered an entire series of probable elite house mounds and a sunken patio on top of the largest mound, which can be considered an acropolis (elevated zone of the site). This sunken patio appeared possibly to have been pentagonal, like the observatory structure at Monte Albán, Oaxaca, although it was too damaged to be clear. In other areas of Mexiquito, stone alignments suggesting smaller structures were found within the patios and along the dividing mounds. At La Quesería, we encountered stone alignments that outlined possible small rooms or structures on top of the largest mound and along the long wall structure (M-2). Also at La Quesería, we found a small mound (M-4) near the center of the large plaza (see Figure 4.2). This structure may have been an '*adoratorio*,' or a small shrine that is often placed in the center of plazas in Mesoamerican construction. It was unclear whether such structures existed at Itzímbaro due to damage from erosion and looting over the years.

It seems reasonable that no one site controlled the entire Middle Balsas region and that the sites were spaced along the permanent sources of water such as the Balsas and its tributaries. Mexiquito is without question the largest site along the river. As mentioned previously, Armillas noted that the area along the Balsas that falls within the Middle Balsas region was the most densely populated area on his travels through western Guerrero (Armillas 1945:77). More large sites seem to be found on the southern bank of the Balsas River than the northern bank, although no detailed survey has investigated that specific question.

In short, the Middle Balsas region was densely occupied by people living in a series of sites primarily located along permanent watercourses. These sites ranged in size from a few house mounds to the site of Mexiquito, which exhibits large complex ceremonial architecture spread over many hectares. The majority of the regional construction utilized earth and stone, with lime plaster used for floors and walls. The region exhibits some characteristic and unique architectural features, such as truncated pyramids with an attached raised plaza and closed, ring-shaped ball courts.

4.5 Summary of Radiocarbon Results

I have demonstrated that La Quesería, Itzímbaro and Mexiquito were occupied during the Classic period, albeit with slightly differing time spans. Itzímbaro had the earliest radiocarbon dates of approximately 300 BC, suggesting that the site was first occupied in the Late Preclassic (see Figure 4.44 for a summary of the radiocarbon results and the probable occupation times from all three sites). On the basis of radiocarbon dates, La Quesería appears to have been occupied by at least AD 100, although figurine styles with links to the Middle Preclassic suggest that earlier occupations may have existed at that site (Schmidt, personal communication, 2006). Mexiquito was likely the last to be founded. Occupation at Mexiquito has been confirmed via radiocarbon analysis for the Classic period (beginning approximately AD 400) and continued into the Postclassic period (until at least AD 1300). In contrast, the radiocarbon evidence from La Quesería and Itzímbaro only confirms occupation through approximately AD 800. It seems likely that occupation continued into the early Postclassic at Itzímbaro, as metal artifacts and *malacates* (spinning weights), both of which are diagnostic of the Postclassic period, were recovered from this site (Hosler, personal communication 2005). The radiocarbon results confirm that the materials I collected from La Quesería, Itzímbaro and Mexiquito were produced between 300 BC and AD 1300, which was the chronological period I had originally intended to study. This time period has not been studied in detail by any previous scholar.

The population in the Middle Balsas region seems to have been stable throughout the Classic Period, with little evidence for the abandonment of the three sites. It is likely that a 'building boom' of some

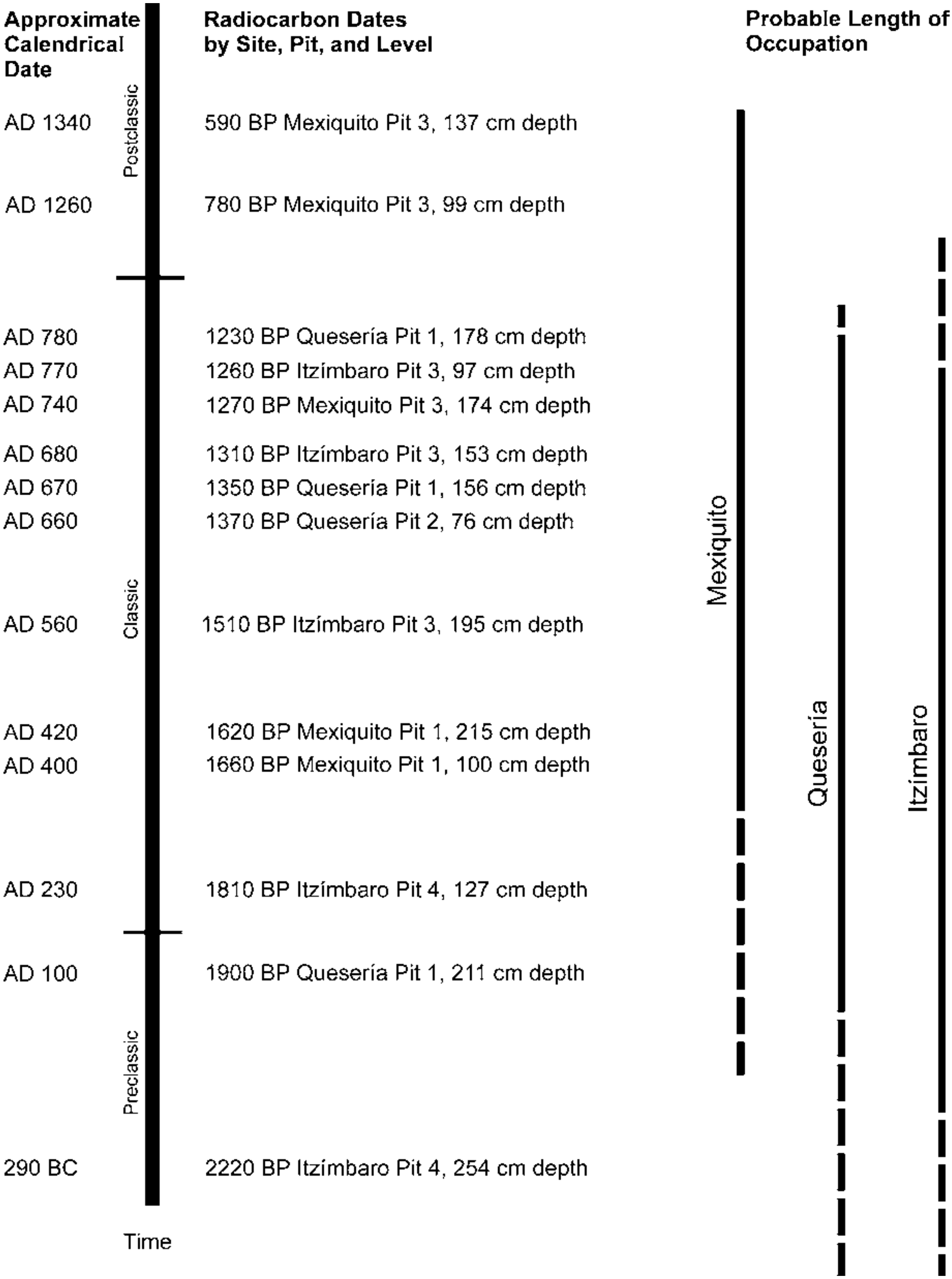


FIGURE 4.44: SUMMARY OF THE RADIOCARBON ANALYSES FROM EACH SITE AND THE LENGTH OF OCCUPATION AT EACH SITE.

sort occurred in the Middle Balsas region between AD 650 and AD 800, due to the large number of dated radiocarbon samples recovered from construction fill at the three sites that fall within this period. Considering events elsewhere in Mesoamerica at the time, it is possible that the region experienced a population increase after the decline of Teotihuacán, which occurred during the same time span. This population growth may also be related to climate changes during this period (Piperno *et al.* 2007). Further investigation into both of these possibilities is needed.

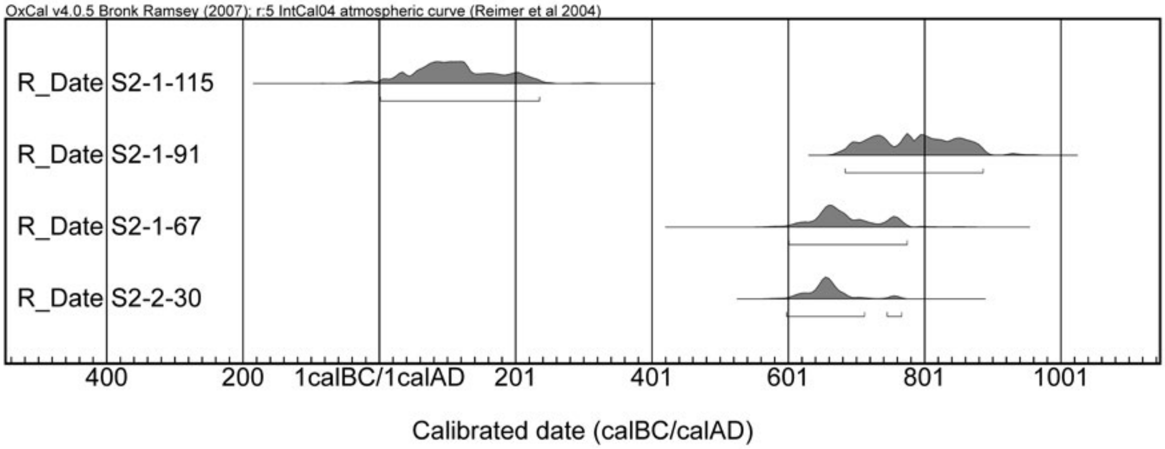


FIGURE 4.45: CALIBRATED PROBABILITY CURVES FOR FOUR RADIOCARBON DATES FROM LA QUESERÍA. THE THREE DATES FROM PIT 1 ARE ABOVE, FROM DEEPEST TO SHALLOWEST BY EXCAVATION DEPTH, FOLLOWED BY THE DATE FROM PIT 2. THE MODERN DATE FROM PIT 4 IS NOT SHOWN.

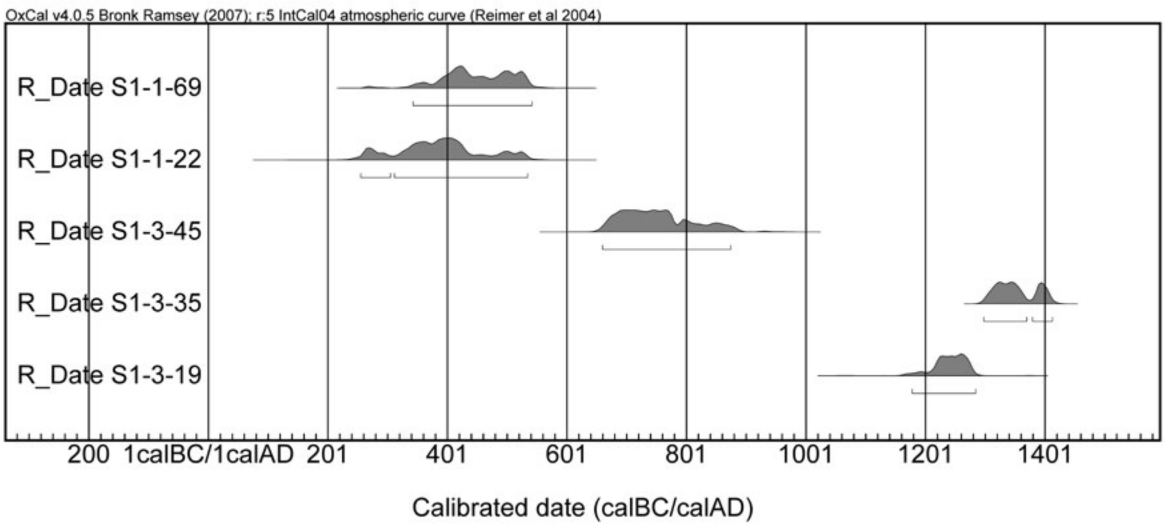


FIGURE 4.46: CALIBRATED PROBABILITY CURVES FOR THE FIVE RADIOCARBON DATES FROM MEXIQUITO. TWO DATES FROM PIT 1 ARE SHOWN FIRST, FROM DEEPEST TO SHALLOWEST BY EXCAVATION DEPTH, FOLLOWED BY THE THREE DATES FROM PIT 3, ALSO FROM DEEPEST TO SHALLOWEST.

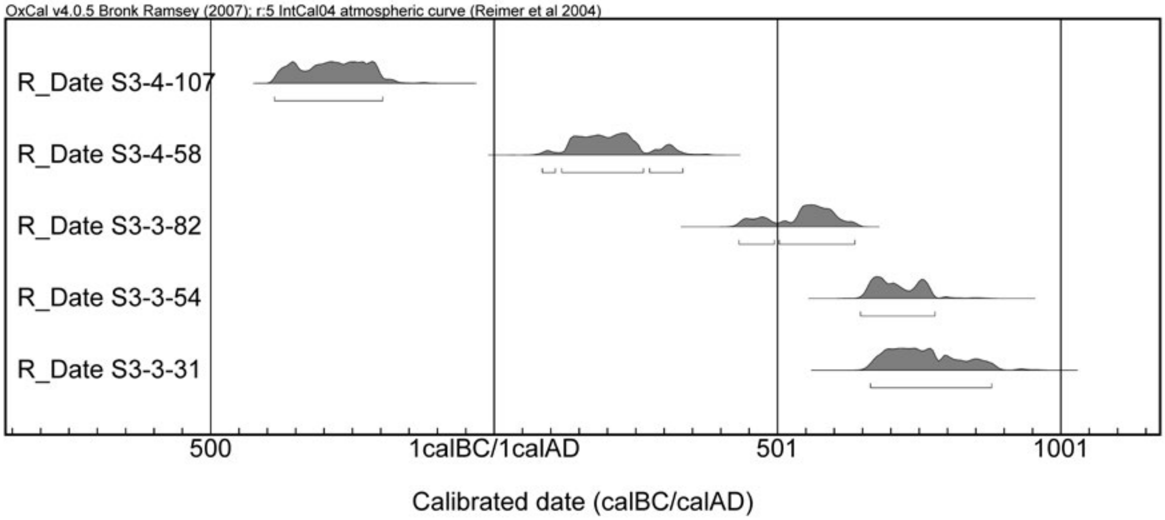


Figure 4.47: Calibrated probability curves for the five radiocarbon dates from Itzímbaro. Two dates from Pit 4 are shown first, from deepest to shallowest by excavation depth, followed by three dates from Pit 3, also from deepest to shallowest.

Chapter 5: Results from Laboratory Analyses and Replication Studies

This chapter presents the analytical results from the laboratory studies of the ceramic and other artifacts recovered during the Middle Balsas Project. I first describe the results of the basic formal (shape) and ware analysis of the ceramics, followed by the results from the petrographic analyses of forty-five sherds from each site. I next discuss the possible clay sources utilized by Middle Balsas potters that were identified by comparing the thin sections of the ancient sherds with the thin sections of the clay test briquettes. I also present data concerning the strength testing of briquettes made from Middle Balsas clays and explain what these results suggest about Middle Balsas pottery manufacturing techniques. I conclude with a brief discussion of the results from the obsidian and figurine analyses. Although these materials were only studied in a preliminary fashion, they support the chronology I propose for the Middle Balsas region and suggest topics for future investigation.

5.1 Formal Types

As mentioned in Chapter 3, I began my analysis of the Middle Balsas pottery by selecting the diagnostic[1] sherds from both the excavated and surface collected bags. I then determined the original vessel form represented by each diagnostic sherd. Using this approach, I classified the formal types seen in the Middle Balsas pottery tradition as represented by the three sites I excavated. I identified a total of five major categories, with a number of subtypes for most shapes, for a total of nine common forms (see Figure 5.1). These formal types are described below, along with a description of their probable function(s). I present the average wall thicknesses and average rim diameters of each of the five major types in two summary tables (Tables 5.1 and 5.2). These measurements were taken on a representative 10% sample from each of the three sites I excavated. The exception was the recurved bowls at Mexiquito, since 10% of the total number of recurved bowls would be less than one sherd. The significance of the wall thickness and rim diameter measurements will be discussed in more detail during my descriptions of each formal type. The number and percentage of sherds from the three sites within each formal category are found in Tables 5.4-5.6, and the minimum value, maximum value, average, and standard deviation for the thicknesses and diameters are shown in Table 5.3.

Table 5.1: The average wall thickness (in mm) of each formal type.

Formal Type	La Quesería	Itzímbaro	Mexiquito	Average
Cajete	7.38	6.66	6.88	7.16
Tecomate	12.16	9.07	9.86	11.51
Olla	11.62	10.61	8.8	11.04
Recurved Bowl	7.83	9.34	Not applicable	8.40
Open Bowl	9.91	8.67	8.27	9.33

Table 5.2: The average rim diameter[2] (in cm) of each formal type.

Formal Type	La Quesería	Itzímbaro	Mexiquito	Average
Cajete	19.46	17.75	19.11	19.01
Tecomate	20.99	19.04	20.62	20.60
Olla	22.73	20.89	22.15	22.23
Recurved Bowl	27.88	28.05	Not applicable	27.94
Open Bowl	27.14	26.96	23	26.75

1 As defined in Chapter 3, the diagnostic sherds were rims, appendages, characteristic inflection points where the original form could be reconstructed, or decorated sherds.

2 The diameter of the *cajetes*, *tecomates*, and open bowls was always measured at the rim. Measurements for the *ollas* and recurved bowls were sometimes taken at the shoulder or neck when the rim was not measurable. I corrected for the neck and shoulder measurements by adding 3 cm of diameter to the *olla* neck measurements and subtracting 3 cm of diameter from the recurved bowl shoulder measurements. These were average corrections based on measurements taken of sherds where I could measure both the rim and the shoulder or neck.

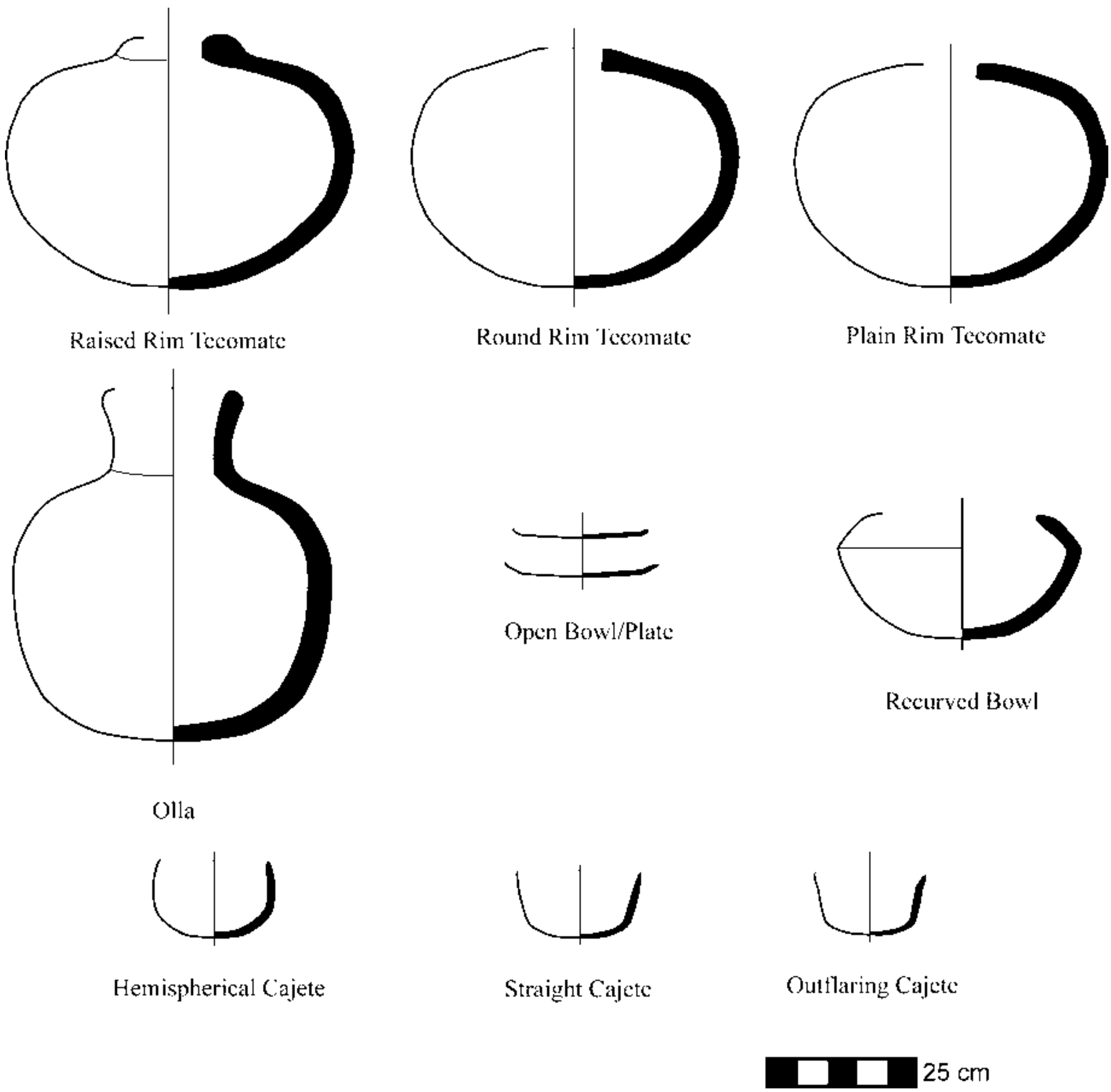


Figure 5.1: Hypothetical reconstructions of the most common formal types for Middle Balsas pottery. The reconstructions were based on the rims presented in Figures 5.2-5.6. Vessel shapes are to scale, but the wall thickness has been exaggerated to show differences between forms.

Table 5.3: Minimum, maximum, average value, and standard deviation for the wall thickness measurements and the diameter measurements for each formal type.

Formal Type	Cajetes	Tecomates	Ollas	Recurved Bowls	Open Bowls
Minimum Thickness (mm)	2.68	4.0	2.98	3.3	4.44
Maximum Thickness (mm)	15.98	30.53	28.27	18.79	20.95
Average Thickness (mm)	7.16	11.51	11.04	8.4	9.33
Standard Dev. of Thickness	1.95	4.79	4.40	2.62	2.66
Minimum Diameter (cm)	7	10	4	18	12
Maximum Diameter (cm)	48	42	45	44	42
Average Diameter (cm)	19.01	20.6	22.23	27.94	26.75
Standard Dev. of Diameter	4.77	4.86	6.45	5.46	5.78

The most frequently identified formal category is the *cajete*, an open-mouthed bowl with straight or curved walls. I divided the *cajete* group into three main sub-categories: straight-walled *cajetes*, hemispherical *cajetes* with rounded walls, and outflaring *cajetes* (see Figure 5.1 and Figure 5.2). Inflaring or restricted *cajetes* also appear rarely[3] (see Figure 5.8). *Cajetes*, being an open vessel form, are most often used today for preparing or serving foods, holding material temporarily or for easy access, and occasionally for short-term storage (Meanwell 2006 unpublished field notes on file at CMRAE). A specific type of *cajete*, known today as a *molcajete*, is characterized by deeply incised lines in the interior at the bottom of the usually hemispherical or straight-walled *cajete.* The grooved surface assists in the grinding of ingredients for the preparation of fresh salsas. I did not find any probable ancient examples of *molcajetes* in my excavated collection, but five *molcajetes* did appear in the surface collected material from Mexiquito. Most *cajetes* are fairly small, thin-walled vessels (see Table 5.1). This formal type also had the smallest standard deviation in thickness and diameter measurements (see Table 5.3).

The next most common group was *tecomate*, which is a globular jar with little to no neck (see Figure 5.1 and Figure 5.3). I found three large subgroups of *tecomate*, depending primarily on the rim style. Plain *tecomates* had simple rounded rims approximately the same thickness as the main vessel wall. Rounded rim *tecomates* had thicker rims that nonetheless were a smooth continuation of the main wall. Raised rim *tecomates* had a thickened rim that stood up noticeably from the wall and provided a definite border to the neck. I occasionally noted flared rim *tecomates* that had a slightly outflaring neck, similar in style to the *olla* type, described next, although the neck was much shorter[4]. It has been argued that *tecomates* are the most versatile ceramic form (Skibo and Blinman 1999). Due to their closed nature, however, *tecomates* are most often used for storage of liquids and solids, for cooking, and for transportation of materials (Meanwell 2006 unpublished field notes on file at CMRAE). *Tecomates* are generally fairly thick-walled vessels (see Table 5.1), and, although the average rim diameter is similar to that of the *cajete* (see Table 5.2), the vessels are larger, since the rim diameter is much smaller than the largest diameter of the vessel (see Figure 5.1).

Another fairly common utilitarian form is the *olla* (see Tables 5.4-5.6). The term *olla* is used to describe any globular jar with a neck that is usually straight or slightly flared (see Figures 5.1 and 5.4). I found *ollas* in my collection of varying sizes and wall thicknesses (see Table 5.3), but they are most often large coarse ware vessels (see Tables 5.1 and 5.2). *Ollas* are frequently used for storage and cooking. The tall neck helps keep the contents contained while also restricting access. In the modern villages in the area, *ollas* are still used to cook beans and to store drinking water to cool it for consumption (Meanwell 2006 unpublished field notes on file at CMRAE). The water storage *ollas* are often called *tinajas*, while the bean cooking *ollas* are simply referred to as '*olla'*. I did measure a few miniature *ollas* at La Quesería and Itzímbaro (see Appendix 3 and Table 5.3).

Another formal category is a sub-type of *cajete*, which I call a recurved bowl. The recurved bowls are large, open, deep bowls with an inwardly recurved shoulder (see Figures 5.1 and 5.5 and note vessel diameters larger than *cajetes* in Tables 5.2 and 5.3). This type of vessel was also called a *cazuela* by my workers. These vessels were likely used for cooking and serving, since today, *cazuelas* (large open vessels) of the size of many of the recurved bowls are used to cook the main course of the meal, although they generally do not have the recurved lip (Meanwell 2006 unpublished field notes on file at CMRAE). Therefore, recurved bowls may also have been used as cooking vessels in the past. The recurved bowls have slightly thicker walls, on average, than the standard *cajetes* (see Table 5.1) although the standard deviation in wall thickness is higher (see Table 5.3). Recurved bowls are the only vessels that are larger and thicker-walled at Itzímbaro than at La Quesería (see Tables 5.1-5.3).

3 I recovered 14 inflaring *cajetes* at La Quesería and 4 at Itzímbaro. I did not find any inflaring *cajetes* at Mexiquito.
4 I found 40 flare-rim *tecomates* at La Quesería, 10 at Itzímbaro, and 1 at Mexiquito.

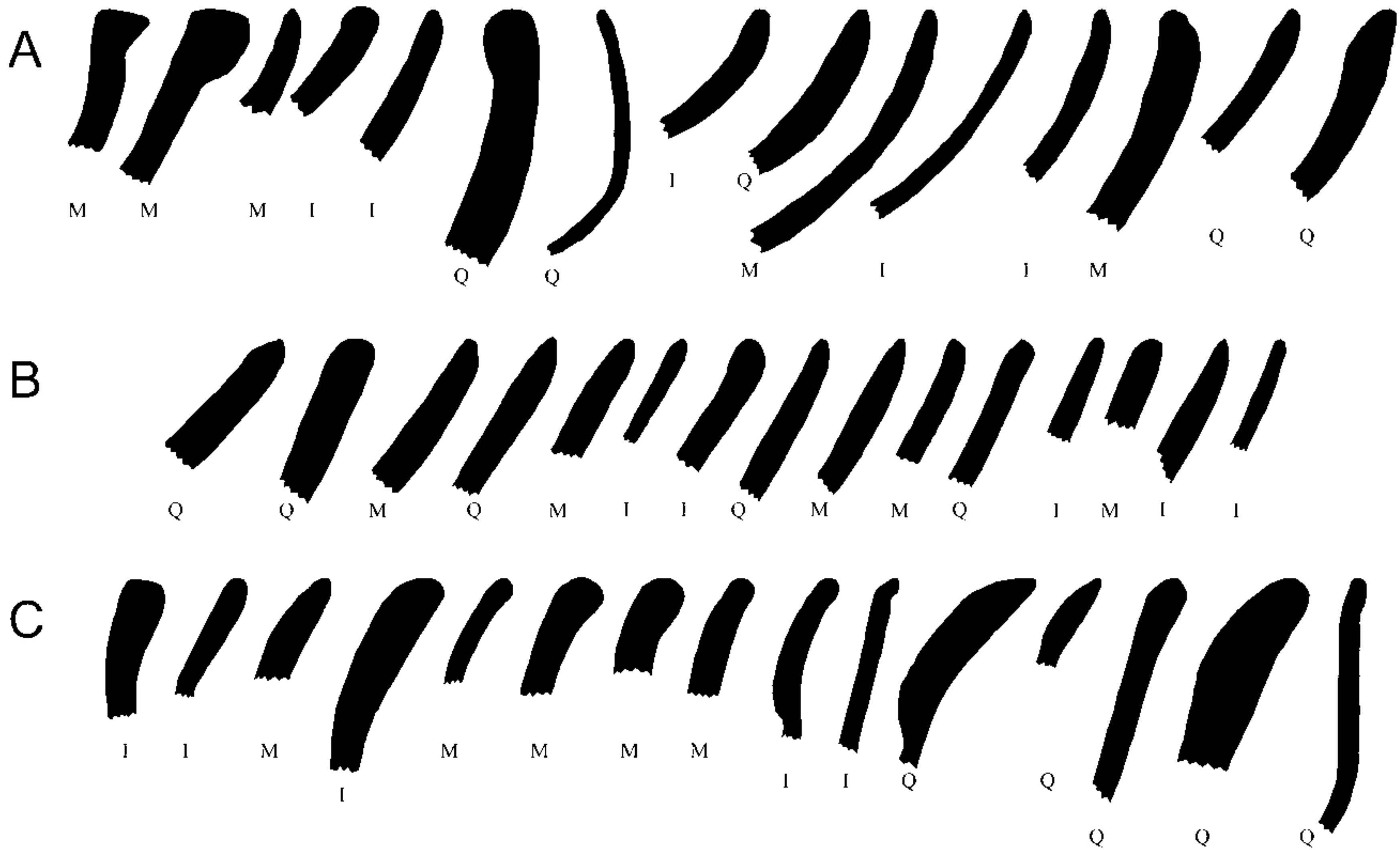


FIGURE 5.2: RIM PROFILES FROM THE THREE SUBTYPES OF *CAJETES*. ROW A IS HEMISPHERICAL *CAJETES*, ROW B IS STRAIGHT-WALLED *CAJETES*, AND ROW C IS OUTFLARING *CAJETES*. NOTE THE WIDE RANGE OF WALL THICKNESSES IN THE *CAJETE* CATEGORY. SCALE IS 5 CM. THE SHERDS MARKED Q WERE FOUND AT LA QUESERÍA, SHERDS MARKED I WERE FOUND AT ITZÍMBARO, AND SHERDS MARKED M ARE FROM MEXIQUITO.

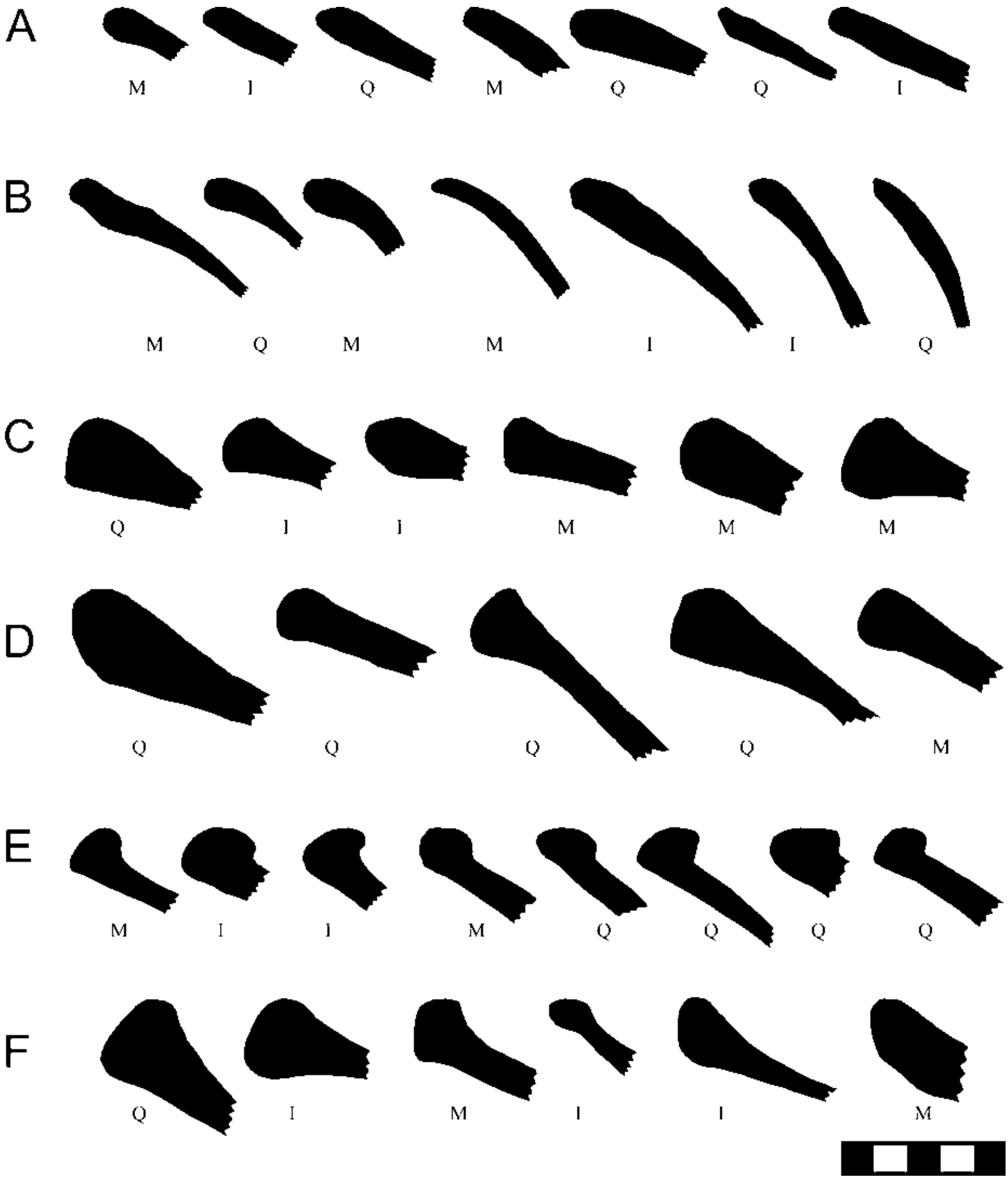


FIGURE 5.3: MAJOR VARIETIES OF *TECOMATE* RIMS. ROWS A AND B ARE PLAIN *TECOMATES*, ROWS C AND D ARE ROUND-RIM *TECOMATES*, AND ROWS E AND F ARE RAISED RIM *TECOMATES*. AS CAN BE SEEN, THE DIFFERENCE BETWEEN RAISED AND ROUNDED RIMS IS SLIGHT, BUT ROUNDED RIMS CONTINUE THE OVERALL CURVE OF THE EXTERIOR WALL, RATHER THAN HAVING A RAISED RIM. THE LAST SHERD ON THE RIGHT SIDE OF ROW F IS A FLARE-RIM *TECOMATE*. SCALE IS 5 CM. THE SHERDS MARKED Q WERE FOUND AT LA QUESERÍA, SHERDS MARKED I WERE FOUND AT ITZÍMBARO, AND SHERDS MARKED M ARE FROM MEXIQUITO.

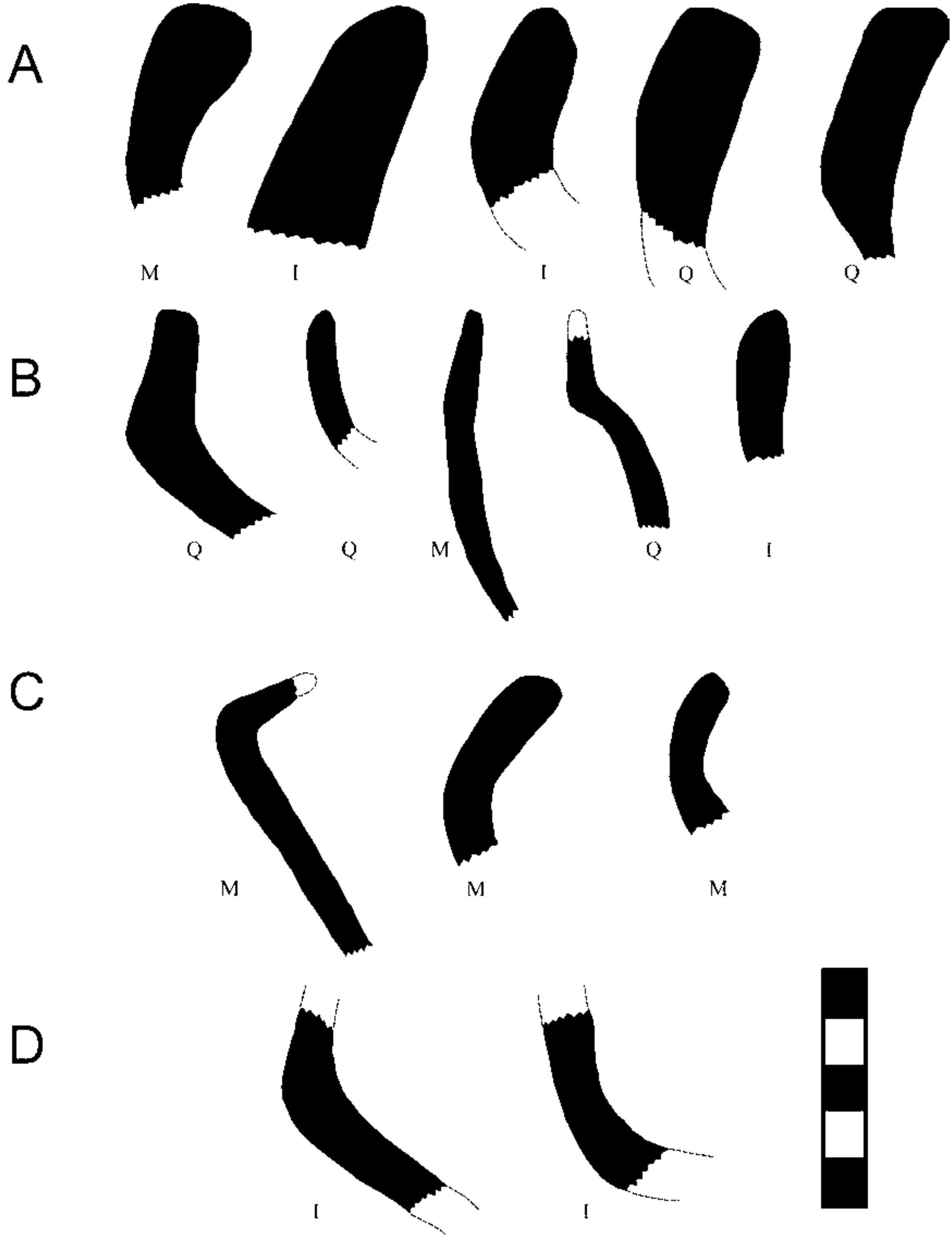


Figure 5.4: Rim and neck profiles from a variety of *ollas*. Row A contains thick, outflaring rims. Row B contains fairly vertical *olla* rims, and Row C contains thinner outflaring rims. Row D contains two neck inflection points that are from *ollas*. Dotted lines are used to indicate probable wall continuations based on the sherds. Scale is 5 cm. The sherds marked Q were found at La Quesería, sherds marked I were found at Itzímbaro, and sherds marked M are from Mexiquito.

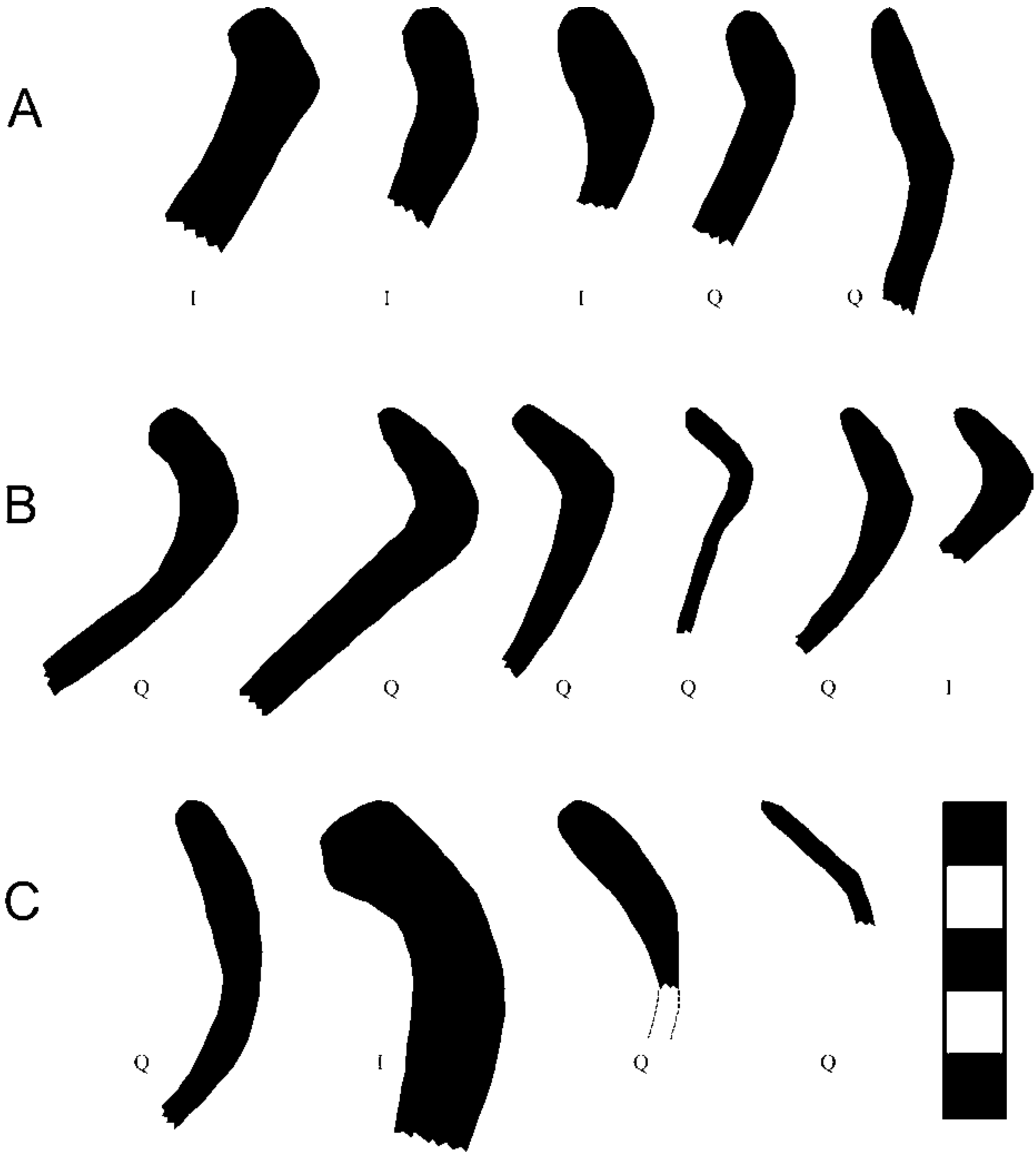


FIGURE 5.5: VARIETIES OF RECURVED BOWL RIMS. ROW A HAS A SHORT RIM ABOVE THE SHOULDER, ROW B HAS A SHARP CURVE AND A LARGER RIM ABOVE THE SHOULDER, WHILE ROW C IS CLOSE TO A *TECOMATE*, WITH A LARGE RIM ABOVE THE SHOULDER. SCALE IS 5 CM. THE SHERDS MARKED Q WERE FOUND AT LA QUESERÍA, AND SHERDS MARKED I WERE FOUND AT ITZÍMBARO.

The final formal group is a combination of several functional types that were difficult to impossible to distinguish in the small pieces recovered from the excavations. This formal group consists of *comals,* plates, and open bowls (see Figure 5.6). These vessels all had a height to diameter ratio of 1:4 or greater. A *comal* is a flat, usually coarse ceramic (or metal in modern times) vessel used to cook tortillas. They occasionally have rounded or other rims and can be slightly concave. Plates are flat disks with or without a distinct rim. Open bowls are more curved than plates, but are shallow and are therefore unable to hold large amounts of liquid. Many of the open bowls exhibited a raised or rounded rim, although some were plain. *Comals* are used for cooking, and the plates and open bowls were likely used mostly for serving food (Meanwell 2006 unpublished field notes on file at CMRAE). All of these vessel types are designated open bowls in my classification. The open bowls vary fairly widely in diameter, but are more consistent in their thickness (see Table 5.3).

In Table 5.4, I present the exact numbers and relative percentages of the major formal types found at each of the three sites. It is notable that the percentages are fairly similar at Itzímbaro and La Quesería, while Mexiquito exhibits a different pattern. Very few recurved bowls were recovered at Mexiquito. *Ollas* were relatively more common at Mexiquito than at the other two sites (although the relative number of *tecomates* was lower). I cannot explain this pattern, although it may be related to the extended Postclassic occupation at Mexiquito. The total number of sherds recovered from Mexiquito was also lower than that at Itzímbaro and La Quesería. As I mentioned in Chapter 4, I found a total of 11,020 diagnostic sherds at La Quesería, 3572 diagnostic sherds at Itzímbaro, and 873 diagnostic sherds at Mexiquito.

TABLE 5.4: ACTUAL NUMBERS AND PERCENTAGES OF THE MAJOR FORMAL CATEGORIES BY SITE (SURFACE COLLECTED AND EXCAVATED).

Formal Category	**La Quesería**	**Itzímbaro**	**Mexiquito**
Cajete	5409 = 49%	1933 = 54%	554 = 63%
Olla	1015 = 9%	376 = 11%	203 = 23%
Tecomate	3751 = 34%	725 = 20%	88 = 10%
Recurved Bowl	578 = 5%	336 = 9%	7 = 1%
Open Bowl/Plate	267 = 2%	202 = 6%	21 = 2%
Total	**11020 = 100%**	**3572 = 100%**	**873 = 100%**

As Tables 5.5 and 5.6 demonstrate, the percentage of utilitarian wares (the *tecomates* and *ollas*) is higher in the surface collected group than among the excavated collection. As I demonstrate in Tables 5.1 and 5.2, the average wall thickness of the *cajetes* is thinner than the *ollas* and *tecomates*, so the *cajetes* may be more easily broken and would not be as frequently encountered on surface.

TABLE 5.5: ACTUAL NUMBERS AND PERCENTAGES OF FORMAL TYPES EXCAVATED FROM EACH SITE.

Type	**Quesería**	**Itzímbaro**	**Mexiquito**
Cajete	1291 = 65%	983 = 67%	285 = 82%
Olla	125 = 6%	81 = 5%	35 = 10%
Tecomate	347 = 17%	223 = 15%	15 = 4%
Recurved Bowl	163 = 8%	100 = 7%	2 = 1%
Open Bowl/Plate	59 = 3%	90 = 6%	9 = 3%
Total	**1985 = 100%**	1477 = 100%	346 = 100%

TABLE 5.6: ACTUAL NUMBERS AND PERCENTAGES OF FORMAL TYPES FROM EACH SITE (SURFACE COLLECTION ONLY).

Type	**Quesería**	**Itzímbaro**	**Mexiquito**
Cajete	4118 = 46%	950 = 45%	269 = 51%
Olla	890 = 10%	295 = 14%	168 = 32%
Tecomate	3404 = 38%	502 = 24%	73 = 14%
Recurved Bowl	415 = 5%	236 = 11%	5 = 1%
Open Bowl/Plate	208 = 2%	112 = 5%	12 = 2%
Total	**9035 = 100%**	**2095 = 100%**	**527 = 100%**

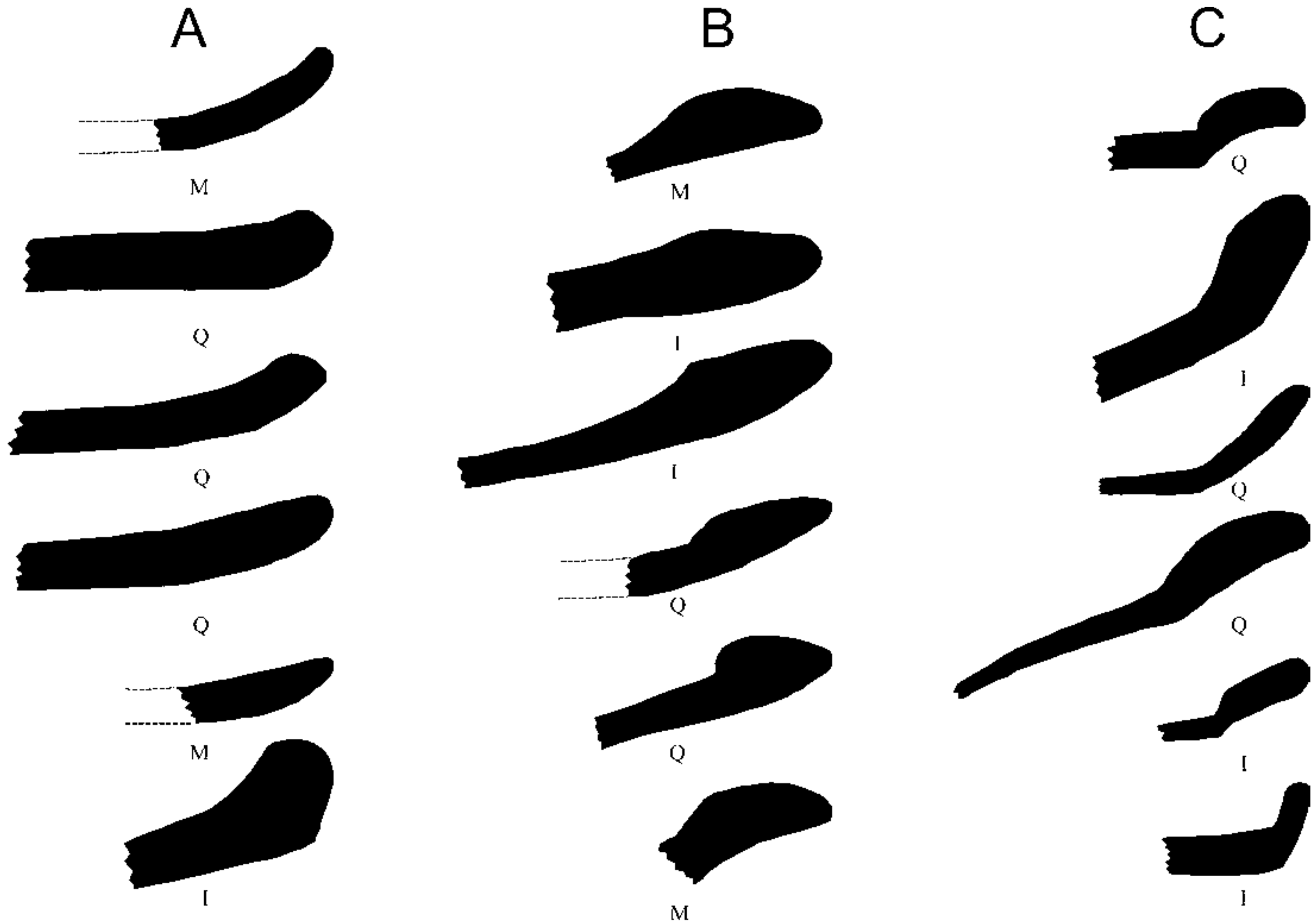


Figure 5.6: Variety of rim profiles from the open bowl category. Column A contains open bowls with plain rounded rims, Column B contains raised flat rims, and Column C has open bowls with a strong bend. In certain cases, the line of the vessel was extended using dashed lines to give a better idea of the overall shape of the vessel. Scale is 5 cm. The sherds marked Q were found at La Quesería, sherds marked I were found at Itzímbaro, and sherds marked M are from Mexiquito.

Many of these formal categories can be difficult to distinguish when looking at the small sherds recovered during archaeological work. For example, *olla* necks that are straight or slightly outflaring can be confused with straight or outflaring *cajetes* when the characteristic inflection point of the neck is not preserved. In some cases, based on the surface finish and thickness of the sherds, I assigned some rims as probable *ollas*, although this could not be determined with certainty. Also, recurved bowl rims without a preserved inflection point can look like *tecomate* rims. The category of plates and open bowls can be confused with recurved bowls or *cajetes* when there is not enough of the rounded edge of the rim to determine the orientation of the curvature. It is entirely probable that the number of *ollas,* plates, and recurved bowls is slightly higher than counted due to these types of improperly assigned sherds.

Appendages and supports of various designs are common in this region[5] in the excavations and surface collections at all three sites (see Figure 5.7). The most common form is that of a loop formed of a cylindrical (or oval cross-section) piece of clay modeled into a hemispherical shape (see Figure 5.7). These loops were used both as handles and as feet (Lister 1947). Due to the small size of some of the loops (cross-sectional diameter of 2 cm or less), these may have served a decorative function. The majority of the loops have a fairly consistent cross-sectional diameter of around 3-4 cm, although smaller and much larger examples were also found. The radius of the loop is usually around 6-8 cm, although some smaller and larger examples did exist.

I also noted a number of annular (ring-shaped) bases of varying heights (see Figure 5.7). Most of these were damaged and I could not determine their overall height. All of them, however, consisted of a round piece of clay attached to the base of a vessel with a flared cross sectional form (see Figure 5.7). I also noted appendages that were tab shaped, nub shaped (small hemispherical protrusions as seen in Figure 5.7), globular hollow, globular solid, cylindrical, and conical (see Figure 5.7). I noted nubs, tabs, and loops used as both handles and feet. The annular base form is exclusively a basal support, but I frequently could not determine whether the other forms were handles or feet without the presence of use marks, due to the small size of the attached sherd.

5 See also Lister 1947 for a description of appendage types.

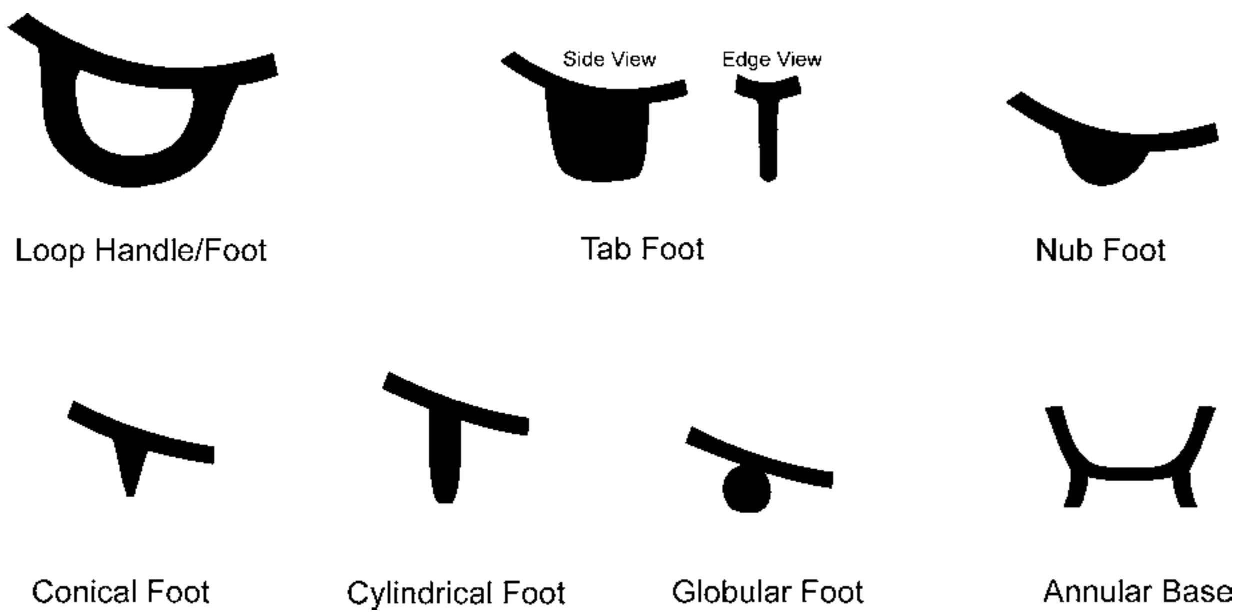


FIGURE 5.7: COMMON APPENDAGE SHAPES.

The analysis also produced a few rare formal types (see Figure 5.8). These include various forms of incense burners as well as *vasos*, which are tall cylindrical vessels often with an opening of a fairly small diameter. I did not carry out petrographic analysis on these types, but for completeness, they are described here. I found at least four thick-walled cylindrical vessels that were likely incense burners, including one with a raised decorative band and decorative holes (see Figure 5.9). I also noted five drilled sherds and three cylindrical handle pieces that appear to have been part of the specific type of incense burner known as *sahumador,* which is a hemispherical bowl attached to the end of a long cylindrical handle (see Figure 5.7). *Vasos* are very rare (I identified a total of eight from the three sites) and are more problematic from a functional standpoint. I am unsure what specific function a *vaso* might have held for the ancient people of the Middle Balsas, as distinct from the other forms.

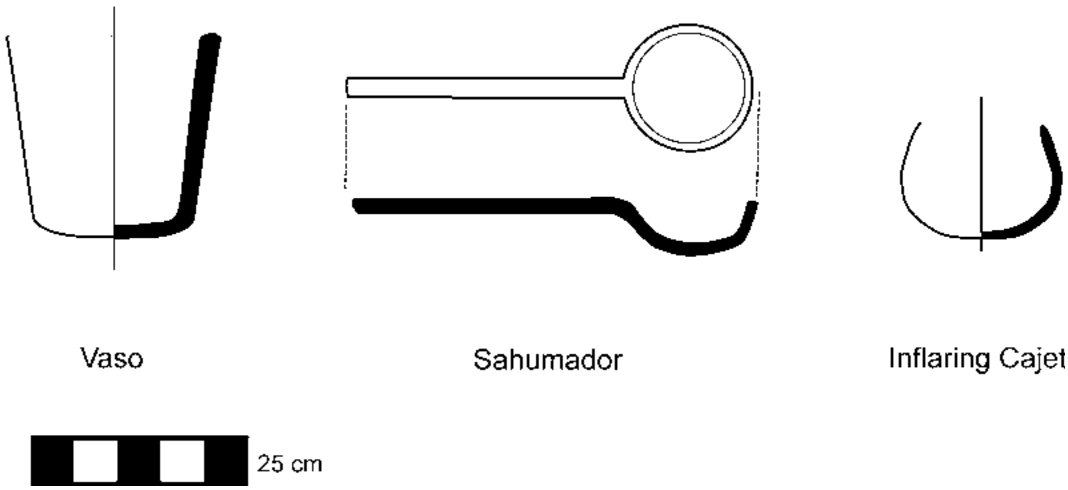


Figure 5.8: Hypothetical reconstructions of unusual formal types.

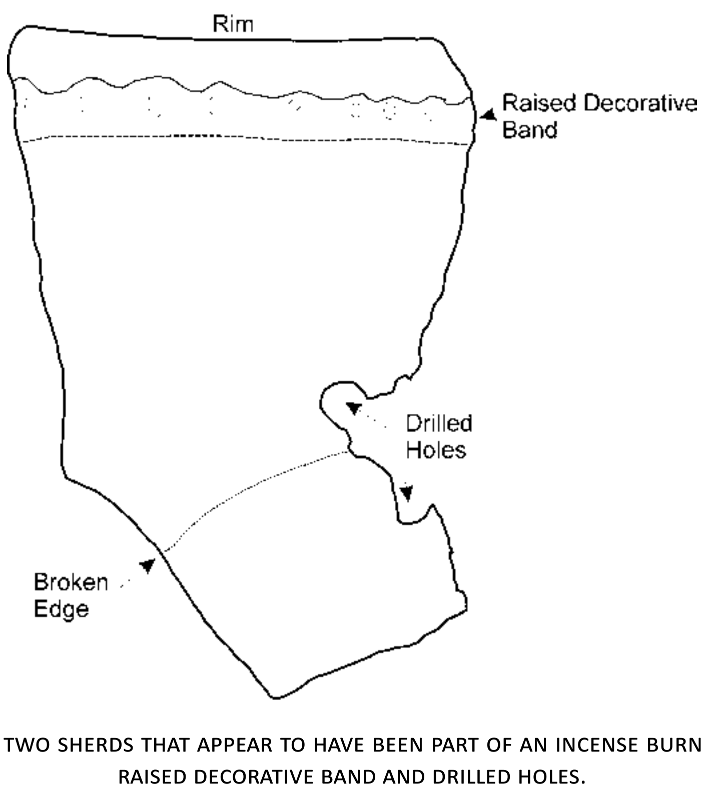


Figure 5.9: Drawing of two sherds that appear to have been part of an incense burner with a crudely made raised decorative band and drilled holes.

Wares and Decorative Techniques

I compared the sherds to the previously published pottery wares documented in this region, including the types identified by Lister, Paradis, and Silverstein (Lister 1947; Paradis 1974; Silverstein 2000). Pottery wares, as defined by archaeologists, are groups of sherds and vessels that share a number of features, usually including but not limited to clay type, surface treatment, and inclusions. Wares are generally chosen to have some chronological and geographical significance, and can also be used in some cases to identify cultural or ethnic groups, based on their differing pottery ware types. Although no previous researchers focused specifically on the Classic and Epiclassic in the Middle Balsas region, the wares identified by Lister, Paradis, and Silverstein generally correspond to my results (Lister 1947; Paradis 1974; Silverstein 2000).

The aim of my analysis of the wares represented by the sherds I collected was 1) to determine if the wares previously identified by other researchers were present in my collections and at what levels and time periods, and 2) to see if any previously unidentified wares were present in the sherds collected during the Middle Balsas Project. I hoped to determine whether any Middle Balsas wares, especially the utilitarian wares, were in use throughout the Classic and Postclassic periods. In Table 2.1, I summarize the wares identified by Lister (1947) and Paradis (1974). In Table 5.7, I show which of those wares were found at La Quesería, Itzímbaro, and Mexiquito.

Table 5.7: Chart of wares found at each site.

Ware	La Quesería	Itzímbaro	Mexiquito
Balsas Red coarse and fine (Lister 1947)	Yes	Yes	Yes
Cútzeo Polished Black (Lister 1947)	Yes	Yes	Rare
La Huichasal Orange (Lister 1947)	Rare	Rare	Rare
San José Grey	Yes	No	No
Chandio Red-on-White (Lister 1947)	No	No	Rare
Zimatepec Black-on-White	No	No	Rare
Guinda Ware (Silverstein 2000)	No	No	Rare
Other Polychrome Wares (unknown origin)	No	No	Rare

As might be expected, the Balsas Red wares (Coarse and Fine) were prevalent at each of the three sites (see Figure 5.10). In general, the Balsas Red ware found in excavations was slipped and smoothed on the exterior (for *ollas* and *tecomates*) or both sides (for *cajetes*, recurve bowls, and open bowls). I also encountered the Cútzeo Polished Black ware at all three sites, although it was more common at La Quesería and Itzímbaro than at Mexiquito (see Figure 5.11). I also identified two of Lister's (1947) polychrome wares at Mexiquito, the Chandio Red-on-White and the Zimatepec Black-on-White (see Figures 5.12 and 5.13). Lister's description of the Zimatepec Black-on-White is similar to the Yestla-Naranjo Early Postclassic ware found in the Mezcala region to the east, as the ware is characterized by a thick white slip and black geometric decorations[6]. The Chandio Red-on-White has some links to Michoacán (Lister 1947; Goggin 1943). At Mexiquito, I found one sherd that was slipped and burnished in a maroon with black lines (see Figure 5.14). This ware may be the same as the Guinda ceramics described by Silverstein (2000:418-419), although my thin section analysis suggests that the example found at Mexiquito was produced locally.

I also encountered a few wares that do not seem to have counterparts in the Lister, Paradis, or Silverstein descriptions (Lister 1947; Paradis 1974; Silverstein 2000). At La Quesería, there is a grey to blue-grey ware (Munsell colors N 6/ to 10B 5/1) that was slipped and usually burnished on the exterior. I designate this ware San José Grey. *Cajetes*, *ollas*, and *tecomates* were all made in this ware. Based on the thin

6 Lister's exact description is: 'A thick white slip was applied to exposed surfaces. The slip is very soft and fugitive and weathers off the vessel very easily. Walls are from three sixteenths to one-fourth of an inch thick. Decoration consists of black geometric and curvilinear designs on the white slip.' (1947:73). See Schmidt 1990:161-185 for comparative material from the Mezcala region.

FIGURE 5.10: SEVERAL EXAMPLES OF BALSAS RED WARES. NOTE THE BURNISHED SURFACES IN MANY CASES, AND THE COLOR IRREGULARITIES OF SHERDS E AND F. THE WARE COMES IN MANY VESSEL FORMS. SHERD A IS A *TECOMATE*, SHERD B IS AN OPEN BOWL, SHERDS C AND E-F ARE *CAJETES*, AND SHERD D IS AN *OLLA*.

FIGURE 5.11: THREE EXAMPLES OF THE CUTZEO POLISHED BLACK WARE OF LISTER (1947). SHERD A IS A RECURVED BOWL WITH INCISED MARKINGS, AND SHERDS B AND C ARE *CAJETES*. ALL SHERDS ARE TO THE SAME SCALE.

Figure 5.12: Probable example of Lister's (1947) Red-on-White ware found at Mexiquito.

Figure 5.13: Example of the Black-on-White ware found at Mexiquito that may be similar to Yestla-Naranjo. Sherd scale is the same as the above figure.

section analysis, I believe this ware was made only at La Quesería from a local clay source (see section 5.2.4 and Figure 5.15). The grey color was likely due to a lightly reducing atmosphere during firing, and it may represent a different way of firing one of the more common clays.

In addition, I identified a few polychrome wares at Mexiquito that the authors do not mention in previous ware descriptions, and these may have been imported. I found a very well made and highly burnished polychrome with orange and white painted decorations as well as black resist designs (see Figure 5.16). Since I encountered only two sherds of this type, I do not have enough information to determine whether it has links to any surrounding area. The sherd analyzed petrographically was definitely imported to

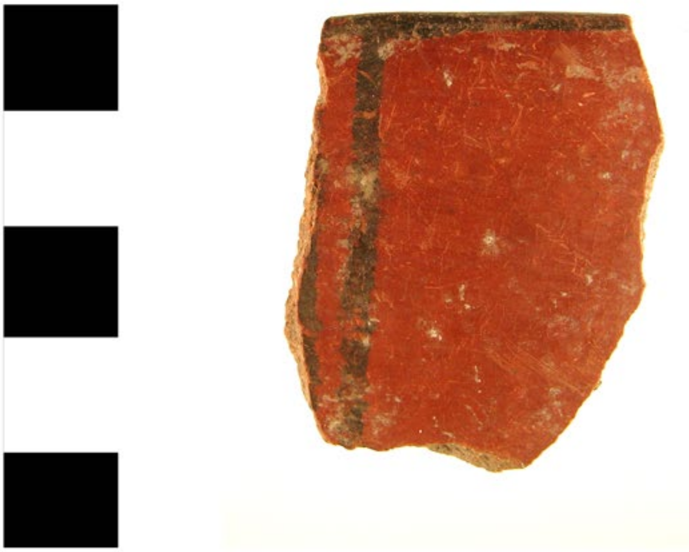


Figure 5.14: Sherd that seems to resemble the Guinda ware of Silverstein (2000). Scale bar is 5 cm.

Figure 5.15: Two examples of San Jose grey ware from La Quesería.

Figure 5.16: Example sherd of red, white, and black ware with resist markings found at Mexiquito.

Figure 5.17: Sherd with black-on-orange decoration found at Mexiquito. The black decoration is along the left side of the sherd in this photograph.

Mexiquito. I also found two sherds of a Black-on-Orange ware that was locally made at Mexiquito, based on the thin section analysis (see Figure 5.17). This ware has thin black geometric patterns on a smoothed orange clay background, and may possibly be a type of Aztec imitation ware.

My macroscopic observations of the pot sherds indicate that Middle Balsas wares are generally not highly decorated or elaborately painted. The majority are slipped and smoothed on the visible surface, usually the exterior. Many of the Balsas Red Fine wares, however, have burnished thin walls, and were well-fired. Two decorative techniques stand out as characteristic of the Middle Balsas tradition. First, many vessels have incised decorations, usually of straight lines or geometric patterns (see Figures 5.18-5.20). Second, it is common to encounter vessels with a raised band with fingertip or other impressions. I call this a raised decorative band (see Figure 5.21).

Most of the incised vessels are thin-walled and usually slipped and burnished. In most cases, the incised decoration appears to have been applied right before firing, while some examples seem to have been completed post-firing. The most common motif is a simple line and zig-zag along the exterior rim of a vessel. This combination was found on *cajetes*, *tecomates*, recurved bowls, and open bowls. I encountered two examples of a vessel that has deeply incised wide lines forming a detailed pattern (see Figure 5.22). This type may have been imported, although I did not perform petrographic analysis on these sherds.

The raised decorative band occurs most frequently on thicker-walled utilitarian vessels such as *tecomates* and *ollas*. The thickness and the details of the decoration vary. Some of the raised bands are very thin (2-3 mm) with small impressions or incised marks. Other raised bands reach up to 2 cm in thickness with deep fingertip impressions. One thick example has Xs incised into the band. The raised decorative band always occurs on the exterior of a vessel, usually at the shoulder of an *olla* or near the rim on a *tecomate* (see Figure 5.23). When handles were present, these were placed in line with the band. Silverstein (2000:412) found a number of vessels (mainly large *ollas* called *tinajas*) with this raised decorative band feature. Paradis (1974:347, 379) also illustrates a number of examples from both her early and late ceramic phases.

Chronological Patterns in Forms and Wares

The major differences I note in formal type and ware become evident when comparing two or more sites, and not within different stratigraphic levels at a single site. In general, the Middle Balsas pottery tradition I described in the previous section seems to persist practically unchanged from the Late Preclassic through the Epiclassic. Paradis (1974:72) also described a long-lived tradition, although she did not have a large number of radiocarbon dates to support that assertion. Silverstein (2000:147) argued that Paradis' data were incomplete, and that some changes in pottery ware types must have taken place in the Classic period. While noting that possibility, my evidence supports Paradis' original statement rather than Silverstein's hypothesis. Although sets of wares persist throughout the Classic period, we do see a marked increase in the number of wares present at Mexiquito in the Postclassic levels.

The relative percentages of the formal types (vessel shapes) are fairly consistently distributed by level within the pits at each of the three sites, although there are some random fluctuations (see Figures 5.24 to 5.26). My data do not follow distributions that are called 'battleship-curves.' This type of distribution is often seen as a new form or ware is adopted slowly (beginning with a low occurrence), then becomes more prevalent, and then tapers off. The time period for each arbitrary level within the pits, which is based on the radiocarbon analyses, is also indicated in Figures 5.24-5.26. Figure 5.27 contains a summary of all of the radiocarbon measurements from the three sites and the probable length of occupation at each site. For more discussion of the radiocarbon dates and the time period associated with each excavated level, see Chapter 4.

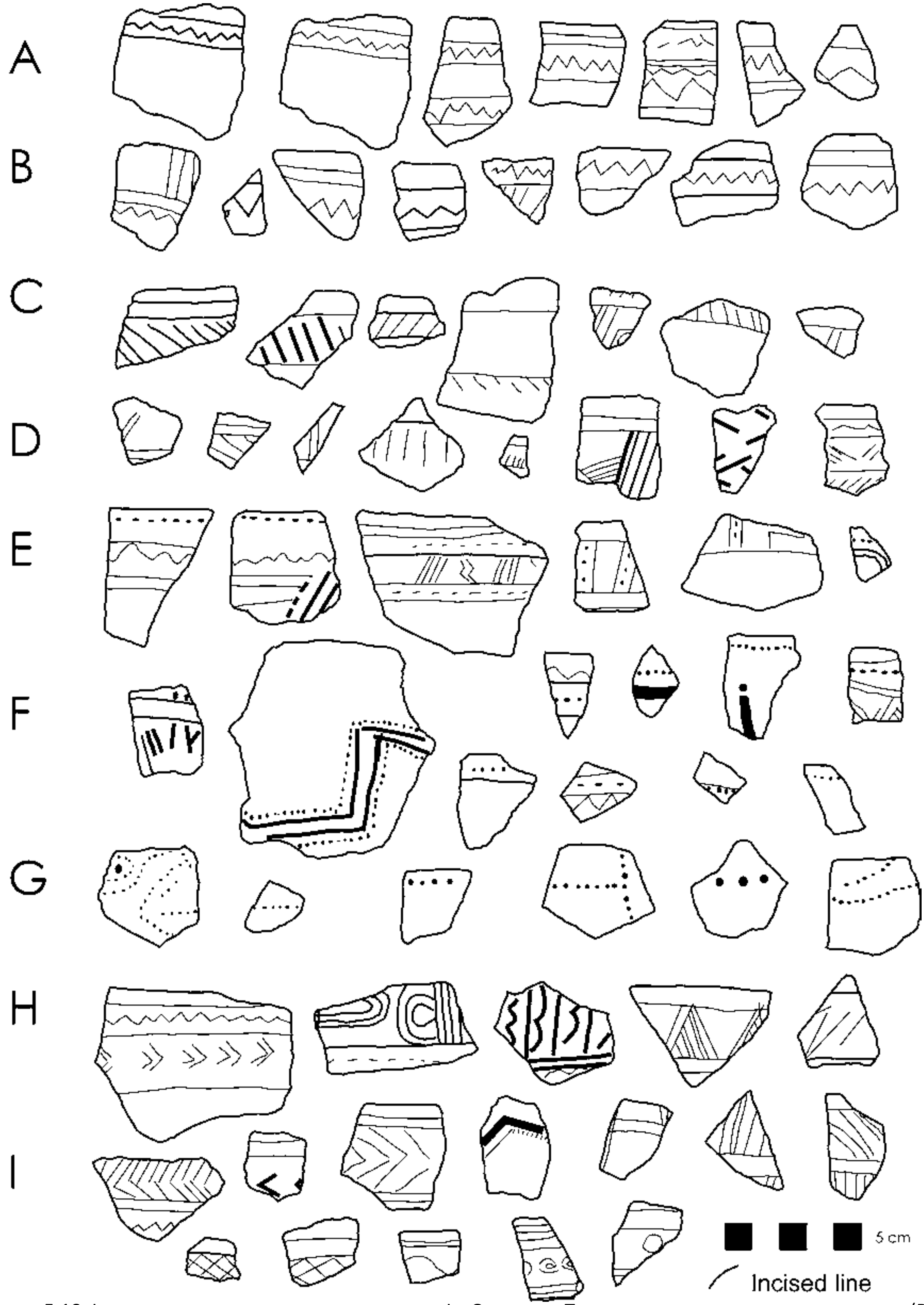


Figure 5.18: Incised sherd patterns from the site of La Queseria. The most common motifs are zig-zags (Rows A and B), straight lines (Rows C and D), chevrons (Row I), and dots (Rows E-G). Additional motifs are found in Rows H and I. This sample represents all of the excavated sherds and some of the more unusual surface collected samples.

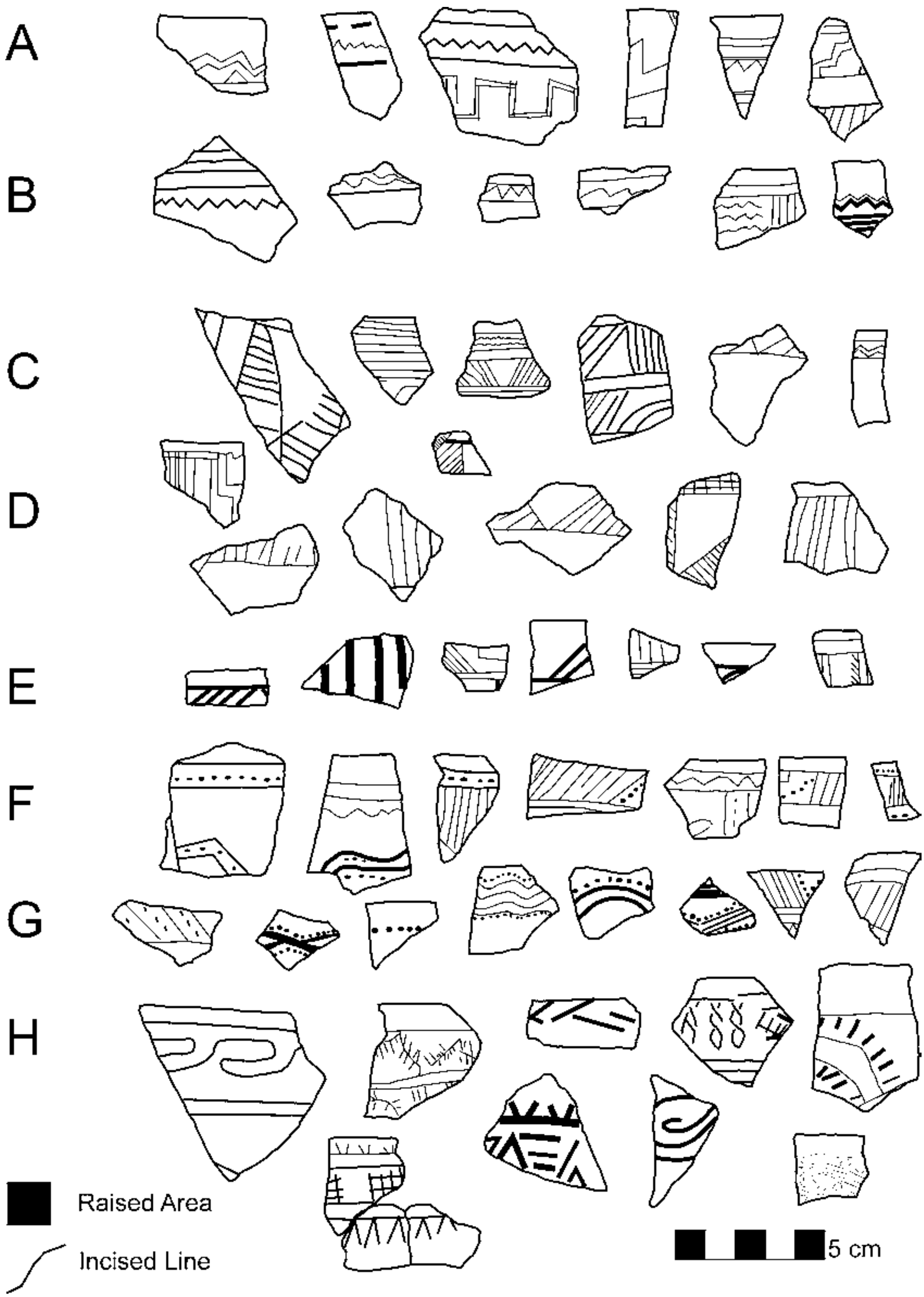


FIGURE 5.19: INCISED SHERD PATTERNS FROM THE SITE OF ITZÍMBARO. THE MOST COMMON MOTIFS ARE ZIG-ZAGS (ROWS A AND B), STRAIGHT LINES (ROWS C-E), DOTS (ROWS F AND G), AND CHEVRONS (SOME IN ROW H).
THIS REPRESENTS ALL OF THE EXCAVATED INCISED SHERDS AND THE MOST INTERESTING INCISED PATTERNS FOUND DURING SURFACE COLLECTIONS.

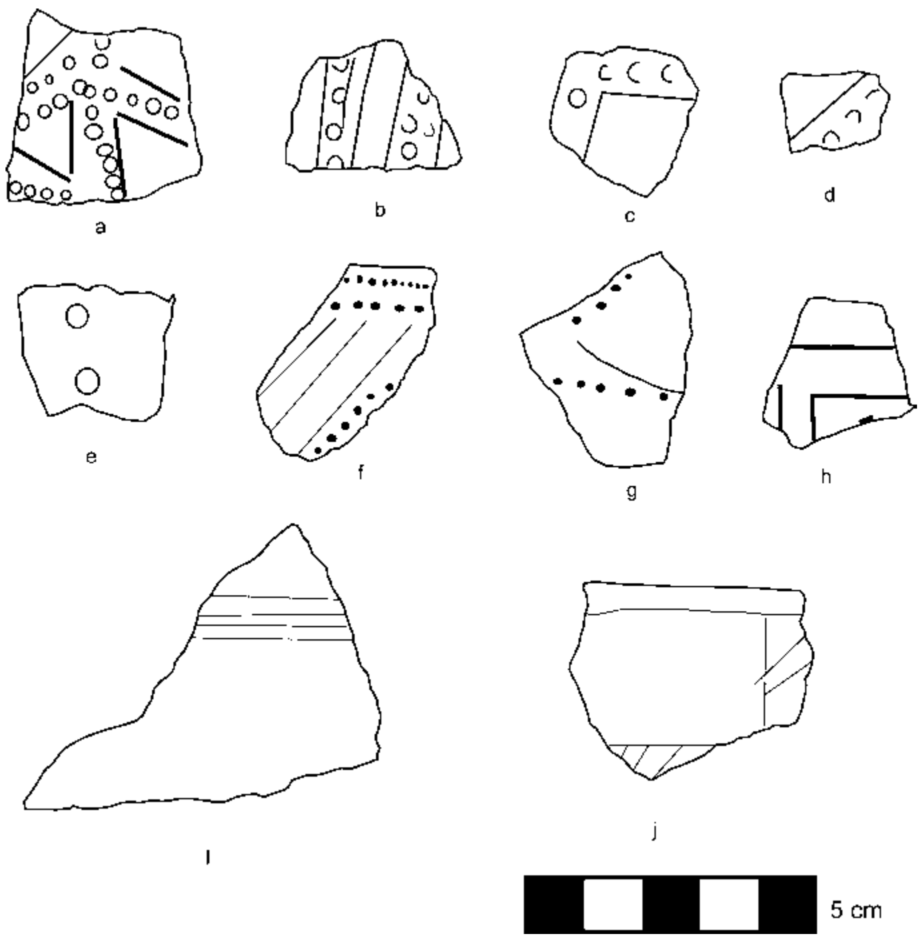


Figure 5.20: Incised sherds from Mexiquito. The most common patterns include stamped circles (a-e), straight lines (a-d, f-j), and dots (f-g). All incised sherds from Mexiquito are represented.

Figure 5.21: Various examples of the raised decorative band from the surface collection at La Quesería.

FIGURE 5.22: TWO DEEPLY INCISED POSSIBLY IMPORTED SHERDS FROM ITZÍMBARO. BOTH WERE FOUND IN PIT 3 IN THE EARLY CLASSIC LEVELS.

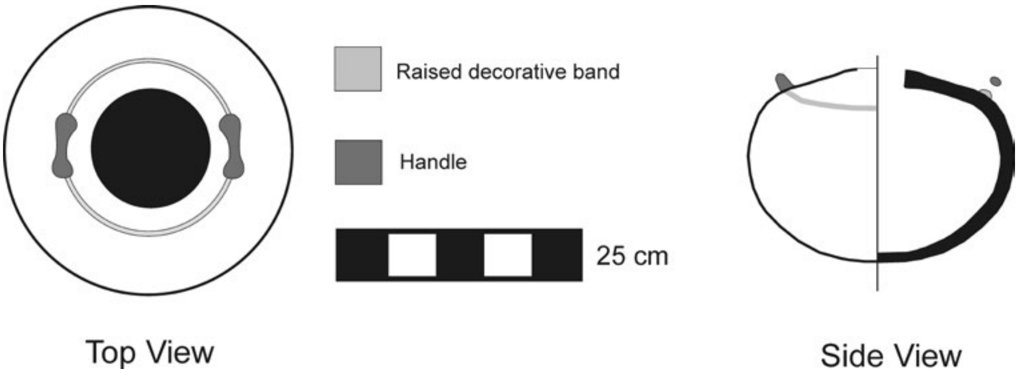


FIGURE 5.23: SCHEMATIC DRAWING OF THE PLACEMENT OF HANDLES AND THE RAISED DECORATIVE BAND ON A *TECOMATE*.

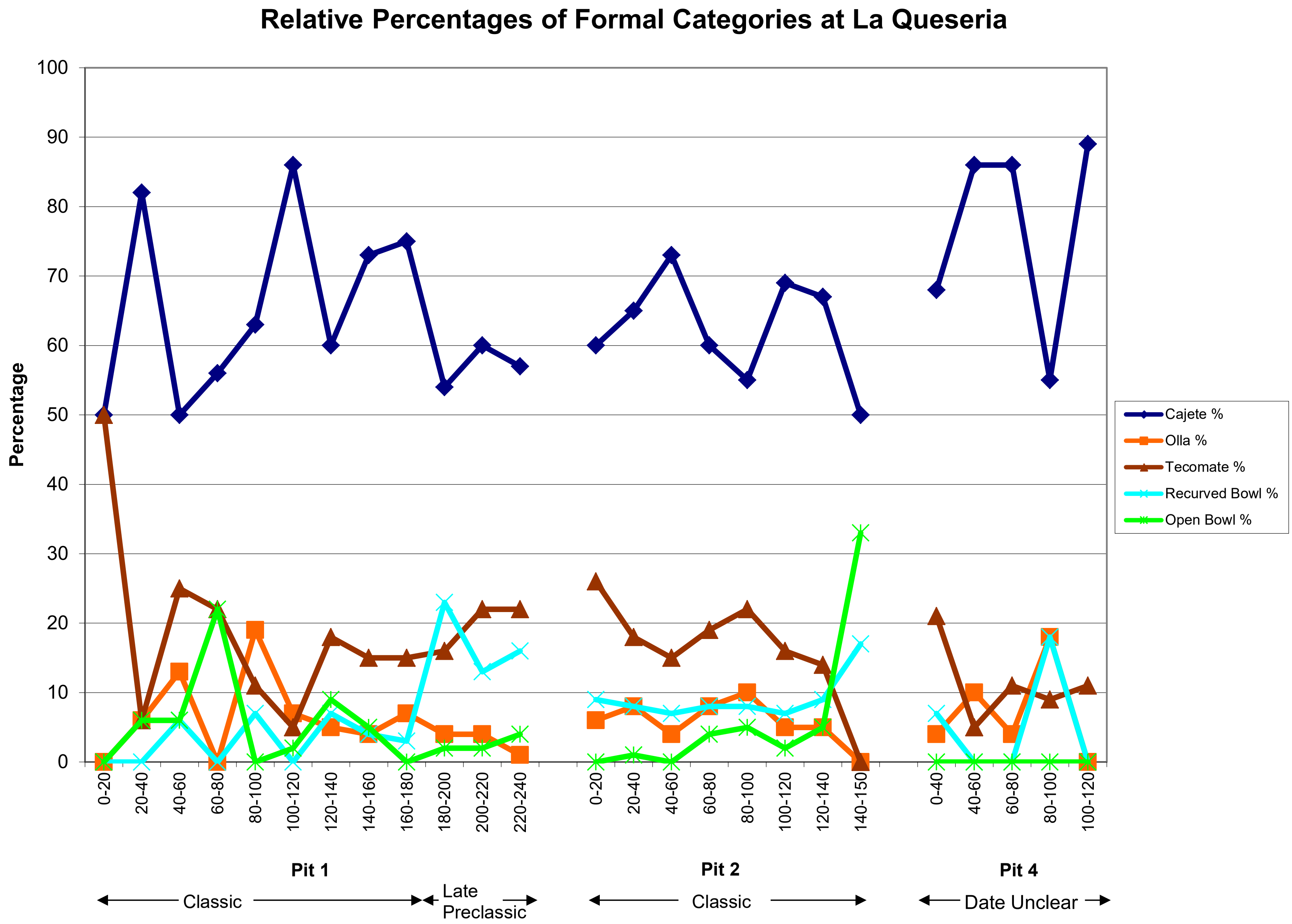


FIGURE 5.24: GRAPH OF THE RELATIVE FREQUENCIES OF THE MAIN FORMAL TYPES IN THE EXCAVATIONS AT LA QUESERÍA.

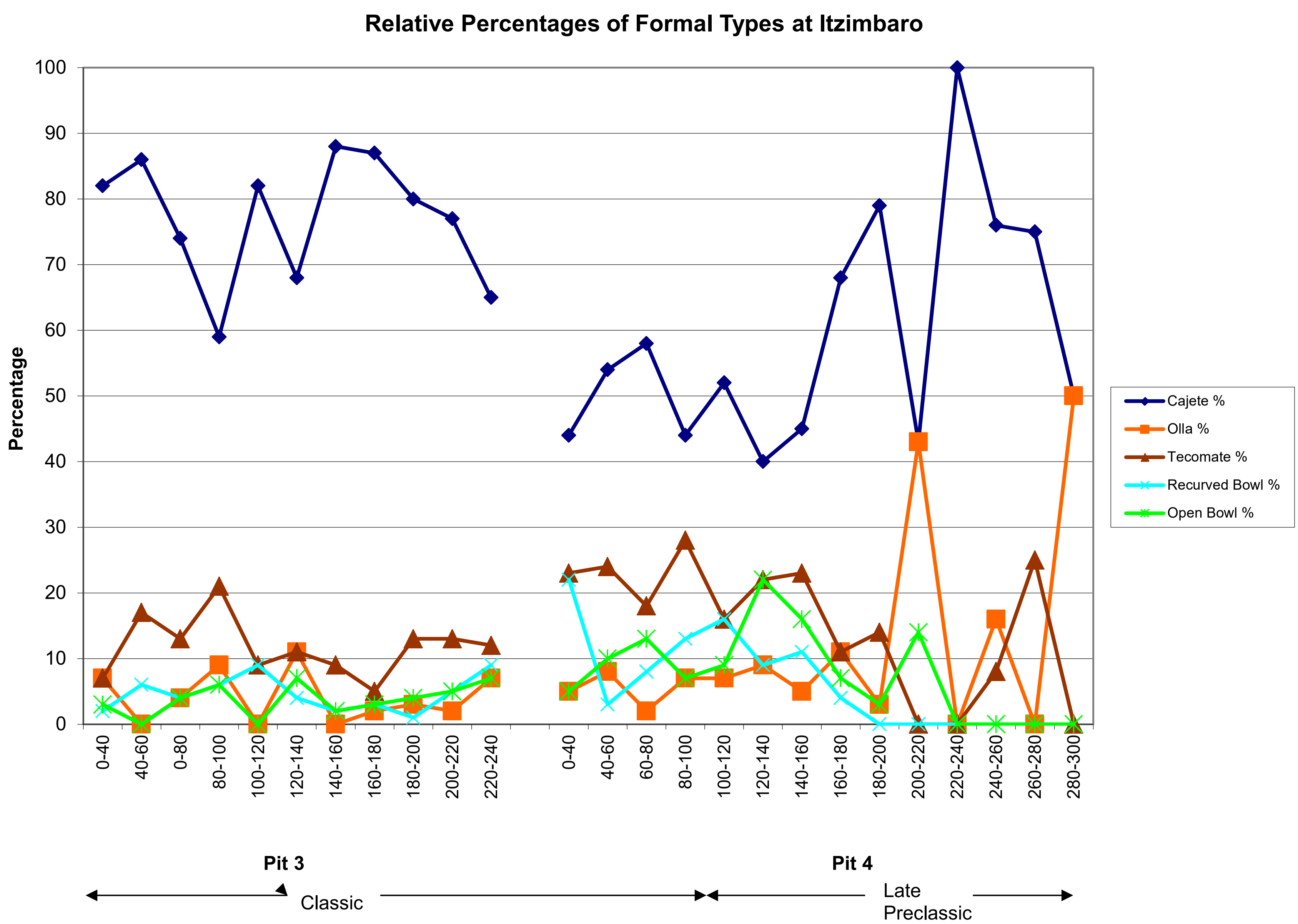


FIGURE 5.25: GRAPH OF THE RELATIVE FREQUENCIES OF THE MAIN FORMAL TYPES IN THE EXCAVATIONS AT ITZÍMBARO.

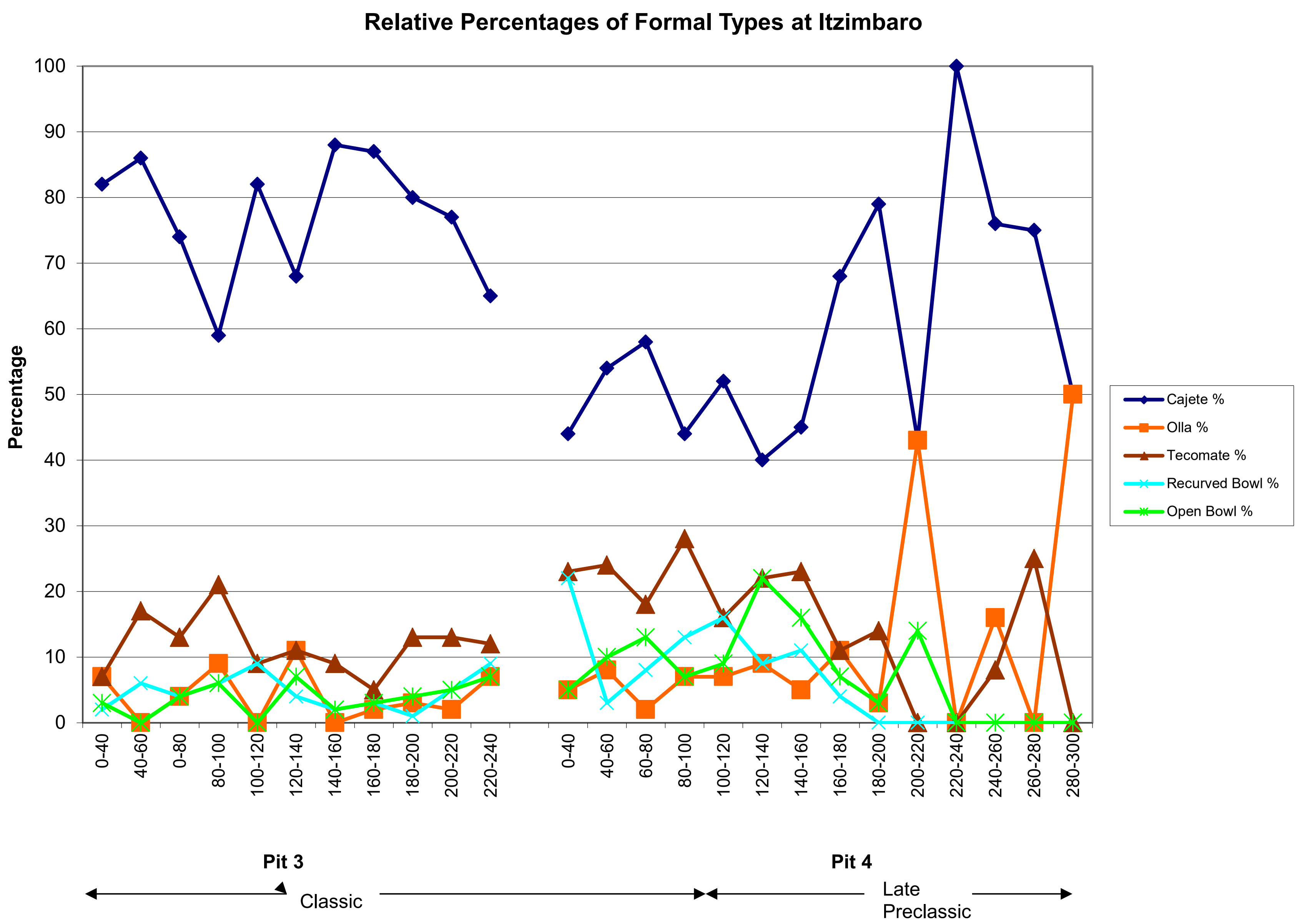


FIGURE 5.26: GRAPH OF THE RELATIVE FREQUENCIES OF THE MAIN FORMAL TYPES IN THE EXCAVATIONS AT MEXIQUITO.

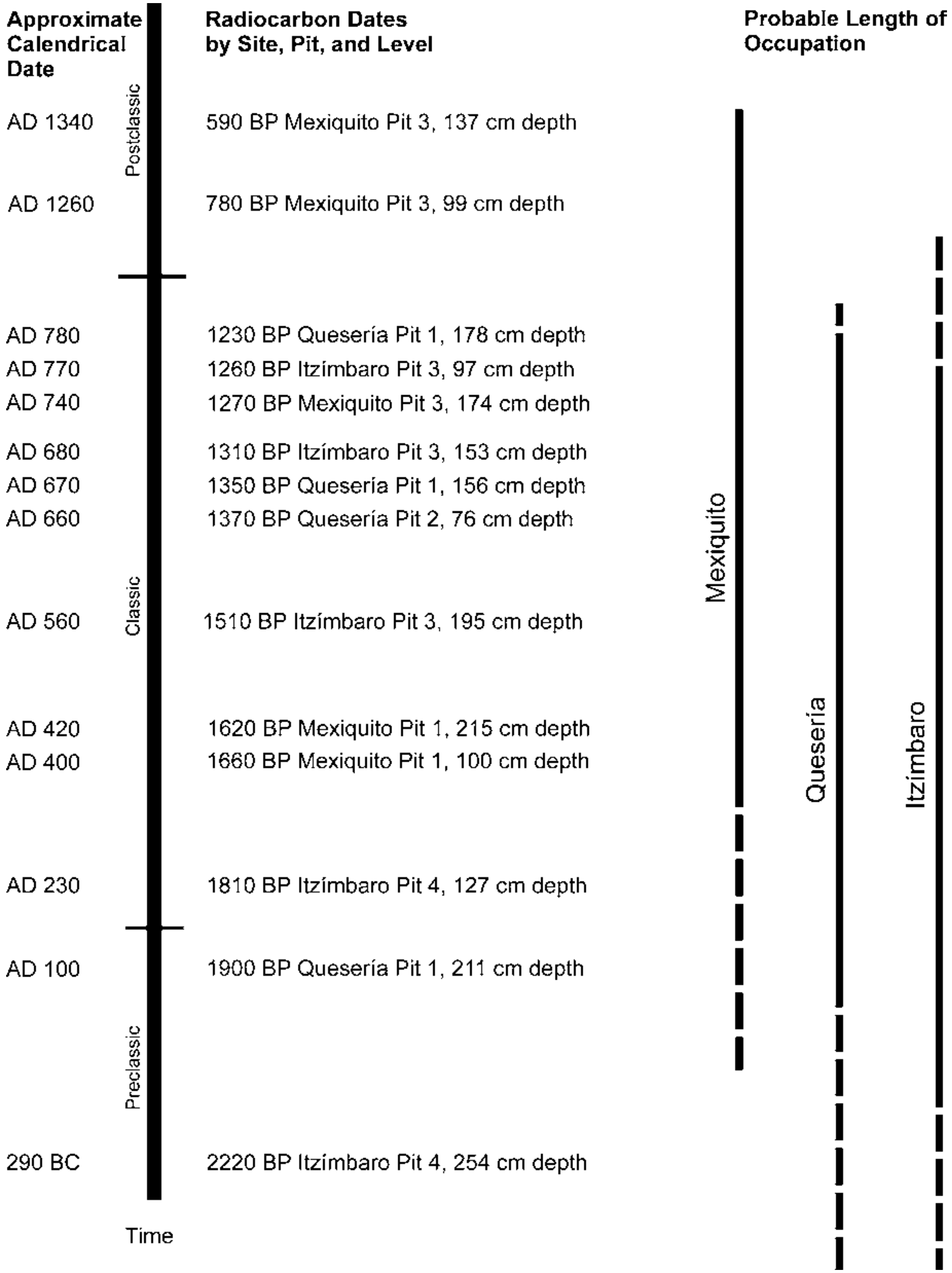


Figure 5.27: Summary of the radiocarbon analyses from each site (see Tables 4.2-4.4, 4.6-4.7, and 4.11-4.12) and the probable length of occupation at each site.

At all three sites, *cajetes* are the most common form. *Tecomates* are the second most common form at La Quesería and Itzímbaro. At Mexiquito, *ollas* are the second most common, with *ollas* almost always equaling or exceeding the percentage of *tecomates* within each excavated level. *Ollas* were also more common than *tecomates* in the surface collected material from Mexiquito. As shown in Figures 5.24-5.26, the consistency of the formal type distribution suggests that all of the forms I identified were used at fairly consistent amounts throughout the Classic period. It may be that recurved bowls are more common in the Classic rather than the Preclassic or Postclassic periods, since they were not found in the deepest levels of Pit 4 at Itzímbaro (see Figure 5.25), which dates to the Preclassic, and very few (7) were found at Mexiquito, which has a Postclassic occupation. At Mexiquito, the percentages of each vessel type from Pit 1 and from the lowest levels of Pit 3, which date to the Classic Period, do not vary much from the percentages in the Postclassic layers in Pit 3 and Pit 2 (see Figure 5.26). At each site, it seems that the formal categories chosen and used remained fairly consistent through time. I cannot explain the higher occurrence of *ollas* at Mexiquito from a functional or stylistic standpoint.

With the possible exception of the recurved bowls discussed above, I was unable to identify any vessel form within the Middle Balsas region that had chronological significance. The graphs demonstrate that the relative percentages of the vessel forms are fairly consistent through time, and when variations are present (especially within the *cajetes*, which have the highest standard deviation), these variations are not suggestive of a chronologically significant trend. The lowest, highest, and average percentages for the occurrence of each of the five vessel forms are shown in Table 5.8.

Table 5.8: Highest, lowest, and average percentages and the standard deviation for the occurrence of formal types within the excavated levels at each site.

Vessel Shape	Highest Value	Lowest Value	Average	Standard Deviation
Cajete	100% (Itzímbaro and Mexiquito	40% (Itzímbaro)	72.3%	16.12
Tecomate	50% (La Quesería)	0% (All sites)	10.8%	9.63
Olla	50% (Itzímbaro)	0% (All sites)	8.3%	10.37
Recurved Bowl	33% (Mexiquito)	0% (All sites)	5.2%	6.78
Open Bowl	33% (La Quesería)	0% (All sites)	3.7%	6.33

5.2 Petrographic Analysis Results

As described in Chapter 3, I analyzed a total of 135 sherds using petrographic analysis. Forty-five sherds were selected from each of the three sites I investigated. This analysis was undertaken to identify probable clay sources, to describe processing techniques used by the Middle Balsas potters, and to determine if both clay sources and processing techniques changed through time. In this section I present the fabric groups identified at each site.

A pottery 'fabric' consists of a specific clay type (identified by its color and optical activity), mineral grain texture (size and shape), and mineralogy (type of mineral inclusions) that, together, form a distinct group of sherds that are related by similar production techniques and clay source. I made my fabric classifications by a microscopic (40X to 200X) inspection of the mineralogy and texture of the sherd thin sections. I then confirmed these groupings by performing a quantitative analysis of the numbers of various types of mineral grains present in each thin section[7]. In Chapter 6, I will relate the fabric groups to the formal types described in section 5.1.

Basic Middle Balsas Geology

Since pottery is made from clays, which are a naturally occurring type of soil deposit, it is important to understand the local geology to correctly identify the source area for the clays utilized and for any mineral inclusions found within the pottery. The local geology is also important because potters generally use

7 This technique is known as point counting, and was described in section 3.3. The full results appear in Appendix 6.

local ingredients for their vessels (Arnold 1985, Fargher 2007; Stark *et al*. 2000). Clays are often formed as weathering products from the surrounding bedrock, thus the minerals that form the bedrock become incorporated into the clay body as small mineral inclusions. The mineralogy of a pottery vessel can suggest possible clay source locations and can help determine whether the vessel could have been imported from other areas. In this section I present the major features of Middle Balsas geology.

The Middle Balsas area is divided into three north-south zones of igneous, sedimentary and metamorphic rocks (see Figures 5.28 and 5.29). Small outcrops of highly felsic and mafic volcanic rocks (granite and basalt, respectively) are found throughout the region, but intermediate rocks such as andesite, as well as volcanic tuffs and volcaniclastic breccia are the most common rock types in the area. Felsic rocks are so named for their high feldspar (Fel) and silicon (Si) components, while mafic rocks include higher amounts of heavier elements including magnesium (Ma) and iron (Fe). These mafic minerals include biotite, the amphibole group[8], the pyroxene group[9], and olivine.

Much of the sedimentary region is composed primarily of volcano-sedimentary rocks that are formed from volcanic mineral grains cemented into new rock types such as conglomerates or sandstones. According to the geologic map, the geologic deposits near La Quesería and Itzímbaro are primarily made of various types of conglomerates. These conglomerates include grains of quartz, feldspar (plagioclase and potassium-rich), and epidote (INEGI 1983).

Mexiquito is located within the volcanic, rather than the sedimentary zone. Mexiquito is surrounded by a number of geological formations, including outcroppings of andesite, granite and granodiorite, intermediate tuff, and intermediate breccia. The typical minerals associated with these rock types include quartz, potassium-rich feldspar (K-spar), plagioclase feldspar, and a variety of the lighter mafic minerals, including biotite, amphibole, pyroxene, and muscovite mica.

Temper and Other Considerations

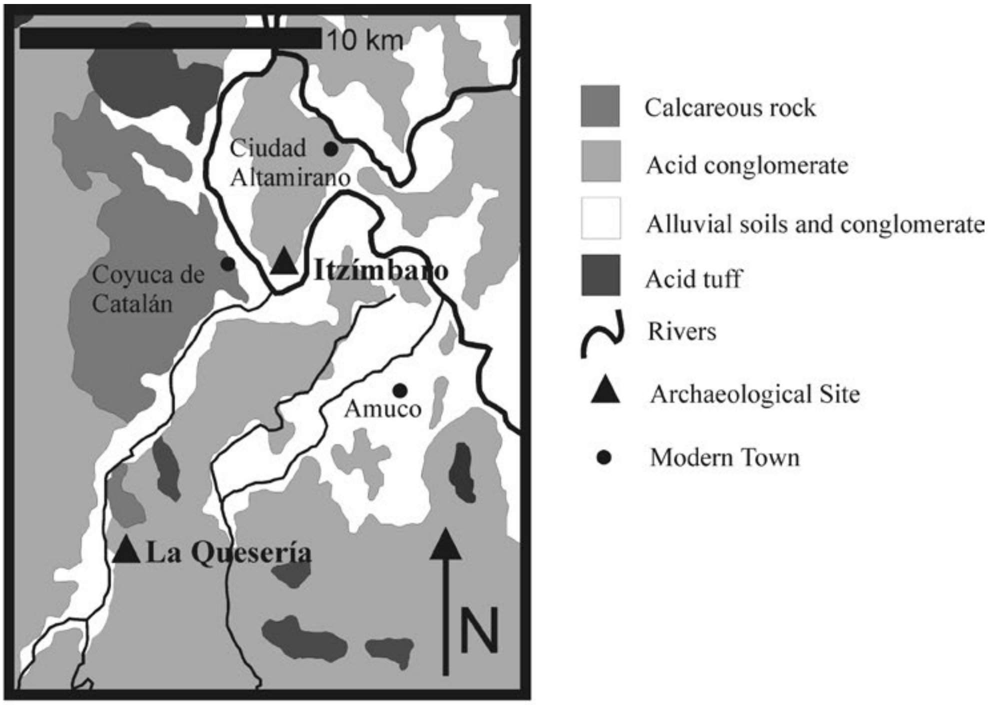
When performing the petrographic analysis, I paid close attention to the distribution of the sizes of the mineral grains. Clay is an extremely plastic material, and working with a pure clay is practically impossible; the clay is too sticky to shape into a coherent structure. In many cases, a pure clay cannot be formed into vessels because it cannot support its own weight and may crack during drying due to excess shrinkage upon loss of water. Potters often add non-plastic inclusions (often called temper in the archaeological literature) to the clay or they select clay beds containing a high number of naturally occurring mineral inclusions. The function of these inclusions is to limit the amount of shrinkage that occurs during the drying process and to make the clay less sticky and stronger during formation. In contrast to many scholars, I use the word 'inclusion' to mean any naturally occurring or added non-plastic particle. I use the word 'temper' exclusively to refer to deliberately added particles.

A variety of materials can be used as temper, such as sand, dung, straw, and shell. When tempering is identified within the Middle Balsas pottery tradition, the potters seem to have tempered the pottery with a mixed-mineralogy sand[10]. One classic sign of a pottery vessel that has been tempered is a bi-modal distribution of the data on grain size or mineralogy (see Figure 5.30). When this occurs, the clay has a naturally occurring suite of small particles to which the potter added additional, larger sand particles to produce a mixture with an appropriate workability. The Middle Balsas tradition appears to include both tempered and non-tempered pots made from clays with a high number of naturally occurring inclusions.

8 The most common minerals within the amphibole group are hornblende, tremolite-actinolite, and lamprobolite.

9 Pyroxenes are divided into orthopyroxenes and clinopyroxenes. The most common clinopyroxenes (as found in my samples) are diopside and augite.

10 The word sand generally refers to a particular size range of pure quartz grains. The Middle Balsas potters appear to have used sand and silt-sized particles in the Udden-Wentworth scale (Adams *et al*. 1984) that consisted not only of quartz, but also of other minerals, such as plagioclase feldspar and biotite.



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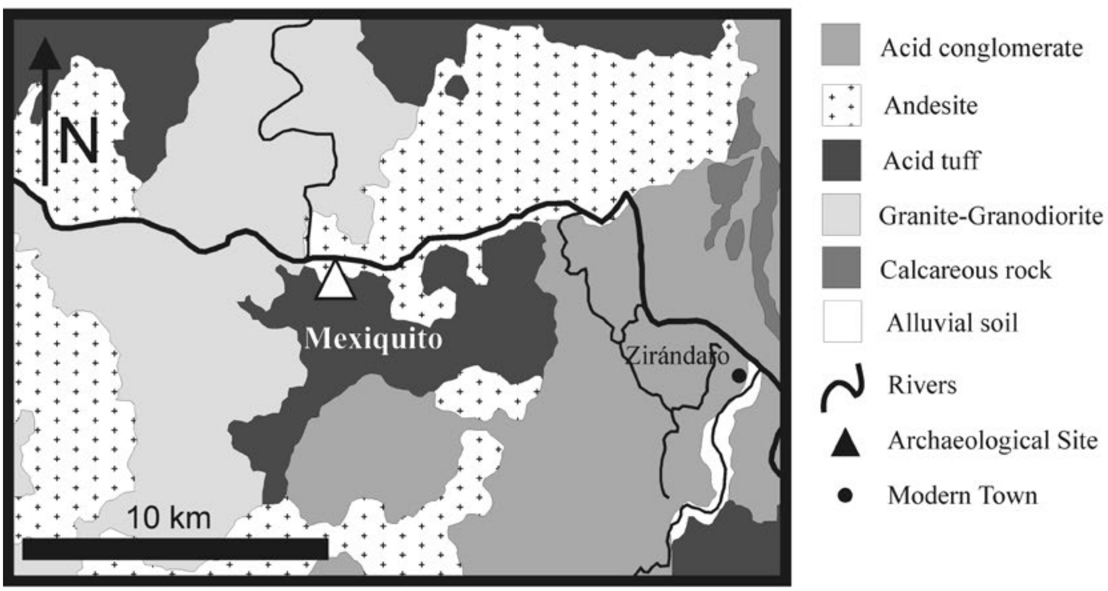


b

FIGURE 5.28: DETAILS REDRAWN FROM THE INEGI (1983) GEOLOGIC MAP OF THE AREAS AROUND LA QUESERÍA, ITZÍMBARO, AND MEXIQUITO. MAP A LOCATES THE LARGELY SEDIMENTARY ROCK DEPOSITS IN THE VICINITY OF ITZÍMBARO AND LA QUESERÍA; MAP B SITUATES MEXIQUITO IN AN IGNEOUS ROCK ZONE.

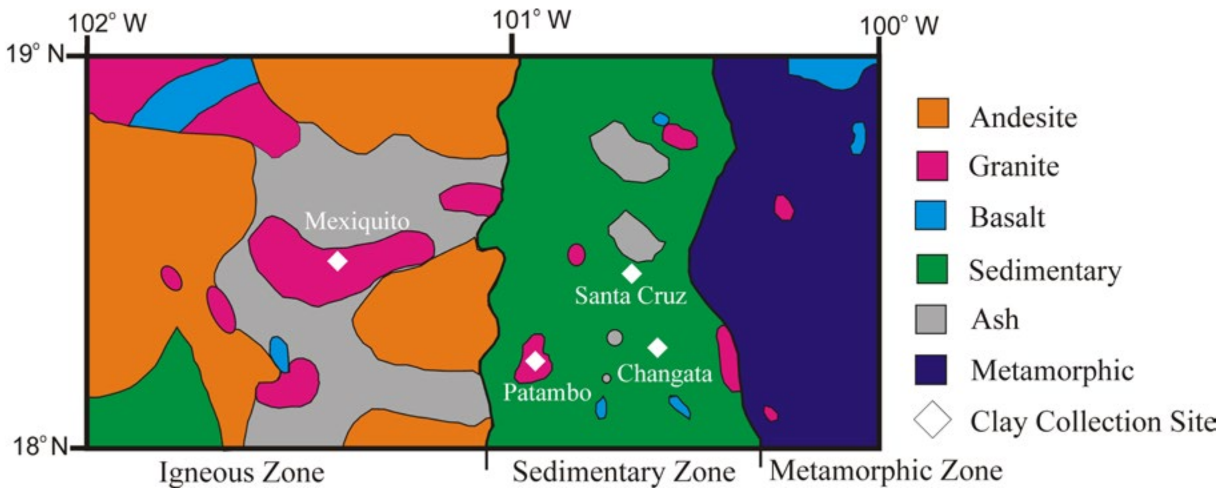


FIGURE 5.29: A SIMPLIFIED MAP OF THE GEOLOGIC ZONES IN THE BALSAS REGION AND THE LOCATIONS AT WHICH I COLLECTED CLAYS.

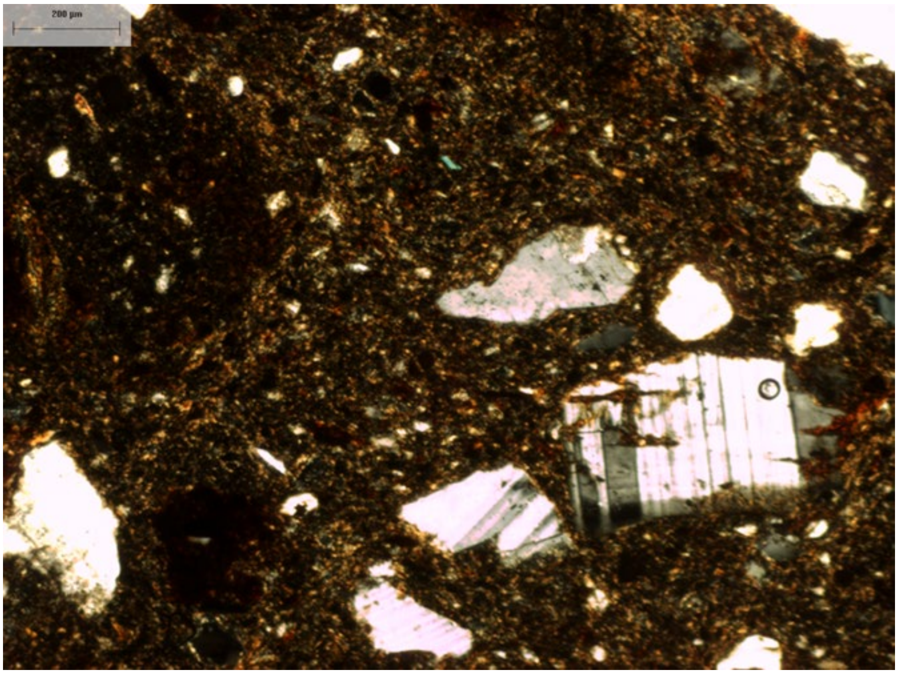


FIGURE 5.30: PHOTOMICROGRAPH (XPL) OF A THIN SECTION OF A MODERN PATAMBO VESSEL MADE USING SAND TEMPER. NOTE THE BIMODAL (VERY SMALL AND VERY LARGE) SIZE DISTRIBUTION OF INCLUSIONS.

Regional Clay Fabric Descriptions from Petrographic Analysis

In general, I identified two dominant clay fabric groups in the Middle Balsas region – Type A and Type B/C. Type A fabrics include a mainly volcanic suite of mineral inclusions that includes quartz, plagioclase feldspar, and small amounts of biotite, amphiboles, and iron-rich minerals. I also encountered small rock fragments of trachyandesite (see Figure 5.31), a rock with the needle-like trachytic texture of an andesitic composition in Type A fabrics. These trachyandesite fragments are present in some sherds at each of the three Middle Balsas sites. The likely source rock for this clay is an intermediate[11] volcanic rock. Type A sherds (in various different sub-types) were found at all three sites. Some appeared to be deliberately tempered, while others appeared to contain mainly the natural non-plastic inclusions typical of Type A fabrics.

Type B/C fabrics also have volcanic-derived mineral inclusions, but they contain less quartz than Type A fabrics. Instead, the most common minerals in Type B/C fabrics are weathered plagioclase feldspar and mafic minerals, including biotite and amphiboles. Type B/C fabrics contain rock fragments, some of which appear to be a trachyandesite as well as an occasional chert. The C sub-type has notably higher amphibole, although the B/C sherds appear to fall along a continuum from low to high amphibole concentrations. No B/C sherds were encountered at Mexiquito. This type appears to be restricted to the areas closer to La Quesería and Itzímbaro, and likely is found only in the sedimentary rock band. Most B-type sherds contain natural inclusions, although a small number is possibly deliberately tempered.

A third rare clay type was found in small amounts (<5 sherds) at each of the three sites. This Type E fabric is distinguished by highly optically active clay domains, as well as high numbers of quartz grains (including polycrystalline quartz) and fewer mafic mineral inclusions. A possible source for the Type E fabric will be discussed later.

I found two additional large fabric groups within the Mexiquito sherds, which I call Types G and H. The G group contains a high proportion of quartz inclusions, and a sub-group of Type G sherds is distinguished by a micrographic[12] intergrowth of quartz and feldspar (see Figure 5.47 for details). Type H sherds contain a more varied mineral suite with higher mafic concentrations. All Type H and G sherds appeared to have been deliberately sand tempered.

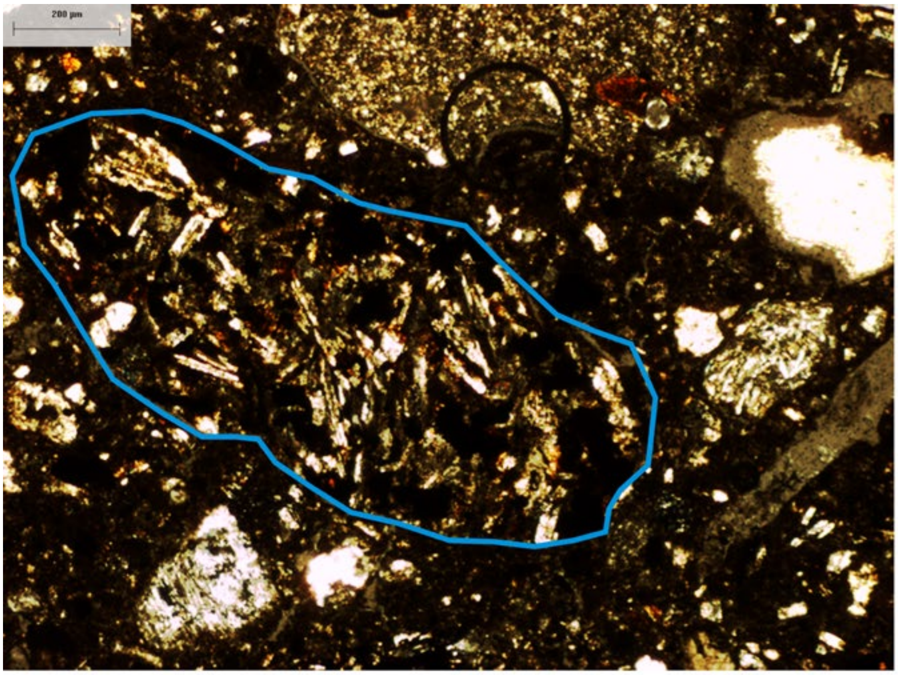
The majority of vessels analyzed from all three sites seems to have been manufactured from local Middle Balsas clays, although small variations in the mineralogy distinguish some sherds from the larger groups. For example, a number of sherds have small fragments of limestone, mudstone, or epidote in addition to the standard mineralogy, and these sherds were analyzed separately from the main group. At Mexiquito, I sectioned three sherds that are clearly made from clay fabric types that are radically different from anything found in the Middle Balsas region. I believe these are from vessels that were imported. These sherds will be described in the section on Mexiquito.

Table 5.9 presents a summary of the major minerals, characteristic texture, and tempering regime in the Middle Balsas fabrics I identified through petrographic analysis. The detailed point counts of the mineral inclusions within the ancient sherds support the fabrics I identified within the collections. The point count data provide a quantitative measure of the relative frequency of occurrence of the various mineral grains within the clay matrix. Although the point count data cannot be used without reference to the grain texture and matrix characteristics that are visible only during petrographic analysis, it is important to verify that

11 Intermediate volcanic rocks are mineralogically between the mafic and felsic rocks described previously. Intermediate rocks generally contain some quartz, plagioclase feldspar, biotite, amphiboles, and occasionally pyroxenes.

12 A 'graphic' intergrowth of quartz and feldspar is distinguished by its regularity and its supposed resemblance to letters or hieroglyphics. This characteristic texture can be either macrographic (visible to the naked eye) or micrographic (visible only with magnification).

the relative frequencies of the minerals are quantitatively supported. The raw data from the point counts are available in Appendix 6.



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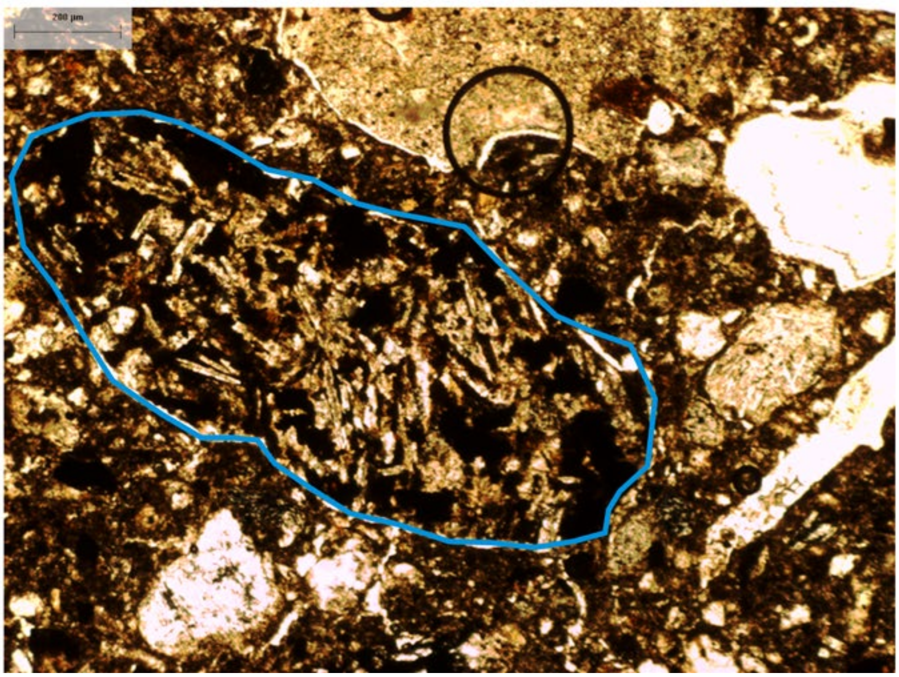


5.31b

Figure 5.31: Two photomicrographs of the same trachyandesite fragment in sample S2-06-22. The top photograph was taken in partial cross-polarized light (pxpl) and the bottom photograph was taken in plane polarized light (ppl). Note the needle-like texture of the feldspar grains within the blue outline.

TABLE 5.9: SUMMARY OF THE MAJOR FEATURES OF THE MIDDLE BALSAS POTTERY FABRICS IDENTIFIED VIA PETROGRAPHIC ANALYSIS.

Fabric	Main Mineral and Rock Inclusions	Characteristic Texture	Tempered?	Sites Found
A1	Abundant quartz, plagioclase feldspar, biotite, amphibole, epidote, chert, trachyandesite.	Angular inclusions	No	La Quesería Itzímbaro Mexiquito
A2	Quartz, plagioclase feldspar, biotite, amphibole.	Sub-angular to rounded inclusions	No	Itzímbaro Mexiquito (La Quesería Meanwell 2001)
A3	Quartz, plagioclase feldspar, biotite, amphibole, epidote, chert, trachyandesite.	Angular inclusions	No	La Quesería
A4	Quartz, plagioclase feldspar, biotite, amphibole.	Angular inclusions	Yes	Itzímbaro
B/C	Weathered plagioclase feldspar, quartz, biotite, amphibole, epidote.	Angular to sub-angular inclusions.	No	La Quesería Itzímbaro
B-tempered	Weathered plagioclase feldspar, quartz, biotite, amphibole, epidote.	Angular to sub-angular inclusions.	Yes	La Quesería
B Variant	Weathered plagioclase feldspar, unweathered plagioclase feldspar, quartz, biotite, amphibole,	Sub-angular inclusions.	No	Itzímbaro
E	Quartz, plagioclase feldspar, biotite, amphibole.	Sub-angular inclusions and very optically active clay matrix.	Sometimes	La Quesería Itzímbaro Mexiquito
G	Quartz, plagcioclase feldspar, epidote, biotite, amphibole, trachyandesite.	Angular to sub-angular.	Yes	Mexiquito
H	Quartz, plagioclase feldspar, biotite, amphibole, trachyandesite, some have micrographic feldspar/quartz.	Angular to sub-angular inclusions and fairly optically active clay matrix.	Yes	Mexiquito

Results from the Petrographic Analyses of Sherds from La Quesería

Most of the sherds from La Quesería fit into the fabric categories summarized in Table 5.9. A number of sherds, however, did not fit neatly within the large group categories; these will be described individually. Since the goal of this investigation is to determine how the form and function of a vessel may have influenced aspects of the pottery production techniques, I separated out all sherds that had identifiable differences from the large categories. This led to a fairly high number of sherds grouped within a category of 'others.' I do not believe that any of the sherds from La Quesería that were placed within the category 'other' were imported to the area.

Most La Quesería sherds fall into the A group and the B/C group, with more sherds in the B/C group than in the A group. Whereas I previously assumed that the B and C groups were distinct based on their amphibole percentages (Meanwell 2001), the larger sample allowed me to see that they describe a continuum. I also identified two E-type sherds. In Table 5.10, I provide descriptions of the detailed fabric types identified at La Quesería and indicate which samples fall into each category.

TABLE 5.10: CORRELATION BETWEEN FABRIC TYPE AND SHERD SAMPLE NUMBER AT LA QUESERÍA.

Fabric Type	Sample Numbers (S2-06-XX)	Total
A1	11, 45	2
A3	10, 16, 18, 20, 25, 26, 28, 29, 44	9
B/C	1, 2, 7, 8, 13, 14, 15, 17, 19, 24, 31, 32, 35, 36, 38, 43	16
B-tempered	22, 23, 30, 33, 41	5
E	21, 27	2
Other	3, 4, 5, 6, 9, 12, 34, 37, 39, 40, 42	11
TOTAL		**45**

Type A:

The inclusions for this fabric type appear to come from a non-weathered sediment with a large range of inclusion sizes. The inclusions are generally angular, although a small subset called the A2 group has more rounded inclusions. The dominant minerals are quartz and plagioclase feldspar with smaller amounts of amphibole, epidote, and biotite (see Figure 5.32). Rock fragments, such as chert and trachyandesite, were also found in small quantities. The source rock was likely an intermediate (between felsic and mafic) rock with a large amount of unweathered plagioclase feldspar, and the chert grains may have come from another deposit. The A1 category contains few mafic inclusions and abundant quartz. These A1 samples may contain a contribution from a source rock that was closer to a granodiorite. The A3 sub-category contains more mafic inclusions than A1 or A2 (see Figure 5.33).

Type B/C:

The inclusions for the B/C fabric type come from a more weathered sediment than the A group sediment. The difference between the groups can be seen mainly in the relative proportions of quartz, plagioclase feldspar and weathered plagioclase feldspar that occur in each sherd (see point count data in Appendix 6 and Figure 5.33). The A group contains a higher abundance of quartz and unweathered plagioclase; higher amounts of weathered plagioclase identify the B/C group. Small amounts of various mafic minerals are present in the B/C group, including epidote, amphibole and biotite. Microscopically, the B/C group is distinct from the A group by its lower abundance of quartz and altered feldspars (see Figures 5.31-5.34). A total of 16 sherds (just over a third of the total sample) falls into the B/C fabric type. In Sample S2-06-1, chert fragments were particularly common.

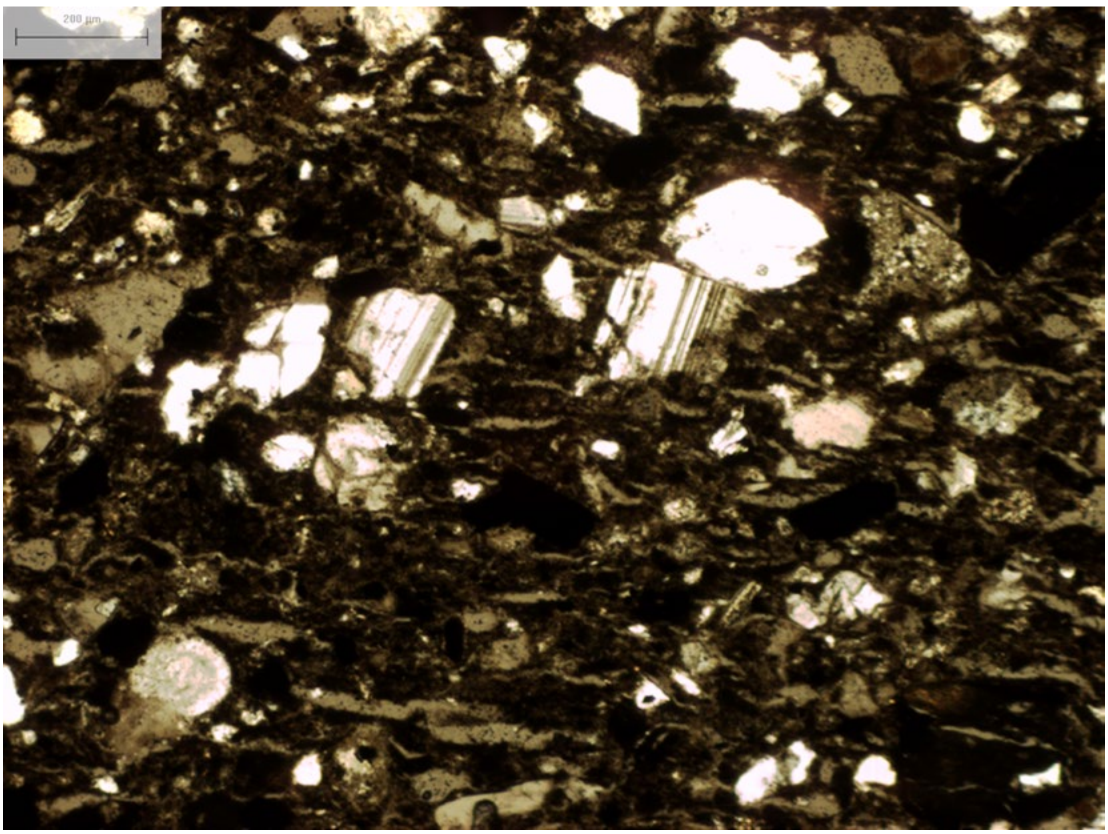
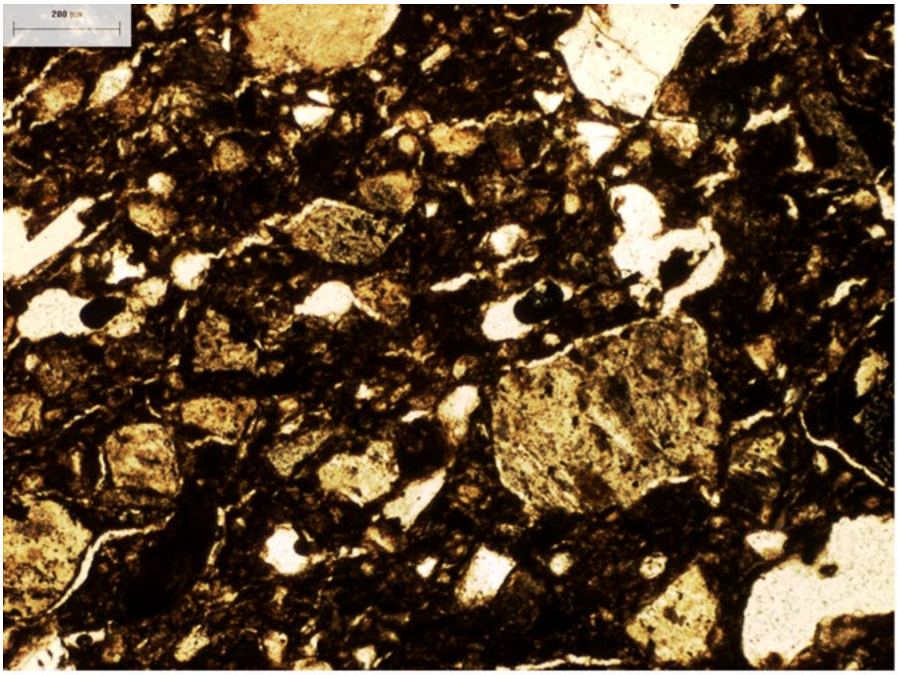
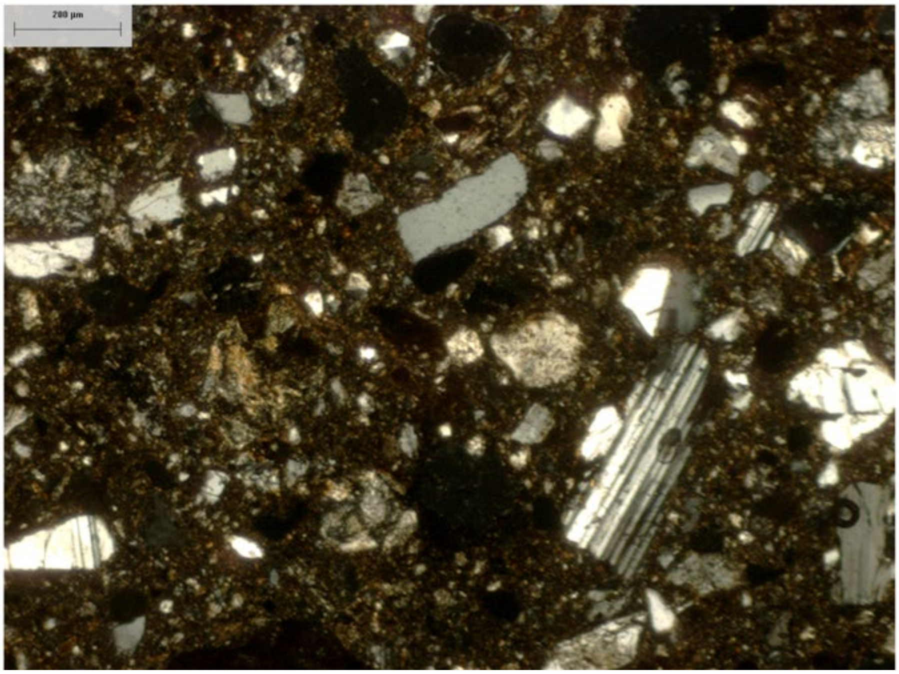


Figure 5.32: A photomicrograph of the Type A1 fabric at La Queseria. The sample is S2-06-45, and the micrograph was taken in partial cross-polarized light (pxpl).

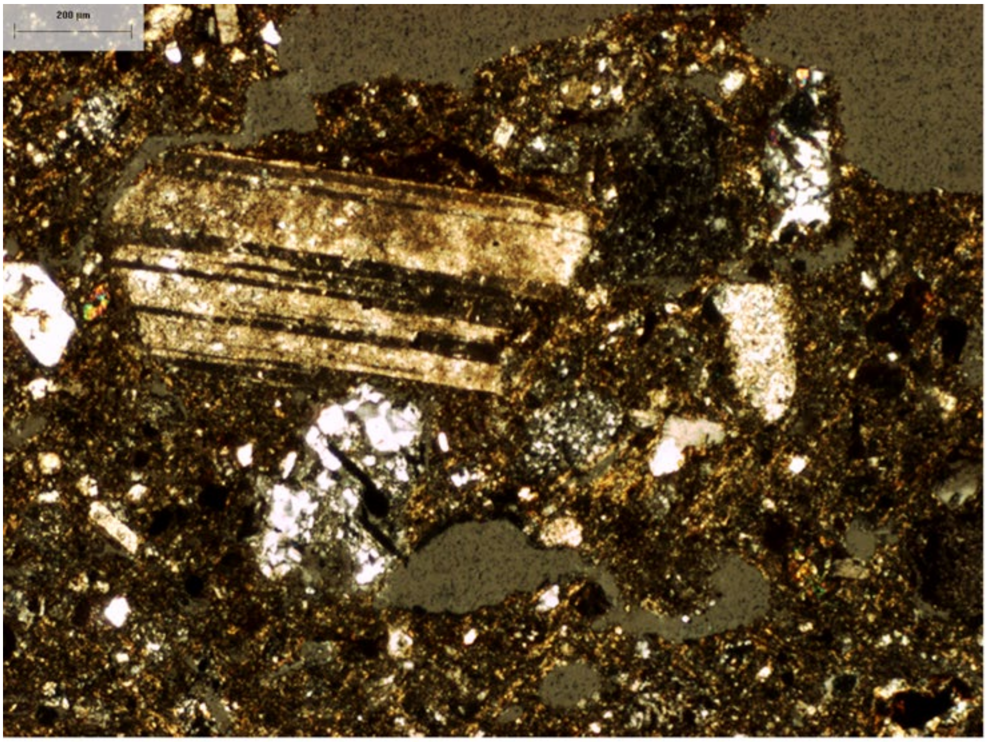


5.33a

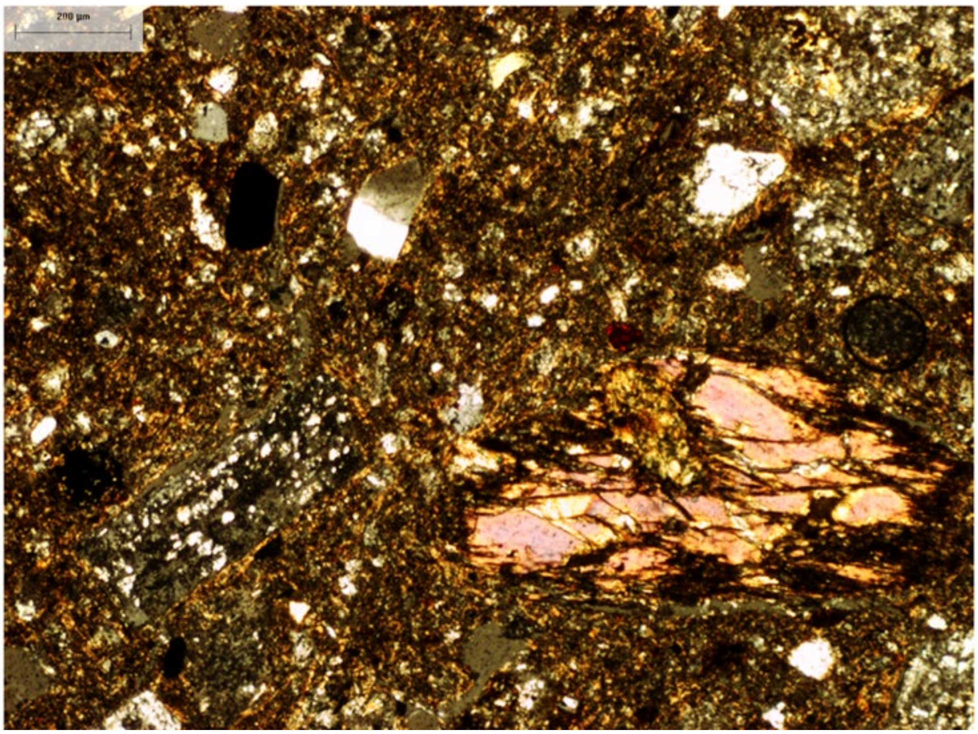


5.33b

Figure 5.33: Images of two different Type A3 samples. Sample S2-06-16 is Figure 5.33a in plane polarize light (ppl), and Figure 5.33b is sample S2-06-29 in cross-polarized light (xpl). Note the high numbers of white quartz grains and striped plagioclase feldspar grains and the fairly angular texture of most grains.



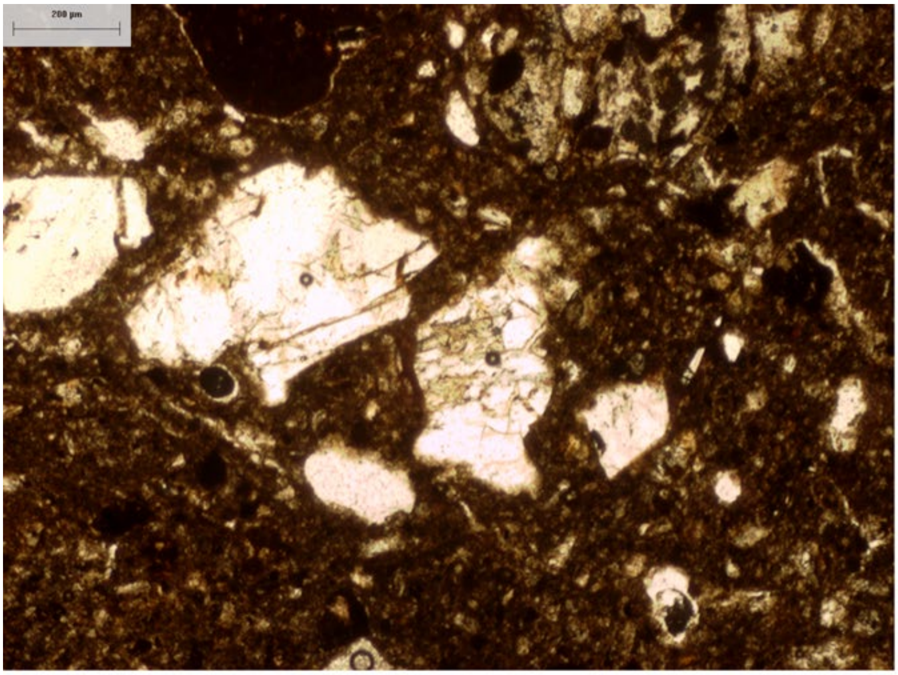
5.34a



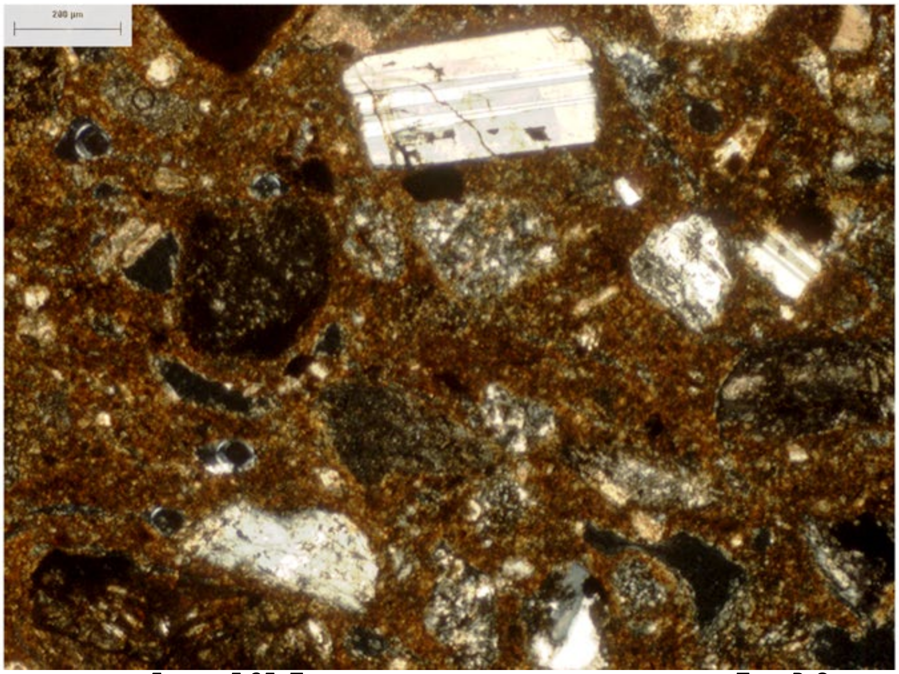
5.34b

Figure 5.34: Two photomicrographs of the Type B-C group: sample S2-06-17 (5.34a, pxpl) contains a large altering feldspar (striped mineral) and sample S2-06-36 (5.34b, xpl) contains a large orange-colored fragment of amphibole

In addition, five sherds are mineralogically members of the B/C group, but they constitute a separate group based on their texture. The mineral grain size distribution of this group is bimodal, which implies that some sort of sand temper was deliberately added to the natural (smaller) inclusions already present in the clay (see Figure 5.35). These five samples are among the only tempered sherds found at La Quesería.



5.35a



5.35b

FIGURE 5.35: TWO EXAMPLES OF THE POSSIBLY TEMPERED TYPE B-C GROUP. THE TOP PHOTOMICROGRAPH SHOWS SAMPLE S2-06-30 (PPL) AND THE BOTTOM IS S2-06-23 (XPL). IN BOTH, THERE ARE LARGER GRAINS AND VERY SMALL GRAINS WITH NO MEDIUM SIZE GRAINS (BIMODAL SIZE DISTRIBUTION).

Type E:

Two E-type sherds were found at La Quesería. As previously described, the E group has a distinctive matrix that is highly optically active with large clay domains that react to the polarized light in unison (see Figure 5.36). Each E-type sherd contains a slightly different suite of mineral inclusions. These two samples contain lower amounts of quartz and a fair amount of weathered plagioclase feldspar. It seems likely that some of the E-type sherds may have been tempered with a range of sands with differing mineralogies, although there is no evidence that the two Type E sherds from this analysis were tempered.

Other Fabrics:

In total, ten sherds could not be placed into the larger categories characteristic of La Quesería. Several sherds appeared to be variants of the larger groups, characterized by the addition of one or two inclusion types that separate them from the fabric type. For example, sample S2-06-9 is comparable to the A3 group, but it contains a high quantity of limestone fragments or other calcareous sedimentary rock fragments. These inclusions are very rare at La Quesería, and their presence in S2-06-9 is significant. Samples S2-06-34 and 40 are similar to the A2 category, which has inclusions that are more rounded and weathered than A1 or A3. The differing amounts of epidote, plagioclase feldspar, and trachyandesite fragments that characterize these two sherds suggest that these samples do not form a coherent A2 group, nor do they match A2 samples from La Quesería analyzed in a previous study (Meanwell 2001:31). Sample S2-06-42 is a slight variant of the B/C group. Mineralogically, the sample falls within the group, but the clay matrix is an unusual color, and this separates it from the group.

The remaining sherds could not be related to the larger groups. As mentioned previously, none of these sherds appears different enough to suggest that it was made in another geologic area and transported to the Middle Balsas region. Likely these sherds were made from clay types that were not heavily utilized and that therefore are rarely found within the corpus. Four of these sherds (3, 4, 6, and 37) also contained very high amounts of trachyandesite rock fragments, possibly forming a small sub-group of their own.

Results from the Petrographic Analyses of Sherds from Itzímbaro

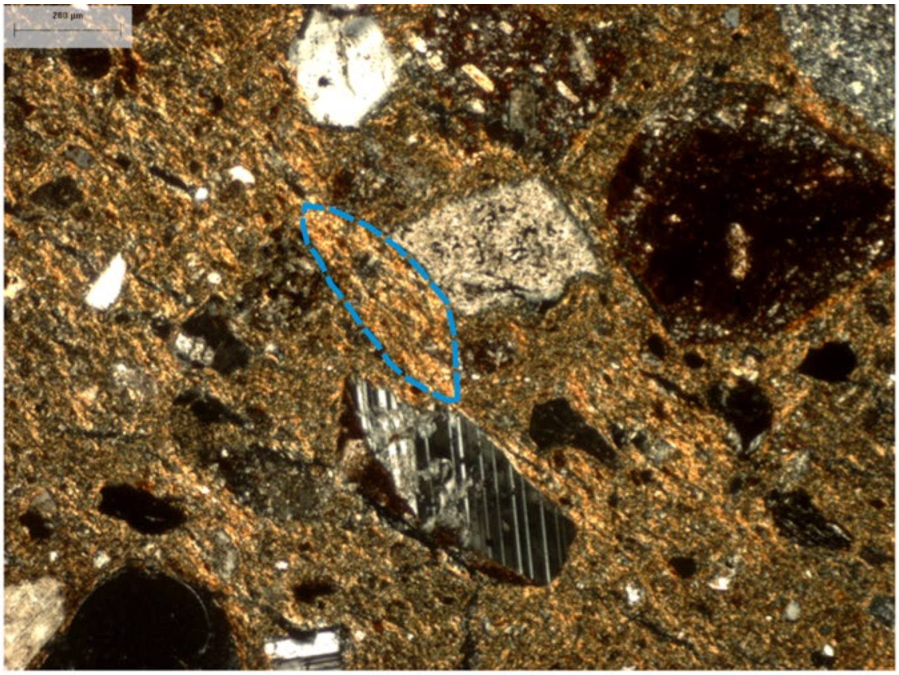
A large proportion of the sherds from Itzímbaro appear to have been made from various Type A fabrics. A small number of Type B/C sherds were also identified, along with two Type E sherds and other sherds that did not fall into one of the larger categories. In general, the Itzímbaro collection had a higher number of deliberately sand tempered vessels than the Quesería group. All of the sherds analyzed from Itzímbaro seem to have been produced from locally available materials. The samples that fall into each fabric type are shown in Table 5.11.

Table 5.11: Correlation between fabric type and sherd sample number at Itzímbaro.

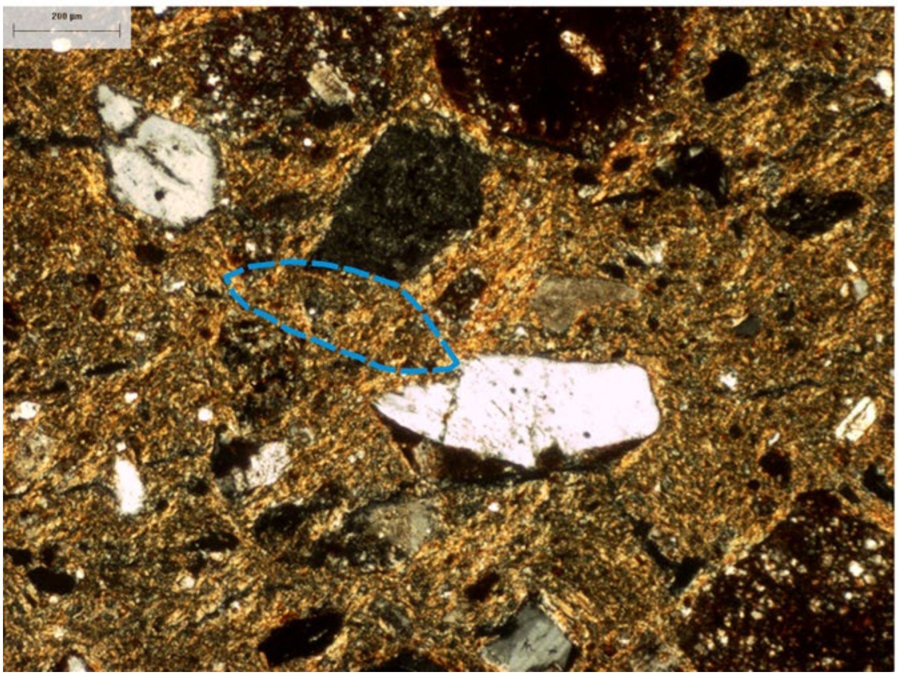
Fabric Type	Sherd Number (S3-06-XX)	Total
A1	7, 16, 23, 29, 41, 45	6
A2	18, 19, 24, 27, 31, 33, 40, 44	8
A4	2, 5, 8, 12, 14, 20, 28, 34, 38	9
B/C	3	1
B-Variant	1, 6, 17, 25, 30	5
E	9, 32	2
Other	4, 10, 11, 13, 15, 21, 22, 26, 35, 36, 37, 39, 42, 44	14
TOTAL		**45**

Type A:

A number of Type A variants occurred at Itzímbaro. A total of eight sherds fell into the A2 type previously described for La Quesería (see Figure 5.37). This type is characterized by a finer texture and slightly



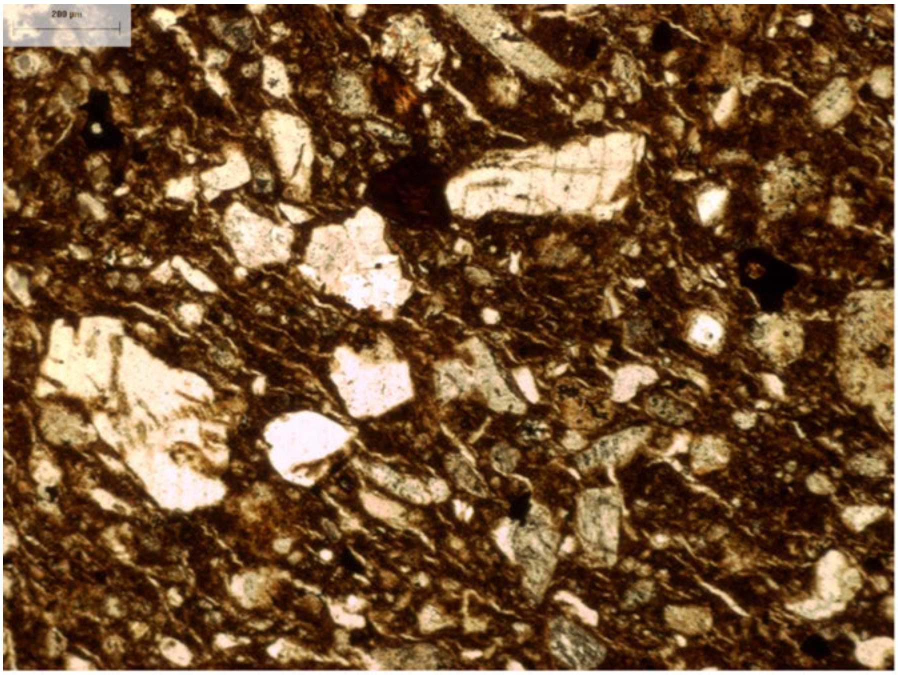
5.36a



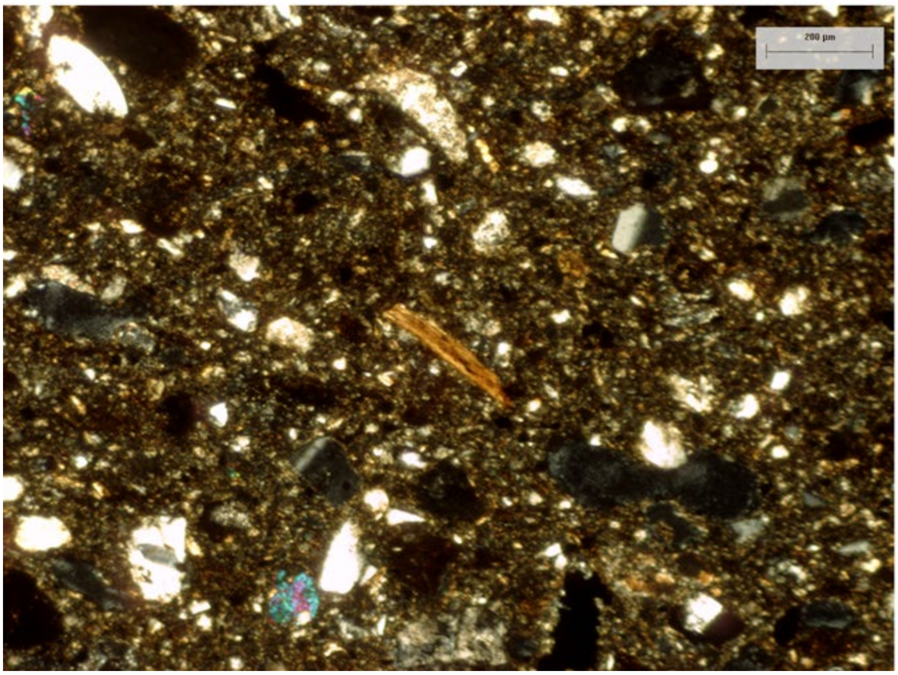
5.36b

Figure 5.36: Two images of sample S2-06-21 (xpl) showing the characteristic feature of the Type E fabric. These two photomicrographs were taken in the same location, but at different orientations. The highlighted section of the clay matrix in the center of the images changes from a bright orange to a more dull brown color. This is optical activity within the clay matrix.

rounded inclusions that are mainly quartz, plagioclase feldspar and small numbers of mafic minerals, particularly biotite and amphibole. The clay matrix of the A2 samples at Itzímbaro was generally low in optical activity. The sherds did not exhibit a bimodal grain size distribution or other evidence of deliberate



5.37a

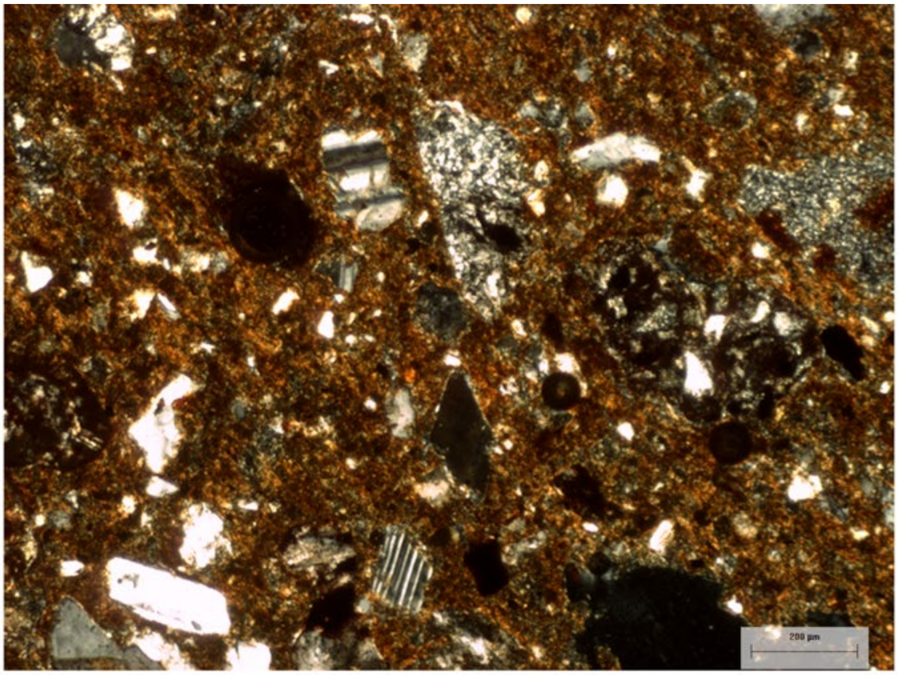


5.37b

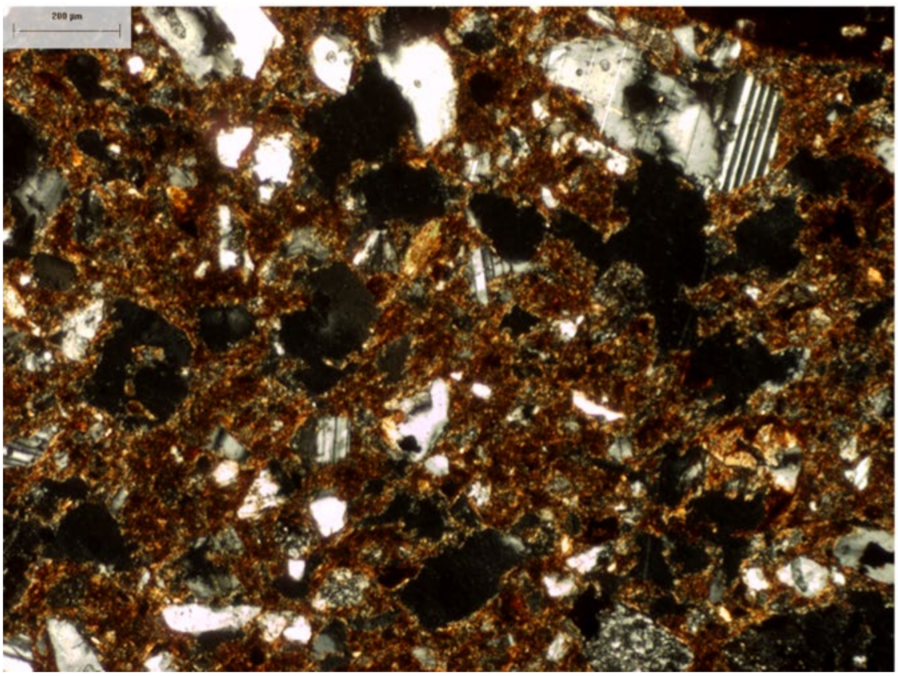
Figure 5.37: Two images of Type A2 fabric from Itzimbaro. The top is sample S3-06-31 (ppl) and the bottom is S3-06-27 (xpl). Note the rounded grains in each case. The reddish mineral in the center of the bottom photomicrograph is biotite, and the blue mineral is epidote.

tempering practices. Sample S3-06-18 has slightly more weathered plagioclase than the other samples in the group, although it still seems to fit within the A2 category.

Another six sherds appear to match closely the A1 group at La Quesería, with its high quartz and plagioclase feldspar (see Figure 5.38). These sherds also contained a few rock fragments of chert and some mafic minerals. This group is fairly similar mineralogically to the following group within the Type A category.



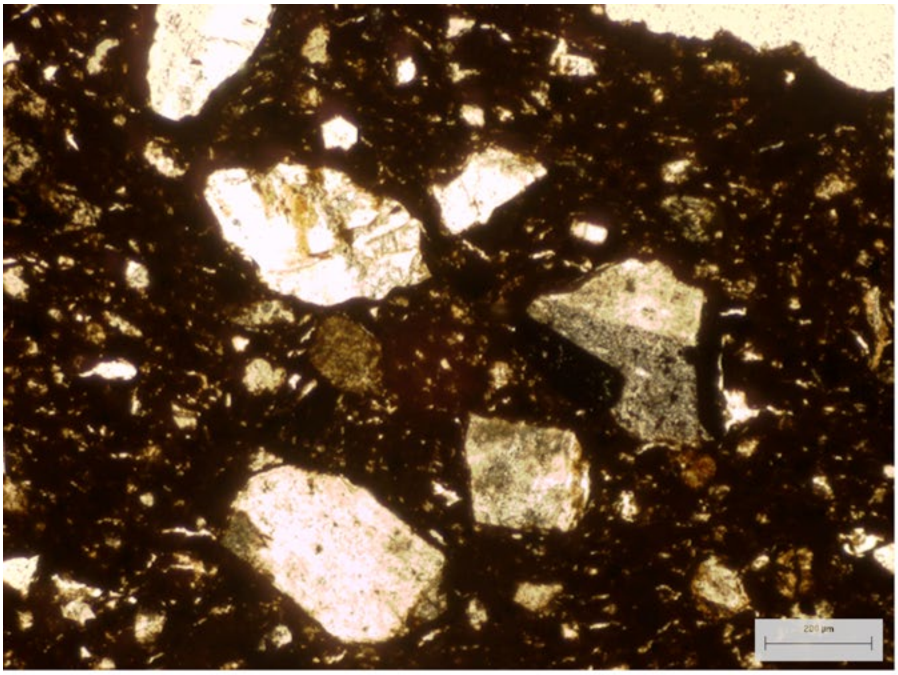
5.38a



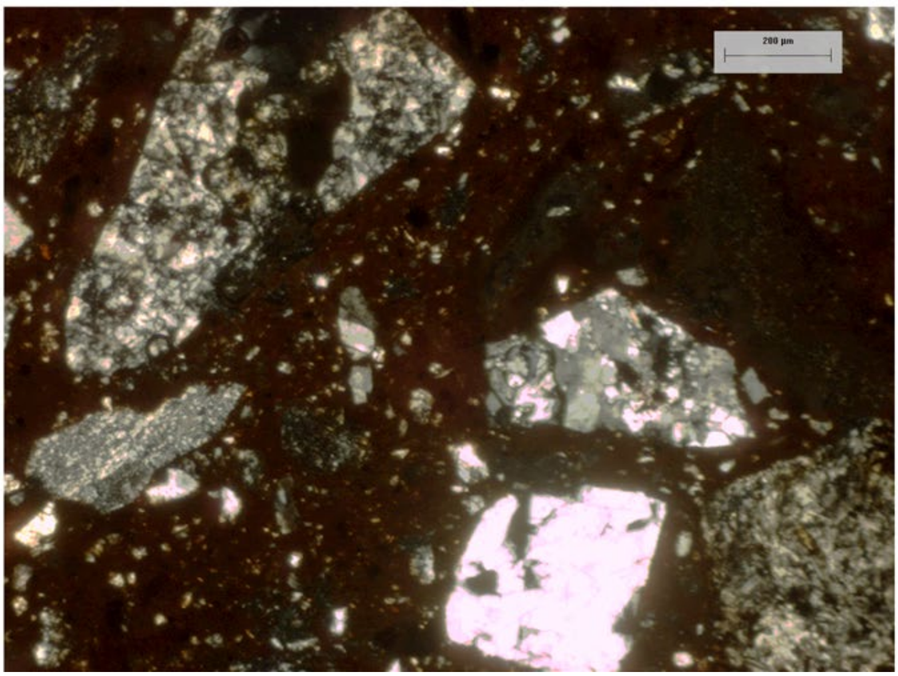
5.38b

Figure 5.38: Photomicrographs of fabric Type A1 at Itzimbaro. 5.38a is S3-06-16, and 5.38b is S3-06-23 (both xpl). Both show the large amounts of quartz and plagioclase feldspar present in this fabric.

I also identified a group of tempered Type A sherds (subtype A4). These nine sherds all show the bimodal size distribution common to tempered sherds (see Figure 5.39). All of these sherds contain the suite of minerals and rock fragments typical of Type A sherds, and are distinguished simply by their bimodal grain size distributions. This subtype was present only at Itzímbaro.



5.39a



5.39b

Figure 5.39: Photomicrographs of samples S3-06-8 (5.39a, ppl) and S3-06-20 (5.39b, xpl) within fabric Type A4. Note the bimodal (very large and very small) grain sizes present in both images.

Types B/C and E:

I encountered one sample that fell within the simple Type B/C group from La Quesería (see Figure 5.40). I also identified two samples (S3-06-9 and S3-06-32) that exhibit a Type E fabric (see Figure 5.41). Also at Itzímbaro I identified a group of five sherds that may be a variant of a Type B/C fabric, although the relative proportions of the various minerals are slightly different from the Type B/C samples from La Quesería. These five sherds contain both the weathered plagioclase so characteristic of Type B/C, and, in addition, high amounts of unweathered plagioclase, and fairly low amounts of quartz (see Figure 5.42). There is no strong evidence of bimodal size distributions of the mineral inclusions. Because the combination of weathered and non-weathered plagioclase fragments in the same clay body is extremely unusual, I suspect that this group may have resulted from potters mixing clay deposits to produce an appropriate clay or adding sand temper of a different mineralogy.

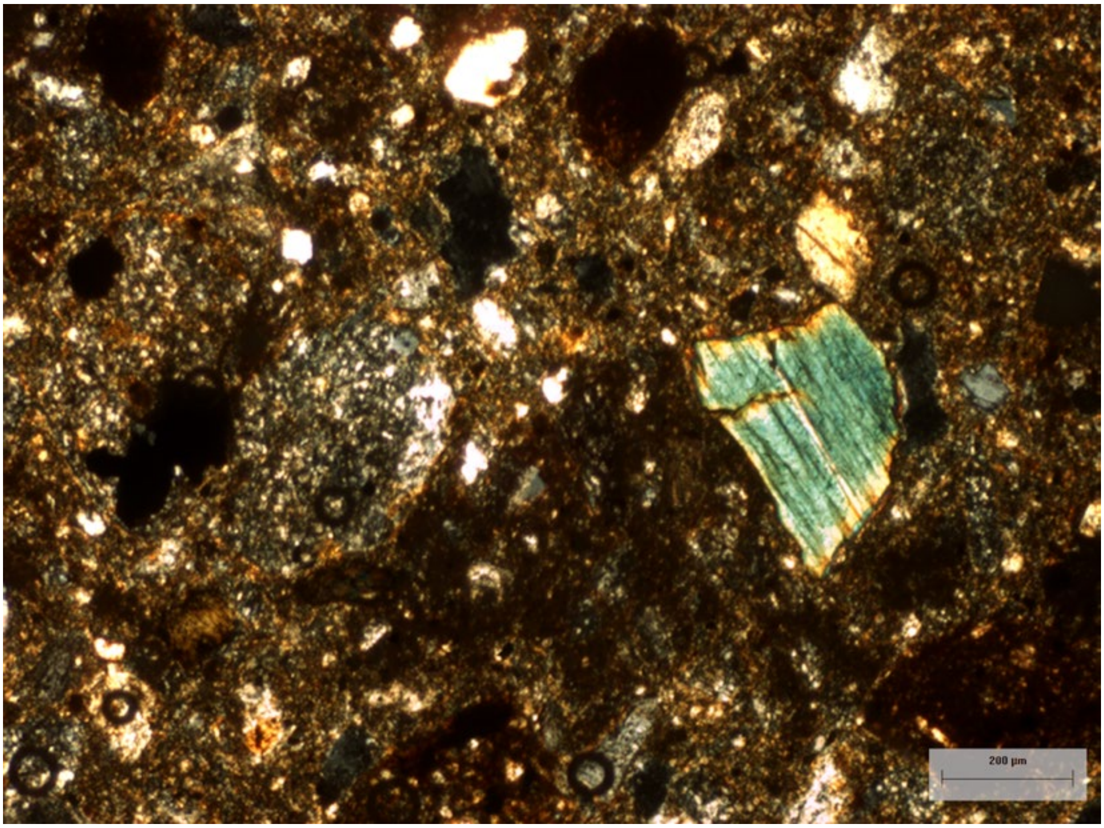
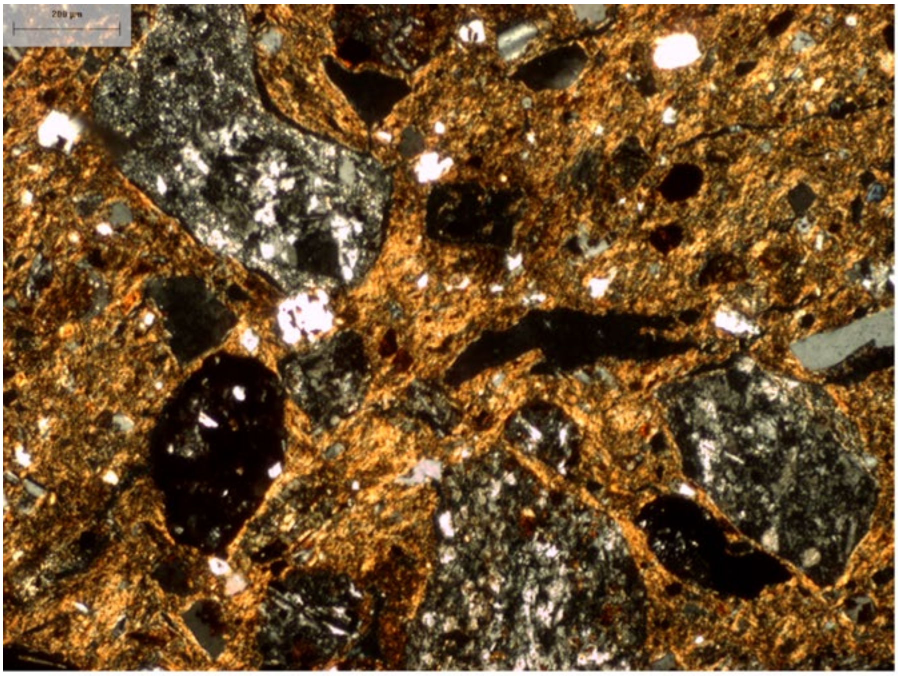


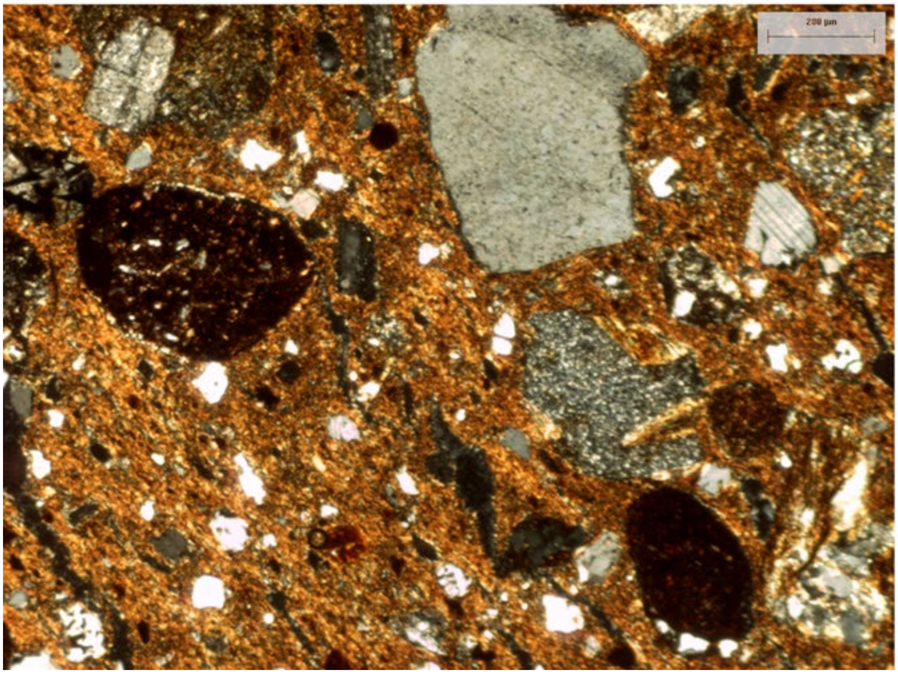
Figure 5.40: Sample S3-06-3 (xpl), an example of Type B/C at Itzimbaro. The large green grain is amphibole.

Other Fabrics:

A total of fourteen sherds from Itzímbaro did not fit neatly into the larger groups. Many of these sherds were variants of the larger groupings, yet some, while still appearing like local products, did not sort clearly with any other sherd in the main groupings. For example, sherds S3-06-11 and S3-06-22 appear to be a variant of the fine texture A2 grouping, but they both contain high amounts of limestone fragments as well as smaller amounts of trachyandesite and, therefore, separate out from the remaining Type A2 sherds. Samples S3-06-36 and S3-06-39 are similar to the A1 group, although sample 36 contains much more polycrystalline quartz than the other A1 sherds, and sample 39 contains higher amounts of trachyandesite and lower amounts of unweathered plagioclase than the rest of the A1 group.

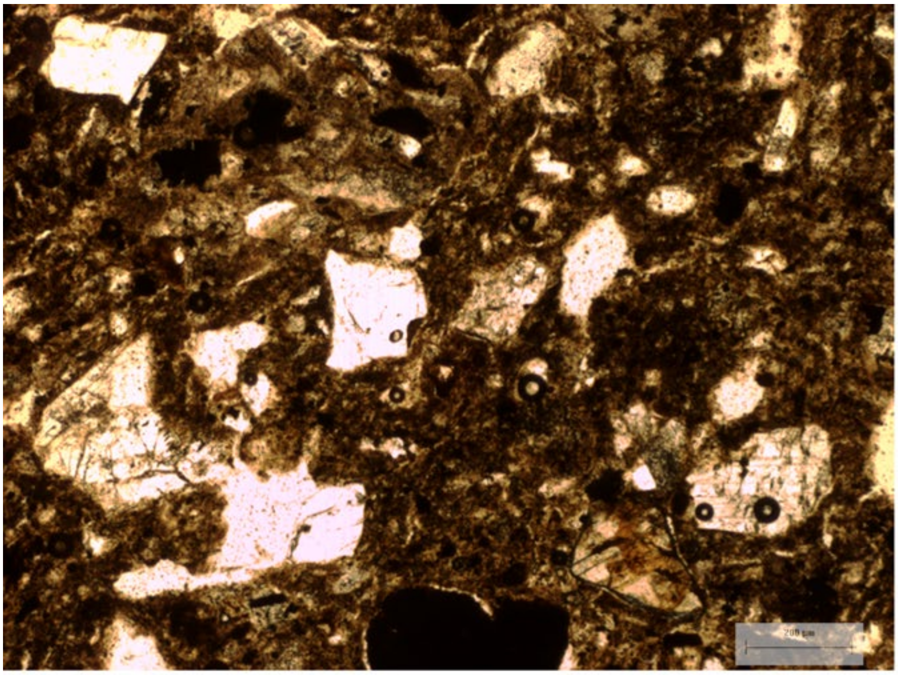


5.41a

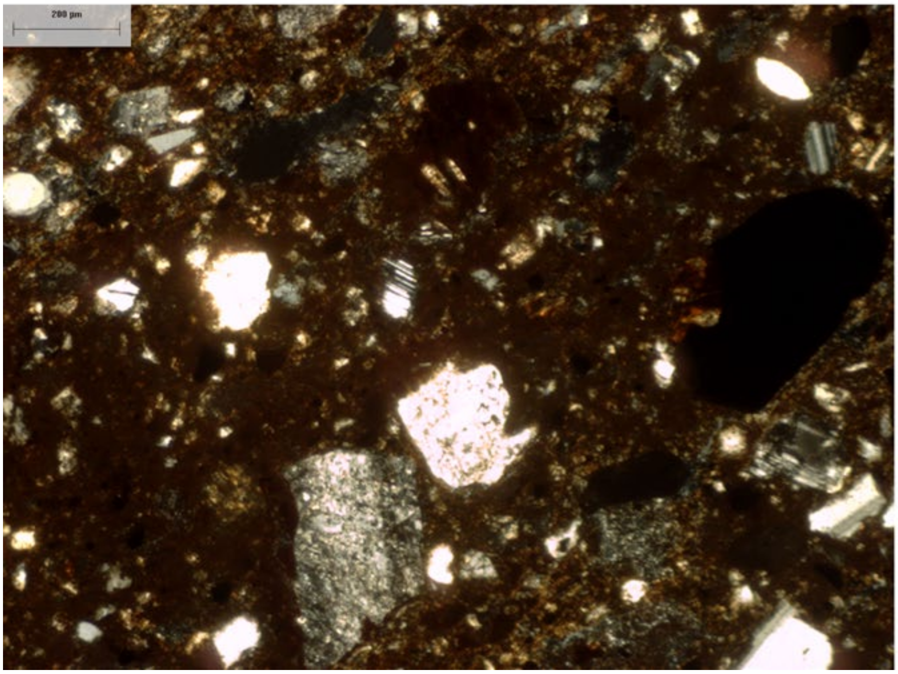


5.41b

FIGURE 5.41: TWO EXAMPLES OF TYPE E FABRIC AT ITZIMBARO. SAMPLE S3-06-9 (XPL) IS ABOVE, AND SAMPLE S3-06-32 (XPL) IS BELOW. THE BRIGHT ORANGE COLOR OF THE MATRIX IS DUE TO ITS HIGH OPTICAL ACTIVITY.



5.42a



5.42b

Figure 5.42: A variant Type B group from Itzimbaro. Sample S3-06-30 (ppl) is above, with S3-06-25 (xpl) below. The bottom image shows the altering feldspars particularly common to Type B sherds.

The tempered A4 group also had a few outlying samples. S3-06-42 contains very high amounts of epidote, which is an extremely rare mineral in the Itzímbaro corpus. Sample S3-06-4 contains a fragment of what appears to be the mafic igneous rock basalt, which contains the mineral olivine. I found no other occurrences of basalt within the La Quesería and Itzímbaro collections. This sample also has lower amounts of the reddish iron-rich rock fragments commonly found scattered throughout all the La Quesería and Itzímbaro sherds. The final outlying sample, S3-06-10, contains more chert fragments and trachyandesite fragments than most. The ground mass is also a different color and texture than the rest of the A4 group.

The remaining samples do not sort cleanly into any of the large groups found at Itzímbaro. These sherds do not show any evidence of deliberate tempering or of foreign origin. They are likely made from underrepresented clay sources or preparation methods.

Results from the Petrographic Analyses of Sherds from Mexiquito

During the petrographic analysis of the vessels from Mexiquito, I identified a few samples that seemed to contain the same suite of minerals and overall characteristics of the Type A samples found at La Quesería and Mexiquito, but these were fairly rare. I also found one Type E sherd and three sherds that obviously represent imported vessels. The remaining samples, however, appeared to have been made from a different clay source (or sources) than the sources for the other two sites, most likely from clay that was closer to Mexiquito itself. I designate the locally produced fabrics Type G and Type H. The results are summarized in Table 5.12.

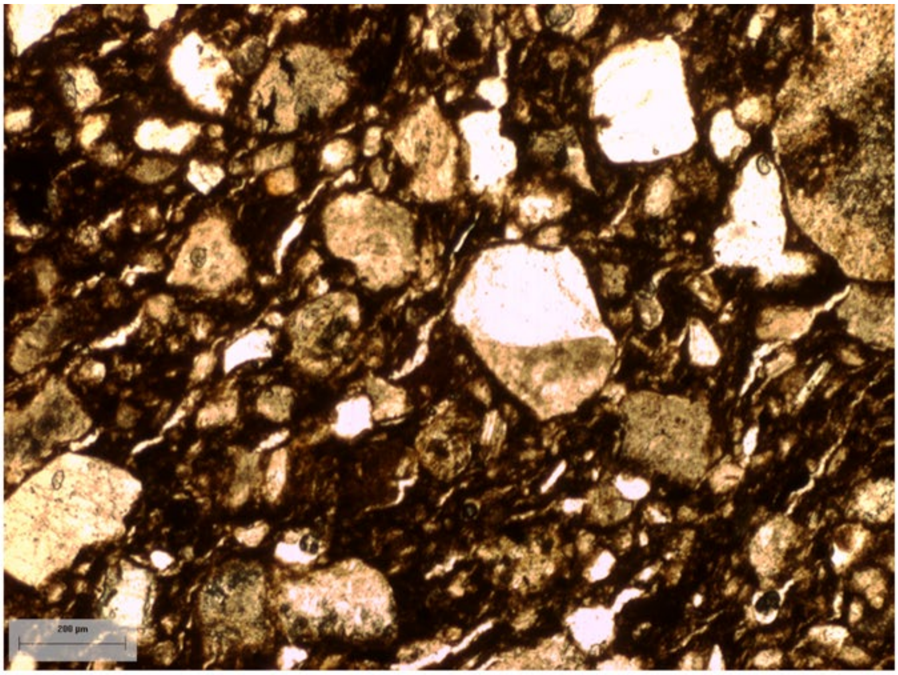
TABLE 5.12: CORRELATION BETWEEN FABRIC TYPE AND SHERD SAMPLE NUMBER AT MEXIQUITO.

Fabric Type	**Sherd Number (S1-06-XX)**	**Total**
A1	3, 9, 33, 36, 39	5
A2	7, 24, 35, 37, 44, 45	6
G	6, 11, 15, 17, 20, 25, 43, 46	8
H	14, 16, 18, 19, 21, 26, 27, 30, 34, 41	10
E	29	1
Imported	1, 2, 31	3
Other	4, 5, 8, 10, 12, 13, 23, 28, 32, 38, 40, 42	12
TOTAL		**45**

Type A:

I identified five A1 subtype vessels at Mexiquito along with six A2 subtype vessels. The A1 sherds contained the typical mineral suite of high amounts of quartz, plagioclase feldspar, and occasional mafic minerals, especially biotite and amphibole (see Figure 5.43). This A1 group is not a perfect correlate to the A1 samples found at La Quesería and Itzímbaro, because the majority of the plagioclase feldspar in this group was weathered, and none of the sherds contained trachyandesite rock fragments, which appear in the A1 group at the other sites. The inclusions also were more felsic, and some potassium feldspar (K-spar) may have been present. There is a high density of inclusions, and they do not appear to fall into a bimodal size distribution that would indicate tempering, like most of the Type A sherds from La Quesería and Itzímbaro.

The A2 type sherds fell into two groups: a very fine texture and a coarser texture category. The fine sherds (S1-06-7, S1-06-44, S1-06-45) contained very small rounded inclusions and did not exhibit bimodal size distributions (see Figure 5.44a). The coarser sherds (S1-06-24, S1-06-35, S1-06-37) also had rounded inclusions and a non-bimodal distribution, but the inclusions covered a larger size range (see Figure 5.44b). Both the fine and coarse samples had high amounts of quartz, some plagioclase feldspar (more weathered than non-weathered), and mafic minerals. The proportion of mafic minerals, especially biotite and epidote, was significantly higher than in the A1 group described above.



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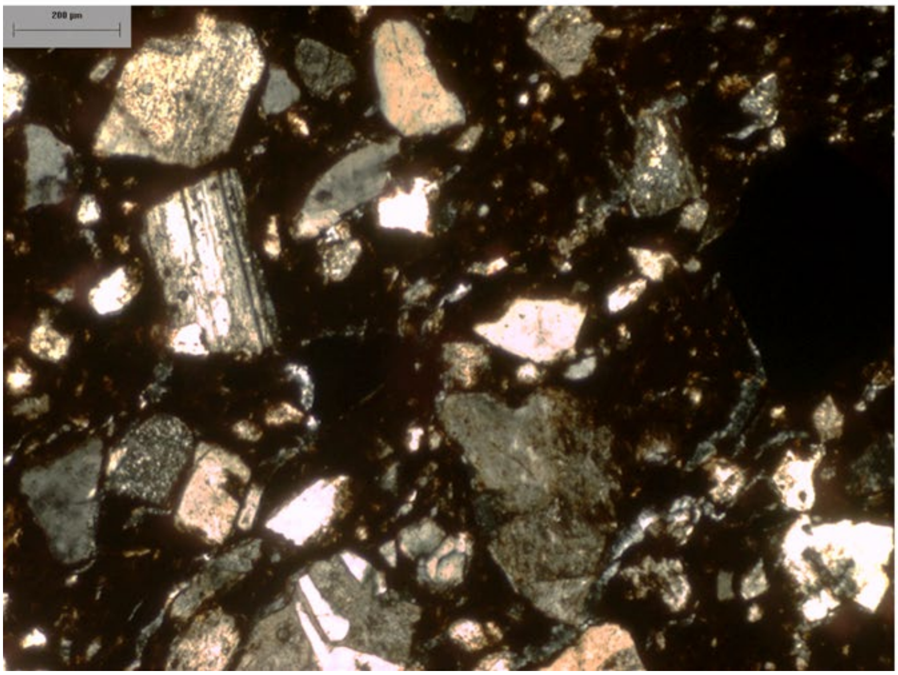
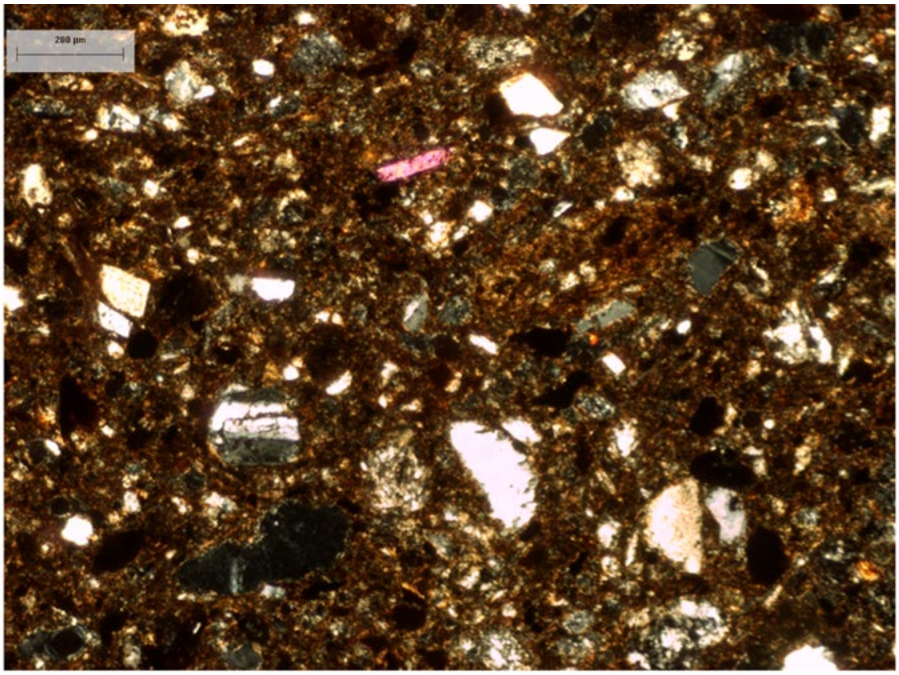


5.43b

Figure 5.43: Two examples of Type A fabric sherds from Mexiquito. Sample S1-06-33 (ppl) is above, and S1-06-3 (xpl) is below. Both contain the high quartz and plagioclase feldspar characteristic of the fabric.



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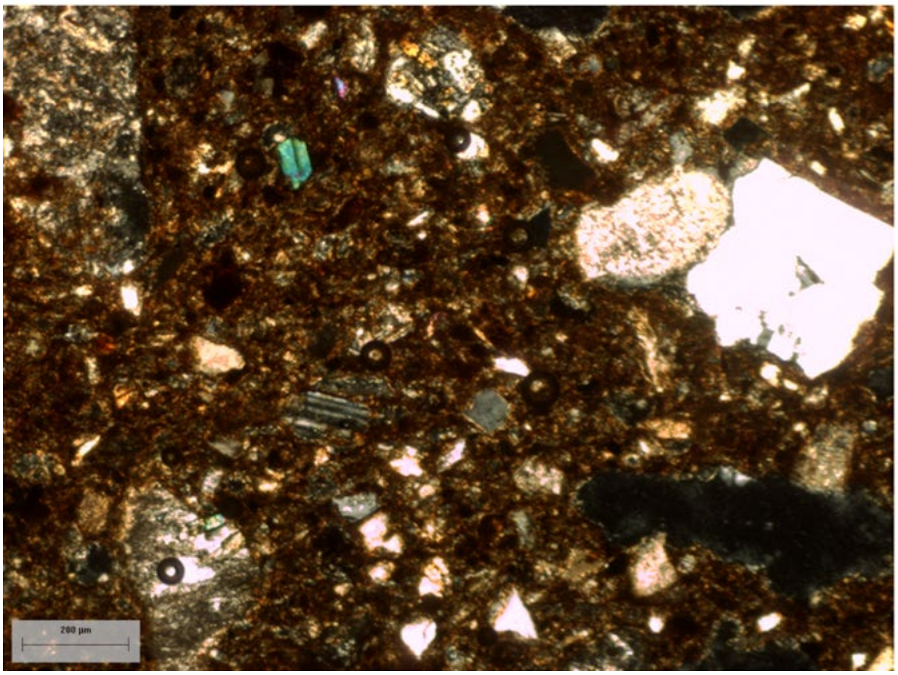
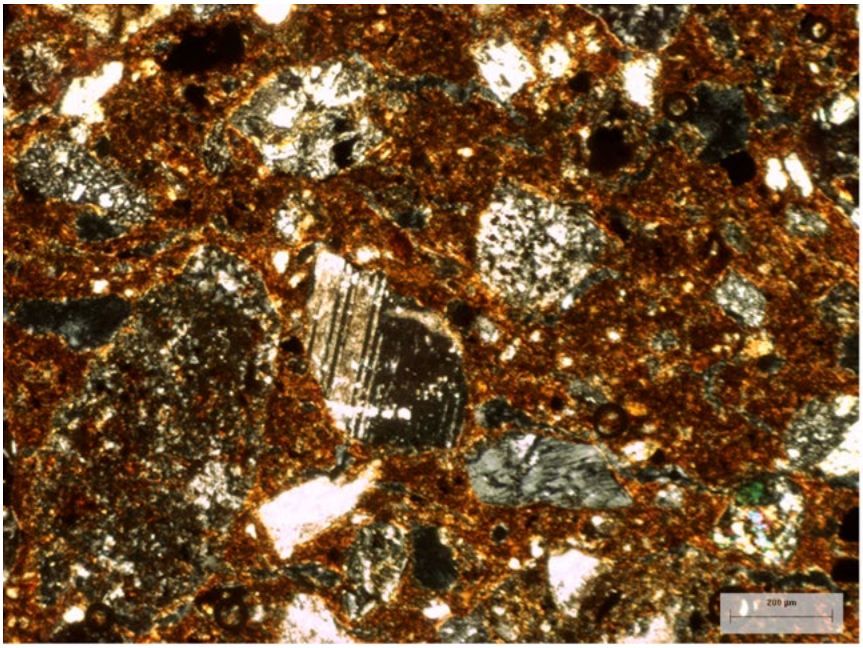


5.44b

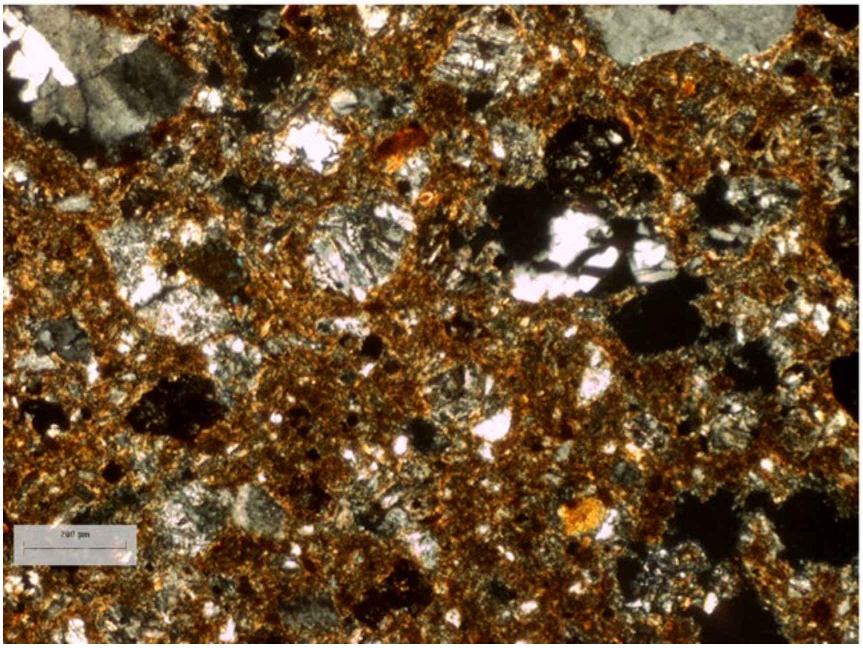
FIGURE 5.44: EXAMPLES OF THE COARSE AND FINE VARIANTS OF TYPE A2 SHERDS AT MEXIQUITO. S1-06-7 (XPL, 5.44A) IS THE FINE TYPE AND SAMPLE S1-06-24 (XPL, 5.44B) IS THE COARSE TYPE.

Type G:

The Type G fabric generally contains the same mineral suite as most vessels from the Middle Balsas region (see Figure 5.45). It contains some trachyandesite rock fragments and a higher number of mafic minerals than many of the Type A sherds from La Quesería or Itzímbaro. The fabric also contains quartz, plagioclase feldspar (both weathered and non-weathered, the weathered being more common), and a number of mafic minerals. Epidote was particularly common in this group, although not all sherds contained a large number of this mineral. The clay matrix was optically active, although it did not exhibit the large domains present in Type E vessels. The Type G fabric did exhibit a bimodal size distribution and, therefore, appears to have been tempered deliberately.



5.45a

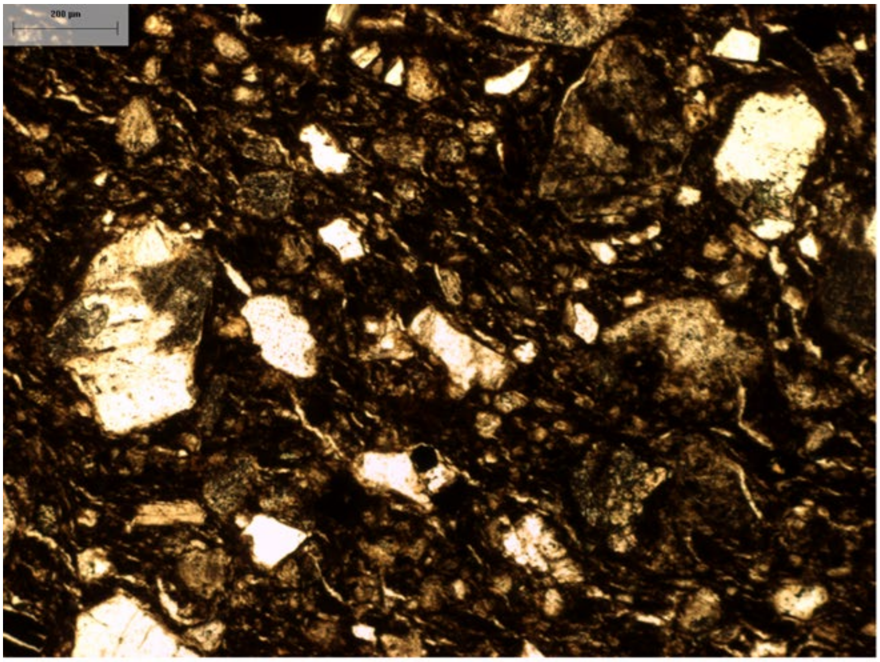


5.45b

FIGURE 5.45: TWO EXAMPLES OF THE TYPE G FABRIC FROM MEXIQUITO, INCLUDINGS1-06-25 (5.45A, XPL) AND S1-06-43 (5.45B, XPL).

Type H:

The Type H sherds also exhibit a bimodal size distribution and contain the typical suite of minerals present in Middle Balsas region sherds (see Figure 5.46). Type H sherds contain a fairly high amount of quartz, along with the standard plagioclase feldspar, rare trachyandesite rock fragments, and a variety of mafic minerals. A total of ten sherds fall into the Type H group. The clay matrix of this group is optically active. Four sherds (samples 19, 26, 30, and 41) from this type group into a subtype that is characterized by a particular mineral formation known as a micrographic intergrowth of quartz and feldspar fragments (see Figure 5.47).



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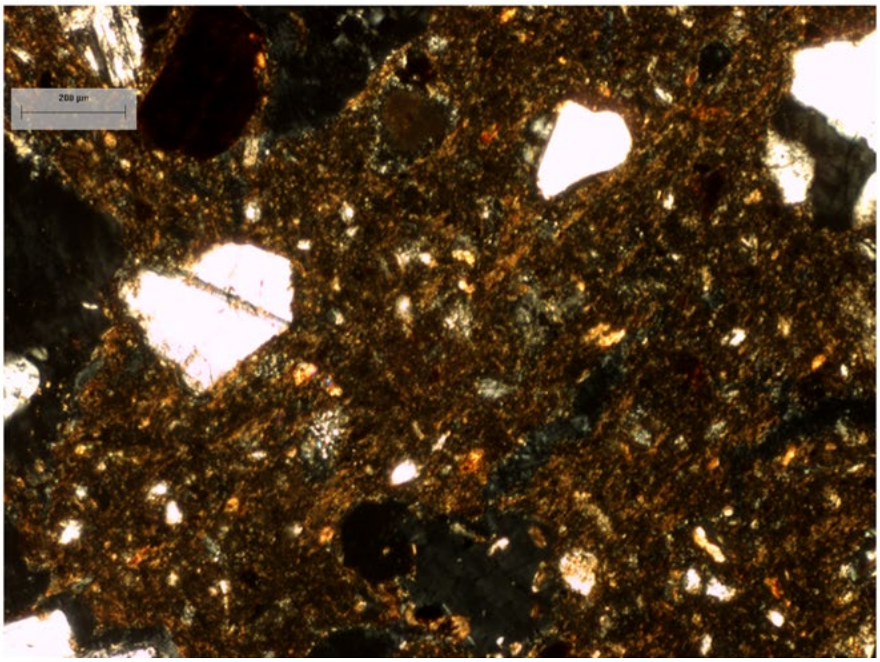
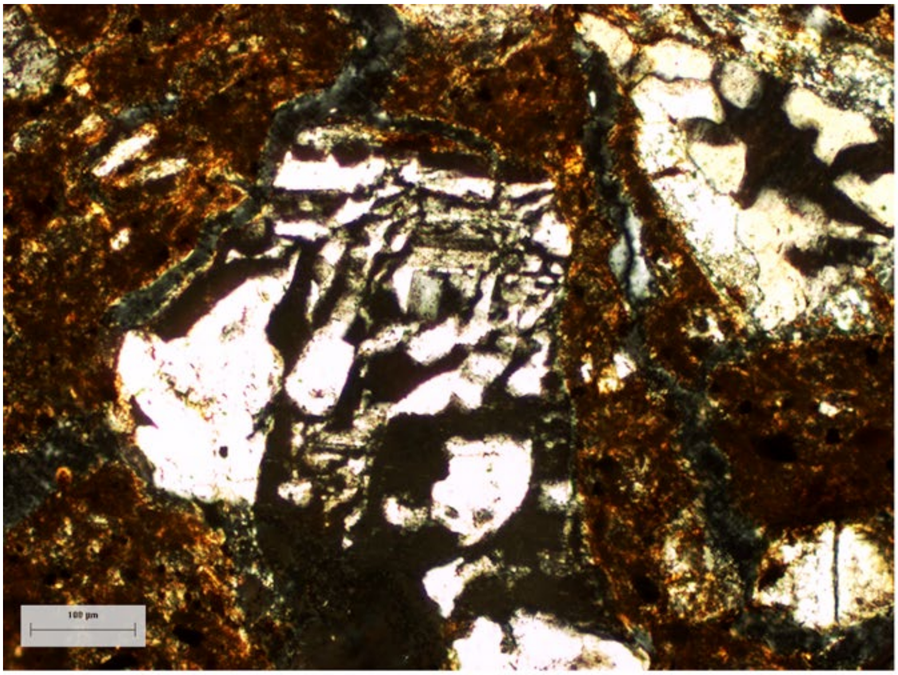


5.46b

FIGURE 5.46: PHOTOMICROGRAPHS OF S1-06-16 (5.46A, PPL) AND S1-06-18 (5.46B, XPL),BOTH OF WHICH EXHIBIT TYPE H FABRIC.



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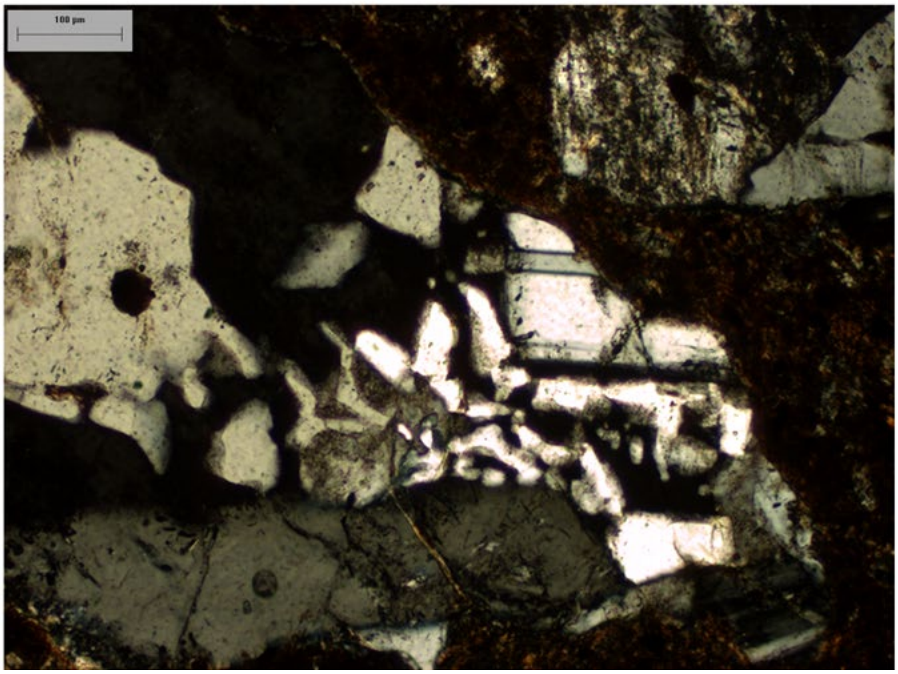


5.47b

FIGURE 5.47: TWO EXAMPLES OF A MICROGRAPHIC INTERGROWTH OF QUARTZ AND FELDSPAR CRYSTALS FOUND WITHIN SAMPLE S1-06-41. BOTH IMAGES TAKEN AT 100X.

Other Fabrics:

A total of twelve sherds from Mexiquito did not fall into one of the larger fabric groups. However, several of these sherds seemed to associate into smaller groups of two or three sherds. Samples S1-06-4, S1-06-10, and S1-06-38 all exhibited a deep maroon clay matrix that was not optically active, with large amounts of quartz inclusions. These three sherds also contained high quantities of weathered plagioclase feldspar and low quantities of mafic minerals. Each of these also contained some sedimentary rock fragments, most likely limestone. These sherds appear to be tempered with a sand temper. I did not assign these three sherds a type designation due to the rarity of the occurrence of this group.

Samples S1-06-8 and S1-06-23 also appeared to form a group that was a variant of Type A. Mineralogically, these sherds showed a distinct similarity to the other Type A variants at Mexiquito, but their texture and clay matrix seemed more similar to each other than to the larger groups. Neither of these sherds appeared to be tempered deliberately.

Finally, a number of sherds representing vessels likely locally made do not fall neatly within the larger groups. Sample S1-06-5 contains a mafic mineral (probably olivine or orthopyroxene) not found in any other sample. Sample S1-06-40 contains a mineral alteration product that I could not identify, but which appears to have been derived from biotite or chlorite of some sort (see Figure 5.48). The other samples did not contain any single specific mineral grain that separated them from the larger groups, but their overall appearance made them distinct.

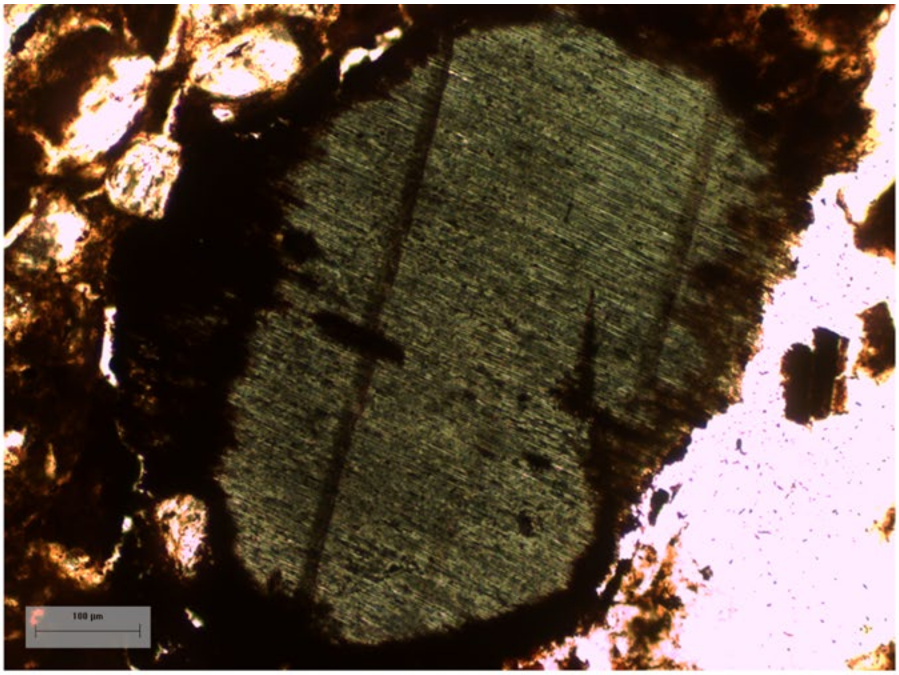
Imported Sherds:

I identified a total of three sherds as definite imports within the Mexiquito collection. Not surprisingly, these three sherds were all from polychrome vessels that likely date to the Postclassic period, based on my radiocarbon analyses. Since the sherds were small, the vessel form could not be identified. These three sherds do not appear to have been made at the same location, nor are they the same ware. The first sample S1-06-1 has an intensely red clay matrix that is not optically active. It did not contain a large number of clearly identifiable mineral grains, but instead contained fragments of trachyandesite, olivine, and other mafic rocks and minerals (see Figure 5.49). I did not identify any quartz grains in this sample, and found only two small grains of plagioclase feldspar. This clay deposit was likely formed from a mafic rock, and the clay appeared to contain a high amount of iron, which is probably the source of its redness. This clay type did not appear to be tempered deliberately. If any temper was added, it appeared to be crushed trachyandesite.

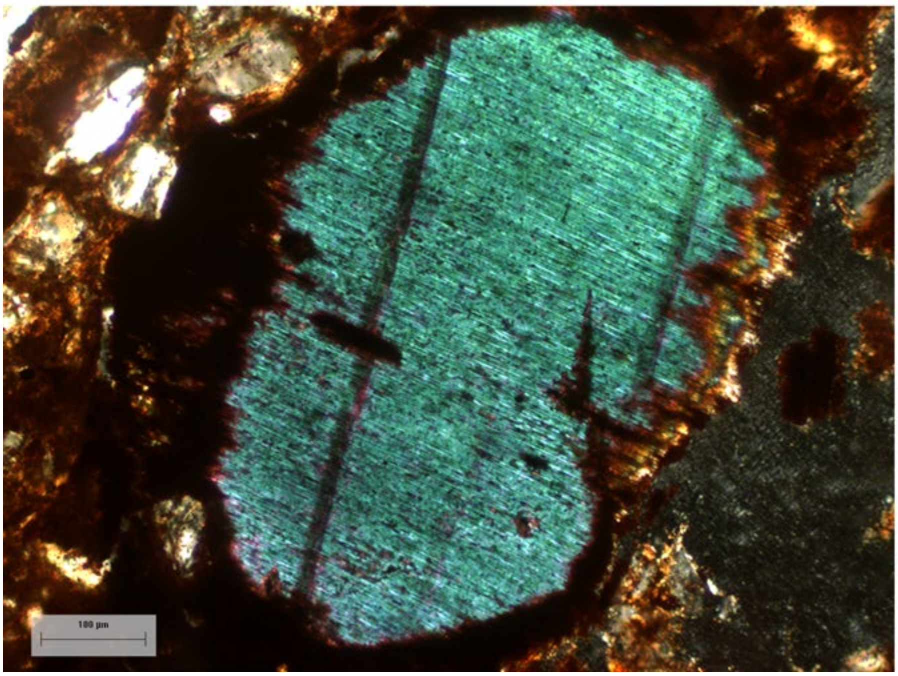
Sample S1-06-2 and S1-06-31 appear to be closely related, although not necessarily derived from the same clay source. Based on the ware analysis, these two sherds seem to come from a similar polychrome ware, although S1-06-31 had black resist markings not found on S1-06-2. These sherds contain a high number of trachyandesite rock fragments, like sample S1-06-1, but they also contain some biotite, quartz, and plagioclase feldspar, which were not found in the other imported sherd (see Figure 5.50). The amount of quartz varies significantly between the two samples (see point count data in Appendix 6). These sherds appear to have been tempered with small amounts of sand that did not contain much quartz.

Summary of Petrographic Results

As presented above, certain forms of Type A fabrics were identified at each of the three Middle Balsas sites. The Type A fabrics were likely made from different clay sources, each of which contained the intermediate mineralogy typical of the Middle Balsas region. Specific source locations for the Type A fabrics will be discussed below. Itzímbaro and La Quesería have very similar fabrics present within the sherds sampled at each site, but the relative proportions of Type A and Type B/C fabrics at the two sites are different. Type A is more common at Itzímbaro, and Type B/C is more common at La Quesería. Mexiquito, likely because it falls in a different geologic zone, did not have any sherds with Type B/C fabric, but does have sherds with Type G and H fabrics. Also, the only sherds that could be identified as imported from another region were found at Mexiquito. Type E fabrics were found in small numbers at each of the three sites. As discussed below, the Type E fabric can be linked to a specific clay source.

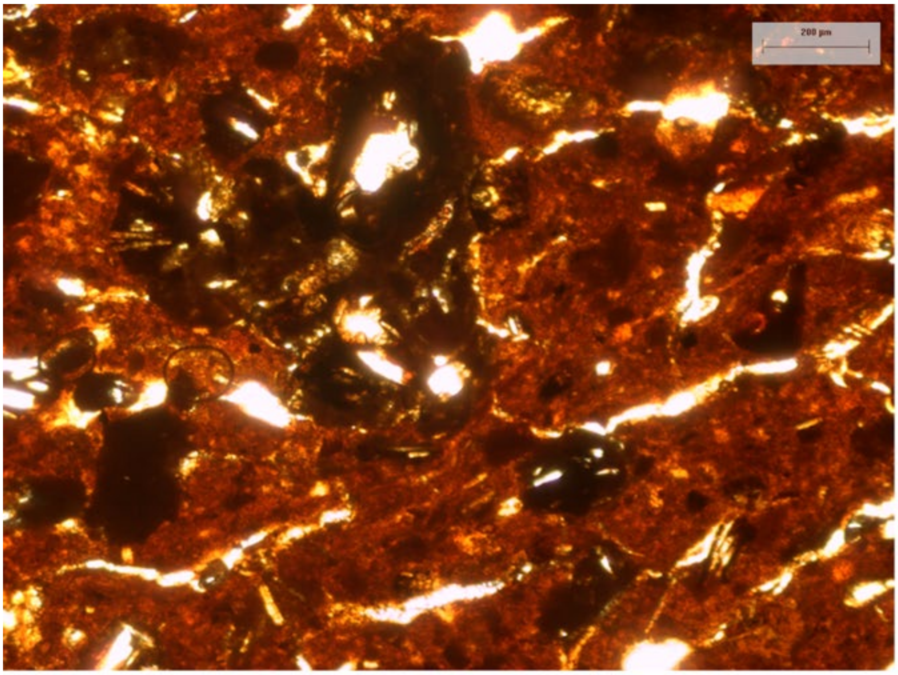


5.48a

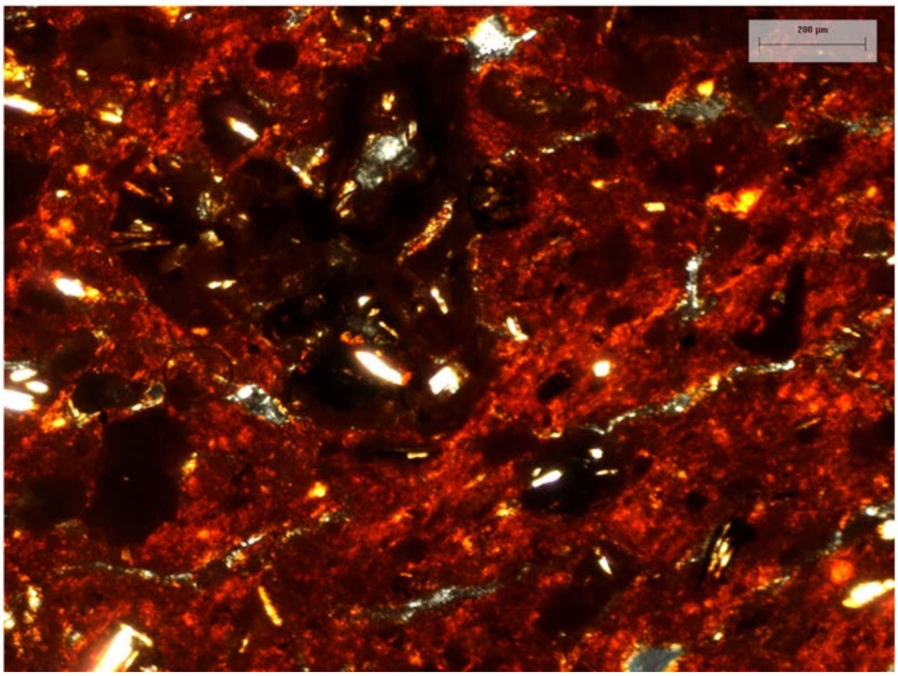


5.48b

Figure 5.48: Unusual altering mineral found in S1-06-40. The top image is in plane polarized light (ppl), and the bottom image is in cross-polarized light (xpl). Both were taken at 100x.

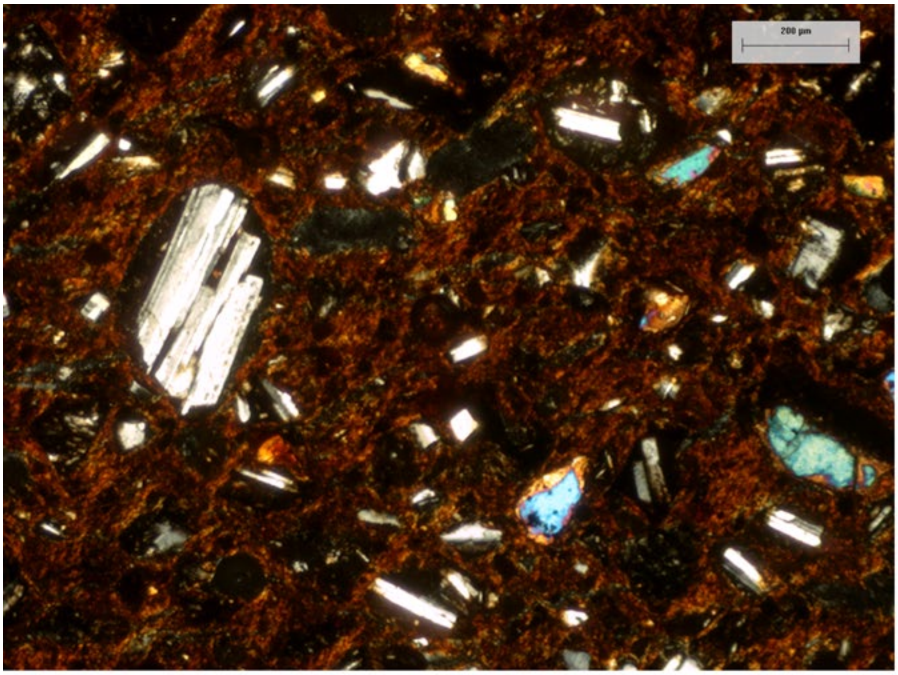


5.49a

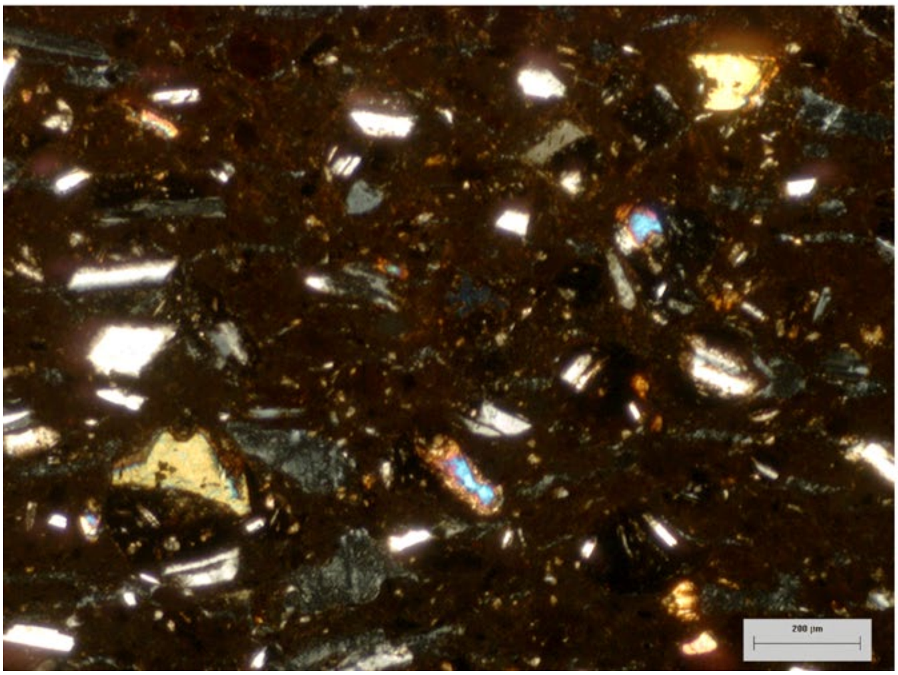


5.49b

Figure 5.49: Photomicrographs of S1-06-1, which show the microstructure of a clearly imported fabric. The top image is plane polarized light (ppl), and the bottom is cross-polarized light (xpl).



5.50a



5.50b

Figure 5.50: Imported fabrics found at Mexiquito, including sample S1-06-2 (5.50a, xpl) and S1-06-31 (5.50b, xpl). Note the high amounts of plagioclase feldspar and mafic minerals that appear brightly colored in cross-polarized light.

I will discuss the chronological implications of the fabric types identified through petrography and their links to vessel form and function in Chapter 6.

5.3 Results of Test Briquette Analyses

I made test briquettes from seven locally collected Middle Balsas clays to investigate the mineral inclusions and ground mass characteristics of some of the clays present in the area. These briquettes were fired at varying temperatures to detect firing-induced changes in the clay matrix and the inclusions present in the clay. The thin sections of these briquettes were compared to the ancient sherds to assess the probable firing temperature of most Middle Balsas pottery and to determine if any of the clay sources currently in use by modern potters could have supplied clay for ancient peoples at La Quesería, Itzímbaro and Mexiquito. I did not expect to find exact matches between the clays in use today and the ancient sherds, but examining the relationships between the clay deposits and the geologic regime can offer insights into which areas may have provided clay for ancient potters.

Possible Clay Sources for Fabrics

I analyzed a total of seven local clays, three of which were from the area around Mexiquito, and four of which were from the area near La Quesería and Itzímbaro (see Figure 5.29 and Table 5.13). All of the clays showed links to various potsherds analyzed in this study. The strongest link was found between the Type E sherds and the clays that were collected near the village of Patambo, Guerrero (see Figure 5.51). In speaking with a modern potter at Patambo, I learned that she mixes clays 12 and 13 to produce her vessels (see Table 5.13). She also sieves and ages the clay mixture before adding additional river sand temper.

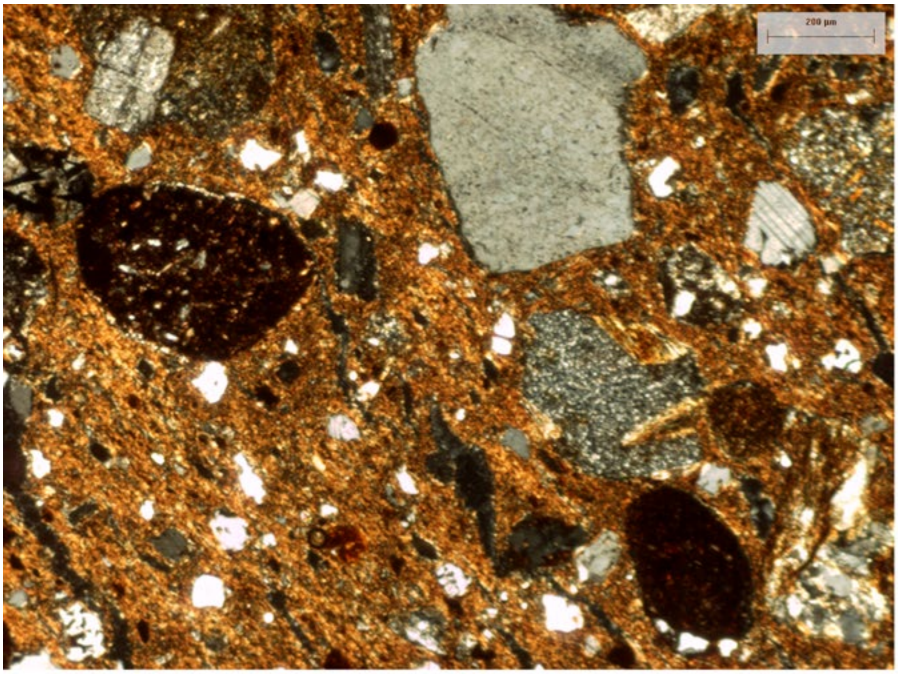
Table 5.13: Summary of clay identification numbers, clay collection locations, and the links to fabric types identified within the ancient sherds.

Clay Number	Collection Location	Fabrics Linked to Clay
1	Santa Cruz, Guerrero (Tanque)	Type A
2	Santa Cruz, Guerrero (La Chica)	Type A
03	Mexiquito	Rare fabric from Mexiquito (S1-06-4, S1-06-10, and S1-06-38)
12	Patambo, Guerrero (negro)	Type E
13	Patambo Guerrero (rojo)	Type E
67	Mexiquito	One Type H sherd (?)
77	Mexiquito	One Type H sherd (?)

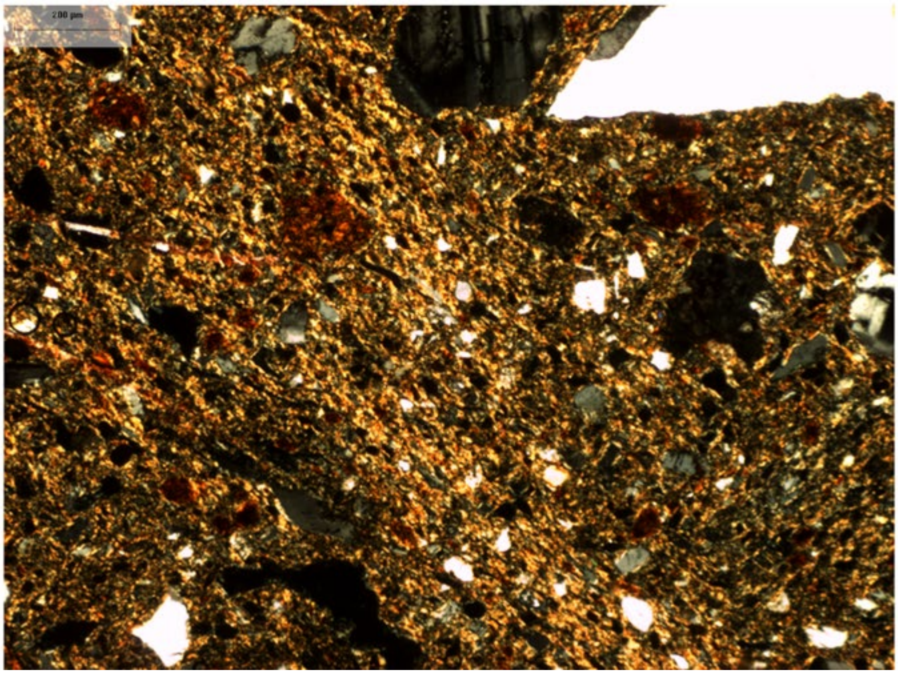
The Type A fabric shows definite links to clays 1 and 2 collected near the village of Santa Cruz, Guerrero (see Figure 5.52 and Table 5.13). I do not believe that all of the Type A pottery found at the three sites was manufactured from the clay source sampled at Santa Cruz. This village, however, is located within a common and widespread geologic zone, and the clays are probably typical of many clay sources within the Middle Balsas region, especially surrounding Itzímbaro and La Quesería (see Figure 5.28).

Of the three clays collected near Mexiquito, two of them (67 and 77) retained a very dark black firing core even after 1 hour of firing in an oxidizing atmosphere. This is likely due to retained carbon, although the sieving that I performed on the clays may have exaggerated the black core effects. Carbon generally fires out at the 700^{o} C temperature I used for my test bricks, although it requires enough porosity in the clay body for the oxygen to penetrate deeply. A lack of inclusions can retard this process (Rice 1987: 88-89). These two clays were almost impossible to distinguish in thin section and were likely part of the same clay body.

Very few of the Mexiquito sherds contained the dark firing core found in these two clays; only one of the Type H sherds (S1-06-41) slightly resembles them (see Figure 5.53). Most of the Mexiquito sherds exhibited fainter firing cores, when firing cores were present at all. Firing cores are not necessarily the result of residual carbon, however. They may also relate to the amount of oxygen present during firing. The absence of a firing core may be partially due to the coarse nature of the vessel fabric. Regardless, the clays 67 and 77 do not match the majority of the fabrics found at Mexiquito.

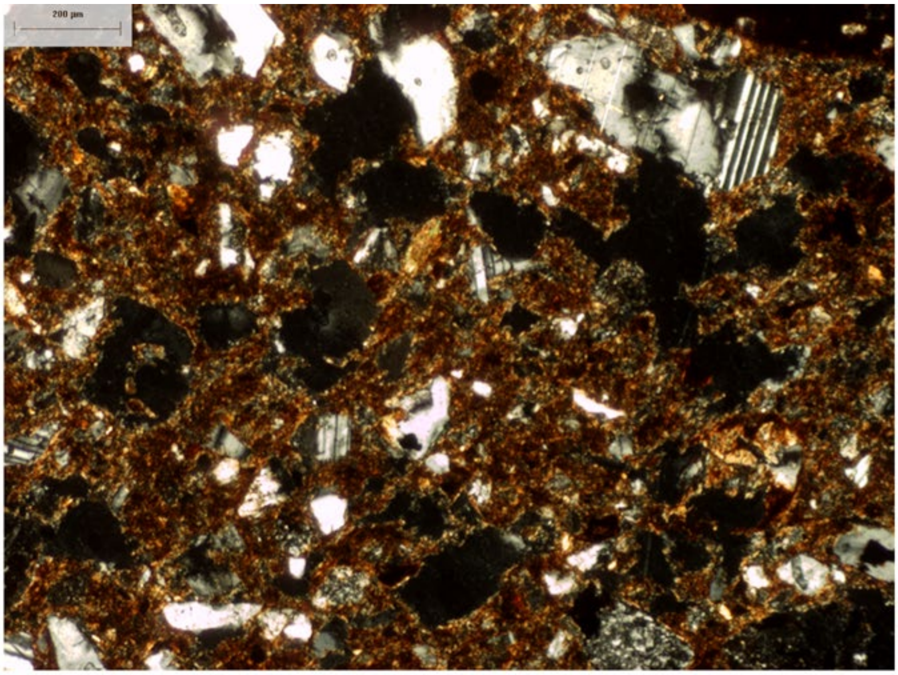


5.51a

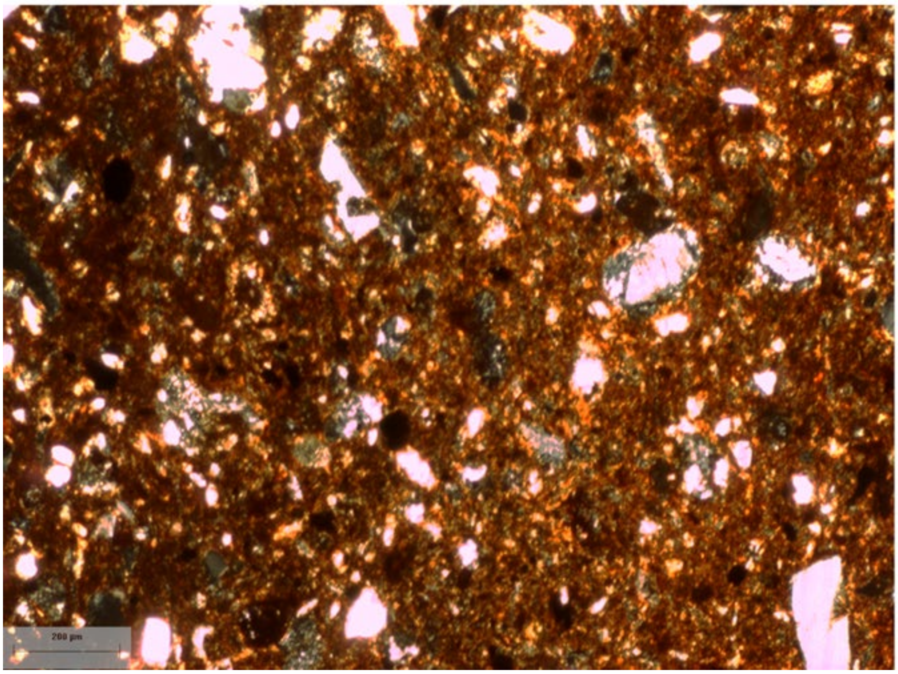


5.51b

Figure 5.51: A comparison between a Type E sherd (S3-06-32, 5.51a) and the clay 12 from Patambo, Guerrero (5.51b). Both exhibit an optically active clay matrix in cross-polarized light.

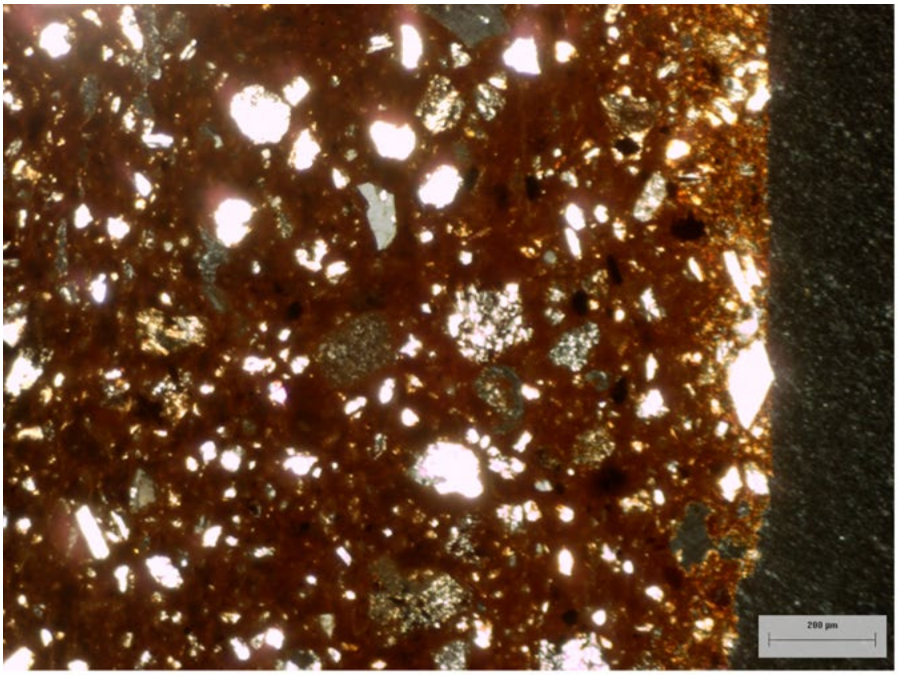


5.52a



5.52b

Figure 5.52: Comparison of Type A sample S3-06-23 (5.52a, xpl) and Clay 1 from Santa Cruz (5.52b, xpl). Clay 1 contains high amounts of quartz inclusions, and forms a deep maroon colored core similar to that seen above in the ancient sherd.



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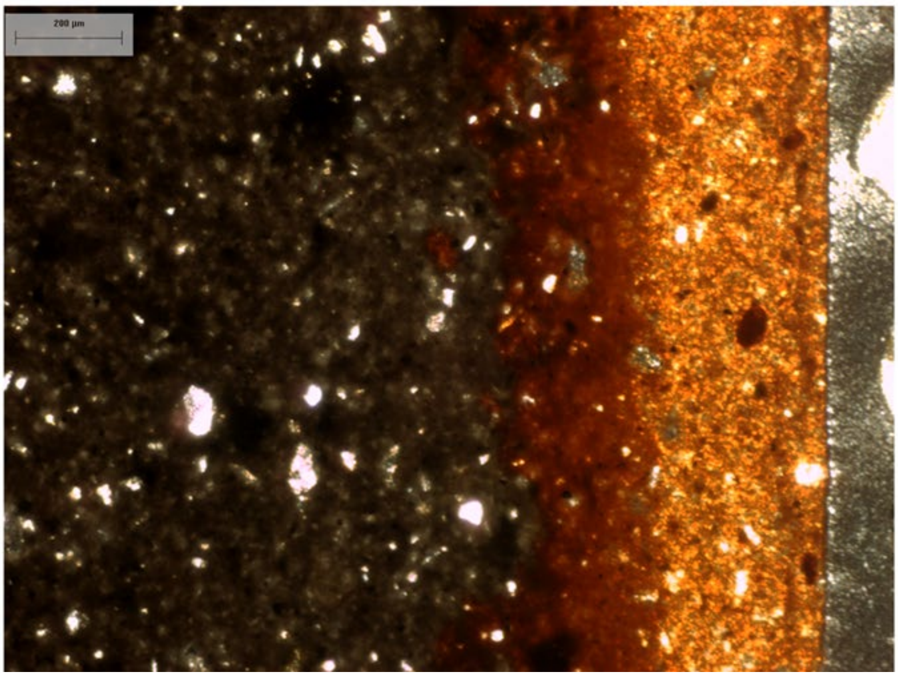
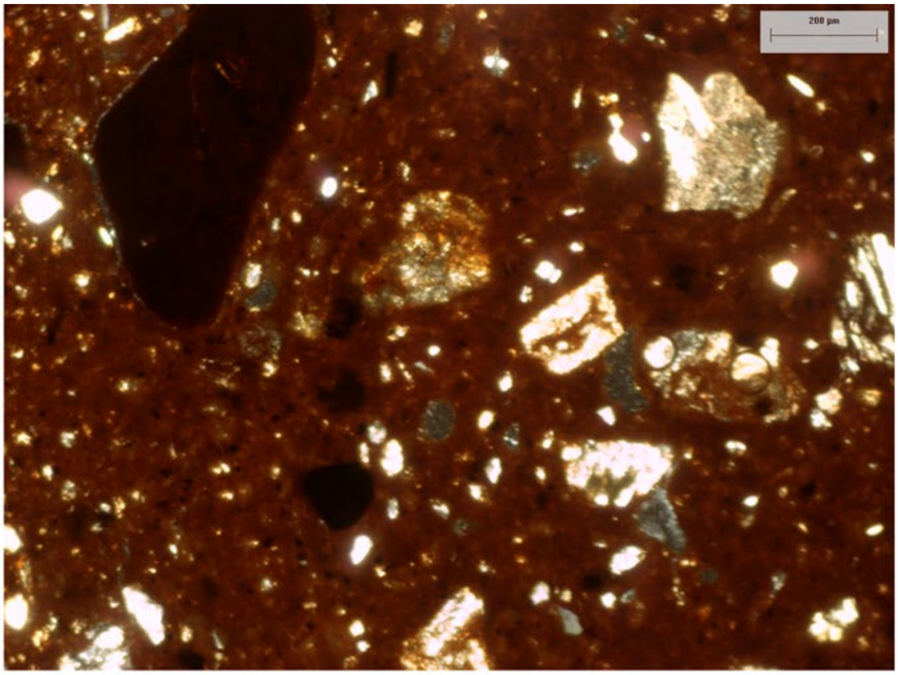


5.53b

Figure 5.53: Comparison of the firing cores in S1-06-41 (5.53a, xpl) and Clay 67 from Mexiquito (5.53b, xpl). The ancient sherd shows superficial remnants of the bright orange firing core and the deep red firing core seen in the clay sample below.

The third clay (03) did not exhibit a black firing core beyond the 500° C firing. This clay was instead similar to Clay 1 at Santa Cruz, as it developed a deep maroon firing core within an active orange outer layer. This clay type correlates well to the rare fabric type that is represented by samples S1-06-4, S1-06-10, and S1-06-38 (see Figure 5.54).



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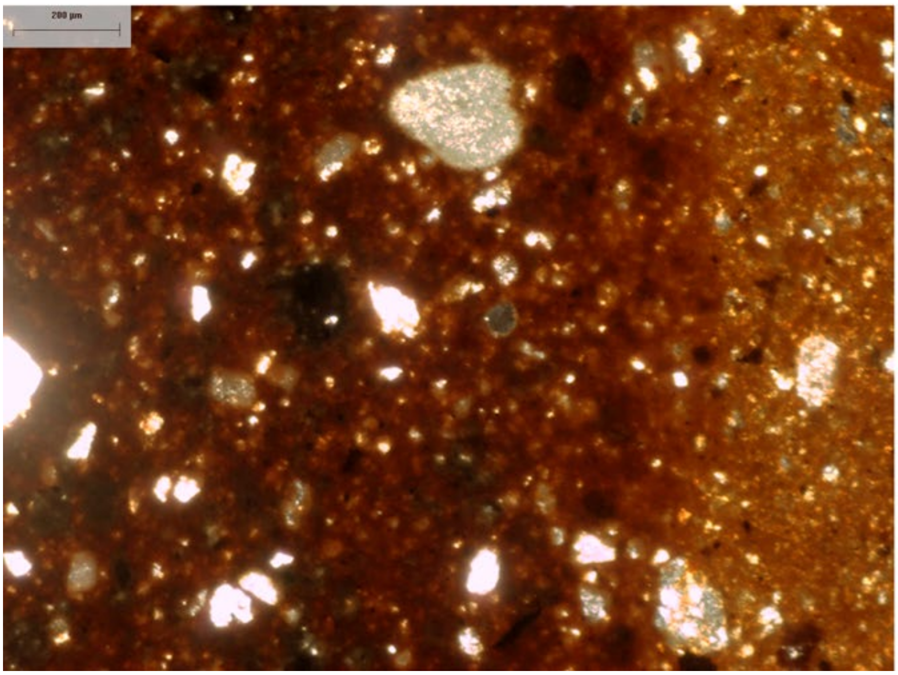


5.54b

FIGURE 5.54: A COMPARISON OF S1-06-38 (5.54A, XPL) AND CLAY 03 (5.54B, XPL) FROM MEXIQUITO. THE ANCIENT SHERD EXHIBITS THE DEEP RED NON-OPTICALLY ACTIVE FIRING CORE SEEN IN THE CLAY SAMPLE. THE SURFACE TREATMENT OF THE ANCIENT SHERD MAY HAVE PREVENTED THE FORMATION OF THE ORANGE SURFACE LAYER.

I did not encounter good clay source correlates for fabric types B/C, G, and most of H within my sample. It seems likely that the B/C group is made from a locally available clay source, and it is probably located quite close to the site of La Quesería, where the type is most common. Types G and H are also likely locally produced from clays near Mexiquito that were not sampled during this project. A broader clay collection project combined with additional chemical and petrographic analyses would be required to pinpoint likely clay sources for all of the sherds analyzed in this project.

Firing Temperature Correlations

Clays and minerals undergo a series of temperature-induced changes during the firing process, and identifying these changes can offer information on the likely firing temperatures achieved by ancient potters. Almost all of the modern potters in the Middle Balsas region fire their pots in open pits, although one potter at Patambo had begun firing her pots in a bread oven. I have no evidence to suggest that ancient Middle Balsas potters were firing their pots in high temperature kilns.

All of the sherds recovered by the Middle Balsas Project appeared to have been fairly well fired. Some fire spotting or other uneven colorations were present on many sherds, however, which suggests that for the Balsas Red wares, potters were not overly concerned with minor color variations. I compared thin sections of the ancient samples to sections of the test briquettes that had been fired to temperatures ranging between 500° C and 950° C to discover any firing-induced changes in the clays that could suggest a likely firing temperature range.

Several of the sherds contained pieces of limestone or other calcareous material, which was useful for firing temperature range measurements. Calcium carbonate ($CaCO_3$), which is present in these calcareous grains, decomposes during firing to lime (CaO). The lime is unstable, as it is hygroscopic, and it bonds with water from the air forming quicklime ($Ca[OH]_2$), which expands upon formation and results in cracking and spalling of the vessel (Rice 1987: 98). The exact temperature at which the calcium carbonate to lime reaction takes place is difficult to measure, and can range from 650° C to 900° C (Rice 1987: 98). The presence of intact limestone fragments suggests that the vessels containing limestone fragments were not fired to extremely high temperatures.

The clay minerals also undergo structural changes during firing. Most of the water bound to the clays is driven off at fairly low temperatures; generally this is completed at a temperature of approximately 600° C (Rice 1987: 90). At very high temperatures (above 950° C) the clay minerals reform into different minerals, or they form glasses (Rice 1987: 90). Between these temperatures, the individual grains of clay mineral can sinter together to form a dense product that has larger grains than the original clay. This sintering process lowers the optical activity of the clay matrix in the sample. Each of the clays I made into test briquettes lost almost all of their optical activity before or having reached 950° C. Individual clays, however, reacted differently to the firing temperatures, with the Patambo clays 12 and 13 remaining more optically active than other clays when fired to a given temperature.

In my samples, a deep maroon, non-optically active firing core developed within Clay 1 from Santa Cruz, which has been linked to some of the Type A vessels. This firing core developed between 700 and 800° C. Some of the Type A fabrics also contain this core, which suggests that the 700-800° C temperature range was likely achieved during the firing of these vessels. Nevertheless, a similar core developed in clay 03 from Mexiquito at 650° C (see Figure 5.54). Other vessels, including those with limestone fragments and with a more optically active matrix, were probably fired within the 600-700° C range.

In general, however, exact firing temperatures and conditions cannot properly be recreated in the laboratory. Open firings with wood or other fuel can fluctuate in temperature and atmosphere as fuel is added or consumed during the firing process. The data gained from the replication studies is only suggestive as to temperature range, but cannot be more specific.

5. 4 Mechanical Testing of Briquettes

I subjected a set of test briquettes manufactured from seven local Middle Balsas clays to three-point bend testing (see Kilikoglou *et al.* 1998), which measures a material's resistance to bend stresses (see Figure 5.55). These test briquettes were made with different amounts of sand temper (by volume) to determine the strength of the pure clay, as well as to measure how the strength changed with the addition of temper. In order to compare the relative mechanical properties of the clays I tested, I calculated the transverse rupture strength (TRS) of each of the briquettes using the force data gathered during the three-point bend tests. The formula for calculating this rupture strength (Equation 5.1) includes data on the highest load (force) sustained by the briquette and the dimensions of the briquette. In the following formula, F is the maximum applied force, l is the length, b is the width, and t is the thickness of the briquette (Kilikoglou *et al.* 1998).

$$\mathrm{TRS} = \frac{3Fl}{2bt^2} \qquad (\textit{Equation 5.1})$$

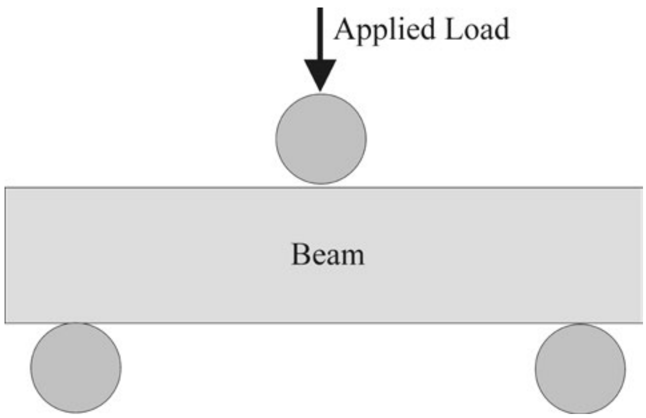


FIGURE 5.55: SCHEMATIC OF A TYPICAL THREE-POINT BEND TEST

Full calculations and graphs of the force versus displacement for each briquette are found in Appendix 7. Once the rupture strength was calculated for each briquette, I calculated an average TRS value for each clay-temper combination (see Appendix 7 and Table 5.14). Since fired clay is a brittle material, the TRS is highly dependent on the number of small inclusions or other irregularities within the clay. It is, therefore, more accurate to combine multiple measurements of any clay-temper material to determine the average rupture strength of that material. Ideally, the largest number of samples possible should be measured to give an accurate average strength. The strengths (TRS) of the clays I measured were not spread over a large range, thus the resulting average strength measurements should be accurate.

TABLE 5.14: THE MEASURED AVERAGE TRANSVERSE RUPTURE STRENGTH (TRS) FOR THE PURE MIDDLE BALSAS CLAY TEST BRIQUETTES.

Clay Number	Collection Site (see Figure 5.26)	Transverse Rupture Strength (TRS) in MPa
1	Santa Cruz	4.9
2	Santa Cruz	6.8
03	Mexiquito	20.0
12	Patambo	7.7
13	Patambo	4.8
67	Mexiquito	15.3
77	Mexiquito	10.7

Interestingly, the three clays from Mexiquito (clays 03, 67, and 77) exhibit the highest pure clay transverse rupture strength, although all of the clays fell within the same order of magnitude. In comparison, a commercial calcareous clay measured by Kilikoglou and his team (1998) using various sizes and percentages of quartz temper resulted in a TRS value ranging from 35 MPa (5% sand temper) to 5 MPa (40% sand temper). They chose this clay to be similar to the clay used in Greece for ancient pottery in many cases (Kilikoglou *et al.* 1998). These are the only published values for clay strength testing with different amounts of temper. My values are significantly lower than these values, suggesting that the Middle Balsas clays are not as strong as the clay measured by Kilikoglou and his team (1998). Since the Balsas clays were in use, however, it is clear that the Middle Balsas potters were able to combine pottery forms and manufacturing processes to result in functional vessels.

Previous TRS measurements of clays 1, 2, 12 and 13 (from Santa Cruz and Patambo), made using smaller test briquettes, yielded slightly higher rupture strengths for each clay (Meanwell 2001: 51). I suspect that the lower rupture strengths measured in the present experiments resulted from the higher probability of the presence of pores in the larger test briquettes. It is also likely that the clay strength measured for the sherds with temper added would have been higher had I used a smaller grain size of sand temper (see Kilikoglou *et al.* 1998 and Tite *et al.* 2001).

Inclusions (temper) and pores create flaws in a clay material that act as nuclei for the initiation of cracks; the presence of cracks, in turn, leads to lowered rupture strength. Voids act essentially as zero-strength inclusions. I expected, therefore, that the briquettes made with higher sand concentrations would be more brittle (have a lower TRS) than the pure clay briquettes. Potters must balance the amount of temper they add to clay, in order to keep the pot from cracking during drying and firing, against maintaining sufficient strength for the pot's intended use. Figure 5.56 presents a graph showing the reduction in briquette transverse rupture strength as a function of increasing amounts of sand added to the clay. All of the clays lost most of their strength when the percentage of sand inclusions reached 40% by volume. In fact, the majority of the 40% bricks did not survive placement in the sample holder even before the test began.

As Figure 5.56 indicates, the strength of the clays decreased significantly with each 10% addition of sand. In the case of clays 1 and 2, an 80% drop in rupture strength was documented with a 10% increase in sand percentage[13]. The average drop for all clay and temper combinations was 44%, which is in agreement with the values reported in the literature for the strength drop. Kilikoglou and his team (1998) documented a 40-50% strength drop with each 10% increase in sand temper volume for their strength experiments with commercial clay and sand temper. In the case of my samples, the largest changes in rupture strength occurred between the pure clay and the 10% tempered clay, and between the 30% and 40% samples (though the rate of TRS decrease between the 30 and 40% samples is much higher).

The density of inclusions or temper also has an effect on the toughness of a clay briquette. Toughness is a measure of how difficult it is for a crack to propagate through a material. Toughness provides an indication of a material's brittleness; the higher the toughness, the lower the brittleness. Items that are tough may initiate a crack in some area, but will not fail catastrophically because of uncontrolled propagation of that crack through the material. It is expected that the addition of inclusions can slow cracks, either by forcing them to travel in meandering paths around each grain or by providing a mechanical locking effect, in which the rough surfaces on either side of the crack prevent the surfaces from sliding past one another. Due to this increase in toughness provided by the addition of temper, tempered ceramic vessels may survive longer during daily use than an extremely brittle material, such as glass. A large force will shatter the ceramic vessel, but lower, everyday stresses may initiate small cracks that fail to propagate, leaving the vessel operational.

13 In the case of clay 1, the 80% drop occurred between 0-10% sand, and in the case of clay 2, the drop occurred between 10-20% sand.

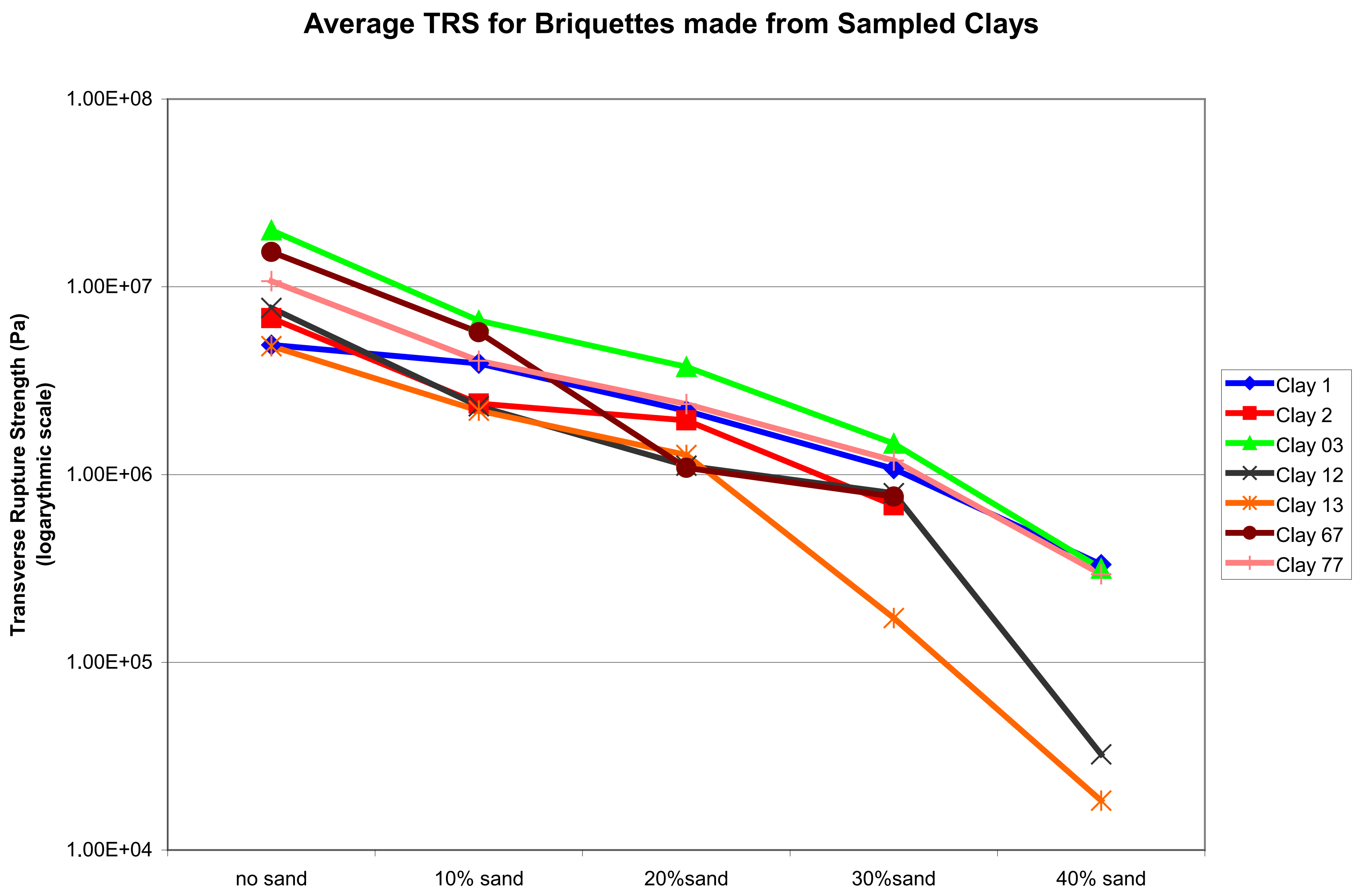


FIGURE 5.56: REDUCTION IN THE TRANSVERSE RUPTURE STRENGTH (TRS) OF EACH CLAY WITH SAND ADDITIONS.

When making these test briquettes, I noted that the pure clay samples were very difficult to work with and to form. For making test briquettes, the ideal mixture of temper to dry clay appeared to be approximately 20% by volume. Once the inclusion percentage reached 40%, there was often insufficient clay to hold the sand grains together. In several cases (clays 2 and 67), I was unable to make a 40% sand set due to the extremely low cohesiveness of these clay-sand combinations.

Based on my analysis of the ancient sherd thin sections, it appears that Middle Balsas potters were producing vessels with high concentrations of inclusions (up to 40vol%), although the inclusions used by Middle Balsas potters were not of a uniform size, like the sand I used for the test briquettes. I measured and mixed both the clay and the sand in their dry form; the results may be different when already moist clay is used. Not unexpectedly, I often found large inclusions located along the broken surfaces of the ancient sherds that may have served as crack initiation locations. The Balsas potters did not exercise rigorous control over the maximum inclusion size when producing their vessels. I detected many extremely large grains, even in thin-walled vessels.

It seems that the modern Patambo clays (12 and 13), which correlate with sherd Type E, are the most brittle of the clays utilized when tempered with sand. Despite this relative brittleness, these clays were used for certain applications, namely for *tecomates*. While it is possible that *tecomates* were the only possible function for this clay type, it seems more likely that this clay (or mixture of clays) has a high propensity to form pore networks, leading to superior performance when made into water-cooling jars. Local inhabitants of the Middle Balsas region recommend Patambo pots for water storage above all other locally made vessels of the same size and shape. In this case, the water-cooling abilities of these pots took precedence over the lowered strength in the vessel design.

Most of the clays tested fall within a functional strength range adequate to the applications chosen by ancient potters. My petrographic analyses of Middle Balsas pottery indicate that, in preparing their clay-temper mixtures to provide adequate strength for particular vessel forms, a primary consideration of the potters related to the largest size of inclusion that could be incorporated into the clay compared to the wall thickness of the vessel. Very thin vessels generally had smaller inclusions. In most cases, the inclusion density was quite high in the Middle Balsas region. On the other hand, my experiments carried out during test brick manufacture demonstrated that the high inclusion densities were not required to produce vessels that did not crack during drying or firing.

It would be worth investigating the relation of the physical properties of clays and clay-temper mixtures in relation to the functions of vessels by studying the clays and processing used for vessels such as *molcajetes*, which receive stress during grinding, and at the thermal shock characteristics of cooking vessels. Previous work elsewhere in Guerrero has suggested that potters used the clay sources locally available to them to engineer specific vessel shapes and wall thicknesses appropriate to the properties of the clay (Reitzel 2007). My research demonstrates that the Middle Balsas potters acted similarly. I found few imported clays or vessels.

The results I have presented in this section indicate that the clays available to Middle Balsas potters were not as strong as modern clays in use for commercial purposes. Nevertheless, potters developed processing techniques that provided their local clays with properties enabling them to be made into a wide variety of vessel forms designed specifically for use in a broad range of applications. The fracture strength alone of the clay does not appear to have been the deciding factor for Middle Balsas potters when they chose clays for certain functions.

5.5 Results from Obsidian, Figurine, and Ground Stone Analyses

The data presented in this section are the result of cursory examinations of these three important artifact categories. Although I did not examine the figurines, obsidian, and ground stone to the extent that I analyzed the ceramic materials, I feel it is important to summarize my major findings for completeness, and because the figurine types and the ground stone forms may be characteristic of the Middle Balsas region. I will begin with the figurines, and then will report my obsidian and ground stone data.

Figurine Data

We recovered a large number of clay figurines from the Middle Balsas region, especially at La Quesería and Itzímbaro: in total, 454 figurine fragments, the majority of which came from La Quesería. The large majority of the figurine fragments were partial human figures, although we also encountered a number of animal figurines. We found one long-billed bird head (possibly a hummingbird), a possible jaguar head, and a probable deer. The animal figurines are shown in Figure 5.57, and the raw figurine analysis data are found in Appendix 5. The majority of these figurines seem to be constructed by hand rather than in a mold, although mold-made examples do exist. We also encountered some composite examples that appeared to be partially made in a mold with details added by hand. Most of the figurines were fired at low temperatures, although they were not slipped or significantly smoothed. One Itzímbaro figurine, however, did have a deep red slipped and partially burnished surface (see Figure 5.58).

I encountered at least one figurine type (described below) that appears to be characteristic of the Middle Balsas region (Figure 5.59), as well as a number of examples that are unique and have no known correlates (see Figures 5.60-5.62). Some of the figurines I encountered showed some similarities to the Pointed-Face and High Head types found along the Guerrero coast (see Figure 5.63) and described by E.S. Brush (1968). I did not find any strong links to Teotihuacán-style figurines (Barbour 1975) nor to the typical Central Plateau figurine types (Vaillant 1935; Reyna 1971). I also did not encounter any of the Olmecoid or Babyface types that were found by Paradis (1974) and E.S. Brush (1968) at some of the Preclassic sites in the Middle Balsas region and along the coast of Guerrero. This figurine type is older than most of the habitation levels at the three Middle Balsas sites I studied. I did encounter at least two nude female bodies (see Figure 5.64) from figurines that appeared to have links to Middle Preclassic figurines in the Mezcala region of Eastern Guerrero (Schmidt, personal communication, 2006).

Several partially intact figurines from the Middle Balsas region group to form a consistent figurine type (see Figure 5.59) that I call the Geometric type. This type is characteristic of the Middle Balsas. These Geometric figurines are fairly flat and may be partially mold made. Details of the faces and jewelry are incised pre-firing into the body or made of additional clay pieces. The figures are generally highly geometric and abstract, with few anatomical details, especially in the bodies. Typically they do not have any features on the back side of the figurine. The hands and feet are simply cylinders, often made with added balls of clay. The arms, made separately, are attached to the main body, and are generally positioned in front of the chest or abdomen. The figures frequently wear detailed choker necklaces and may have detailed headdresses or hairstyles. Most of the partial figurines I recovered were fairly small (approximately 10-12 cm tall), although I did find a body fragment that appears to fall within this type that came from a larger figurine (body fragment was 8 cm tall).

The evidence suggests that the Middle Balsas had its own figurine tradition, although forms and types from the coastal region and possibly from Mezcala influenced the figurine styles in the Middle Balsas. The majority of the figurines are likely Late Preclassic to Classic period, although the possible Middle Preclassic figurines from La Quesería suggest that the occupation at that site may date well back into the Preclassic. Further excavations and more radiocarbon analyses will be required to verify this hypothesis.

Figure 5.57: Animal and bird figurines. The top two figurines may be deer, while the bottom figurine is a hummingbird.

FIGURE 5.58: RED SLIPPED FIGURINE FROM ITZÍMBARO.

Figure 5.59: Three examples of the Middle Balsas Geometric figurine type.

Figure 5.60: Three unique figurine heads from the Middle Balsas Project.

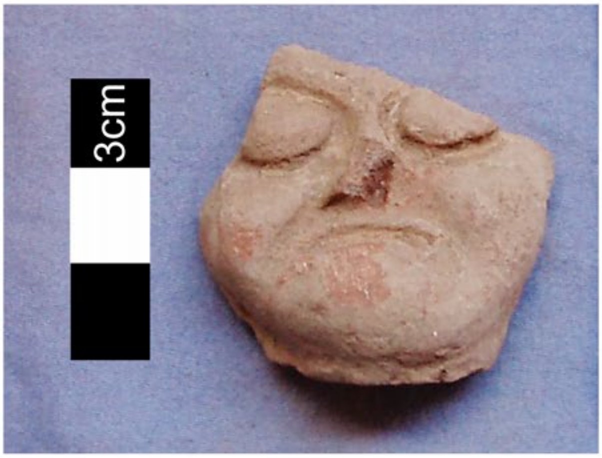


FIGURE 5.61: ADDITIONAL UNIQUE FIGURINE HEADS FROM THE MIDDLE BALSAS PROJECT.

FIGURE 5.62: UNUSUAL BODY TYPES FROM THE MIDDLE BALSAS FIGURINE COLLECTION.

Figure 5.63: Left: Images of the High Head Type (above) and the Pointed Face Type (below) from Brush (1968:272-273). Right: Their possible Middle Balsas correlates. Left Image © 1971 by Ellen Sparry Brush. Reprinted with permission.

Figure 5.64: Two small fragments of female torsos, possibly dating to the Middle Preclassic.

Obsidian Data

In total, the Middle Balsas Project recovered 2776 individual fragments of obsidian. Their distribution by site is shown in Table 5.15. I noted three different colors of obsidian, specifically green, grey striped, and dull opaque black. We counted the number of pieces of each color found at each site, as well as noting the general shape of each piece (blade, flake, projectile point, or core). The proportion of each color at each site is also shown in Table 5.15.

Table 5.15: The total number and proportion of different colored obsidian fragments found at the three sites.

Site	Grey	Grey %	Green	Green %	Black	Black %	TOTAL
La Quesería	1092	73%	75	5%	337	22%	1504
Itzímbaro	355	77%	11	2%	98	21%	464
Mexiquito	524	65%	12	1%	272	34%	808
TOTAL	**1971**	**100%**	**98**	**100%**	**707**	**100%**	**2776**

Table 5.15 indicates that grey was the most common color of the obsidian that we recovered in the Middle Balsas region. The grey obsidian varied in color from a deep charcoal to a highly transparent light grey. It was common to encounter smoky patterns of deeper color within the lighter samples. The black obsidian was thicker and less shiny than the grey or green examples, based on thickness measurements of approximately 10% of the blades from each color group[14]. The green obsidian was fairly rare, but was found in noticeable numbers at all three sites.

Approximately half of the obsidian collected was in the form of small flakes and other unidentifiable *debitage*. The remaining half was in the form of prismatic blades, in addition to eighteen projectile points and four cores. The number and proportion of blades recovered of each color at each site is found in Table 5.16. The projectile points came mainly from the surface collection at Mexiquito, although two excavated examples were recovered from Itzímbaro. The generally low number of cores recovered from the Middle Balsas region may suggest that obsidian tools were not directly produced in the area, but were imported as roughly finished cores or blades.

Table 5.16: The number and percentage of obsidian blades recovered in each color from each site.

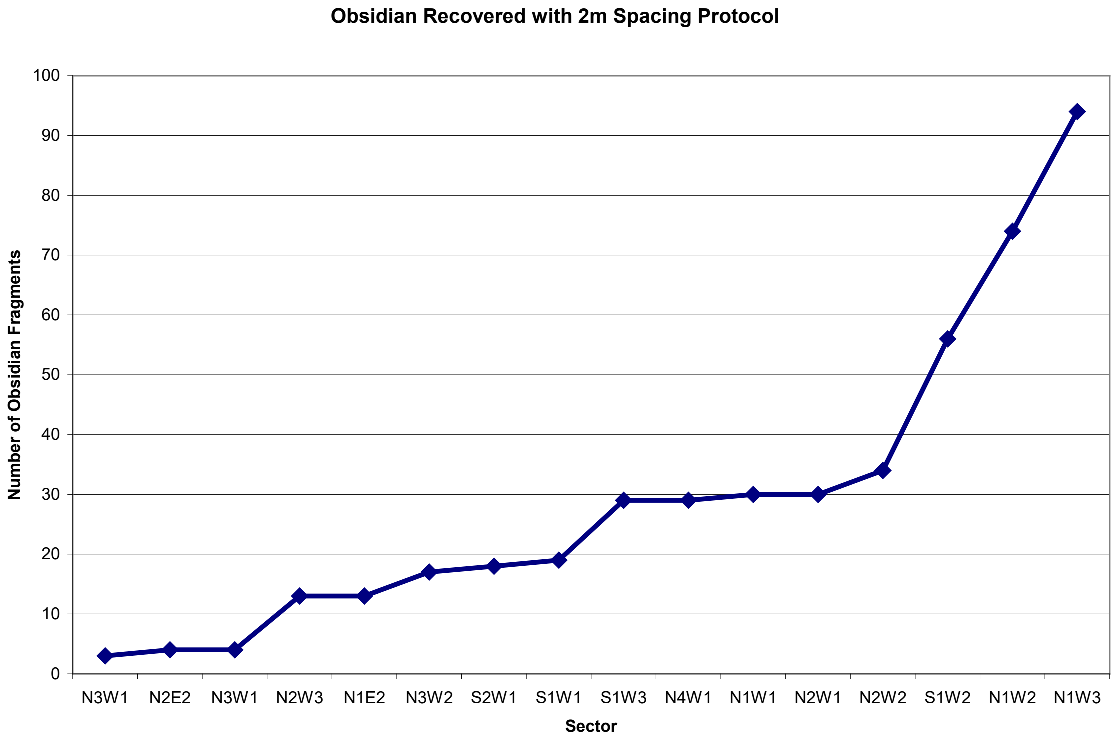
Site	Grey	Grey %	Green	Green %	Black	Black %	Total Blades	% of total obsidian recovered
La Quesería	272	70%	59	15%	59	15%	390	26%
Itzímbaro	171	87%	12	6%	14	7%	197	43%
Mexiquito	222	60%	8	2%	143	33%	373	46%
TOTAL	**665**		**79**		**216**		**960**	**35%**

The obsidian was not distributed uniformly within each site or equally between sites. The density of obsidian within each of the three sites is shown in Table 5.17. At La Quesería, most of the obsidian was recovered from sectors near the largest pyramid (sectors S1W2, N1W2 and N1W3) and from sector N6E1 (see Figure 5.65). Sector N6E1 contained an area damaged during the construction of the roadway and several houses, and we encountered a very high number of obsidian fragments there. At Mexiquito, the highest density of obsidian came from sector S2E5 (see Figure 5.66), which falls within the large flat plaza area between Zone 1 and Zone 2. The density of obsidian at Itzímbaro was significantly lower than at La Quesería and Mexiquito (see Figure 5.67).

Table 5.17: The average density of obsidian recovered at each site (total number of surface collected fragments/number of sectors).

La Quesería	Itzímbaro	Mexiquito
31.6 pieces/sector	10.29 pieces/sector	38.67 pieces/sector

14 The black blades averaged 3.01 mm in thickness, while the grey and green blades averaged 2.59 mm and 2.44 mm respectively.



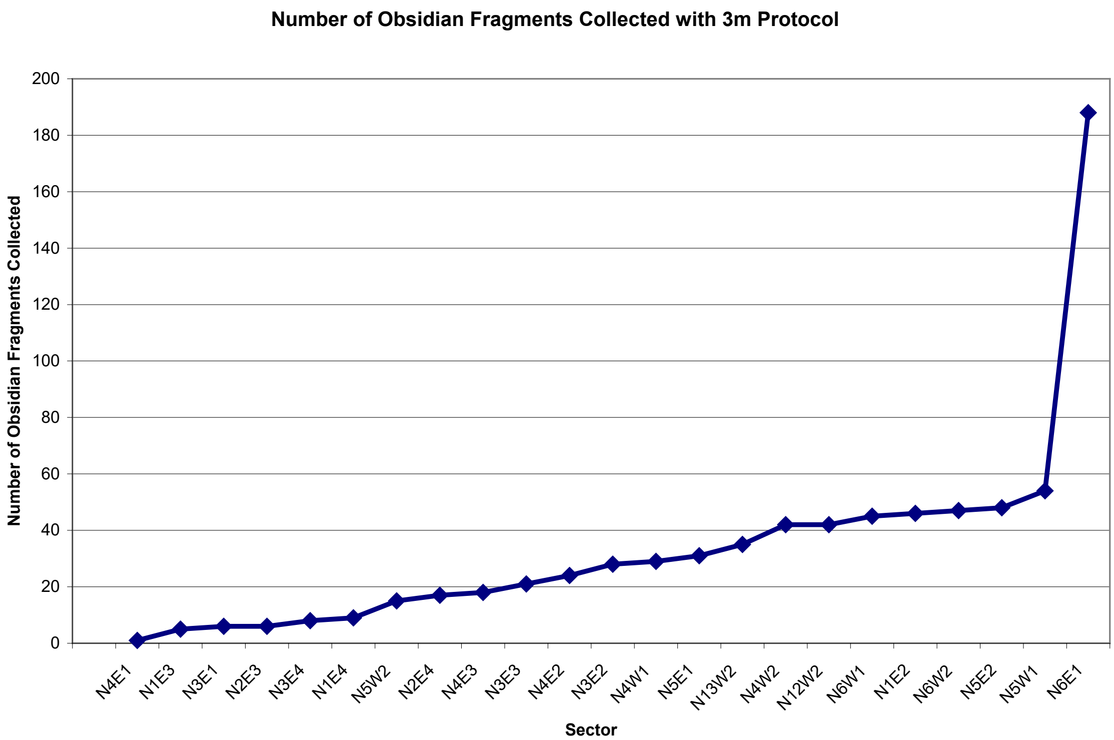


Figure 5.65: Graph of the amount of obsidian recovered in each sector during surface collection at La Quesería.

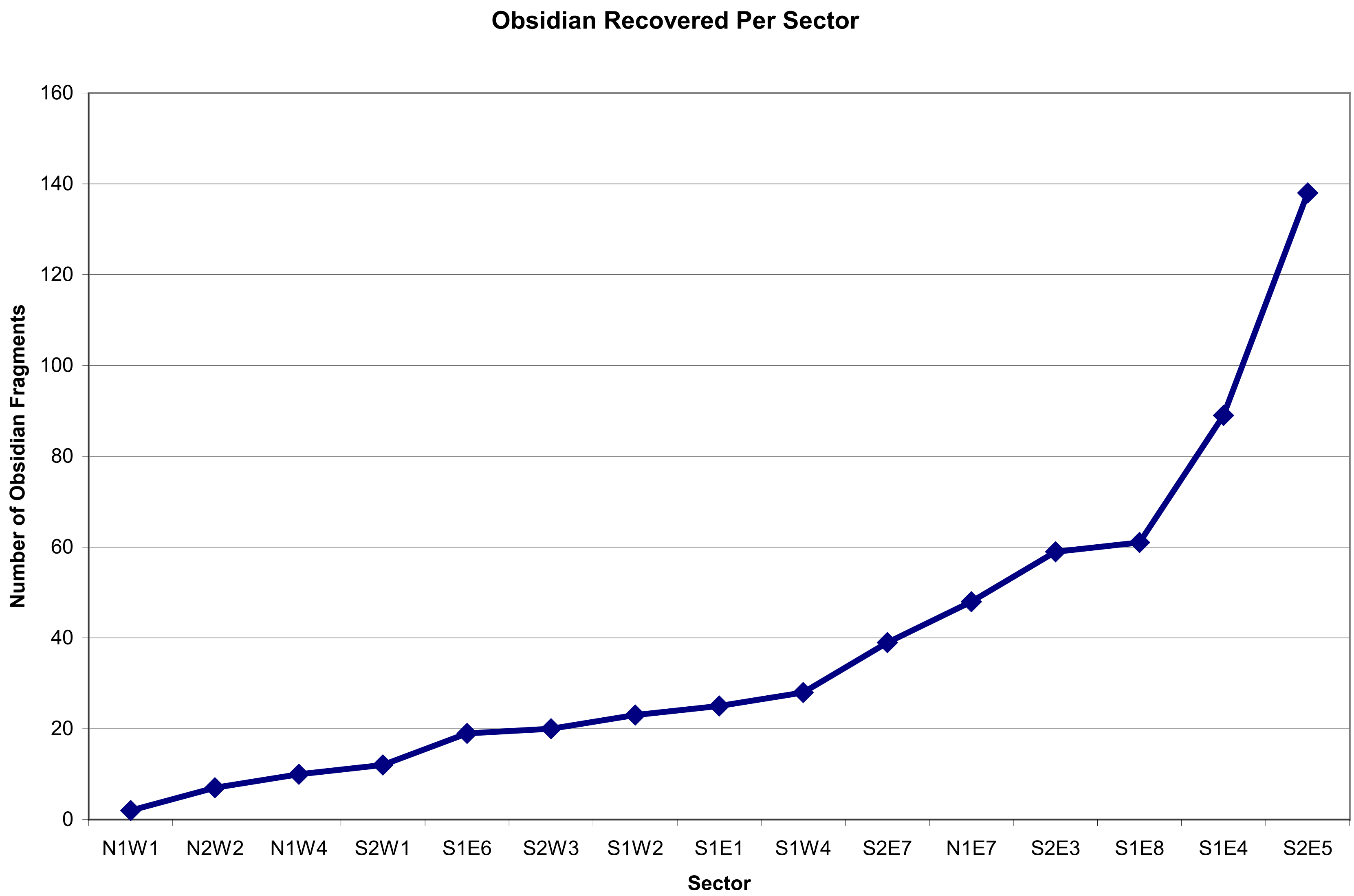


FIGURE 5.66: GRAPH OF THE AMOUNT OF OBSIDIAN RECOVERED IN EACH SECTOR DURING SURFACE COLLECTION AT MEXIQUITO.

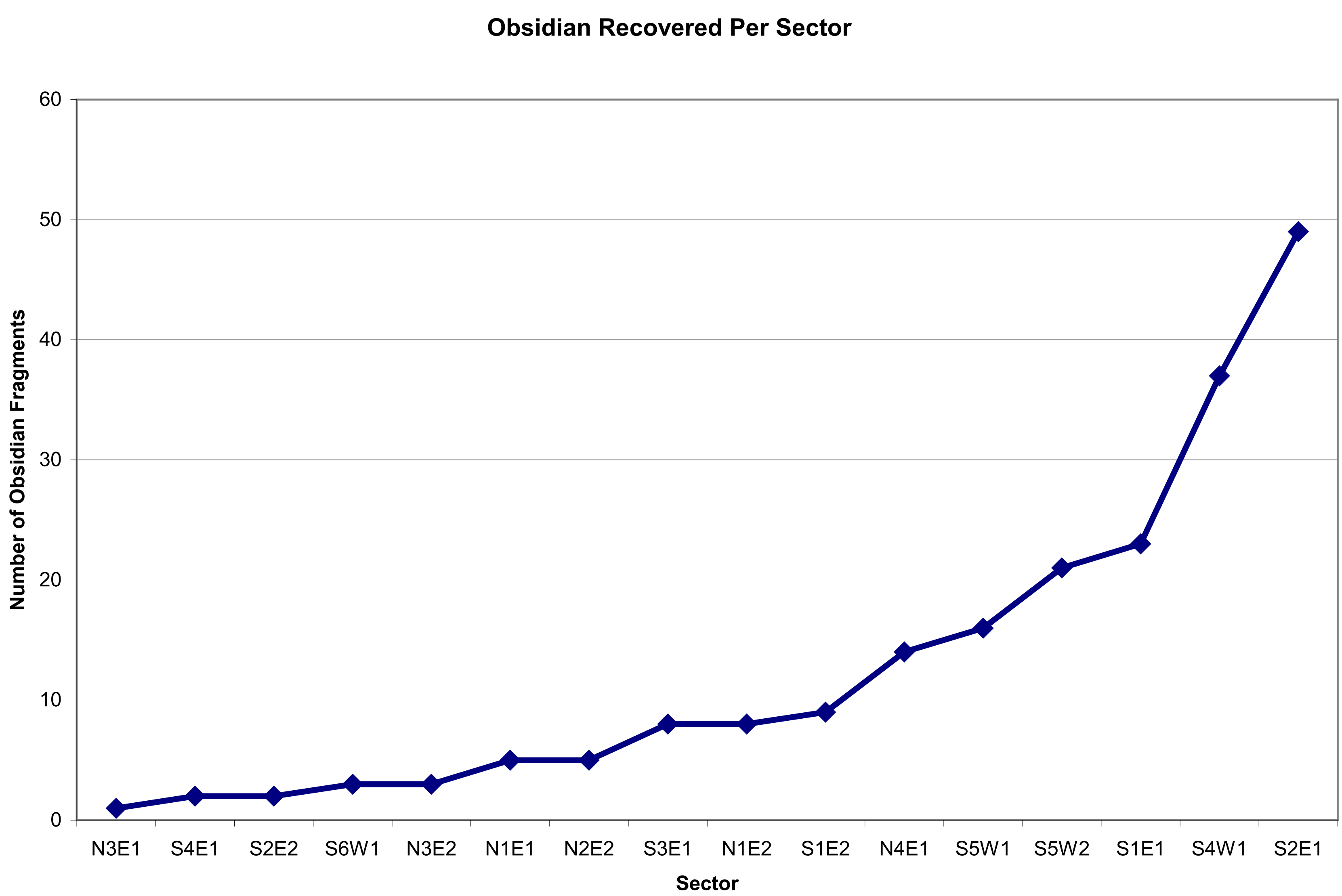


FIGURE 5.67: GRAPH OF THE AMOUNT OF OBSIDIAN RECOVERED IN EACH SECTOR DURING SURFACE COLLECTION AT ITZÍMBARO.

Since the Middle Balsas region is not known as a major source zone of obsidian in Mesoamerica (Cobean 1991; Healan 1997), the presence of obsidian at these three sites demonstrates that this area was involved in long-distance exchange involving obsidian. It will require further studies and chemical sourcing of the obsidian to determine the exact geological sources for the Middle Balsas. It is possible that the smaller percentage of grey and green obsidian found at Mexiquito represents some shift in obsidian trade during the Postclassic in the Middle Balsas region. Only further investigation will clarify this issue.

Ground Stone Data

During the fieldwork at La Quesería, Itzímbaro and Mexiquito, we recovered a number of ground stone tools, most commonly *manos* and *metates,* that are used in food preparation. These ground stone tools were made primarily from large-grained igneous rocks, such as granite, although a few appeared to have been made out of volcanic tuff or basalt. In Table 5.18, I present the number of *manos* and *metates* recovered from each site. The numbers from Itzímbaro and Mexiquito are much lower than for La Quesería. At each site, we encountered a few *metates* that had been used as construction material for the ancient structures. In order not to damage the structures, these were left in place and are not included in the totals. In addition to the *manos* and *metates*, we also encountered a few shaped stone axes. We found one stone tool at La Quesería that was incised on a flat surface. This tool appeared to be designed for smoothing plaster.

Table 5.18: Total numbers of *manos* and *metates* found at each site.

Tool Shape	La Quesería	Itzímbaro	Mexiquito
Manos	68	13	7
Metates	50	16	10

In general, all but two of the *metates* we found were legless stone troughs (see Figure 5.68). Two *metate* fragments, however, showed evidence of stubby cylindrical feet (see Figure 5.69). One of these footed *metates* was found at Itzímbaro, and one at Mexiquito. In addition to the standard *metates*, we also encountered a small hemispherical stone bowl at Mexiquito that was possibly used to grind pigments (see Figure 5.70).

The *manos* that we found were usually long cylindrical objects (see Figure 5.71), although their diameter varied. Most were ovaloid in cross-section and along the longest axis of the oval, the average diameter was approximately 6-8 cm. A few *mano* fragments had a more triangular cross-section. The *manos* were made of the same varieties of hard volcanic stone as the *metates*.

Figure 5.68: Example of a typical legless *metate* from La Quesería.

Figure 5.69: The undersides of two *metates* with cylindrical feet. The top *metate* is from Mexiquito, the bottom *metate* is from Itzímbaro.

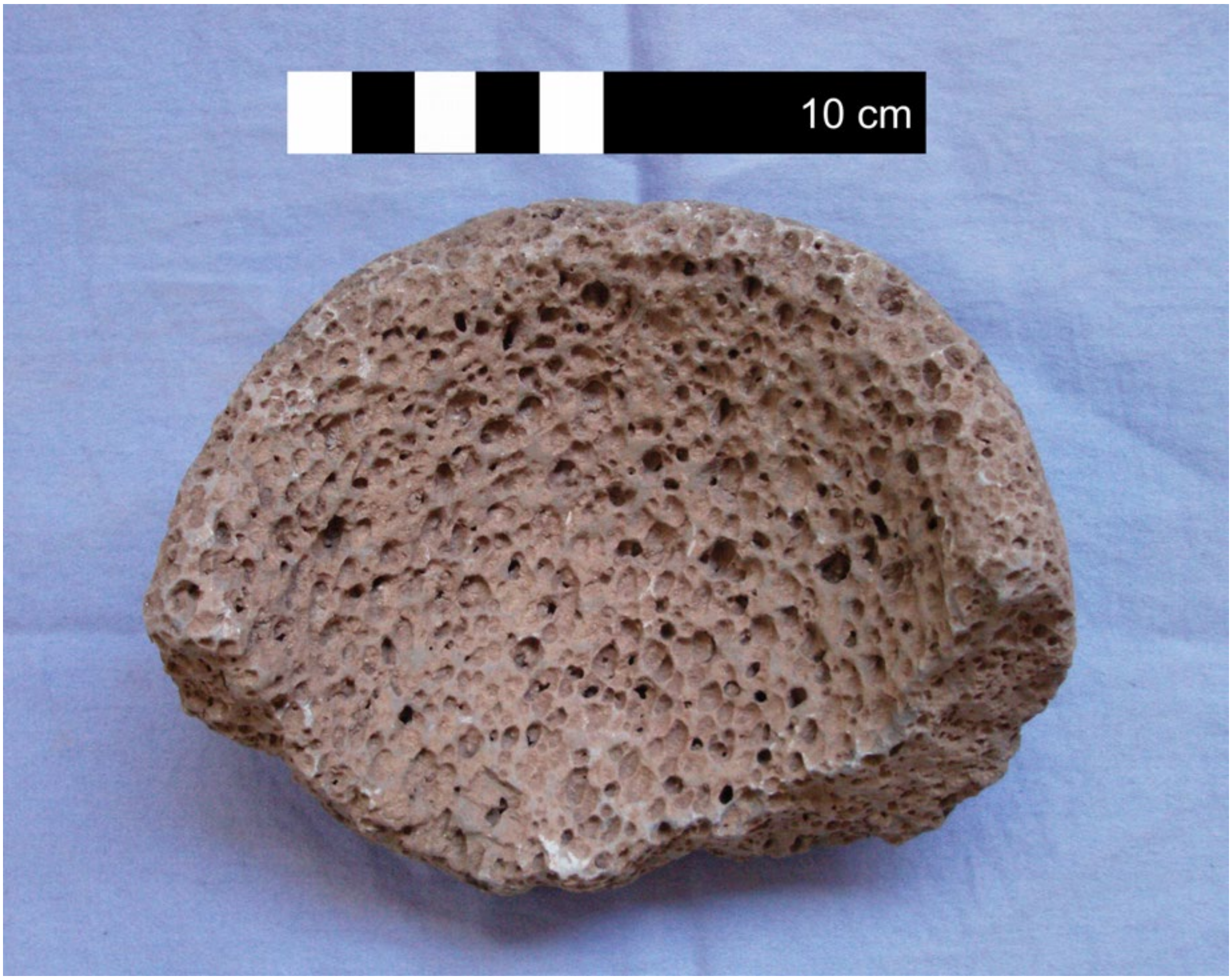


Figure 5.70: Small round bowl from Mexiquito made of very rough volcanic rock.

FIGURE 5.71: A VARIETY OF *MANOS* RECOVERED DURING THE MIDDLE BALSAS PROJECT.

Chapter 6: Patterns in Middle Balsas Pottery Production and Their Interpretation

In this chapter, I present my interpretation of how pottery was produced through time in the Middle Balsas region based on my analytical results (see Chapter 5). I begin by comparing the vessel shape categories to the fabrics, identified by thin section analysis, to determine if vessel shape and function had an effect on production choices at any site. I then identify the different production patterns noted at the three sites I investigated and explain what these may imply about the organization of pottery production at each settlement and about production changes through time. Finally, I summarize all of the data produced during my research that provide insights about the characteristics of the Middle Balsas pottery production tradition and explain how my results compare to pottery production studies in other regions.

6.1 Links Between Vessel Shape and Fabric

In Chapter 5, I presented a description of the most common pottery forms found in the Middle Balsas region with an explanation of which functions can most feasibly be ascribed to each shape. The function of a vessel is not a direct correlate to its shape, but vessel form can restrict the possible functions a vessel may likely perform. In Chapter 5, I also described the various clay fabrics in pottery found at each site based on the mineralogy and clay characteristics visible in the thin sections of sherds. In the present chapter, I relate the vessel forms to the clay fabrics that, together, provide an analytical framework for assessing which vessel types were made with specific materials and techniques. This approach allows me to suggest explanations, both chronological and functional, for the production patterns I identify.

Tables 6.1-6.3 facilitate a discussion of the patterns noted in my data. These tables link each numbered sherd sample to its clay fabric, vessel shape, probable date of manufacture, and average thickness. For this level of analysis, I am primarily concerned with the broadest shape categories, thus the tables do not differentiate, for example, between hemispherical and straight-walled *cajetes*. Wall thicknesses in the table are presented as the general categories of thick, medium, or thin[1]. Within each table, sherds are sorted first by clay fabric type, and then by formal type (shape). Table 6.1 gives the results from La Quesería, Table 6.2 from Itzímbaro, and Table 6.3 from Mexiquito. In each case, only the sherds within a well-described category are included in the table. Sherds that were placed in the category 'other' are not included.

1 The cutoff values for the thick, medium, and thin categories were individually determined for each site based on the graphs of the wall thicknesses for the sampled vessels. I chose cutoff values where natural breaks or inflection points appeared in the thickness measurements (see Figures 6.1-6.3).

TABLE 6.1: TABULATION OF CLAY FABRIC, VESSEL SHAPE, PIT NUMBER, DATE[2], AND THICKNESS[3] OF ANALYZED SHERDS FROM LA QUESERÍA.

Fabric	Shape	Pit and Date	Thickness (in mm)	Sample Number
A3	Open Bowl	2- Classic	7.7 Thin	S2-06-10
A3	Open Bowl	2- Classic	10.2 Medium	S2-06-16
A3	Tecomate	1- Classic	17.0 Thick	S2-06-18
A3	Olla	1- Classic	7.5 Thin	S2-06-25
A3	Recurved Bowl	4- Unknown	6.8 Thin	S2-06-28
A3	Cajete	1- Classic	9.0 Medium	S2-06-26
A3	Cajete	4- Unknown	7.7 Thin	S2-06-29
A3	Cajete	1- Classic	6.2 Thin	S2-06-20
A3	Cajete	1- Classic	4.7 Thin	S2-06-44
B/C	Recurved Bowl	2- Classic	6.9 Thin	S2-06-2
B/C	Recurved Bowl	2- Classic	7.8 Thin	S2-06-31
B/C	Recurved Bowl	1- Late Preclassic	7.1 Thin	S2-06-8
B/C	Recurved Bowl	2- Classic	9.3 Medium	S2-06-13
B/C	Tecomate	2- Classic	20.8 Thick	S2-06-14
B/C	Tecomate	2- Classic	17.9 Thick	S2-06-1
B/C	Tecomate	4- Unknown	14.1 Thick	S2-06-35
B/C	Tecomate	1- Classic	14.6 Thick	S2-06-36
B/C	Tecomate	2- Classic	5.9 Thin	S2-06-15
B/C	Tecomate	4- Unknown	10.2 Medium	S2-06-17
B/C	Olla	1- Late Preclassic	11.6 Medium	S2-06-7
B/C	Olla	1- Late Preclassic	17.5 Thick	S2-06-38
B/C	Olla	1- Classic	5.8 Thin	S2-06-19
B/C	Open Bowl	1- Classic	9.2 Medium	S2-06-24
B/C	Cajete	2- Classic	5.9 Thin	S2-06-32
B/C	Cajete	1- Late Preclassic	11.1 Medium	S2-06-43
B-Tempered	Cajete	4- Unknown	11.7 Medium	S2-06-22
B-Tempered	Cajete	4- Unknown	7.5 Thin	S2-06-30
B-Tempered	Cajete	4- Unknown	10.0 Medium	S2-06-33
B-Tempered	Open Bowl	4- Unknown	7.4 Thin	S2-06-23
B-Tempered	Tecomate	1-Late Preclassic	8.7 Medium	S2-06-41
E	Tecomate	4- Unknown	15.3 Thick	S2-06-21
E	Tecomate	4- Unknown	9.7 Medium	S2-06-27

2 In the Middle Balsas, the Late Preclassic sherds date between 300 BC-AD 200. The Classic period is between AD 200-900, and the Postclassic period is AD 900-1350 (see Figure 5.27).
3 Thin vessels have an average wall thickness of less than 8 mm, and thick vessels have an average wall thickness greater than 12 mm (see Figure 6.1).

TABLE 6.2: TABULATION OF CLAY FABRIC, VESSEL SHAPE, PIT NUMBER, DATE, AND THICKNESS[4] OF ANALYZED SHERDS FROM ITZÍMBARO.

Fabric	Shape	Pit and Date	Thickness (in mm)	Sample Number
A4-Tempered	Cajete	4- Late Preclassic	6.5 Thin	S3-06-2
A4-Tempered	Olla	3- Classic	15.8 Thick	S3-06-5
A4-Tempered	Olla	4- Classic	11.0 Medium	S3-06-34
A4-Tempered	Olla	3- Classic	10.0 Medium	S3-06-8
A4-Tempered	Open Bowl	4- Late Preclassic	9.5 Medium	S3-06-12
A4-Tempered	Open Bowl	3- Classic	13.9 Thick	S3-06-20
A4-Tempered	Open Bowl	4- Classic	11.1 Medium	S3-06-28
A4-Tempered	Tecomate	3- Classic	13.3 Thick	S3-06-14
A4-Tempered	Tecomate	4- Late Preclassic	7.6 Medium	S3-06-38
A1	Tecomate	4- Late Preclassic	14.1 Thick	S3-07-7
A1	Tecomate	4- Late Preclassic	8.5 Medium	S3-06-45
A1	Tecomate	3- Classic	15.2 Thick	S3-06-16
A1	Recurved Bowl	3- Classic	10.5 Medium	S3-06-23
A1	Open Bowl	3- Classic	9.4 Medium	S3-06-29
A1	Open Bowl	4- Late Preclassic	7.6 Medium	S3-06-41
A2	Cajete	3- Classic	6.8 Thin	S3-06-19
A2	Cajete	4- Classic	5.8 Thin	S3-06-24
A2	Cajete	4- Classic	6.2 Thin	S3-06-27
A2	Cajete	4- Classic	5.9 Thin	S3-06-33
A2	Cajete	4- Late Preclassic	4.6 Thin	S3-06-40
A2	Tecomate	4- Classic	9.3 Medium	S3-06-31
B/C	Cajete	4- Late Preclassic	7.1 Thin	S3-06-1
B/C	Olla	4- Late Preclassic	11.8 Thick	S3-06-6
B/C	Tecomate	4- Late Preclassic	11.6 Thick	S3-06-17
B/C	Tecomate	4- Classic	13.9 Thick	S3-06-25
B/C	Tecomate	4- Late Preclassic	14.2 Thick	S3-06-30
E	Tecomate	3- Classic	10.5 Medium	S3-06-9
E	Tecomate	3- Classic	12.5 Thick	S3-06-32

4 Thin vessels have an average wall thickness of less than 7.5 mm and thick vessels have an average wall thickness greater than 11.5 mm (see Figure 6.2).

Table 6.3: Tabulation of clay fabric, vessel shape[5], pit number, date, and thickness[6] of analyzed sherds from Mexiquito.

Fabric	Shape	Pit and Date	Thickness (in mm)		Sample Number
A1	Cajete	2- Postclassic	6.5	Thin	S1-06-3
A1	Tecomate	1- Classic	10.6	Thick	S1-06-9
A1	Tecomate	2- Postclassic	9.1	Medium	S1-06-29
A1	Polychrome	3- Postclassic	4.9	Thin	S1-06-33
A1	Olla	2- Postclassic	9.1	Medium	S1-06-36
A2 fine	Cajete	1- Classic	5.1	Thin	S1-06-7
A2 coarse	Cajete	1- Classic	9.0	Medium	S1-06-24
A2 coarse	Cajete	3- Classic	6.4	Thin	S1-06-37
A2 fine	Cajete	3- Classic	7.2	Thin	S1-06-44
A2 coarse	Open Bowl	1- Classic	7.2	Thin	S1-06-35
A2 fine	Olla	1- Classic	7.8	Thin	S1-06-45
E	Tecomate	2- Postclassic	9.1	Medium	S1-06-29
G-Tempered	Tecomate	1- Classic	10.9	Thick	S1-06-6
G-Tempered	Tecomate	Surface/Unknown	10.0	Thick	S1-06-11
G-Tempered	Tecomate	3- Classic	9.0	Medium	S1-06-43
G-Tempered	Cajete	3- Postclassic	6.9	Thin	S1-06-15
G-Tempered	Cajete	1- Classic	7.5	Thin	S1-06-17
G-Tempered	Cajete	3- Postclassic	9.4	Medium	S1-06-20
G-Tempered	Open Bowl	1- Classic	9.1	Medium	S1-06-25
G-Tempered	Open Bowl	1- Classic	9.0	Medium	S1-06-46
H-Tempered	Cajete	3- Postclassic	7.3	Thin	S1-06-34
H-Tempered	Cajete	2- Postclassic	6.9	Thin	S1-06-14
H-Tempered	Tecomate	3- Postclassic	7.6	Thin	S1-06-16
H-Tempered	Tecomate	1- Classic	16.6	Thick	S1-06-18
H-Tempered	Tecomate	Surface/Unknown	13.4	Thick	S1-06-19
H-Tempered	Tecomate	3- Postclassic	8.4	Medium	S1-06-21
H-Tempered	Tecomate	Surface/Unknown	9.9	Medium	S1-06-26
H-Tempered	Tecomate	Surface/Unknown	12.0	Thick	S1-06-27
H-Tempered	Tecomate	3- Postclassic	13.0	Thick	S1-06-30
H-Tempered	Tecomate	Surface/Unknown	18.9	Thick	S1-06-41
Imported	Polychrome/Cajete	3- Postclassic	7.1	Thin	S1-06-1
Imported	Polychrome	3- Postclassic	7.5	Thin	S1-06-2
Imported	Polychrome	3- Postclassic	7.4	Thin	S1-06-31

Table 6.4 presents one clear regional pattern. I found that all of the Type E fabric sherds are from *tecomates,* and examples of this same vessel shape/fabric type combination are found in small numbers at each site. Via petrographic analysis, I linked this fabric type to the clay deposits near the modern village of Patambo, Guerrero. The simplest explanation for this manufacturing pattern is that a settlement located in or near Patambo with easy access to this clay source specialized in manufacturing *tecomates*, which were then exported in low numbers to surrounding population centers. Patambo is less than 7 km from Placeres del Oro. Spinden (1911) reports archaeological material from Placeres del Oro, although the precise dates of occupation at Placeres have not been determined. At the same time, my evidence does not eliminate the possibility that potters from each of the three settlements came to collect and use clays from Patambo,

5 At Mexiquito I did not find enough recurved bowls to sample. Therefore, I analyzed a number of polychrome sherds to make up the full sample size of 45 sherds from each site.
6 Thin vessels have an average wall thickness of less than 8 mm, thick vessels have an average wall thickness greater than 10 mm (see Figure 6.3).

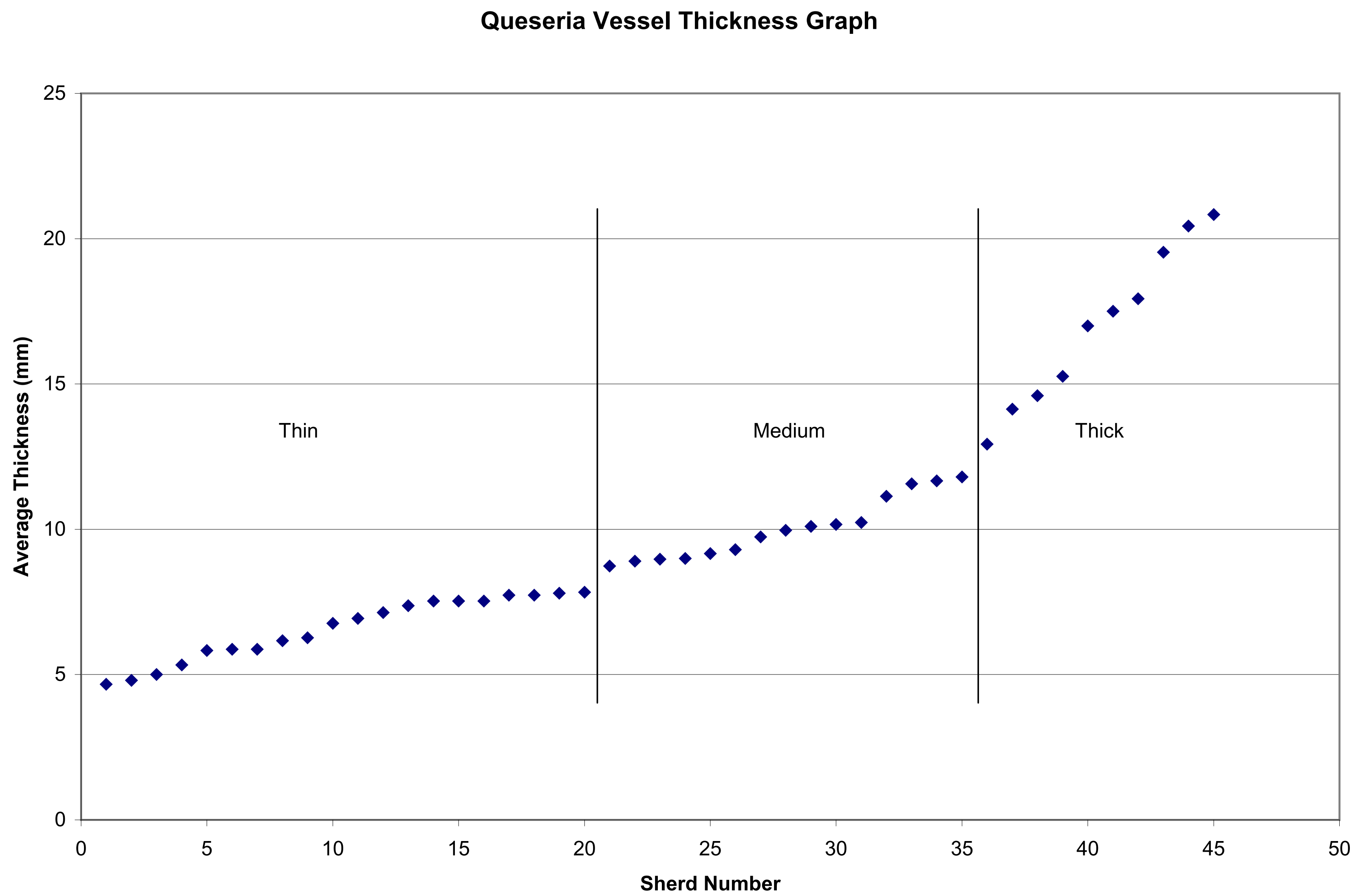


FIGURE 6.1: GRAPH OF THE AVERAGE WALL THICKNESS OF EACH OF THE SHERDS FROM LA QUESERÍA THAT WERE ANALYZED USING PETROGRAPHY. THIS GRAPH DEMONSTRATES THE DIVIDING LINES BETWEEN THIN, MEDIUM, AND THICK.

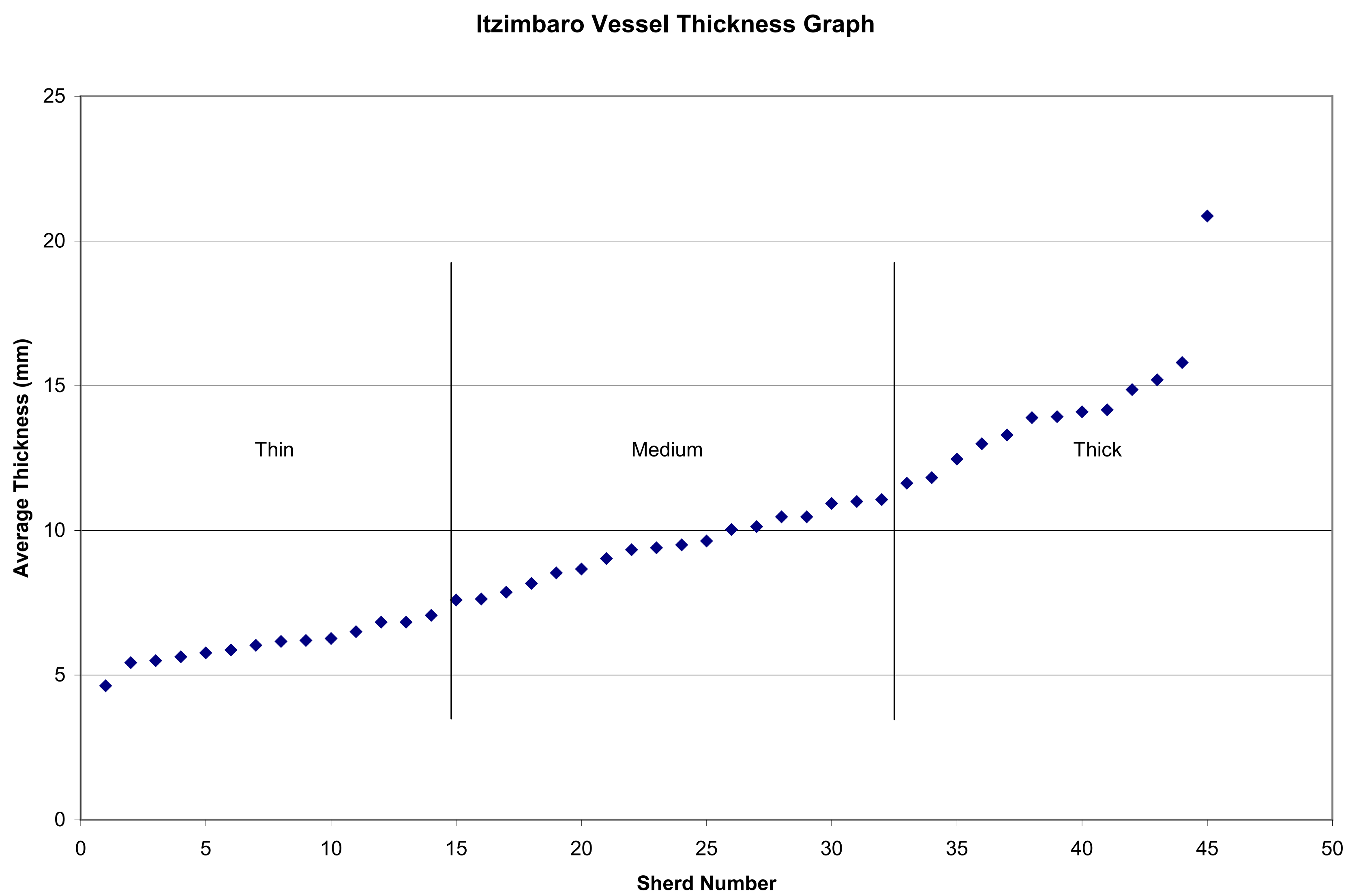


Figure 6.2: Graph of the average wall thickness of each of the sherds from Itzímbaro that were analyzed using petrography. This graph demonstrates the dividing lines between thin, medium, and thick.

or that small deposits of a similar clay that do not appear on the geologic map existed near each site. It is also possible that potters from Patambo carried clay with them to make *tecomates* at different sites, as was documented in highland Bolivia by Sillar (1997). Since the modern potters at Patambo are known for their water-storage vessels, and the clay is said to be especially good for this application, it is possible that earlier inhabitants of the area were also utilizing this clay for specific vessels, namely *tecomates*. Further survey research would be required to confirm the existence of a site near Patambo that was occupied during the Classic period and whose inhabitants might have produced pottery.

Table 6.4: Type E sherds from La Quesería, Itzímbaro, and Mexiquito.

Fabric	Shape	Site
E	Tecomate	La Quesería
E	Tecomate	La Quesería
E	Tecomate	Itzímbaro
E	Tecomate	Itzímbaro
E	Tecomate	Mexiquito

Using the data presented in Tables 6.1-6.3 on a site-by-site basis, I identified several patterns (both chronological and functional) in the pottery production technologies of each of the three Middle Balsas sites I studied. Due to the small sample size, statistical significance tests cannot be performed. Nonetheless, certain specific groups and patterns emerge from the samples at each site, which are described below. In sections 6.2 and 6.3 I consider the regional patterning in the data from all three sites.

La Quesería

Out of the 45 sherds thin sectioned from the site of La Quesería, a total of 5 of 45 are tempered by the addition of sand[7]. The remaining sherds are made from clays that naturally contain high numbers of non-plastic mineral grain inclusions. The tempered vessels (of fabric Type B/C) are medium or thick-walled, which may suggest that adding temper was required when making thicker or larger vessels from that particular clay. Additionally, all but one of the tempered sherds identified in this study came from the Pit 4 excavations. The radiocarbon analysis from this pit indicates that these levels have been highly disturbed by modern activities, so that these sherds may originate from any time period, including the last 200 years when tempering has been a common practice in the area (Meanwell 2001:42-44). The final sample, S2-06-41, was recovered from the Late Preclassic levels in Pit 1. No strong chronological or other conclusions can be made on the basis of this single tempered sherd found within a secure context, but it is possible that the Quesería potters used temper only in the early stages of occupation. This presupposes that the clay sources exploited during later occupations were inaccessible. Although clay deposits that lack inclusions are present, the Quesería potters demonstrate a marked preference for producing pottery from clays with natural inclusions throughout all time periods, probably due to the material properties they exhibit. In rare cases where potters exploited the clays lacking in inclusions, they added temper, as I have shown in Chapter 5.

Although the Quesería potters exhibit a definite preference for clays containing a high volume fraction of natural inclusions, they do not seem to use specific clay types for specific vessel functions. The vessel forms and wall thicknesses found in the A and B/C clay groups vary widely and do not cluster around a specific formal type/shape (see Table 6.1). This suggests that the clays and firing processes used by Quesería potters were not tailored to a function or vessel form and that the material properties allowed many design and functional options. It is notable, however, that Type A fabric sherds are on average

7 When including previously analyzed sherds from La Quesería, the total comes to 6 tempered sherds out of 79, which is 8% of the total number of analyzed sherds.

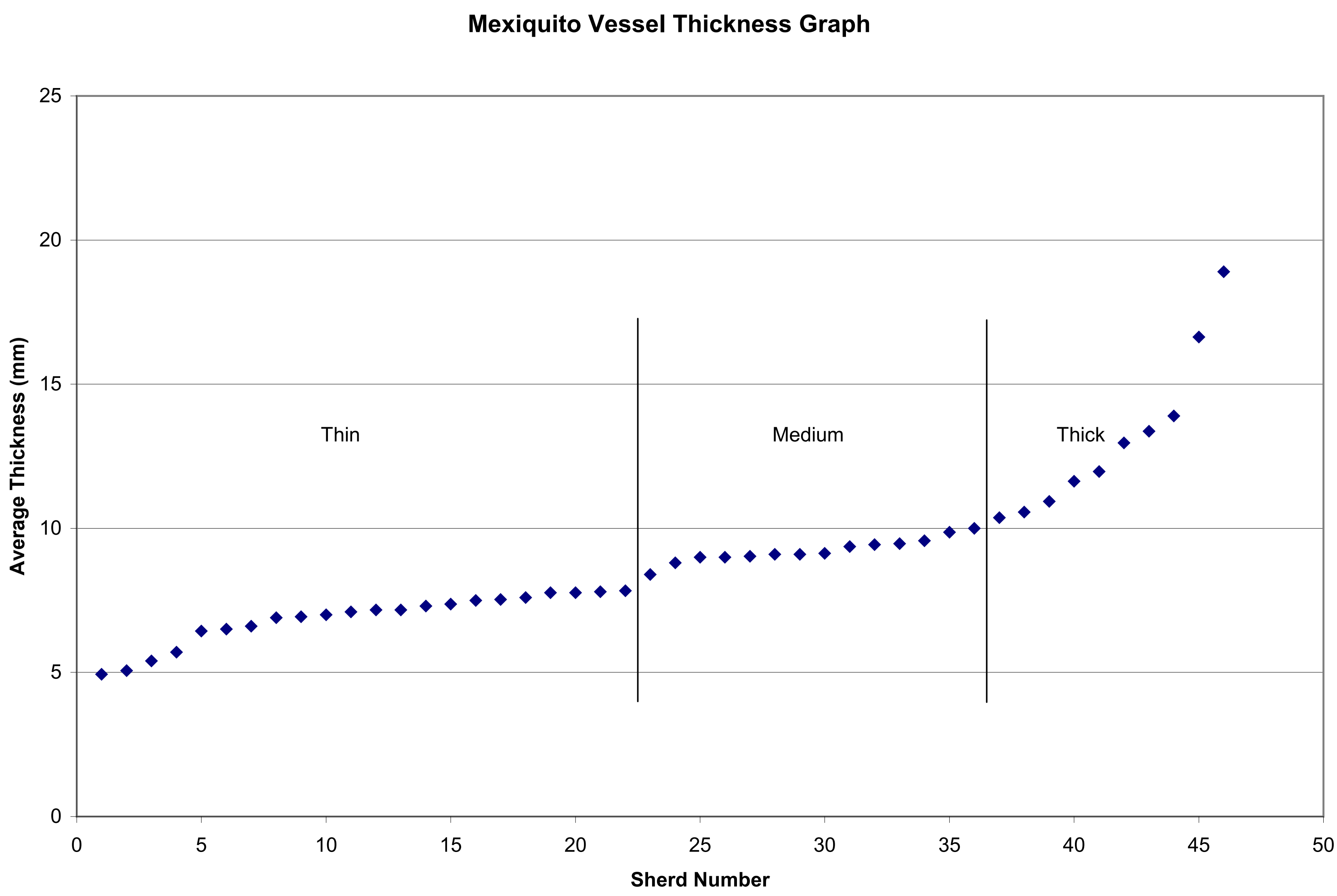


FIGURE 6.3: GRAPH OF THE AVERAGE WALL THICKNESS OF EACH OF THE SHERDS FROM MEXIQUITO THAT WERE ANALYZED USING PETROGRAPHY. THIS GRAPH DEMONSTRATES THE DIVIDING LINES BETWEEN THIN, MEDIUM, AND THICK.

thinner than those in the B/C group (see Table 6.5). Although thin and thick-walled vessels are present in types A and B/C, it seems that the majority of the thick-walled vessels, most often *tecomates* and *ollas* were made from Type B/C clay.

Table 6.5: Average wall thickness for Type A sherds and Type B/C sherds.

Fabric	N	Average Thickness	Standard Deviation
A	9	8.5 mm	3.5
B/C	16	11.0 mm	4.7

An additional notable result is that relatively few *cajetes* are made of the Type B/C clay (see Table 6.6). Only one of the incised and finely decorated *cajetes* common to the Middle Balsas region (S2-06-32) is made from Type B/C clay, although thin, burnished *ollas* and recuved bowls were produced from this clay type (as seen in Table 6.1).

From a chronological standpoint, it is relevant that the five Late Preclassic vessels that were identified with a fabric type all fall into the Type B/C fabric (including one sample made of tempered B fabric). Out of the eleven Late Preclassic sherds I sampled, however, the remaining six sherds fall into the category 'other' (see Table 6.7). It is possible that Quesería potters chose to use Type A and Type B/C fabrics on a more consistent basis during the Classic period.

Table 6.6: Number[8] of vessels from each shape category within the fabric Type B/C sherds from La Quesería.

Vessel Shape	Number Identified	Expected Number of Vessels
Cajete	2	5.3
Tecomate	6	5.3
Olla	3	1.8
Recurved Bowl	4	1.8
Open Bowl	1	1.8
TOTAL	**16**	**16**

Table 6.7: Number of Late Preclassic vessels within each fabric type.

Fabric	A3	B/C	B-Tempered	E	Other
Number of Late Preclassic Vessels	0	4	1	0	6

Itzímbaro

The pottery analyzed from the site of Itzímbaro was manufactured mainly from different subtypes of the Type A fabric. The tempered sherds (Type A4) include a variety of vessel shapes and thicknesses (as Tables 6.2 and 6.8 indicate). Since temper was added to the clay used for pottery that range in wall thicknesses, it seems unlikely that tempering was required only for thick-walled vessels, in contrast to the pattern found at La Quesería in the tempered Type B sherds. The sherds identified as Types A1 and A4 fabrics were excavated in fairly equal numbers from Pits 3 and 4 (which date to the Classic and Late Preclassic respectively), suggesting that the pottery manufacturing method that utilized these clays continued for at least 1100 years (see Table 6.9). The A1 group includes primarily utilitarian vessels such as *tecomates*, *ollas*, open bowls, and recurved bowls; I found no *cajetes* in this group.

8 The expected value was calculated by multiplying the total number of B/C fabric sherds by the proportion of the overall sample from each vessel shape. For example, 15 of the 45 sampled vessels were cajetes, so the expected percentage, assuming an even distribution, would be 1/3 of the total.

TABLE 6.8: NUMBER OF EACH VESSEL SHAPE FOUND IN THE A4 TEMPERED FABRIC FROM ITZÍMBARO.

Vessel Shape	N	Expected Number of Vessels
Cajete	1	3
Tecomate	2	3
Olla	3	1
Recurved Bowl	0	1
Open Bowl	3	1
TOTAL	9	9

TABLE 6.9: NUMBER OF LATE PRECLASSIC PERIOD VERSUS CLASSIC PERIOD VESSELS FROM EACH FABRIC TYPE.

Fabric	Late Preclassic Sherds (300 BC-AD 200)	Classic Sherds (AD 200-800)	Total Number of Sherds
A1	3	3	6
A2	1	5	6
A4-tempered	3	6	9
B/C	4	1	5
E	0	2	2
Other	1	14	15

The number of sherds found in each chronological period as shown in Table 6.9 suggests that pottery of fabric B/C was manufactured primarily during the Late Preclassic and Early Classic periods (300 BC-AD 300). The single B/C sherd from the Classic period was from the level directly above the Preclassic deposits, and may represent an instance of heirlooming or accidental deposition in this level.

The A2 group, on the other hand, consists mainly of *cajetes* and dates almost exclusively to the Classic period (see Table 6.9). This group consists of generally thinner-walled vessels than those made from Types A1 and A4 clays (see Table 6.10). Additionally, all sherds with incised decoration that were sampled from Itzímbaro fall into the A2 group, although this does not indicate that incised wares were made exclusively in the Classic period at Itzímbaro. I recovered a large number of incised sherds from the Late Preclassic levels in Pit 4, although none were sampled for petrographic analysis due to the random sampling strategy I employed.

As at La Quesería, the Type B/C sherds are thicker than many of the Type A sherds (see Table 6.10), and they usually are from utilitarian vessel shapes, such as *tecomates* and *ollas* (see Table 6.2). The Type B/C clay source may have been exhausted by the potters at Itzímbaro during the Preclassic period or they may have lost access to the clay, which explains the lower frequency in later levels of excavation. It is also possible that the B/C fabric vessels were imported from another ancient settlement (such as La Quesería) that produced pottery and that the trade stopped in the Classic period.

TABLE 6.10: AVERAGE THICKNESSES OF VARIOUS FABRICS AT ITZÍMBARO.

Fabric	N	Average Thickness	Standard Deviation
A1	6	10.9 mm	3.1
A2	6	6.3 mm	1.8
A4	9	11.0 mm	3.0
B/C	5	11.7 mm	2.9

Of the three sites I investigated, Itzímbaro yielded the highest number of sherds within the category 'other.' Although it may be coincidental, the majority of the sherds in the category 'other' at Itzímbaro were recovered from Pit 3, which dates to the Classic period. Out of 17 sherds sampled from Pit 3, a total of 13 category 'other' sherds were recovered. This may indicate that the potters at Itzímbaro expanded the number of clay sources they utilized through time. Multiple factors, including exhaustion of some clay sources, availability of new sources, or an increase in the number of potters could explain this pattern.

The Itzímbaro potters again exhibit a strong preference for naturally tempered pots; only Type A4 shows evidence of deliberate tempering that must have been required for vessel production and/or performance. As shown in Table 6.11, the incidence of tempering found at Itzímbaro is higher than at La Quesería, but remains much lower than at Mexiquito, where over half of the sherds are tempered. Since the A4 group appears in all levels in the excavated sample, the presence of tempering is not chronologically significant, as it may be at La Quesería.

Table 6.11: Number and percentage of tempered vessels within the analyzed sample from La Quesería, Itzímbaro, and Mexiquito.

Site	Number of Tempered Vessels	Total Number of Vessels Analyzed	Percentage of Tempered Vessels
La Quesería	5	45	11
Itzímbaro	12	45	27
Mexiquito	26	45	58

Mexiquito

As shown in Table 6.11, 58% of the sherds analyzed from Mexiquito were likely tempered with a multi-mineral sand (Types G and H and the imported sherds). The Types G and H tempered sherds appear to be made from local clay sources, although a specific source was not identified. The clays available near Mexiquito, especially the clays used to make pottery with fabrics G and H, may not contain sufficient non-plastic inclusions to have survived the manufacturing process, requiring the addition of sand temper.

The Type A2 sherds at Mexiquito are all from vessels with fairly thin walls (see Table 6.12). The majority of these vessels are *cajetes*, in addition to one open bowl and one *olla*. These sherds were all recovered from excavated levels (Pits 1 and 3) at Mexiquito that date to the Classic period, suggesting that the A2 recipe for pottery production was not used during the Postclassic period. The *cajetes* manufactured at Mexiquito during the Postclassic period were made from different fabrics, such as Types G and A1 (see Table 6.3). This change in production pattern over time may be attributed to the exhaustion of the clay source used earlier or to its later inaccessibility to Mexiquito potters for social or political reasons.

Table 6.12: The average thickness of sherds from various fabrics at Mexiquito.

Fabric	N	Average Thickness	Standard Deviation
A1	5	8.0 mm	2.3
A2	6	7.1 mm	1.3
G	8	9.0 mm	1.3
H	10	11.4 mm	4.1
Imported	3	7.3 mm	0.2
Other	12	9.0 mm	2.3
TOTAL	44	9.0 mm	2.8

Table 6.12 demonstrates that fabrics A1, G and the category 'other' all contained sherds that averaged close to the total mean thickness of 9 mm. Fabrics A2 and the imported sherds were the thinnest, while Fabric H contained the thickest sherds found at Mexiquito.

Types G and H fabrics were used only for specific vessel forms, as Table 6.13 indicates. The Type G group consists of *cajetes*, *tecomates*, and open bowls. The Type H group contains mainly *tecomates* with a few *cajetes*. It is more difficult to suggest a time period for the use of these two sources, because five of the *tecomates* sampled came from the surface collected material. The remaining vessels, however, were excavated from various levels within all three pits, indicating that the G and H sources were likely in use for a long period of time, probably the Classic period through Early Postclassic period.

Table 6.13: Number of each vessel shape for fabrics G and H from Mexiquito, showing the concentration of cajetes and tecomates in these fabrics.

Vessel Shape	Number of Fabric G Found	Expected Number of Vessels of Fabric G	Number of Fabric H Found	Expected Number of Vessels of Fabric H
Cajete	3	2.7	2	3.3
Tecomate	3	2.7	8	3.3
Olla	0	0.9	0	1.1
Recurved Bowl	0	0.9	0	1.1
Open Bowl	2	0.9	0	1.1
TOTAL	8	8	10	10

Interestingly, although *ollas* are the second most common vessel form at Mexiquito, they do not seem to have been made consistently from a particular clay type. Two of the five *ollas* sampled appear in different Type A groups, while the final three fall into the category 'other' (see Tables 6.3 and 6.16). This pattern may be explained by the material properties of the clays or by assuming a number of individual family groups or small workshops made *ollas*, each of whom used different clay sources when producing these basic utilitarian vessels.

Chronologically Significant Production Choices in the Middle Balsas

The Middle Balsas region exhibits few changes in pottery production through time with regard to vessel form, ware type, or clay fabric. In fact, the pottery tradition appears to be remarkably consistent over the time span from 300 BC to AD 900, the period that served as the focus of my investigation. I did identify, however, variation in production regimes that seem to be significant chronologically. These changes are noted in Figure 6.4.

Table 6.14: Vessel forms, wall thicknesses, pit number, and dates for sherds within the category 'other' at La Quesería.

Fabric	Shape	Pit and Date	Thickness (in mm)		Sample Number
Other	Olla	2- Classic	19.5	Thick	S2-06-3
Other	Open Bowl	2- Classic	10.1	Medium	S2-06-37
Other	Tecomate	1- Late Preclassic	12.9	Thick	S2-06-4
Other	Tecomate	1- Late Preclassic	20.4	Thick	S2-06-6
Other	Tecomate	1-Late Preclassic	5.0	Thin	S2-06-9
Other	Tecomate	1- Classic	9.0	Medium	S2-06-45
Other	Cajete	2- Classic	7.8	Thin	S2-06-11
Other	Cajete	2- Classic	5.3	Thin	S2-06-12
Other	Cajete	1- Late Preclassic	7.5	Thin	S2-06-5
Other	Cajete	1- Late Preclassic	8.9	Medium	S2-06-42

At La Quesería, pottery production (including the vessel shape, fabric types, and ware types) varies little through time. The clay fabric types identified for every vessel type were used during the entire Classic period. Some examples of Type B/C fabrics have been securely dated to the Late Preclassic (100 BC-AD 200), however, while the Type A fabrics appear to date exclusively to the Classic period. The remaining Late Preclassic sherds were grouped into the category 'other,' which may imply that potters used a greater variety of clay sources during the early occupation than they did during the Classic period. As Table 6.14

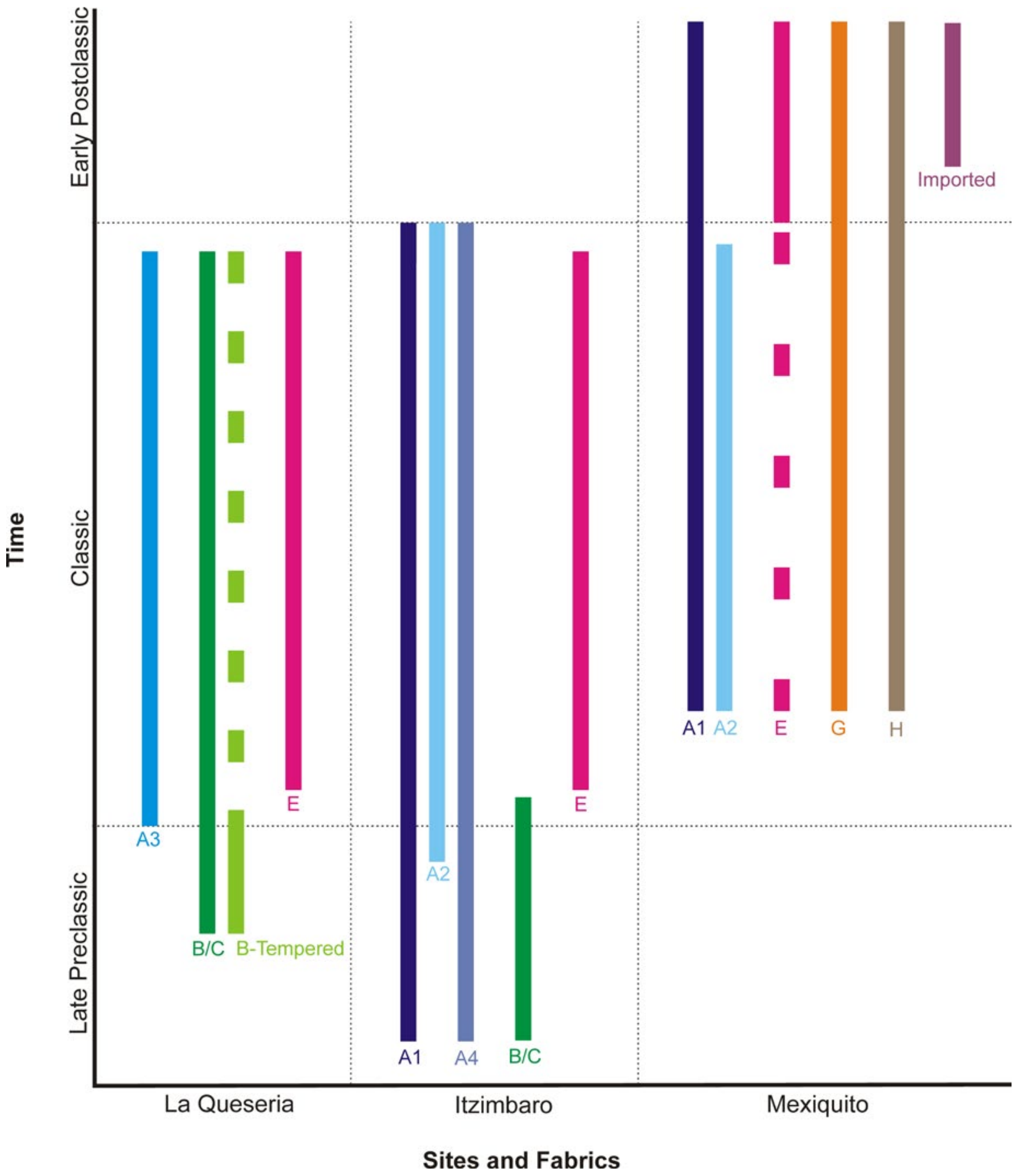


Figure 6.4: Graphical summary of the fabrics found at each site and their duration. Dotted lines are used where the precise duration of the fabric is in doubt. To aid in fabric group identification, all Type A fabrics are shown in shades of blue and Type B/C fabrics are in shades of green.

demonstrates, the sherds within the category 'other' at La Quesería appear in equal numbers in the Late Preclassic period and the Classic period. Use of the tempered B fabric may indicate an early technique, because the only securely dated sherd in the group was found in Late Preclassic period levels.

Pottery production at Itzímbaro shows more chronological variation. Fabric types A2 and B/C are the particularly chronologically significant (see Table 6.9). Fabric B/C dates almost exclusively to the Late Preclassic period, while fabric A2 pertains almost exclusively to the Classic period. It is unclear why the potters stopped making vessels that exhibit fabric Type B/C in the Classic period, but it seems most likely that the clay source was exhausted or that the potters lost access to the clay. Because Fabric B/C continued to be used for a variety of vessels at La Quesería throughout the Classic period (Meanwell 2001), the probability is small that the Itzímbaro potters changed clay sources to improve functionality, as might be suggested by an evolutionary hypothesis about pottery production changes (see Loney 2000 for a discussion of this common viewpoint). The presence of vessels made from Fabric A2 in the Classic period likely represents access to a new clay source.

Additionally, the majority of the sherds within the category 'other' at Itzímbaro date to the Classic period (see Tables 6.9 and 6.15). This may indicate that potters at Itzímbaro expanded the number of clay sources they used in the Classic period. It may also indicate experimentation to replace the clay source represented by Fabric B/C, which was used during the Late Preclassic.

Table 6.15: Vessel forms, wall thicknesses, pit number, and dates for sherds within the category 'other' at Itzímbaro.

Fabric	Shape	Pit and Date	Thickness (in mm)		Sample Number
Other	Recurved Bowl	3- Classic	10.1	Medium	S3-06-4
Other	Recurved Bowl	3- Classic	6.3	Thin	S3-06-18
Other	Recurved Bowl	3- Classic	8.7	Medium	S3-06-10
Other	Olla	3- Classic	20.9	Thick	S3-06-42
Other	Tecomate	3- Classic	7.9	Medium	S3-06-11
Other	Tecomate	4- Classic	9.6	Medium	S3-06-26
Other	Tecomate	3- Classic	9.0	Medium	S3-06-15
Other	Cajete	3- Classic	5.6	Thin	S3-06-21
Other	Cajete	3- Classic	5.4	Thin	S3-06-22
Other	Cajete	3- Classic	6.8	Thin	S3-06-13
Other	Cajete	3- Classic	8.2	Medium	S3-06-35
Other	Cajete	3- Classic	6.2	Thin	S3-06-36
Other	Cajete	4- Late Preclassic	10.9	Medium	S3-06-37
Other	Cajete	3- Classic	5.5	Thin	S3-06-43
Other	Cajete	3- Classic	6.0	Thin	S3-06-44

At Mexiquito the chronologically significant pot sherds are the polychrome wares and those made from fabric Type A2. The polychrome sherds do not form a single fabric group, and I believe these vessels were made in at least three different locations. The mineralogy of the sherds indicates that two were made at Mexiquito of locally available clays, while the other three were imported from two completely different geological areas. The polychrome sherds were excavated exclusively from Postclassic period levels (approximately AD 1100-1500) or were collected on the surface. As Table 6.3 indicates, the Type A2 pot sherds were found only in levels dating to the Classic period (AD 400-800) at Mexiquito. Vessels made using other fabric groups were utilized throughout the occupation at Mexiquito, which appears to have lasted from at least AD 400 to AD 1350, based on radiocarbon analyses. At Mexiquito, I did not observe any significant chronological or other patterns within the sherds that fall into the category 'other' (see Table 6.16).

Table 6.16: Vessel forms, wall thicknesses, pit number, and dates for sherds within the category 'other' at Mexiquito.

Fabric	Shape	Pit and Date	Thickness (in mm)	Sample Number
Other	Cajete	1- Classic	8.8 Medium	S1-06-4
Other	Cajete	2- Postclassic	10.4 Thick	S1-06-40
Other	Cajete	1- Classic	7.8 Thin	S1-06-23
Other	Cajete	3- Postclassic	7.8 Thin	S1-06-28
Other	Cajete/Polychrome	3- Postclassic	5.4 Thin	S1-06-32
Other	Cajete	1- Classic	6.6 Thin	S1-06-8
Other	Open Bowl	Surface/Unknown	9.4 Medium	S1-06-10
Other	Olla	3- Postclassic	7.0 Thin	S1-06-12
Other	Olla	3- Postclassic	9.5 Medium	S1-06-13
Other	Olla	1- Classic	11.6 Thick	S1-06-38
Other	Tecomate	1- Classic	13.9 Thick	S1-06-5
Other	Tecomate	1- Classic	9.6 Medium	S1-06-42

6.2 Regional Patterns and Differences Noted Between Sites

Each Middle Balsas site appears primarily to have been producing and using its own pottery. The only region-wide exceptions are the Type E *tecomates* that were possibly manufactured near Patambo. The presence of these Type E vessels at each of the three sites I studied suggests that limited pottery exchange took place among the sites in the Middle Balsas region. This exchange, if it occurred, was likely restricted to certain vessel forms and fabrics, specifically the Type E *tecomates*.

The most significant difference in the technology of pottery production among the potters at each settlement (other than the specific clays in use at each, which is likely due to small geological differences in available clays near each site) is in clay processing methods, specifically differences in the use of temper. The vessels from La Quesería were only rarely tempered (5 of 45 = 11%), while Itzímbaro exhibits a moderate level of tempering (12 of 45 = 27%). Mexiquito potters, however, tempered the majority of their vessels (26 of 45 = 58%).

All vessels, regardless of the site and whether they were deliberately tempered or contained sufficient natural inclusions, have a fairly high density of inclusions. As determined in the point count analysis, the clay fabrics from all three sites average 42% to 46% coarse fraction[9], with a standard deviation of 5%. Results of similar analyses from various Mesoamerican sites are presented in Table 6.17. As an additional comparison, a study of pottery production from the Maya area found a fairly continuous variation in the coarse fraction from 7% to 62%, although the data for the average value and standard deviation were not given (Jones 1984, 1986).

Table 6.17: Fraction of non-plastic inclusions[10] in pottery from various Mesoamerican sites.

Source	N	Average Inclusion Fraction	Standard Deviation
Postclassic Oaxacan graywares (G3M) (Feinman *et al.* 1992)	89	17.3%	7.7
Preclassic to Classic Oaxacan graywares (Fargher 2007)	48	24.0%	8.8
Teotihuacán Classic period cooking pots (Hopkins 1995)	57	28.1%	N/A
La Quemada Classic period tripod bowls, plain bowls, and plain jars (Devereux 1996)	46	30.3%	N/A
Temamatla Preclassic pottery (Ramírez *et al.* 2000)	31	38.7%	7.9
Middle Balsas pottery (this study)	135	44.3%	5.0
Yaxchilán Classic period pottery (López 1989)	21	46.6%	11.1

9 The term 'coarse fraction' is used in thin section analysis to refer to the grains of inclusions that are sand sized particles or larger (> 62 μm). These grains can generally be identified as a specific mineral. The remainder of the vessel is the fine fraction (clay or silt particles) and voids. The total must add up to 100%.
10 The published values for the fraction of inclusions is usually the coarse fraction, but in the case of the Oaxacan pottery, the authors add the silt inclusion percentage to the coarse fraction (Fargher 2007; Feinman *et al.* 1992).

In the Middle Balsas, the overall coarse fraction does not differ significantly between tempered and non-tempered sherds. This indicates that the clays available in the region had to contain sufficient non-plastic materials to accommodate the manufacturing techniques used by local potters and the functional requirements of the finished vessels. Middle Balsas potters added temper to clays that did not contain the appropriate volume fraction of inclusions to survive the drying and firing process. My firing experiments, however, indicate that test bricks with lower amounts of tempering (10-30%) survived the drying or firing process successfully in a laboratory setting. This apparent discrepancy is likely explained by the fact that the laboratory is a controlled environment, and I used a narrow size range of sand grains, unlike the ancient potters. Kilikoglou and his team (1998) did prove that above a 20% volume fraction of sand (see Figure 6.5), the grain size had little effect, so my results are likely valid for the 20-40% test briquettes. Kilikoglou's experiments using a calcareous clay (Kilikoglou *et al.* 1998) indicate that a 40% sand is a viable production option.

The variation in the volume fraction of inclusions among the different regions of Mesoamerica is likely due to the specific mixture of clay minerals available to potters in different locations. Various clay minerals shrink differentially during drying and firing, so different volume fractions of inclusions were likely required for the specific clays found in geologically different regions. The average coarse fraction of 44.3% found in the Middle Balsas region appears to be on the high end for Mesoamerican pottery, but at least one region (Yaxchilán) has a slightly higher value (see Table 6.17).

Another distinction among the sites is the presence of imported pottery. Imported pottery appears at only one site, Mexiquito, and in only the Postclassic occupation levels. My results indicate that the Middle Balsas region was not heavily involved in long-distance pottery exchange with surrounding areas during the Classic period. This tradition of semi-isolation or independence appears to have altered in the Postclassic period, at least at Mexiquito (since we do not have comparative Postclassic levels at La Quesería and Itzímbaro, it is difficult to tell if the expansion of pottery exchange in the Early Postclassic occurred at sites other than Mexiquito). I did not encounter any imported pot sherds dating to the Classic period at Mexiquito, which suggests that little pottery was imported during the Classic period throughout the region.

Another study (Silverstein 2000) centered just east of the Middle Balsas region and using surface collected material suggests that multiple sites participated in ceramic exchange of one form or another during the Late Postclassic period. At sites within his study area, Silverstein found multiple examples of wares that were presumably produced in other regions, including a Tarascan ware found at an Aztec site (Silverstein 2000:185). This data is useful, although one limitation of Silverstein's study (apart from the lack of chronological controls) is his assumption that wares associated with neighboring societies were imported from those source areas. He did not corroborate this assumption by sourcing the sherds using chemical or petrographic techniques. At Mexiquito, I found one sherd made from local materials that matched his descriptions of the (presumably imported) Guinda ware (see Chapter 5).

The functional or social reasons behind the different manufacturing patterns at the three sites I investigated are still unclear. The concentration of vessel forms within clay types G and H at Mexiquito and type A2 at Itzímbaro could suggest that these clays were not suitable for other functions. Since the functions of *cajetes* and *tecomates* are so different, however, I cannot identify a physical design requirement shared only by these two vessel types or one that would exclude *ollas*, open bowls, and recurved bowls. It seems more probable that certain potters or groups of potters specialized in a certain set of vessel forms, and each had its own paste recipe that worked well for the specific processing techniques involved. It is also possible, because *tecomates* and *cajetes* were the most common vessel forms and were correspondingly sampled more frequently, that this pattern was partially generated by a sampling bias.

The pattern at La Quesería, where vessels of all shapes and thicknesses were made from each clay group, leads to a slightly different interpretation. It appears that all potters through time at La Quesería used the same two local clay sources to make all of the vessel designs they needed. This implies that the properties of the clays were such that they worked well for every design, or else that the potters found other ways to adapt these clays to various forms and functions, such as coating vessels with pitch that has since eroded away. Reitzel (2007) documented changes in wall thickness based on the thermal shock properties of the clay source in her study of pottery from the site of El Manchón, Guerrero, just south of the Middle Balsas region in the Sierra Madre del Sur. The Middle Balsas potters could have done something similar.

6.3 Overview of Middle Balsas Pottery Production Techniques

The particulars of the Middle Balsas pottery production techniques have been discussed throughout Chapter 5 and in the earlier sections of this chapter. In this section I summarize the major characteristics of pottery production (clay treatment and firing techniques) that I observed in Middle Balsas pottery, and then set forth the significance of the results of this study.

Apart from the San José grey ware I identified in this study, the wares previously described by researchers in the Middle Balsas region (Lister 1947, 1971; Paradis 1974; Silverstein 2000) seem to describe adequately the variation in wares recovered during my excavations. These wares include Balsas Red (Coarse and Fine), Cútzeo polished black, and Chandio Red-on-White. Lister (1947) identified three polychrome wares (Chandio Red-on-White, Zimatepec Black-on-White, and Totolapan Red-on-Tan) that he thought might date to the Classic period, but I did not encounter any examples of these wares in my Classic period excavations. These were probably Postclassic wares that Lister misidentified as Classic period since he lacked radiocarbon analyses of materials associated with the vessels. The most common ware type I documented and that others have encountered in the Middle Balsas region is Balsas Red Coarse and Thin (Lister 1947; Hosler 1999a; Silverstein 2000). I also frequently found the burnished black ware called Cútzeo Polished Black (see Figures 5.10-5.17). Many sherds show evidence of incised decoration or a raised decorative band, but not both. At present, it seems that the incised wares are decorated variants of the standard ware types, but further research might indicate that these should be treated as a different ware.

The vast majority of the pottery I examined in thin section or in hand sample appears to have been made locally. The results of selected chemical analyses of Middle Balsas pottery also suggest that the sherds I analyzed from La Quesería, with the possible exception of one sherd, were made from locally available clay sources (Meanwell 2005). These data suggest that the Middle Balsas region was self-sufficient at pottery production and did not import a large number of vessels from trading partners in the surrounding areas, at least during the Classic period. The only imported sherds I found were recovered during excavation in the Postclassic occupation levels at Mexiquito. My limited evidence from Mexiquito and the evidence from Silverstein's 1998 surface survey suggest that a variety of wares, including Tarascan (Cream-on-Red), Aztec (Black-on-Orange), and Chontal (Guinda) wares, were being imported in low volumes to northern Guerrero and were distributed to a number of sites during the Postclassic period (Silverstein 2000).

The majority of the Middle Balsas pottery I examined was well-fired, likely to temperatures between 650 and 750^{o} C. These data are based on petrographic comparisons between Middle Balsas sherds and my laboratory produced test bricks (see Chapter 5). The total duration of the firing is unclear, but it likely was between 30 minutes to an hour, as many sherds contain primarily carbon firing cores which are usually removed by longer firing cycles (Rice 1987:88; Hopkins 1995:292; Frame 2004: 89). None of the surface collected or excavated material showed evidence of slumping or vitrification from excessive temperatures, and all appeared to be fired above the temperature necessary to drive off all of the chemically bound water. This temperature varies by specific clay mineral, but it usually occurs between 300 and 800^{o} C (Rice 1987:87-90).

Vessel color uniformity does not appear to have been relevant to the Middle Balsas potters, especially for the oxidized red wares. My samples indicate that the potters did not control the firing atmosphere tightly, as many pots show darker spots likely due to a localized reducing atmosphere or to contact with the burning fuel (see Figure 5.10). This sort of defect is common in open or pit firings. The dark black and grey reduced wares, however, generally do not show reddish patches where partial oxidation took place, and may, therefore, have been more carefully fired. None of the three sites showed a significant difference in the quality of the firing. Comparative studies of firing temperature for other regions of Mesoamerica are rare, but the results of two other studies are summarized in Table 6.18. The firing temperature range observed for the Middle Balsas pottery is close to that found in these two other regions.

Table 6.18: Firing temperature ranges[11] determined at Teotihuacán and in the Oaxaca valley.[12]

Source	N	Minimum	Maximum	Average	Standard Deviation
Hopkins (1995) Teotihuacan cooking pots	241	550° C	1000° C	747.5° C	94.51
Feinman *et al.* (1989) Oaxacan grey ware	40	590° C	810° C	685.6° C	N/A
Middle Balsas Pottery	135	650° C	800° C	N/A	N/A

The vessels at each site were made from a limited number of clay sources and fall into discrete fabrics. Potters at each settlement exploited their own distinct clay sources, although the thin sections of vessels from La Quesería and Itzímbaro show many similarities. This is most likely due to their geographic proximity and their location in relatively similar geologic settings. In two cases, I saw a correlation between vessel shape and fabric type. The data from Mexiquito show that fabric Types G and H were used primarily for *cajetes* and *tecomates.* This correlation is not related to a functional similarity or a performance requirement of these two vessel types. Itzímbaro potters seem to have made *cajetes* preferentially from Type A2 clay.

At each site, I identified minor changes in pottery production methods that have chronological significance. The pottery production at La Quesería appears to be highly consistent from the Late Preclassic through the Epiclassic periods (AD 100-900). A possible exception is the use of Type A fabric in the Classic period. At Itzímbaro, one fabric type (B/C) appears only in the Late Preclassic period, and one appears exclusively in the Classic period (A2). It also seems likely that Itzímbaro potters expanded the number of clay sources they used during the Classic period, based on the large number of sherds that I classified as 'other' (see Table 6.14). At Mexiquito, the imported and polychrome pot sherds were found only in the Postclassic period levels, and Fabric A2 was identified only in the Classic period. Figure 6.4 summarizes these results.

The thin section and dimensional data do not suggest that Middle Balsas potters were making large adjustments to their clay processing or firing techniques to produce pots for particular functions or uses. When a fabric type associates with a particular vessel shape, that association does not necessarily relate to the probable use of the vessels in question. For example, *ollas* and *tecomates* are both utilitarian, closed vessels, and may have been used interchangeably in certain contexts, but they are not usually made from the same fabrics. *Tecomates* and *cajetes*, however, are very distinct functionally, but at Mexiquito and Itzímbaro they were made preferentially from the same fabrics (see Tables 6.2 and 6.13). At Itzímbaro, Fabric A2 is used exclusively for *cajetes* and *tecomates*, while at Mexiquito, Fabric H is also only *cajetes* and *tecomates*. It may be simply that since *cajetes* and *tecomates* were the most common vessel types, and were correspondingly sampled more often, sampling bias can explain this pattern.

11 In some cases the data were not published or were impossible to determine using that specific method.

12 The Teotihuacan firing temperatures were estimated by comparing the colors of the ancient sherds to test bricks of local clays fired at different temperatures. The Oaxacan samples were measured in a refiring experiment to determine when they began to shrink, which indicates the original firing temperature. My data comes from petrographic comparisons between the ancient sherds and laboratory produced test bricks.

It is difficult to determine whether other Mesoamerican potters were adapting their production techniques based on the intended vessel function. The only other study (Devereux 1996) posing this question found a small difference in temper size between cooking vessels and other vessel forms at the site of La Quemada. Other pottery production studies in Mesoamerica have focused their attention on provenience or on specific ware or formal types, rather than looking for functional differences.

One defining characteristic of the Middle Balsas pottery tradition is its consistency in ware types throughout the entire Classic period[13]. Certain vessel shapes and decorative techniques change between the three major pottery phases in the Middle Balsas region. These phases include: the Early and Middle Preclassic phase (Sesame phase in Paradis 1974), the Late Preclassic and Classic phase (Guacamole phase in Paradis 1974), and the Postclassic phase (see Silverstein 2000 and this study). The earliest pottery (Sesame phase) exhibits several decorative elements, such as the raised decorative band and the preference for incised designs, that continue through the Postclassic period (Paradis 1974). The wares and certain vessel shapes present in the Sesame phase, however, are obviously different from those found in later periods.

From at least 300 BC through AD 900, which includes the Classic period, my data suggest that the pottery does not vary in decorative technique, vessel shape, or production technique. Other studies have suggested that the ware types and vessel shapes I identified are found throughout the entire Middle Balsas region, including a survey of 34 possible metal production sites near the Balsas River (Hosler 1999a) and a salvage project in the northern section of the Middle Balsas region (Moguel 2002). A major shift between the Classic and Postclassic periods is characterized by the presence of polychrome and painted wares at Mexiquito. Some of these wares appear to have been locally produced, while others were imported from other areas. The mainly utilitarian Balsas Red ware continues uninterrupted into the Postclassic period. The Cútzeo polished black ware is found much more frequently in the Classic period than the Postclassic. This is corroborated by a study by Moguel (2002) of sites in the northern portion of the Middle Balsas region, where black wares were found only at sites dating to the Epiclassic and earlier.

My data indicate that the Middle Balsas inhabitants did not import or imitate any foreign styles or wares during the Classic period. This pattern of pottery production that varies by site and that does not incorporate foreign traditions suggests that each of these Middle Balsas sites was probably an independent political entity, although they shared common pottery wares, architectural styles, and material culture.

I did not find any links between production method and pottery function, as I had originally hypothesized. The Middle Balsas potters seem to have had no need to experiment with variations in their production techniques to produce pots intended for different functions, since their recipes worked in all applications.

Further research may lead to the eventual identification of additional ceramic phases based on subtle changes in the wares currently identified in the Middle Balsas region. Evidence from well-studied Mesoamerican ceramic traditions, including Oaxaca and the Basin of Mexico, suggests that ceramic phases generally last for a few hundred years at most (*e.g.,* Caso *et al*. 1967; Sanders *et al.* 1979; Ramírez *et al.* 2000), thus the unchanging nature of the Middle Balsas pottery tradition appears to be unusual. Studies from the Andes, however, have also identified long-standing pottery traditions over time spans similar to those exhibited by the Middle Balsas (Sillar 1997). At least one Mesoamerican state level society exhibits a distinct preference for a specific vessel color over long periods of time that, without sufficient data, could be mistaken as a single ceramic phase. This example is Oaxaca, where grey (reduced) wares were the most popular type throughout a number of ceramic phases, but the details of the vessel shapes and decorative techniques changed (Caso, *et al*. 1967; Fargher 2007).

13 The fabrics and manufacturing methods used during the Classic period are also consistent, although I saw changes in fabric type during the broader Guacamole phase (300 BC-AD 900) when the wares do not change.

6.4 Theoretical Implications and Comparisons with Other Regions

Over at least a 600 year time span, a prominent feature of Middle Balsas pottery production is that the potters at these different sites were all making pottery that is stylistically consistent (same wares) while using the local materials and techniques. This suggests that the cultural preferences for these vessel shapes and ware types were widely distributed and maintained, while specifics of the manufacturing processes varied with location. This result is not unprecedented, as many studies of pottery production have found that a single ware was made from more than one clay source (*e.g.,* Courtois and Velde 1981; Rands *et al.* 1974; Langdon and Robertshaw 1985; Feinman *et al.* 1989; Fargher 2007).

The pattern of production seen at other Mesoamerican sites can provide some possible correlates and interesting contrasts to the Middle Balsas region. Very few studies have focused on pottery production in small independent settlements, like those found in the Middle Balsas. I therefore compared my data to production patterns at sites that were much larger and that participated in a more complex socio-political system. In most cases, we find that the majority of the domestic pottery produced and used at a specific settlement was produced nearby, although some exceptions to this are highlighted in the following examples.

The production pattern most similar to those I identified in the Middle Balsas appears at the Maya site of Lubantuun (although caveats regarding the fundamental differences in socio-cultural complexity apply). Hammond's study suggests that, like in the Middle Balsas, potters were producing the majority of their own vessels and that they used local products available within 6 km of the site (Hammond 1975; Hammond and Harbottle 1976).

In the case of Palenque, a site which is orders of magnitude larger than La Quesería, Itzímbaro or Mexiquito, most of the domestic and ceremonial ceramics produced within the center were used in the center, while smaller quantities of domestic pottery were also imported from the surrounding hinterlands (Rands and Bishop 1980). Some of the ceremonial vessels that were made at Palenque were exported from the site to be used in the hinterland settlements (West 2002). In addition, Rands and Bishop noted compositional clusters within their chemical data, suggesting that each of the outlying areas specialized in a certain vessel form (Rands and Bishop 1980). This is unlike the pattern in the Middle Balsas region, where each settlement appears to have made its own pottery in a range of vessel forms common to the region rather than specializing in one form.

Another Mesoamerican production pattern involving production and regional exchange is Classic period pottery manufacture in the Chalchihuites area of Mexico, which is on the northern border of Mesoamerica (Strazicich 1998). Using chemical sourcing techniques and some petrographic analyses, Strazicich (1998) finds that from 200 AD to 900 AD, potters at various settlements produced their own plain and engraved wares, but also participated in a regional exchange of pottery vessels (usually elaborately painted) with other sites at least 30 km away. The type of ware exchanged changed through time, and the exchange pattern became more asymmetrical, although the general production pattern remained the same (Strazicich 1998).

Two major investigations have focused on pottery production techniques in the valley of Oaxaca. One study found that potters living very close to Monte Albán during the Classic period supplied the majority of the grey ware for the settlement (Fargher 2007). This example of local production of mainly domestic wares is similar to the pattern found in the Middle Balsas region. On the other hand, in earlier times the pottery seems to have been produced at a larger number of sites in the region and was brought to Monte Albán (Fargher 2007). Another study of Oaxacan pottery during the Late Postclassic suggests that several ware types associated with particular ethnic groups were made at a number of locations within the valley and that the scale of production varied among the three valley arms (Feinman *et al.* 1989). Therefore, in both the Preclassic period and the Late Postclassic period in Oaxaca, pottery production was dispersed, and both ceremonial and domestic vessels were imported into the major settlements.

A petrographic study of Lowland Maya pottery (mainly from Belize), suggests that various paste recipes were used to make similar ware types (Jones 1984, 1986), which was also found in the Middle Balsas region. In all other ways, however, the Middle Balsas sites and the Maya sites are not comparable. In the Maya area, production techniques varied widely from location to location and at least four different tempering materials were used to produce pottery, including grog, volcanic ash, calcareous material, and sand (Jones 1984, 1986).

An additional contrasting Mesoamerican example is the common Classic period trade ware Thin Orange, which has been associated with the site of Teotihuacán. Chemical analyses have demonstrated that this ware was not produced at Teotihuacán itself, but was instead produced near Rio Carnero, Puebla, Mexico (Rattray and Harbottle 1992; Rattray 2001). Thin Orange ware was imported in large numbers at Teotihuacán, and was also distributed widely throughout Mesoamerica, including into the Middle Balsas region (Paradis 1974).

In general, the pattern of pottery production varies widely among settlements that exhibit different levels of socio-political integration and at different time periods. Despite the large differences in socio-political integration, the closest correlates to the Middle Balsas production patterns are found at smaller sites, such as Lubantuun. The results from major settlements including Teotihuacán, Monte Albán, and Palenque indicate that exchange and non-local production were common features of pottery production in Mesoamerica, although in most cases, domestic wares were locally produced and used.

In the final chapter, I discuss further implications of the major conclusions of this study and suggest directions for further research in the Middle Balsas region.

Chapter 7: Conclusions

My research focused on two overlapping questions: the chronology of occupation in the Middle Balsas region and the technology of pottery production, more specifically whether potters tailored the mechanical or physical properties of their vessels to particular functions or uses. Through my excavations, radiocarbon analyses and laboratory studies of the pottery and other materials recovered from three sites, I have determined the length of occupation at each site and have identified the wares produced in the Middle Balsas region during the Classic Period. I have also determined that Middle Balsas potters did not choose to make pots intended for different functions by using different raw materials or by changing certain production techniques. Rather, they elected to use a specific volume fraction of inclusions (44%), regardless of whether the inclusions were found naturally in the clays or were added deliberately by the potters.

I need to reiterate that in developing my research design, I chose to investigate a wide range of wares and vessel types from the three sites of La Quesería, Itzímbaro and Mexiquito. As described in Chapter 5, some fraction of the sherds I collected came from incised fine Balsas Red and incised Cútzeo Polished Black vessels, which I consider to be elite wares based on contextual evidence. For example, whole vessels of these two wares are common in collections from tombs looted in this area. A small number of the sherds I analyzed petrographically are from these two elite wares. These vessels could have been used in a variety of contexts that signaled elite status, such as rituals and feasting centered on the ball courts, large plazas, or pyramid structures found at each site. It is possible that I did not identify other elite wares that may have been in use in the Middle Balsas region because I did not excavate any burials or ceremonial deposits. Any unidentified wares may not follow the production patterns identified thus far.

In this chapter, I explain what the results from my research suggest about the pottery production patterns in the Middle Balsas region and how they differ from other areas of Mesoamerica. I also discuss what these results may suggest about the specialization of Middle Balsas potters. Finally, I conclude with directions for further research.

7.1 Discussion of Key Results from the Middle Balsas Project

My research into pottery production in the Middle Balsas region has implications for at least three specific areas of investigation related to production technologies or other pottery production studies. In the following sections, I explain how my results compare to other studies of pottery and production as related to 1) temporal and spatial continuity of manufacturing choices, 2) craft production and social organization, and 3) materials constraints on pottery production.

Temporal and Spatial Continuity of Manufacturing Choices

The manufacturing choices I identify in this study persist over at least 1000 years in the Middle Balsas. This pattern appears to be highly unusual. As discussed in Chapter 6, studies of other Mesoamerican pottery traditions suggest that the volume fraction of inclusions found in the clay fabric varies by region. As shown in Table 7.1, results from various regions of Mesoamerica, including Oaxaca, the Valley of Mexico, and the Maya area, found a greater coefficient of variation in the volume fraction of inclusions in the sherds (0.2 to 0.44) than occurs in the Middle Balsas region (0.11). Two studies of Oaxacan greyware (Feinman *et al.* 1992; Fargher 2007) found differing volume fractions of temper used respectively in Early Classic and Late Postclassic Period pottery (24.0% versus 17.7%). Further, as Table 7.1 indicates, the Oaxacan studies consistently found lower amounts of temper than in many others of Mesoamerica.

Table 7.1: Fraction of non-plastic inclusions[1] in pottery from various Mesoamerican sites[2].

Region or Site, Time Period, Vessel Type(s) and Source	N	Average Inclusion Fraction	Coefficient of Variation
Oaxacan graywares (G3M) from the Postclassic Period (Feinman *et al.* 1992)	89	17.3%	0.44
Oaxacan graywares (19 ware types) from the Late Preclassic and Early Classic Periods (Fargher 2007)	48	24.0%	0.37
Teotihuacán Classic Period cooking pots (Hopkins 1995)	57	28.1%	N/A
La Quemada Classic Period tripod bowls, plain bowls, and plain jars (Devereux 1996)	46	30.3%	N/A
Temamatla (Valley of Mexico) Preclassic Period pottery (Ramírez *et al.* 2000)	31	38.7%	0.20
Middle Balsas Region Classic Period pottery	135	44.3%	0.11
Yaxchilán Classic Period pottery (López 1989)	21	46.6%	0.24
Lowland Maya (Cuello and Nohmul) Preclassic Period pottery (Jones 1984, 1986)	94	7-62%	N/A

One important consideration when evaluating the data presented in Table 7.1 is whether the study in question looked at a single ware type, a specific vessel form, or a variety of vessel forms and wares. The Temamatla, Yaxchilán, and Middle Balsas studies provide the only data sets that compare a range of vessel forms and ware types, including both elite and domestic wares. The remaining studies focused on a specific vessel form, function, or ware type. Fargher's (2007) study of Oaxacan grayware includes 19 different grayware types, and thus is more inclusive than the earlier Feinman *et al*. study (1992) that focused primarily on one ware (G3M). Fargher investigates only graywares and does not consider the other Oaxacan fabric types, including cream, brown, or yellow. Jones (1984, 1986) also studied a number of different wares and vessel forms in the lowland Maya area, including elite and domestic wares, but she did not report an average fabric temper percentage, since the numbers varied widely at each site.

Only two comparative data sets exist in other regions of Mesoamerica that can speak to the continuity of manufacture over a long time period. One set comes from the two Oaxacan investigations (Fargher 2007; Feinman *et al.* 1989). The other is the study performed by Jones (1984, 1986, Table 7.1) in the lowland Maya area. The results of my research, the Oaxacan studies, and the Maya results show that the specific clay mixtures regionally utilized function adequately, although the volume fraction of inclusions varies. The functional range may be very wide (as in the Maya area) or narrow (as in Oaxaca and the Middle Balsas), but in each case potters developed techniques to produce vessels whose physical and mechanical properties sufficed. My results from the experimental test briquettes made from local clays suggest that Middle Balsas potters did have *some* amount of flexibility in the precise amount of non-plastics they add in each case. If this pattern is broadly true, this may explain some of the variation between the early and late Oaxacan examples.

The Maya study is particularly useful to compare to the Middle Balsas region, because Jones (1984, 1986) researched production patterns at a large number of sites[3] throughout the Maya lowlands from the Preclassic through the Postclassic Periods. Jones (1984, 1986) identified four different temper types (calcareous particles, sand, grog[4], and volcanic ash) that were used at most sites. All four temper types were used during the Preclassic Period. Interestingly, grog-tempered sherds were made exclusively during the Preclassic Period, but potters at most sites continued using the other three materials as temper through the Postclassic

1 The published values for the fraction of inclusions is usually the coarse fraction, but in the case of the Oaxacan pottery, the authors add the silt inclusion percentage to the coarse fraction (Fargher 2007; Feinman *et al.* 1992).
2 Thie value for the Lowland Maya is not an average, but Jones (1984, 1986) did not provide raw data to allow a calculation of the average inclusion fraction.
3 The sites include Tikal, Barton Ramie, Altar de Sacrificios, Seibal, Becan, Uaxactun, Mayapan, San José, Lubaantun, Trinidad, Cuello, and Nohmul.
4 The word 'grog' refers to crushed fired pottery that is added as temper.

Period. Potters in the Maya area precisely controlled the locally available calcareous material, which can lead to spalling if fired incorrectly, and used it as a temper at all sites and in all time periods. Sand was used primarily where it was readily available, most commonly at sites including Barton Ramie, San José, Lubaantun, Trinidad, Altar de Sacrificios and Seibal that were located close to sand sources. Volcanic ash is not a locally available material in the Maya lowlands and must have been imported to the lowlands from highland Guatemala or the Maya mountains of Belize. Based on replication experiments by Anna Shepard (1965:133-134), Jones (1984, 1986) considered the discontinuation of grog temper rather counterintuitive, as sherds tempered with grog are stronger in bend tests than sherds tempered with calcareous material, sand, or ash. The change from grog temper is probably due to production considerations and the vessels made using other tempers clearly functioned adequately.

Both the Jones (1984, 1986) study of Maya pottery and my Middle Balsas results suggest that potters do not necessarily optimize their techniques through time (see Loney 2000 for a comprehensive summary of this commonly espoused viewpoint). This 'evolutionary' approach assumes that potters are continually improving their product to make it as ideally suited to its function as possible. 'Ideal' is a Western concept that perhaps should not be applied to ancient technologies. Potters used materials whose physical and mechanical properties were appropriate for their specific performance requirements, although they did not necessarily produce the 'ideal' strongest or thinnest vessel possible. Although my research and the Jones (1984) study both identified production changes with time (changes in clay sources and discontinuation of grog temper use), in neither case is it possible to explain this change based on an improvement in materials properties. In fact, the Maya potters changed from a technique (grog temper) that produced stronger vessels, all other variables being equal, to one that produced weaker vessels (calcareous temper). I suggest that this may be related to the fact that grog requires more processing than sand, ash, or calcareous material. While changes in pottery wares and production techniques do occur through time, thus far we do not have significant evidence in Mesoamerica for evolutionary pressures toward optimization playing a strong role in production decisions.

Explanations for change or lack thereof in pottery production must be developed individually, for each specific situation, and will likely vary by time period and social context. In the case of the Maya, Jones (1984, 1986) does not offer an explanation for the use of ash temper in the lowlands. The persistence of pottery production methods in the Middle Balsas region may relate to the fact that potters evidently developed an 'ideal' or at least adequate set of production techniques suited to their specific needs. These techniques were passed on from older potters to their apprentices. In the Middle Balsas region, that 'ideal' seemed to have been associated with the consistency and workability of clays with an invariant volume fraction of non-plastic inclusions, whether naturally occurring in the clay source or added as temper.

Craft Production and Social Organization

My data can be applied to questions of craft production and social organization. Since study of the social organization of production is not a main focus of my research and I do not have evidence for ceramic production areas, such as workshops, I treat this topic briefly here. I also limit my comments to the possible organization of pottery production in the Middle Balsas region, since I have no evidence for the production of other materials such as obsidian, ground stone, shell, or greenstone.

Many authors have proposed general material-independent models for various levels or organizational modes of production (*e.g.*, Rice 1981, 1987; Peacock 1982; Clark and Parry 1990; Costin 1991). These models often imply specialization on the part of the producer (Costin 2001). In most cases, specialist producers are assumed to produce more standardized products, although this link has been questioned and investigated by several researchers through ethnographic fieldwork (Arnold 2000; Arnold and Nieves 1992; Longacre 1999; Stark *et al.* 2000; Deal 1998: 31-37).

Deal's (1998) work, which examines household pottery production among the Maya in highland Chiapas, shows that what he terms 'occasional' producers made more varied vessel forms and paste mixtures than potters who worked more frequently (Deal 1998: 35). He attributes this pattern to experimentation and forgetfulness on the part of the occasional potters, while potters who are engaged in production on a more regular basis develop more consistent techniques (Deal 1998: 35-36). If this analogy is extended to the Middle Balsas, the uniformity of vessel shapes and paste recipes through time would suggest that a small number of households produced all of the pottery for each settlement. It is likely that these potters were engaged in production on a fairly regular basis. Due to the time depth characteristic of the Middle Balsas sample, the direct applicability of Deal's observations needs to be taken with caution.

Peacock (1982) has developed a model that archaeologists often use to describe the organization of pottery production. He defined eight different modes of production for pre-industrial societies. Four of the modes of production are applicable to highly commercialized proto-industrial economies (*e.g.*, Roman). The other four modes of production -- the household, household industry, individual workshops, and nucleated workshops -- can be evaluated for societies such as the Middle Balsas (Peacock 1982: 8-9). Based on his description, it is most likely that pottery production at the three sites I studied falls into household industry mode or the individual workshops mode. In the household industry mode, a small number of potters produce vessels, but they are not engaged in this activity full time, and they have other means of subsistence (Peacock 1982: 8). Individual workshops, on the other hand, are similar, but in this case pottery production becomes an important part of subsistence for the potter, and he may use outside assistants (Peacock 1982: 9). This model does not imply full-time or year-round pottery production. In cases such as the Middle Balsas, pottery production can only take place during the dry season. My suggestions about the organization of pottery production in the Middle Balsas are limited by the fact that I did not encounter any production sites (concentrations of wasters or possible kilns) during my surface collections and excavations at the three sites. I did not look for or find any evidence to suggest whether the potters in the Middle Balsas practiced other subsistence strategies (such as agriculture) in addition to making pottery. The Type E vessel production pattern may suggest that potters near Patambo were producing pottery in the individual workshop mode for distribution around the Middle Balsas region.

Several recent studies have suggested that even in highly organized state-level societies such as Teotihuacán, the Maya, and the Aztecs, domestic and utilitarian goods were not produced in large organized workshops as many of the production models would have predicted (Feinman 1999; Feinman and Nicholas 2000; Brumfield 1987). In fact, it seems that in several cases, including chert tool production at Colhá in Belize, obsidian tool production at Teotihuacán, and shell production at Ejútla in Oaxaca, specialized households, and not physically discrete workshops, were producing large volumes of objects (Feinman 1999; Feinman and Nicholas 2000). In the case of elite goods, however, attached specialists seem to have produced goods for elite consumption in the Aztec Empire (Brumfield 1987). If the Middle Balsas region had such attached specialists, it seems likely that they made ritual or elite objects out of materials other than clay.

The persistence of pottery production methods in the Middle Balsas region suggests that an enduring technological tradition (possibly based in small workshops at each site) characterized this area. Whereas the tightly controlled amount of non-plastic inclusions might suggest a high level of standardization and specialization in pottery production, it seems more likely, due to the different clay sources utilized, that potters in the Middle Balsas had developed a set of wares, formal types, and production techniques that suited their needs, and that this tradition was continued with each successive generation of potters. Although many of the vessels produced in the Middle Balsas region were utilitarian in nature with different functional purposes, the potters used a specific and controlled production process for all of their pots. Comparisons with the Maya area and with Oaxaca suggest that these other areas also had pottery production patterns (volume fraction of inclusions) that changed over time, whether subtly or profoundly. Potters in Oaxaca and the Maya lowlands used a more varying volume fraction of inclusions in producing their vessels than did the Middle Balsas potters. The volume fraction of inclusions could place limitations on potters while forming the vessel, during pre-firing treatments, such as burnishing, or during the firing itself, a question that my research does not fully address. My test briquette results suggest that Middle Balsas potters could have made functional vessels with a lower volume fraction of inclusions than they actually utilized. Although we cannot fully explain the reasons behind the ancient potters' choices, it is notable that Middle Balsas potters elected to adhere to this pattern over a long time span. The reasons for this most likely have to do with some aspect of the production regime.

The differences in the volume fraction of inclusions present among the three areas (lowland Maya, Oaxaca, and the Middle Balsas) are likely the result of a combination of factors in each case, including the local geology and the political structures in place at different time periods. The geology of the lowland Maya area is very different from that of the Middle Balsas and Oaxaca. The Maya lowlands sit on a large shelf of calcareous sedimentary rock (mostly limestone or dolomite). Little volcanic rock is present, except for small outcroppings in the Maya Mountains region of Belize. Oaxaca and the Middle Balsas region, on the other hand, are located in areas with a large amount of volcanic, volcano-sedimentary, and metamorphic bedrock.

The local geology has a large influence on what clay mineral mixtures and tempering materials are available to potters. The exact clay mixture used may restrict potters to a certain volume fraction of inclusions. Calcareous material is not commonly found as inclusions in Middle Balsas pottery, since the local geology provides no limestone or dolomite source. Since grog (or ground pottery) is generally available to all potters, it is unclear why it was used only in the Maya area during the Preclassic Period, but does not seem ever to have been used in Oaxaca or the Middle Balsas. Differences in the properties of the local clays or in the forming and production techniques likely allowed the Maya potters to produce vessels with a wider range of inclusion densities than that found in the other two regions.

Another factor related to differences in ceramic production is the difference in population densities and political structure among the three areas. The Middle Balsas region was likely fairly densely populated, according to surveys performed by Armillas (1945), but the sites in the region never reached the urban densities found at Monte Albán in Oaxaca or sites such as Tikal in the Maya lowlands. Fewer pottery workshops might have been required in the Middle Balsas to supply the population with their (mainly domestic) wares. This smaller number of producers, all of whom followed a recipe taught to them by their predecessors, could explain the fact that the inclusion density was uniform at each Middle Balsas site. In Oaxaca, by contrast, a number of different villages produced pottery for export to Monte Albán (Fargher 2007), which could explain the broader distribution in inclusion densities.

The generalized models of production organization may offer some insights into pottery production in the Middle Balsas region, and additional research could be undertaken to find production areas, such as kilns. My data offer an incomplete picture of the production organization of a single artifact class, pottery, and I have no information about how other types of production may have been organized. Therefore, making any broader conclusions about production organization in the Middle Balsas and how it compares to other regions of Mesoamerica must wait for further investigation. In general, to explore fully the production differences found within Mesoamerica, more research is needed in geographic areas that exhibit different levels of political organization, since most research is focused on state-level societies.

Materials Constraints on Pottery Production

The next question raised by the consistent volume fraction of inclusions in Middle Balsas pottery over one thousand years is whether materials constraints or possibilities required this pattern. My results suggest an intriguing picture. I identified only one correlation between a clay fabric and a specific vessel shape. This was the Type E fabric (from Patambo) that was used only for *tecomates*. Since the clays associated with Type E have the lowest average transverse rupture strength (TRS --see Figure 5.56), the strength of the vessels does not appear to have been the deciding variable in their production. Modern jars made from the same clay source are said to be particularly good for cooling water (Meanwell 2001). Potters in the past may also have utilized this clay for vessels intended for a similar function. In the case of water jars, the most relevant materials property is the permeability of the vessel walls, and the Patambo clays may form stable pore networks that substantially increase the permeability of the vessel walls and allow evaporative cooling of the water stored within the vessel.

Ideally, this hypothesis would be investigated by experimental replication of whole vessels that would be tested for porosity and water cooling ability. Alternatively, one could attempt to document the pore networks in the ancient sherds. Since pore networks are three-dimensional, however, they cannot be identified using petrography, since the investigator sees only a two-dimensional section through the sherd. It is also impossible to measure the porosity of sherds with broken edges by standard immersion and evaporation techniques, as the broken edges would not have contacted water during normal use. Schiffer (1990) has demonstrated that the surface treatment of pottery has a large effect on its permeability. I carried out preliminary replication studies that suggest the Patambo clays are slightly better for water cooling than the other clays collected in the Middle Balsas region (Meanwell 2001), although additional confirmation is needed.

In the few cases where certain forms were more common within a particular clay fabric, the vessels had such divergent dimensions and likely functions that I was unable to identify any materials considerations that would have impacted the potters. This does not mean that materials constraints do not exist, but reflects the nature of my data. It seems that, at least in the case of the Middle Balsas clays, potters did not need to be extremely concerned with the eventual function of their vessels. The physical and mechanical properties of the local clays provided great latitude for the design and function of the vessels.

Several ethnographic studies have suggested that most potters in various parts of the world have flexibility in their production methods and that experienced potters do not always achieve paste standardization (*e.g.,* Sillar 1997; Arnold 2000; Rice 1987: 120-123). This makes clay and pottery different from certain other materials used by ancient peoples, such as metals, where the relationship between materials properties and the function of the product is more restrictive (see Hosler 1988, 1994, 1995; Lechtman 1984a, 1984b, 1996a). In contrast, for certain rare cases that include the shell tempered pottery in the United States (Bronitsky and Hamer 1986), the cooking pots from La Quemada (Devereux 1996), and the *tecomates* produced from Type E fabric, a particular materials property may be important enough or restrict potters' options sufficiently to produce links between the production method and the function of the pottery produced.

The Middle Balsas potters' enduring solution for pottery production was to add temper to certain clay deposits so that these clays would achieve the same inclusion densities (and likely materials properties) of naturally occurring, culturally 'optimum' clays.

7.2 Broader Implications for Mesoamerican Studies

The Middle Balsas region occupies a geographically unique area in Mesoamerica. The region, as described in sections 1.3 and 1.4, contains a number of geological, floral, and faunal resources that were not necessarily found together in other areas of Mesoamerica. Geographically, it also lies near areas where several Mesoamerican state-level societies developed. Since peoples in the Middle Balsas region must have interacted with these surrounding societies, my data offer a few suggestions about the extent of that interaction, based on the evidence from pottery production studies and the obsidian.

My work suggests through the radiocarbon dates reported here (see Figure 5.27) that significant social change occurred in the Middle Balsas region during at least two time periods. These two transitional periods that I identified divide the pottery into three distinct phases. The earliest Middle Balsas pottery phase was identified at Amuco and has been dated to 1600-600 BC (Paradis 1974). Paradis (1974) did identify the Classic period wares in her research, but was unable to determine when they were introduced to the Middle Balsas region. My research indicates that the second (Classic period) phase was present by 300 BC, so the transition must therefore have occurred between 600 BC and 300 BC. The change may reflect an influx of new inhabitants to the area bringing new wares or may just be an idiosyncratic shift in the preferred ware types, since the vessel forms appear similar during both time periods. The second time of transition was during the Epiclassic period (AD 900-1100). After the Epiclassic period transition, a number of new wares with relations to surrounding societies were introduced, although the native Balsas Red and incised variants continued to be produced in the Middle Balsas region. As I show in Chapter 4, it also appears that the sites of La Quesería and Itzímbaro were abandoned at some point during this time span (AD 900-1100), although Mexiquito continued to be occupied.

The Middle Balsas is thought to have been a frontier area between the Aztec and Tarascan Empires during the Late Postclassic period (AD 1350-1520- Silverstein 2000, 2002; Hernández 1994, 1996; Pollard and Smith 2003). Increased contact with surrounding societies seems to have been initiated during the Epiclassic period. The Epiclassic period was a time of changes throughout Mesoamerica, and this was also the case in the Middle Balsas region.

Although this is not reflected in the pottery, it is possible that a third period of time was important in the chronology of the Middle Balsas region. A cluster of radiocarbon dates from all three of the Middle Balsas sites fall within the Late Classic period (AD 650-800) just before the Epiclassic transition. Since all these radiocarbon samples were recovered from various levels of construction fill, the data may suggest a population increase or 'building boom' in the region, possibly related to the decline of Teotihuacán or climatic fluctuations.

This study of the pottery production technology in the Middle Balsas region is one of the first in Mesoamerica to focus on pottery production in a complex but not state-level society. Whether the Maya sites investigated in earlier studies were organized more like chiefdoms or states, their level of political complexity still appears to be greater than that in the Middle Balsas region. Monte Albán, Teotihuacán and La Quemada are also larger and more complex settlements than the three I studied. It appears that Middle Balsas potters shared common formal types and wares, although they made their pottery from different local materials in households or small workshops. Rather than altering vessel design, they adapted their production process and design to fit the physical and mechanical properties of the raw materials.

The evidence from my investigation demonstrates that the pottery wares found in the Middle Balsas region during the Classic Period did not change significantly over at least 800 years. In most cases, decorative ware types found within Mesoamerica have a defined time period of production, which is usually shorter than the thousand-year span currently suggested for the incised Middle Balsas wares (see Caso *et al.* 1967; Sanders *et al.* 1979; Ramírez *et al.* 2000; Rattray 2001). It also seems significant that during the Classic period when Middle Balsas inhabitants obtained obsidian and other products not available locally, they did not import large numbers of vessels from the nearby traditions that supplied the obsidian. Wares such as Thin Orange or plumbate are generally fairly widely distributed throughout Mesoamerica, yet few examples have been documented within the Middle Balsas region (Paradis 1974 identified one Thin Orange sherd).

My data suggest that the residents of the Middle Balsas region did not interact significantly with their neighbors to obtain pottery or most other resources, with the exception of obsidian. Since the Middle

Balsas area is not known as a major source of obsidian (Cobean 1991; Healan 1999), all of the obsidian I collected at the three sites was likely imported. During the Classic period, the evidence from the obsidian and pottery suggests that the three sites were independent of one another and that little trade or exchange took place within the region. Long-distance trading seems to have been restricted to obsidian and possibly shell from the Pacific Coast. This picture appears to have modified somewhat in the Postclassic period when imported polychrome sherds were found at Mexiquito. It is possible that the increased Aztec and Tarascan conflicts and presence in the Middle Balsas (Silverstein 2000, 2002; Hernández 1994, 1996; Pollard and Smith 2003) may have altered the political structure of the Middle Balsas causing increased pottery trade. My hypothesis, which will require significant further research to confirm, is that the Middle Balsas region consisted of a number of small, independent polities during the Classic period.

On the basis of the complex ceremonial architecture and presence of ball courts, I suggest tentatively that the political structure of the Middle Balsas region consisted of a number of enduring small chiefdom-like entities. At present, this is little more than an educated guess. For example, Dietler (1996) argues that labor mobilization through feasting, which does not require a central political authority, may provide the necessary manpower to construct large ceremonial structures. He suggests that several varieties of earthworks and standing stones from Neolithic England may have been constructed in this manner. Burger (1992) also has suggested that feast mobilization of small, competitive labor groups may explain the construction of early ceremonial monuments in Peru. These examples may or may not have correlates in Mesoamerican society.

7.3 Directions for Future Research

The large quantity of data recovered by the Middle Balsas Project provides multiple directions for future research in the Middle Balsas region. First and foremost, the project would be more complete with a detailed analysis of the non-ceramic materials from the investigation including the obsidian, ground stone, and figurines. A chemical sourcing analysis of the obsidian might define the long-distance exchange networks for each site and clarify whether the source of obsidian changed through time at each site. It would be interesting to determine if the same clay sources used at each site for the pottery production were also used for figurines, because these two artifact classes, while both made of clay, have very different functional requirements. In this study, I assumed that most of the volcanic stone used for the various stone tools was obtained from nearby locations, but I would like to confirm what sources might have been used. Finally, a detailed survey and additional excavations within the Middle Balsas region to confirm the density of occupation reported by Armillas (1945) and to provide additional dates of occupation would be useful.

7.4 Conclusions

My research has demonstrated that during the Classic period complex sites with monumental architecture were occupied in the Middle Balsas region, and that pottery production was occurring at each of these sites using different clay sources. Potters at these sites adhered to a certain standard volume fraction of inclusions when making vessels. Further investigation should be performed to determine the full role of the Middle Balsas region in the greater Mesoamerican system, but my investigations make it clear that the Middle Balsas was a region with a high population density and impressive complex architecture that must have interacted with other Mesoamerican societies.

Three results from my research are most important. First, the pottery sequence and chronology for the Classic period provide baseline data for all future research in the Middle Balsas region. My research fills a gap that has been present in the culture history of this region for at least 70 years, and provides a point of departure for researchers examining other sites in the region and the relation among Middle Balsas settlements and those in other areas of Mesoamerica. Second, the evidence suggesting that pottery production is not always subject to 'evolutionary' pressures toward optimization and that potters do not always need to tailor their pottery for specific functions contradicts many conventional viewpoints. Middle Balsas potters developed production techniques using their local materials to produce vessels suited to their functional requirements. Third, the data suggesting that the Middle Balsas potters used a consistent fraction of non-plastic inclusions at three different sites when making a shared variety of pottery forms from different clay sources is suggestive of an enduring and consistent production tradition for at least 1000 years. Due to a lack of comparative data, it is difficult to know how unusual this may have been in Mesoamerican pottery production.

My unique combination of anthropology, archaeology, and materials science was required to investigate these important aspects of production. The research I presented here should serve as a model for other investigators interested in pottery production in different geographical areas worldwide and as a foundation for additional investigation into an important and currently under-investigated region of Mesoamerica.

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Appendix 1: Registry of Bags from La Quesería, Itzímbaro, and Mexiquito

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	23-Jan	S1W1	-	1	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	2	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	3	surface	obsidian	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	4	surface	figurines	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	5	surface	quartz	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	6	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	7	surface	stone	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	8	surface	stone	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	9	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	10	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	11	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	12	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	13	surface	mano/metate	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	14	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	15	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	16	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	17	surface	stone	M.F.F.Z.I.J.
Quesería	23-Jan	S1W1	-	18	surface	stone axe	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	1	surface	mano/metate	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	2	surface	obsidian	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	3	surface	worked stone?	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	4	surface	metate	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	5	surface	figurines	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	6	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	7	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	8	surface	sherds	M.F.F.Z.I.J.
Quesería	23-Jan	N1W1	-	9	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	10	surface	figurines	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	11	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	12	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	13	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	14	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	15	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	N1W1	-	16	surface	obsidian	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	1	surface	obsidian	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	2	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	3	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	4	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	5	surface	figurines	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	6	surface	special tool	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	7	surface	sherds	M.F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	24-Jan	S1W2	-	8	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	9	surface	sherds	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	10	surface	metate	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	11	surface	metate	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	12	surface	metate	M.F.F.Z.I.J.
Quesería	24-Jan	S1W2	-	13	surface	sherds	M.F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	14	surface	figurines	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	15	surface	obsidian	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	16	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	17	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	18	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	19	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S2W1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S2W1	-	2	surface	obsidian	F.F.Z.I.J.
Quesería	25-Jan	S2W1	-	3	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S2W1	-	4	surface	figurines	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	20	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	21	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	22	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	23	surface	mano/metate	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	24	surface	special tool	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	25	surface	sherds	F.F.Z.I.J.
Quesería	25-Jan	S1W2	-	26	surface	sherds	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	27	surface	obsidian	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	28	surface	figurines	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	29	surface	special tool	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	30	surface	sherds	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	31	surface	sherds	F.F.Z.I.J.
Quesería	26-Jan	S1W2	-	32	surface	metate	F.F.Z.I.J.
Quesería	26-Jan	S2W2	-	1	surface	mano/metate	F.F.Z.I.J.
Quesería	26-Jan	S2W2	-	2	surface	sherds	F.F.Z.I.J.
Quesería	26-Jan	S2W2	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	26-Jan	S2W2	-	4	surface	figurines	F.F.Z.I.J.
Quesería	26-Jan	S2W2	-	5	surface	sherds	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	1	surface	sherds	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	2	surface	sherds	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	3	surface	sherds	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	4	surface	sherds	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	5	surface	obsidian	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	6	surface	round stone	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	7	surface	figurines	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	8	surface	mano/metate	F.F.Z.I.J.
Quesería	27-Jan	S1W3	-	9	surface	sherds	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	27-Jan	S1W3	-	10	surface	sherds	F.F.Z.J.D.P.
Quesería	27-Jan	S1W3	-	11	surface	sherds	F.F.Z.J.D.P.
Quesería	27-Jan	S1W3	-	12	surface	sherds	F.F.Z.J.D.P.
Quesería	27-Jan	S1W3	-	13	surface	sherds	F.F.Z.J.D.P.
Quesería	27-Jan	S1W3	-	14	surface	sherds	F.F.Z.J.D.P.
Quesería	27-Jan	S1W3	-	15	surface	plaster with sherd	F.F.Z.J.D.P.
Quesería	28-Jan	N1W3	-	1	surface	figurines	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	2	surface	obsidian	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	3	surface	mano/metate	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	4	surface	quartz blades	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	5	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	6	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	7	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	8	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	9	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	10	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	11	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	12	surface	sherds	F.F.Z.I.J.D.
Quesería	28-Jan	N1W3	-	13	surface	sherds	F.F.Z.I.J.D.
Quesería	30-Jan	N1W3	-	14	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W3	-	15	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W3	-	16	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W3	-	17	surface	obsidian	F.F.Z.I.J.
Quesería	30-Jan	N1W3	-	18	surface	figurines	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	16	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	17	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	18	surface	obsidian	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	19	surface	figurines	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	20	surface	stucco fragment	F.F.Z.I.J.
Quesería	30-Jan	S1W3	-	21	surface	plaster with sherd	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	2	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	4	surface	worked quartz	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	5	surface	mano/metate	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	6	surface	mold fragment?	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	7	surface	stucco fragment	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	8	surface	figurines	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	9	surface	plaster with sherd	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	10	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	11	surface	sherds	F.F.Z.I.J.
Quesería	30-Jan	N1W2	-	12	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	13	surface	sherds	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	31-Jan	N1W2	-	14	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	15	surface	metate	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	16	surface	metate	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	17	surface	obsidian	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	18	surface	figurines	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	19	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	20	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N1W2	-	21	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	2	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	3	surface	sherds	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	4	surface	mano	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	5	surface	figurines	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	6	surface	obsidian	F.F.Z.I.J.
Quesería	31-Jan	N2W2	-	7	surface	worked quartz	F.F.Z.I.J.
Quesería	1-Feb	N1W1	-	17	surface	figurines	F.F.Z.I.J.
Quesería	1-Feb	N1W1	-	18	surface	obsidian	F.F.Z.I.J.
Quesería	1-Feb	N1W1	-	19	surface	metate	F.F.Z.I.J.
Quesería	1-Feb	N1W1	-	20	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N1W1	-	21	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	1	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	2	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	4	surface	figurines	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	5	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	6	surface	sherds	F.F.Z.I.J.
Quesería	1-Feb	N2W3	-	7	surface	mano	F.F.Z.I.J.
Quesería	1-Feb	N3W3	-	1	surface	obsidian	F.Z.I.J.D
Quesería	1-Feb	N3W2	-	1	surface	sherds	F.Z.I.J.D
Quesería	1-Feb	N3W2	-	2	surface	sherds	F.Z.I.J.D
Quesería	1-Feb	N3W2	-	3	surface	mano	F.Z.I.J.D
Quesería	1-Feb	N3W2	-	4	surface	obsidian	F.Z.I.J.D
Quesería	1-Feb	N3W2	-	5	surface	figurines	F.Z.I.J.D
Quesería	2-Feb	N3W2	-	6	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N3W2	-	7	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N3W2	-	8	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N3W2	-	9	surface	mano/metate	F.F.Z.I.J.
Quesería	2-Feb	N3W2	-	10	surface	obsidian	F.F.Z.I.J.
Quesería	2-Feb	N3W2	-	11	surface	special tool	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	2	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	3	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	4	surface	sherds	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	2-Feb	N2W1	-	5	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	6	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	7	surface	figurines	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	8	surface	obsidian	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	9	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	10	surface	sherds	F.F.Z.I.J.
Quesería	2-Feb	N2W1	-	11	surface	mano	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	12	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	13	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	14	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	15	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	16	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	17	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	18	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	19	surface	mano	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	20	surface	obsidian	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	21	surface	figurines	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	22	surface	stone axe	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	23	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	24	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	25	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N2W1	-	26	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N3W1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N3W1	-	2	surface	sherds	F.F.Z.I.J.
Quesería	3-Feb	N3W1	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	4-Feb	N3W1	-	4	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	5	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	6	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	7	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	8	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	9	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	10	surface	sherds	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	11	surface	obsidian	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	12	surface	mano	F.Z.I.J.D
Quesería	4-Feb	N3W1	-	13	surface	figurines	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	14	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	15	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	16	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	17	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	18	surface	mano/metate	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	19	surface	obsidian	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	20	surface	figurines	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	1	surface	sherds	F.Z.I.J.D

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	6-Feb	N4W1	-	2	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	3	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	4	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	5	surface	figurines	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	6	surface	obsidian	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	7	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	8	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	9	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	10	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	11	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N3W1	-	21	surface	metate	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	12	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	13	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	14	surface	sherds	F.Z.I.J.D
Quesería	6-Feb	N4W1	-	15	surface	sherds	F.Z.I.J.D
Quesería	7-Feb	N1E1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E1	-	2	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E1	-	3	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E1	-	4	surface	figurines	F.F.Z.I.J.
Quesería	7-Feb	N1E1	-	5	surface	mano/metate	F.F.Z.I.J.
Quesería	7-Feb	N2E1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N2E1	-	2	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N2E1	-	3	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N2E1	-	4	surface	mano/metate	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	2	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	3	surface	mano/metate	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	4	surface	obsidian	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	5	surface	figurines	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	6	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	7	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	8	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N1E2	-	9	surface	mano/metate	F.F.Z.I.J.
Quesería	7-Feb	N2E2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	7-Feb	N2E2	-	2	surface	obsidian	F.F.Z.I.J.
Quesería	7-Feb	N2E2	-	3	surface	metate	F.F.Z.I.J.
Quesería	8-Feb	N3E1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	8-Feb	N3E1	-	2	surface	sherds	F.F.Z.I.J.
Quesería	8-Feb	N3E1	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	8-Feb	N3E1	-	4	surface	figurines	F.F.Z.I.J.
Quesería	8-Feb	N3E1	-	5	surface	mano/metate	F.F.Z.I.J.
Quesería	8-Feb	N4E1	-	1	surface	sherds	F.F.Z.I.J.
Quesería	8-Feb	N4E1	-	2	surface	sherds	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	8-Feb	N4E1	-	3	surface	sherds	F.F.Z.I.J.
Quesería	8-Feb	N4E1	-	4	surface	obsidian	F.F.Z.I.J.
Quesería	8-Feb	N4E1	-	5	surface	mano	F.F.Z.I.J.
Quesería	8-Feb	N4E1	-	6	surface	figurines	F.F.Z.I.J.
Quesería	8-Feb	N3E2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	8-Feb	N3E2	-	2	surface	obsidian	F.F.Z.I.J.
Quesería	8-Feb	N3E2	-	3	surface	figurines	F.F.Z.I.J.
Quesería	8-Feb	N3E2	-	4	surface	metate	F.F.Z.I.J.
Quesería	9-Feb	N3E2	-	5	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N3E2	-	6	surface	obsidian	F.F.Z.I.J.
Quesería	9-Feb	N3E2	-	7	surface	figurines	F.F.Z.I.J.
Quesería	9-Feb	N3E2	-	8	surface	special tool	F.F.Z.I.J.
Quesería	9-Feb	N3E2	-	9	surface	metate	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	2	surface	mano/metate	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	3	surface	special tool	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	4	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	5	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	6	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	7	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	8	surface	obsidian	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	9	surface	figurines	F.F.Z.I.J.
Quesería	9-Feb	N4E2	-	10	surface	chisel?	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	1	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	2	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	3	surface	sherds	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	4	surface	metate	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	5	surface	mano/metate	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	6	surface	obsidian	F.F.Z.I.J.
Quesería	9-Feb	N1E3	-	7	surface	figurines	F.F.Z.I.J.
Quesería	9-Feb	N1E4	-	1	surface	metate	F.F.Z.I.J.
Quesería	9-Feb	N3E1	-	6	surface	metate	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	1	surface	sherds	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	2	surface	sherds	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	3	surface	obsidian	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	4	surface	figurines	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	5	surface	special tool	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	6	surface	mano	F.F.Z.I.J.
Quesería	10-Feb	N2E3	-	7	surface	special tool	F.F.Z.I.J.
Quesería	10-Feb	N5E2	-	1	surface	sherds	F.F.Z.I.J.
Quesería	10-Feb	N5E2	-	2	surface	sherds	F.F.Z.I.J.
Quesería	10-Feb	N5E2	-	3	surface	sherds	F.F.Z.I.J.
Quesería	10-Feb	N5E2	-	4	surface	obsidian	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	10-Feb	N5E2	-	5	surface	figurines	F.F.Z.I.J.
Quesería	10-Feb	N5E2	-	6	surface	manos	F.F.I.J.
Quesería	15-Feb	N3E3	-	1	surface	sherds	F.F.I.J.
Quesería	15-Feb	N3E3	-	2	surface	obsidian	F.F.I.J.
Quesería	15-Feb	N3E3	-	3	surface	metate	F.F.I.J.
Quesería	15-Feb	N3E3	-	4	surface	sherds	F.F.I.J.
Quesería	15-Feb	N3E3	-	5	surface	sherds	F.F.I.J.
Quesería	15-Feb	N3E3	-	6	surface	sherds	F.F.I.J.
Quesería	15-Feb	N3E3	-	7	surface	sherds	F.F.I.J.
Quesería	15-Feb	N3E3	-	8	surface	special tool	F.F.I.J.
Quesería	15-Feb	N3E3	-	9	surface	figurines	F.F.I.J.
Quesería	16-Feb	N1W2	1	1	0-20 cm	sherds	F.F.I.J.
Quesería	16-Feb	N1W2	1	2	0-20 cm	obsidian	F.F.I.J.
Quesería	16-Feb	N1W2	1-SE	1	0-30 cm	sherds	F.F.I.J.
Quesería	16-Feb	N1W2	1-NE	1	0-30 cm	sherds	F.F.I.J.
Quesería	16-Feb	N1W2	1-NE	2	0-30 cm	plaster floor	F.F.I.J.
Quesería	16-Feb	N1W2	1-NW	1	0-30 cm	sherds	F.F.I.J.
Quesería	16-Feb	N1W2	1	3	20-40 cm	sherds	F.F.I.J.
Quesería	16-Feb	N1W2	1	4	20-40 cm	obsidian	F.F.I.J.
Quesería	16-Feb	N1W2	1	5	20-40 cm	figurines	F.F.I.J.
Quesería	16-Feb	N1W2	1	6	20-40 cm	sherds	F.F.I.J.
Quesería	17-Feb	N1W2	1	7	40-60 cm	sherds	F.F.I.J.
Quesería	17-Feb	N1W2	1	8	40-60 cm	mano	F.F.I.J.
Quesería	17-Feb	N1W2	1	9	40-60 cm	plaster fragment	F.F.I.J.
Quesería	17-Feb	N1W2	1	10	40-60 cm	figurines	F.F.I.J.
Quesería	17-Feb	N1W2	1	11	40-60 cm	shell	F.F.I.J.
Quesería	17-Feb	N1W2	1	12	60-80 cm	sherds	F.F.I.J.
Quesería	17-Feb	N1W2	1	13	60-80 cm	figurines	F.F.I.J.
Quesería	17-Feb	N1W2	1	14	60-80 cm	obsidian	F.F.I.J.
Quesería	17-Feb	N1W2	1	15	60-80 cm	shell	F.F.I.J.
Quesería	17-Feb	N1W2	1	16	60-80 cm	worked quartz	F.F.I.J.
Quesería	20-Feb	N1W2	1	17	80-100 cm	sherds	Z.J.
Quesería	20-Feb	N1W2	1	18	80-100 cm	obsidian	Z.J.
Quesería	20-Feb	N1W2	1	19	80-100 cm	stone ball	Z.J.
Quesería	20-Feb	N1W2	1	20	80-100 cm	radiocarbon	Z.J.
Quesería	20-Feb	N1W2	1	21	80-100 cm	radiocarbon	Z.J.
Quesería	20-Feb	N1W2	1	22	80-100 cm	radiocarbon	Z.J.
Quesería	20-Feb	N3E4	-	1	surface	sherds	F.F.I.
Quesería	20-Feb	N3E4	-	2	surface	sherds	F.F.I.
Quesería	20-Feb	N3E4	-	3	surface	sherds	F.F.I.
Quesería	20-Feb	N3E4	-	4	surface	sherds	F.F.I.
Quesería	20-Feb	N3E4	-	5	surface	sherds	F.F.I.
Quesería	20-Feb	N3E4	-	6	surface	sherds	F.F.I.

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Quesería	20-Feb	N3E4	-	7	surface	mano/metate	F.F.I.
Quesería	20-Feb	N3E4	-	8	surface	obsidian	F.F.I.
Quesería	20-Feb	N3E4	-	9	surface	figurines	F.F.I.
Quesería	20-Feb	N4E3	-	1	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	2	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	3	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	4	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	5	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	6	surface	sherds	F.F.I.
Quesería	20-Feb	N4E3	-	7	surface	obsidian	F.F.I.
Quesería	20-Feb	N4E3	-	8	surface	figurines	F.F.I.
Quesería	20-Feb	unknown	-	1	surface	obsidian	F.F.I.
Quesería	20-Feb	N1W2	1	23	80-100 cm	figurines	F.F.Z.I.J.
Quesería	21-Feb	N1W2	1	24	80-100 cm	sherds	Z.J.
Quesería	21-Feb	N1W2	1	25	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N1W2	1	26	100-120 cm	sherds	Z.J.
Quesería	21-Feb	N1W2	1	27	100-120 cm	stone axe	Z.J.
Quesería	21-Feb	N1W2	1	28	100-120 cm	figurines	Z.J.
Quesería	21-Feb	N4E3	-	9	surface	sherds	F.F.I.
Quesería	21-Feb	N4E3	-	10	surface	sherds	F.F.I.
Quesería	21-Feb	N4E3	-	11	surface	sherds	F.F.I.
Quesería	21-Feb	N4E3	-	12	surface	metate	F.F.I.
Quesería	21-Feb	N4E3	-	13	surface	obsidian	F.F.I.
Quesería	21-Feb	N4E3	-	14	surface	figurines	F.F.I.
Quesería	21-Feb	N4E3	-	15	surface	worked stone?	F.F.I.
Quesería	21-Feb	N3E3	-	10	surface	worked stone?	F.F.I.
Quesería	21-Feb	unknown	-	2	surface	obsidian	F.F.I.
Quesería	21-Feb	N1W2	1	29	100-120 cm	obsidian	Z.J.
Quesería	21-Feb	N1W2	1	30	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N1W2	1	31	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N1W2	1	32	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N1W2	1	33	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N1W2	1	34	100-120 cm	radiocarbon	Z.J.
Quesería	21-Feb	N2E4	-	1	surface	sherds	F.F.I.
Quesería	21-Feb	N2E4	-	2	surface	sherds	F.F.I.
Quesería	21-Feb	N2E4	-	3	surface	sherds	F.F.I.
Quesería	21-Feb	N2E4	-	4	surface	metate	F.F.I.
Quesería	21-Feb	N2E4	-	5	surface	obsidian	F.F.I.
Quesería	21-Feb	N2E4	-	6	surface	figurines	F.F.I.
Quesería	21-Feb	N1W2	1-south wall	35	unknown	sherds	F.F.Z.I.J.
Quesería	21-Feb	N1W2	1-south wall	36	unknown	obsidian	F.F.Z.I.J.
Quesería	21-Feb	N1W2	1-south wall	37	unknown	figurines	F.F.Z.I.J.
Quesería	21-Feb	N1W2	1-west wall	38	unknown	sherds	F.F.Z.I.J.

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Quesería	21-Feb	N1W2	1-west wall	39	unknown	obsidian	F.F.Z.I.J.
Quesería	22-Feb	N1W2	1	40	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	41	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	42	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	43	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	44	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	45	120-140 cm	sherds	Z.J.
Quesería	22-Feb	N1W2	1	46	120-140 cm	obsidian	Z.J.
Quesería	22-Feb	N1W2	1	47	120-140 cm	figurines	Z.J.
Quesería	22-Feb	N1W2	1	48	120-140 cm	animal tooth	Z.J.
Quesería	22-Feb	N5E1	-	1	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	2	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	3	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	4	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	5	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	6	surface	sherds	F.F.I.
Quesería	22-Feb	N5E1	-	1	surface	olla fragments	F.F.I.
Quesería	22-Feb	N5E1	-	7	surface	obsidian	F.F.I.
Quesería	22-Feb	N5E1	-	8	surface	figurines	F.F.I.
Quesería	22-Feb	N5E1	-	9	surface	incised stone	F.F.I.
Quesería	22-Feb	N5E1	-	10	surface	mano	F.F.I.
Quesería	22-Feb	N1W2	1	49	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	50	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	51	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	52	120-140 cm	stone ball	Z.J.
Quesería	22-Feb	N1W2	1	53	120-140 cm	radiocarbon	Z.J.
Quesería	22-Feb	N1W2	1	54	120-140 cm	sherds	Z.J.
Quesería	22-Feb	N1W2	1	55	120-140 cm	stone tool	Z.J.
Quesería	22-Feb	N1W2	1-north wall	56	unknown	sherds	Z.J.
Quesería	22-Feb	N5W1	-	2	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	3	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	4	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	5	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	6	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	7	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	8	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	9	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	10	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	11	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	12	surface	sherds	F.F.I.
Quesería	22-Feb	N5W1	-	13	surface	obsidian	F.F.I.
Quesería	22-Feb	N5W1	-	14	surface	figurines	F.F.I.
Quesería	22-Feb	N5W1	-	15	surface	special tool	F.F.I.

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Quesería	22-Feb	N5W1	-	16	surface	mano	F.F.I.
Quesería	22-Feb	N5E2	-	7	surface	obsidian	F.F.I.
Quesería	23-Feb	N1W2	1	57	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	58	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	59	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	60	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	61	140-160 cm	bone	Z.J.
Quesería	23-Feb	N1W2	1	62	140-160 cm	obsidian	Z.J.
Quesería	23-Feb	N1W2	1	63	140-160 cm	figurines	Z.J.
Quesería	23-Feb	N1W2	1	64	140-160 cm	sherds	Z.J.
Quesería	23-Feb	N1W2	1	65	140-160 cm	shell	Z.J.
Quesería	23-Feb	N1W2	1	66	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	67	140-160 cm	radiocarbon	Z.J.
Quesería	23-Feb	N1W2	1	68	140-160 cm	sherds	Z.J.
Quesería	23-Feb	N1W2	1-east wall	69	unknown	figurines	Z.J.I.
Quesería	23-Feb	N1W2	1-east wall	70	unknown	obsidian	Z.J.I.
Quesería	23-Feb	N1W2	1-east wall	71	unknown	sherds	Z.J.I.
Quesería	23-Feb	N1W2	1-east wall	72	unknown	teeth/bone	Z.J.I.
Quesería	23-Feb	N1W2	1	73	140-160 cm	radiocarbon	Z.J.I.
Quesería	23-Feb	N6E1	-	1	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	2	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	3	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	4	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	5	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	6	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	7	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	8	surface	sherds	F.D.I.
Quesería	23-Feb	N6E1	-	9	surface	obsidian	F.D.I.
Quesería	23-Feb	N6E1	-	10	surface	figurines	F.D.I.
Quesería	23-Feb	N6E1	-	11	surface	mano	F.D.I.
Quesería	23-Feb	N6E1	-	12	surface	special tool	F.D.I.
Quesería	23-Feb	N6E1	-	13	surface	special tool	F.D.I.
Quesería	23-Feb	N5W1	-	14	surface	bead-shell	F.D.I.
Quesería	24-Feb	N1W2	1-south wall	74	unknown	sherds	Z.J.
Quesería	24-Feb	N1W2	1-south wall	75	unknown	obsidian	Z.J.
Quesería	24-Feb	N1W2	1-south wall	76	unknown	figurines	Z.J.
Quesería	24-Feb	N1W2	1	77	unknown	bone	Z.J.
Quesería	24-Feb	N1W2	1	78	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N1W2	1	79	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N1W2	1	80	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N1W2	1	81	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N1W2	1	82	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N1W2	1	83	160-180 cm	radiocarbon	Z.J.

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Quesería	24-Feb	N1W2	1	84	160-180 cm	obsidian	Z.J.
Quesería	24-Feb	N1W2	1	85	160-180 cm	figurines	Z.J.
Quesería	24-Feb	N1W2	1	86	160-180 cm	bone	Z.J.
Quesería	24-Feb	N1W2	1	87	160-180 cm	radiocarbon	Z.J.
Quesería	24-Feb	N6W1		1	surface	sherds	F.D.I.
Quesería	24-Feb	N6W1		2	surface	sherds	F.D.I.
Quesería	24-Feb	N6W1		3	surface	sherds	F.D.I.
Quesería	24-Feb	N6W1		4	surface	obsidian	F.D.I.
Quesería	24-Feb	N6W1		5	surface	figurines	F.D.I.
Quesería	24-Feb	N6W1		6	surface	mano	F.D.I.
Quesería	24-Feb	N1W2	1	83	160-180 cm	sherds	Z.J.
Quesería	27-Feb	N1W2	1	88	160-180 cm	radiocarbon	Z.J.
Quesería	27-Feb	N1W2	1	89	160-180 cm	radiocarbon	Z.J.
Quesería	27-Feb	N1W2	1	90	160-180 cm	radiocarbon	Z.J.
Quesería	27-Feb	N1W2	1	91	160-180 cm	radiocarbon	Z.J.
Quesería	27-Feb	N1W2	1	92	160-180 cm	sherds	Z.J.
Quesería	27-Feb	N1W2	1	93	160-180 cm	obsidian	Z.J.
Quesería	27-Feb	N1W2	1	94	160-180 cm	bone	Z.J.
Quesería	27-Feb	N1W2	1	95	160-180 cm	shell	Z.J.
Quesería	27-Feb	N1W2	1	96	180-200 cm	radiocarbon	Z.J.
Quesería	27-Feb	N1W2	1	97	180-200 cm	sherds	Z.J.
Quesería	27-Feb	N1W2	1	98	180-200 cm	obsidian	Z.J.
Quesería	27-Feb	N1W2	1	99	180-200 cm	figurines	Z.J.
Quesería	27-Feb	N1W2	1	100	180-200 cm	bone	Z.J.
Quesería	27-Feb	N4W2	-	1	surface	sherds	F.F.I.
Quesería	27-Feb	N4W2	-	2	surface	sherds	F.F.I.
Quesería	27-Feb	N4W2	-	3	surface	sherds	F.F.I.
Quesería	27-Feb	N4W2	-	4	surface	sherds	F.F.I.
Quesería	27-Feb	N4W2	-	5	surface	obsidian	F.F.I.
Quesería	27-Feb	N4W2	-	6	surface	figurines	F.F.I.
Quesería	27-Feb	N4W2	-	7	surface	mano	F.F.I.
Quesería	27-Feb	N5W2	-	1	surface	sherds	F.F.I.
Quesería	27-Feb	N5W2	-	2	surface	sherds	F.F.I.
Quesería	27-Feb	N5W2	-	3	surface	sherds	F.F.I.
Quesería	27-Feb	N5W2	-	4	surface	sherds	F.F.I.
Quesería	27-Feb	N5W2	-	5	surface	sherds	F.F.I.
Quesería	27-Feb	N5W2	-	6	surface	obsidian	F.F.I.
Quesería	27-Feb	N5W2	-	7	surface	figurines	F.F.I.
Quesería	27-Feb	N5W2	-	8	surface	special tool	F.F.I.
Quesería	28-Feb	N1W2	1	101	180-200 cm	sherds	Z.J.
Quesería	28-Feb	N1W2	1	102	180-200 cm	obsidian	Z.J.
Quesería	28-Feb	N1W2	1	103	180-200 cm	figurines	Z.J.
Quesería	28-Feb	N1W2	1	104	180-200 cm	worked stone	Z.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	28-Feb	N1W2	1	105	180-200 cm	radiocarbon	Z.J.
Quesería	28-Feb	N1W2	1	106	180-200 cm	radiocarbon	Z.J.
Quesería	28-Feb	N1W2	1	107	200-220 cm	radiocarbon	Z.J.
Quesería	28-Feb	N1W2	1	108	200-220 cm	radiocarbon	Z.J.
Quesería	28-Feb	N1W2	1	109	200-220 cm	radiocarbon	Z.J.
Quesería	28-Feb	N1W2	1	110	200-220 cm	figurines	Z.J.
Quesería	28-Feb	N1W2	1	111	200-220 cm	bone	Z.J.
Quesería	28-Feb	N1W2	1	112	200-220 cm	sherds	Z.J.
Quesería	28-Feb	N13W2	-	1	surface	sherds	F.D.I.
Quesería	28-Feb	N13W2	-	2	surface	sherds	F.D.I.
Quesería	28-Feb	N13W2	-	3	surface	sherds	F.D.I.
Quesería	28-Feb	N13W2	-	4	surface	obsidian	F.D.I.
Quesería	28-Feb	N13W2	-	5	surface	mano	F.D.I.
Quesería	28-Feb	N12W2	-	1	surface	sherds	F.D.I.
Quesería	28-Feb	N12W2	-	2	surface	sherds	F.D.I.
Quesería	28-Feb	N12W2	-	3	surface	obsidian	F.D.I.
Quesería	28-Feb	N12W2	-	4	surface	figurines	F.D.I.
Quesería	28-Feb	N12W2	-	5	surface	stone axe	F.D.I.
Quesería	28-Feb	unknown	-	3	surface	obsidian	F.D.I.
Quesería	1-Mar	N1W2	1	113	200-220 cm	radiocarbon	I.J.
Quesería	1-Mar	N1W2	1	114	200-220 cm	radiocarbon	I.J.
Quesería	1-Mar	N1W2	1	115	200-220 cm	radiocarbon	I.J.
Quesería	1-Mar	N1W2	1	116	200-220 cm	sherds	I.J.
Quesería	1-Mar	N1W2	1	117	200-220 cm	sherds	I.J.
Quesería	1-Mar	N1W2	1	118	200-220 cm	metate	I.J.
Quesería	1-Mar	N1W2	1	119	200-220 cm	figurines	I.J.
Quesería	1-Mar	N1W2	1	120	200-220 cm	stone ball	I.J.
Quesería	1-Mar	N1W2	1	121	200-220 cm	bone	I.J.
Quesería	1-Mar	N6W2	-	1	surface	sherds	F.F.Z.
Quesería	1-Mar	N6W2	-	2	surface	sherds	F.F.Z.
Quesería	1-Mar	N6W2	-	3	surface	sherds	F.F.Z.
Quesería	1-Mar	N6W2	-	4	surface	sherds	F.F.Z.
Quesería	1-Mar	N6W2	-	5	surface	obsidian	F.F.Z.
Quesería	1-Mar	N6W2	-	6	surface	figurines	F.F.Z.
Quesería	2-Mar	N1E4	-	1	surface	sherds	F.D.I.Z.
Quesería	2-Mar	N1E4	-	2	surface	sherds	F.D.I.Z.
Quesería	2-Mar	N1E4	-	3	surface	obsidian	F.D.I.Z.
Quesería	2-Mar	N1E4	-	4	surface	mano/metate	F.D.I.Z.
Quesería	3-Mar	N5E3	-	1	surface	sherds	F.D.I.Z.
Quesería	3-Mar	N5E3	-	2	surface	sherds	F.D.I.Z.
Quesería	3-Mar	N5E3	-	3	surface	sherds	F.D.I.Z.
Quesería	3-Mar	N5E3	-	4	surface	sherds	F.D.I.Z.
Quesería	3-Mar	N5E3	-	5	surface	sherds	F.D.I.Z.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	3-Mar	N5E3	-	6	surface	mano	F.D.I.Z.
Quesería	3-Mar	N5E3	-	7	surface	obsidian	F.D.I.Z.
Quesería	7-Mar	N3W1	2	1	0-20 cm	sherds	F.F.Z.
Quesería	7-Mar	N3W1	2	2	0-20 cm	sherds	F.F.Z.
Quesería	7-Mar	N3W1	2	3	0-20 cm	obsidian	F.F.Z.
Quesería	7-Mar	N3W1	2	4	20-40 cm	radiocarbon	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	5	20-40 cm	obsidian	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	6	20-40 cm	figurines	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	7	20-40 cm	shell	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	8	20-40 cm	bone	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	9	20-40 cm	plaster fragment	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	10	20-40 cm	sherds	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	11	20-40 cm	sherds	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	12	20-40 cm	sherds	F.F.Z.I.J.
Quesería	7-Mar	N3W1	2	13	20-40 cm	sherds	F.F.Z.I.J.
Quesería	8-Mar	N1W2	1	122	220-240 cm	radiocarbon	I.F.
Quesería	8-Mar	N1W2	1	123	220-240 cm	sherds	I.F.
Quesería	8-Mar	N1W2	1	124	220-240 cm	sherds	I.F.
Quesería	8-Mar	N1W2	1	125	220-240 cm	obsidian	I.F.
Quesería	8-Mar	N1W2	1	126	220-240 cm	figurines	I.F.
Quesería	8-Mar	N1W2	1	127	220-240 cm	shell	I.F.
Quesería	8-Mar	N3W1	2	14	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	15	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	16	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	17	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	18	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	19	40-60 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	20	40-60 cm	obsidian	Z.D.
Quesería	8-Mar	N3W1	2	21	40-60 cm	figurines	Z.D.
Quesería	8-Mar	N3W1	2	22	40-60 cm	radiocarbon	Z.D.
Quesería	8-Mar	N3W1	2	23	40-60 cm	metal	Z.D.
Quesería	8-Mar	N1W2	1	128	220-240 cm	radiocarbon	I.F.
Quesería	8-Mar	N1W2	1	129	220-240 cm	radiocarbon	I.F.
Quesería	8-Mar	N1W2	1	130	220-240 cm	bone	I.F.
Quesería	8-Mar	N1W2	1	131	220-240 cm	sherds	I.F.
Quesería	8-Mar	N1W2	1	132	220-240 cm	radiocarbon	I.F.
Quesería	8-Mar	N1W2	1	133	220-240 cm	special tool	I.F.
Quesería	8-Mar	N3W1	2	24	40-60 cm	stone tool	Z.D.
Quesería	8-Mar	N3W1	2	25	60-80 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	26	60-80 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	27	60-80 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	28	60-80 cm	sherds	Z.D.
Quesería	8-Mar	N3W1	2	29	60-80 cm	obsidian	Z.D.

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Quesería	8-Mar	N3W1	2	30	60-80 cm	radiocarbon	Z.D.
Quesería	8-Mar	N3W1	2	31	60-80 cm	figurines	Z.D.
Quesería	8-Mar	N3W1	2	32	60-80 cm	mano	Z.D.
Quesería	9-Mar	N1W2	1	134	>240 cm	sherds	F.I.
Quesería	9-Mar	N3W1	2	33	60-80 cm	sherds	Z.F.
Quesería	9-Mar	N3W1	2	34	60-80 cm	sherds	Z.F.
Quesería	9-Mar	N3W1	2	35	60-80 cm	obsidian	Z.F.
Quesería	9-Mar	N3W1	2	36	60-80 cm	figurines	Z.F.
Quesería	9-Mar	N3W1	2	37	80-100 cm	sherds	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	38	80-100 cm	sherds	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	39	80-100 cm	sherds	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	40	80-100 cm	figurines	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	41	80-100 cm	obsidian	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	42	80-100 cm	shell	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	43	80-100 cm	worked shell	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	44	80-100 cm	radiocarbon	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	45	80-100 cm	bone	F.F.Z.I.J.
Quesería	9-Mar	N3W1	2	46	80-100 cm	radiocarbon	F.Z.
Quesería	9-Mar	N3W1	2	47	80-100 cm	radiocarbon	F.Z.
Quesería	9-Mar	N3W1	2	48	80-100 cm	metate	F.Z.
Quesería	9-Mar	N3W1	2	49	80-100 cm	radiocarbon	F.Z.
Quesería	9-Mar	N3W1	2	50	80-100 cm	sherds	F.Z.
Quesería	9-Mar	N3W1	2	51	100-120 cm	radiocarbon	F.Z.
Quesería	9-Mar	N3W1	2	52	100-120 cm	sherds	F.Z.
Quesería	9-Mar	N3W1	2	53	80-100 cm	sherds	F.Z.
Quesería	9-Mar	N3W1	2	54	100-120 cm	obsidian	F.Z.
Quesería	9-Mar	N5W2	-	9	surface	obsidian	F.I.J.
Quesería	9-Mar	N5W2	-	10	surface	figurines	F.I.J.
Quesería	9-Mar	N5W2	3	1	0-20 cm	sherds	F.I.J.
Quesería	9-Mar	N5W2	3	2	0-20 cm	obsidian	F.I.J.
Quesería	9-Mar	N5W2	3	3	0-20 cm	figurines	F.I.J.
Quesería	10-Mar	N5W2	3-NE	1	0-30 cm	sherds	F.I.
Quesería	10-Mar	N3W1	2	55	100-120 cm	radiocarbon	F.Z.
Quesería	10-Mar	N3W1	2	56	100-120 cm	sherds	F.Z.
Quesería	10-Mar	N3W1	2	57	100-120 cm	obsidian	F.Z.
Quesería	10-Mar	N3W1	2	58	100-120 cm	figurines	F.Z.
Quesería	10-Mar	N3W1	2	59	120-140 cm	sherds	Z.D.
Quesería	10-Mar	N3W1	2	60	120-140 cm	obsidian	Z.D.
Quesería	10-Mar	N5W2	3	4	0-20 cm	sherds	I.F.
Quesería	10-Mar	N5W2	3	5	0-20 cm	sherds	I.F.
Quesería	10-Mar	N5W2	3	6	0-20 cm	obsidian	I.F.
Quesería	10-Mar	N5W2	3	7	0-20 cm	figurines	I.F.
Quesería	10-Mar	N5W2	3	8	0-20 cm	bone	I.F.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Quesería	10-Mar	N5W2	3	9	20-40 cm	sherds	I.F.
Quesería	10-Mar	N5W2	3	10	20-40 cm	obsidian	I.F.
Quesería	10-Mar	N5W2	3	11	20-40 cm	figurines	I.F.
Quesería	10-Mar	N5W2	3	12	20-40 cm	bone/teeth	I.F.
Quesería	10-Mar	N5W2	3	13	20-40 cm	sherds	I.F.
Quesería	13-Mar	N5W2	3	14	20-40 cm	sherds	F.I.
Quesería	13-Mar	N5W2	3	15	0-40 cm	obsidian	F.I.
Quesería	13-Mar	N3W1	2	61	120-140 cm	sherds	Z.F.
Quesería	13-Mar	N3W1	2	62	120-140 cm	obsidian	Z.F.
Quesería	13-Mar	N3W1	2	63	120-140 cm	figurines	Z.F.
Quesería	13-Mar	N5W2	-	11	surface	obsidian	F.I.
Quesería	13-Mar	N3W1	2	64	140-150 cm	sherds	Z.F.
Quesería	14-Mar	N3E2	4-SW	1	0-30 cm	sherds	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4-SW	2	0-30 cm	figurines	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4-SE	1	0-30 cm	sherds	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4-NE	1	0-30 cm	sherds	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4	1	0-40 cm	sherds	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4	2	0-40 cm	obsidian	F.F.Z.I.J.
Quesería	14-Mar	N3E2	4	3	0-40 cm	figurines	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	4	40-60 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	5	40-60 cm	red pigment?	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	6	40-60 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	7	40-60 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	8	40-60 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	9	40-60 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	10	40-60 cm	obsidian	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	11	40-60 cm	figurines	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	12	40-60 cm	sherds	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	13	60-80 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	14	60-80 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	15	60-80 cm	radiocarbon	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	16	60-80 cm	sherds	F.F.Z.I.J.
Quesería	15-Mar	N3E2	4	17	60-80 cm	bone ?	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	18	60-80 cm	radiocarbon	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	19	60-80 cm	sherds	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	20	60-80 cm	figurines	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	21	60-80 cm	shell	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	22	80-100 cm	radiocarbon	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	23	80-100 cm	sherds	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	24	80-100 cm	obsidian	F.F.Z.I.J.
Quesería	16-Mar	N3E2	4	25	80-100 cm	shell	F.F.Z.I.J.
Quesería	17-Mar	N3E2	4	26	100-120 cm	radiocarbon	F.F.Z.I.J.
Quesería	17-Mar	N3E2	4	27	100-120 cm	sherds	F.F.Z.I.J.

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Quesería	17-Mar	N3E2	4	28	100-120 cm	shell	F.F.Z.I.J.
Quesería	17-Mar	N3E2	4	29	100-120 cm	earth	F.F.Z.I.J.
Quesería	17-Mar	N3E2	4	30	100-120 cm	obsidian	F.F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Itzímbaro	21-Mar	S5W1	-	1	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	2	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	3	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	4	surface	obsidian	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	5	surface	figurines	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	6	surface	mano	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W1	-	7	surface	stone axe	F.Z.I.J.D.
Itzímbaro	21-Mar	S5E1	-	1	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5E1	-	2	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5E1	-	3	surface	figurines	F.Z.I.J.D.
Itzímbaro	21-Mar	S5E1	-	4	surface	clay bead	F.Z.I.J.D.
Itzímbaro	21-Mar	S5E1	-	5	surface	worked stone?	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	1	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	2	surface	obsidian	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	3	surface	figurines	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	4	surface	metate	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	5	surface	malacate	F.Z.I.J.D.
Itzímbaro	21-Mar	S6W1	-	6	surface	worked stone?	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	1	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	2	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	3	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	4	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	5	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	6	surface	sherds	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	7	surface	obsidian	F.Z.I.J.D.
Itzímbaro	21-Mar	S5W2	-	8	surface	figurines	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1-NE	1	0-30 cm	sherds	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1-SE	1	0-30 cm	sherds	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1	1	0-20 cm	sherds	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1	2	0-20 cm	obsidian	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1	3	20-40 cm	sherds	F.Z.I.J.D.
Itzímbaro	22-Mar	S1E1	1	4	20-40 cm	obsidian	F.Z.I.J.D.
Itzímbaro	22-Mar	S4W1	-	1	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4W1	-	2	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4W1	-	3	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4W1	-	4	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4W1	-	5	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4W1	-	6	surface	obsidian	F.D.I.
Itzímbaro	22-Mar	S4W1	-	7	surface	figurines	F.D.I.
Itzímbaro	22-Mar	S4W1	-	8	surface	mano	F.D.I.
Itzímbaro	22-Mar	S4E1	-	1	surface	sherds	F.D.I.
Itzímbaro	22-Mar	S4E1	-	2	surface	obsidian	F.D.I.
Itzímbaro	22-Mar	S4E1	-	3	surface	figurines	F.D.I.

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Itzímbaro	22-Mar	S4E1	-	4	surface	mano/metate	F.D.I.
Itzímbaro	23-Mar	S3E1	-	1	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S3E1	-	2	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S3E1	-	3	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S3E1	-	4	surface	obsidian	F.Z.I.
Itzímbaro	23-Mar	S3E1	-	5	surface	metate	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	1	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	2	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	3	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	4	surface	obsidian	F.Z.I.
Itzímbaro	23-Mar	S3E1	-	6	surface	figurines	F.Z.I.
Itzímbaro	23-Mar	S1E1	1	5	40-60 cm	sherds	F.J.
Itzímbaro	23-Mar	S1E1	1	6	40-60 cm	obsidian	F.J.
Itzímbaro	23-Mar	S1E1	1	7	40-60 cm	figurines	F.J.
Itzímbaro	23-Mar	S1E1	1	8	40-60 cm	bone	F.J.
Itzímbaro	23-Mar	S1E1	1	9	40-60 cm	mano	F.J.
Itzímbaro	23-Mar	S2E1	-	5	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	6	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	7	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	8	surface	figurines	F.Z.I.
Itzímbaro	23-Mar	S2E2	-	1	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E1	-	9	surface	mano/metate	F.Z.I.
Itzímbaro	23-Mar	S2E2	-	2	surface	sherds	F.Z.I.
Itzímbaro	23-Mar	S2E2	-	3	surface	obsidian	F.Z.I.
Itzímbaro	23-Mar	S2E2	-	4	surface	figurines	F.Z.I.
Itzímbaro	23-Mar	S1E1	1	10	60-80 cm	sherds	F.J.
Itzímbaro	23-Mar	S1E1	1	11	60-80 cm	obsidian	F.J.
Itzímbaro	23-Mar	S2E1	-	10	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	1	12	60-80 cm	sherds	F.J.
Itzímbaro	24-Mar	S1E1	1	13	60-80 cm	obsidian	F.J.
Itzímbaro	24-Mar	S1E1	1	14	80-100 cm	sherds	F.J.
Itzímbaro	24-Mar	S1E1	1	15	80-100 cm	shell	F.J.
Itzímbaro	24-Mar	S1E1	-	1	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	2	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	3	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	4	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	5	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	6	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	7	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	8	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	9	surface	obsidian	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	10	surface	figurines	F.Z.I.
Itzímbaro	24-Mar	S1E1	-	11	surface	mano/metate	F.Z.I.

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Itzímbaro	24-Mar	S1E2	-	1	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E2	-	2	surface	sherds	F.Z.I.
Itzímbaro	24-Mar	S1E2	-	3	surface	obsidian	F.Z.I.
Itzímbaro	24-Mar	S1E2	-	4	surface	figurines	F.Z.I.
Itzímbaro	27-Mar	N3E1	2-NE	1	0-30 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2-SE	1	0-30 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2-SW	1	0-30 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2-NW	1	0-30 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2	1	0-20 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2	2	0-20 cm	obsidian	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2	3	20-40 cm	sherds	F.F.Z.I.J.
Itzímbaro	27-Mar	N3E1	2	4	20-40 cm	obsidian	F.F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	1	surface	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	2	surface	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	3	surface	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	4	surface	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	5	surface	obsidian	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	6	surface	figurines	F.Z.I.J.
Itzímbaro	28-Mar	N1E1	-	7	surface	special tool	F.Z.I.J.
Itzímbaro	28-Mar	N3E1	2	5	20-40 cm	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N3E1	2	6	40-60 cm	sherds	F.Z.I.J.
Itzímbaro	28-Mar	N3E1	2	7	40-60 cm	obsidian	F.Z.I.J.
Itzímbaro	30-Mar	N2E1	-	1	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2W1	-	1	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	1	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	2	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	3	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	4	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	5	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	6	surface	obsidian	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	7	surface	figurines	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	8	surface	mano/metate	F.Z.I.J.
Itzímbaro	30-Mar	N2E2	-	9	surface	special tool	F.Z.I.J.
Itzímbaro	30-Mar	N3E1	-	1	surface	sherds	F.Z.I.J.
Itzímbaro	30-Mar	N3E1	-	2	surface	obsidian	F.Z.I.J.
Itzímbaro	30-Mar	N3E1	-	3	surface	incised stone	F.Z.I.J.
Itzímbaro	31-Mar	N3E2	-	1	surface	sherds	D.Z.I.J.
Itzímbaro	31-Mar	N3E2	-	2	surface	sherds	D.Z.I.J.
Itzímbaro	31-Mar	N3E2	-	3	surface	obsidian	D.Z.I.J.
Itzímbaro	31-Mar	N3E2	-	4	surface	metate	D.Z.I.J.
Itzímbaro	31-Mar	N4E1	-	1	surface	sherds	D.Z.I.J.
Itzímbaro	31-Mar	N4E1	-	2	surface	sherds	D.Z.I.J.
Itzímbaro	31-Mar	N4E1	-	3	surface	obsidian	D.Z.I.J.

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Itzímbaro	31-Mar	N4E1	-	4	surface	figurines	D.Z.I.J.
Itzímbaro	31-Mar	N4E1	-	5	surface	metate	D.Z.I.J.
Itzímbaro	31-Mar	N4E1	-	6	surface	ceramic bead	D.Z.I.J.
Itzímbaro	31-Mar	N3E1	2	8	40-60 cm	sherds	D.Z.I.J.
Itzímbaro	31-Mar	N3E1	2	9	60-80 cm	radiocarbon	D.Z.I.J.
Itzímbaro	31-Mar	N3E1	2	10	60-80 cm	sherds	D.Z.I.J.
Itzímbaro	4-Apr	N3E1	2	11	60-80 cm	sherds	F.Z.I.J.
Itzímbaro	4-Apr	N3E1	2	12	60-80 cm	radiocarbon	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-NW	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-NW	2	0-30 cm	obsidian	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-SW	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-SW	2	0-30 cm	obsidian	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-SE	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	3-NE	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	-	10	surface	sherds	F.Z.I.J.
Itzímbaro	4-Apr	S2E1	-	11	surface	obsidian	F.Z.I.J.
Itzímbaro	5-Apr	N1E2	-	1	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	2	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	3	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	4	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	5	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	6	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	7	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	8	surface	obsidian	F.I.P.
Itzímbaro	5-Apr	N1E2	-	9	surface	figurines	F.I.P.
Itzímbaro	5-Apr	N1E2	-	10	surface	metate	F.I.P.
Itzímbaro	5-Apr	N1E2	-	11	surface	sherds	F.I.P.
Itzímbaro	5-Apr	N1E2	-	12	surface	sherds	F.I.P.
Itzímbaro	5-Apr	S2E1	3	1	0-40 cm	sherds	Z.J.
Itzímbaro	5-Apr	S2E1	3	2	0-40 cm	sherds	Z.J.
Itzímbaro	5-Apr	S2E1	3	3	0-40 cm	obsidian	Z.J.
Itzímbaro	5-Apr	S2E1	3	4	0-40 cm	figurines	Z.J.
Itzímbaro	5-Apr	S2E1	3	5	0-40 cm	worked stone?	Z.J.
Itzímbaro	5-Apr	S2E1	3	6	0-40 cm	shell	Z.J.
Itzímbaro	5-Apr	S2E1	3	7	0-40 cm	ceramic bead	Z.J.
Itzímbaro	6-Apr	S2E1	3	8	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	9	0-40 cm	obsidian	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	10	0-40 cm	shell	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	11	40-60 cm	sherds	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	12	40-60 cm	obsidian	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	13	40-60 cm	figurines	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	14	40-60 cm	shell	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	15	40-60 cm	stucco	F.Z.I.J.

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Itzímbaro	6-Apr	S2E1	3	16	60-80 cm	radiocarbon	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	17	60-80 cm	radiocarbon	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	18	60-80 cm	sherds	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	19	60-80 cm	obsidian	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	20	60-80 cm	shell	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	21	60-80 cm	stucco	F.Z.I.J.
Itzímbaro	6-Apr	S2E1	3	22	60-80 cm	ceramic bead	F.Z.I.J.
Itzímbaro	7-Apr	S2E1	3	23	60-80 cm	radiocarbon	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	24	60-80 cm	sherds	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	25	60-80 cm	obsidian	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	26	60-80 cm	figurines	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	27	60-80 cm	shell	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	28	60-80 cm	greenstone bead	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	29	60-80 cm	bead? Malacate?	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	30	80-100 cm	radiocarbon	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	31	80-100 cm	radiocarbon	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	32	80-100 cm	sherds	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	33	80-100 cm	obsidian	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	34	80-100 cm	figurines	Z.I.J.D.
Itzímbaro	7-Apr	S2E1	3	35	80-100 cm	shell	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	36	100-120 cm	radiocarbon	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	37	100-120 cm	sherds	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	38	100-120 cm	obsidian	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	39	100-120 cm	figurines	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	40	100-120 cm	shell	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	41	100-120 cm	bone	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	42	120-140 cm	radiocarbon	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	43	120-140 cm	radiocarbon	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	44	120-140 cm	sherds	Z.I.J.D.
Itzímbaro	11-Apr	S2E1	3	45	120-140 cm	obsidian	Z.I.J.D.
Itzímbaro	10-Apr	N4E2	-	1	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N4E2	-	2	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N4E2	-	3	surface	obsidian	Z.I.D.
Itzímbaro	10-Apr	N4E2	-	4	surface	figurines	Z.I.D.
Itzímbaro	10-Apr	N4E2	-	5	surface	mano/metate	Z.I.D.
Itzímbaro	10-Apr	N5E2	-	1	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N5E2	-	2	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N5E2	-	3	surface	obsidian	Z.I.D.
Itzímbaro	10-Apr	N5E2	-	4	surface	figurines	Z.I.D.
Itzímbaro	10-Apr	N5E2	-	5	surface	frag. de metate	Z.I.D.
Itzímbaro	10-Apr	N5E1	-	1	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N5E1	-	2	surface	obsidian	Z.I.D.
Itzímbaro	10-Apr	N3E2	-	5	surface	sherds	Z.I.D.

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Itzímbaro	10-Apr	N2E2	-	10	surface	sherds	Z.I.D.
Itzímbaro	10-Apr	N5E1	-	3	surface	frag. de metate	Z.I.D.
Itzímbaro	12-Apr	S2E1	3	46	120-140 cm	radiocarbon	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	47	120-140 cm	radiocarbon	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	48	120-140 cm	sherds	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	49	120-140 cm	obsidian	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	50	120-140 cm	figurines	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	51	120-140 cm	shell	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	52	120-140 cm	bone	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	53	140-160 cm	radiocarbon	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	54	140-160 cm	radiocarbon	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	55	140-160 cm	sherds	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	56	140-160 cm	obsidian	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	57	140-160 cm	figurines	Z.I.J.D.
Itzímbaro	12-Apr	S2E1	3	58	140-160 cm	shell	Z.I.J.D.
Itzímbaro	24-Apr	S2E1	3-walls	59	100-160 cm	sherds	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3-walls	60	100-160 cm	obsidian	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3-walls	61	100-160 cm	figurines	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3-walls	62	100-160 cm	shell	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	63	160-180 cm	radiocarbon	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	64	160-180 cm	radiocarbon	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	65	160-180 cm	radiocarbon	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	66	160-180 cm	sherds	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	67	160-180 cm	sherds	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	68	160-180 cm	obsidian	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	69	160-180 cm	figurines	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	70	160-180 cm	shell	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	71	160-180 cm	worked stone?	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	72	160-180 cm	hueso	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	73	160-180 cm	special tool	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	74	160-180 cm	bone needle?	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	75	180-200 cm	radiocarbon	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	76	180-200 cm	sherds	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	77	180-200 cm	obsidian	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	78	180-200 cm	figurines	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	79	180-200 cm	shell	F.Z.I.J.
Itzímbaro	24-Apr	S2E1	3	80	180-200 cm	hueso	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	81	180-200 cm	radiocarbon	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	82	180-200 cm	radiocarbon	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	83	180-200 cm	sherds	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	84	180-200 cm	obsidian	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	85	180-200 cm	figurines	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	86	180-200 cm	worked stone?	F.Z.I.J.

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Itzímbaro	25-Apr	S2E1	3	87	180-200 cm	ceramic ball	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	88	200-220 cm	radiocarbon	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	89	200-220 cm	radiocarbon	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	90	200-220 cm	sherds	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	91	200-220 cm	obsidian	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	92	200-220 cm	shell	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	93	200-220 cm	bone	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	94	200-220 cm	stone figurine?	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	95	200-220 cm	stone tool	F.Z.I.J.
Itzímbaro	25-Apr	S2E1	3	96	200-220 cm	incised sherd	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	97	200-220 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	98	200-220 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	99	200-220 cm	sherds	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	100	200-220 cm	obsidian	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	101	200-220 cm	figurines	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	102	200-220 cm	shell	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	103	200-220 cm	hueso	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	104	220-240 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	105	220-240 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	106	220-240 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	107	220-240 cm	radiocarbon	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	108	220-240 cm	sherds	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	109	220-240 cm	sherds	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	110	220-240 cm	obsidian	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	111	220-240 cm	shell	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	112	220-240 cm	hueso	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	113	220-240 cm	incised sherd	F.Z.I.J.
Itzímbaro	26-Apr	S2E1	3	114	220-240 cm	unknown material	F.Z.I.J.
Itzímbaro	27-Apr	S2E1	3	115	220-240 cm	sherds	F.Z.I.J.
Itzímbaro	27-Apr	S2E1	3	116	220-240 cm	obsidian	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-NE	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-SE	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-SW	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-NW	1	0-30 cm	sherds	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-NW	2	0-30 cm	figurines	F.Z.I.J.
Itzímbaro	27-Apr	S5W1	4-SW	2	0-30 cm	obsidian	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	1	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	2	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	3	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	4	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	5	0-40 cm	obsidian	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	6	0-40 cm	figurines	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	7	0-40 cm	shell	F.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Itzímbaro	28-Apr	S5W1	4	8	0-40 cm	bone	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	9	40-60 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	10	40-60 cm	sherds	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	11	40-60 cm	broken ollas	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	12	40-60 cm	broken ollas	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	13	40-60 cm	obsidian	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	14	40-60 cm	figurines	F.Z.I.J.
Itzímbaro	28-Apr	S5W1	4	15	40-60 cm	shell	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	16	0-40 cm	sherds	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	17	0-40 cm	obsidian	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	18	0-40 cm	figurines	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	19	40-60 cm	sherds	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	20	40-60 cm	broken ollas	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	21	40-60 cm	broken ollas	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	22	40-60 cm	broken ollas	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	23	40-60 cm	obsidian	F.Z.I.J.
Itzímbaro	1-May	S5W1	4-ext	24	40-60 cm	shell	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	25	60-80 cm	sherds	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	26	60-80 cm	obsidian	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	27	60-80 cm	figurines	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	28	60-80 cm	special tool	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	29	60-80 cm	shell	F.Z.I.J.
Itzímbaro	1-May	S5W1	4	30	60-80 cm	broken ollas	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	31	60-80 cm	sherds	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	32	60-80 cm	obsidian	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	33	60-80 cm	figurines	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	34	60-80 cm	shell	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	35	80-100 cm	radiocarbon	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	36	80-100 cm	broken ollas	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	37	80-100 cm	broken ollas	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	38	80-100 cm	broken ollas	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	39	80-100 cm	broken ollas	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	40	80-100 cm	sherds	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	41	80-100 cm	sherds	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	42	80-100 cm	sherds	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	43	80-100 cm	obsidian	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	44	80-100 cm	figurines	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	45	80-100 cm	stone tool	F.Z.I.J.
Itzímbaro	2-May	S5W1	4	46	80-100 cm	shell	F.Z.I.J.
Itzímbaro	3-May	S5W1	4-walls	47	80-100 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	48	100-120 cm	radiocarbon	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	49	100-120 cm	radiocarbon	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	50	100-120 cm	ash sample	D.Z.I.J.

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Itzímbaro	3-May	S5W1	4	51	100-120 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	52	100-120 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	53	100-120 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	54	100-120 cm	obsidian	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	55	100-120 cm	figurines	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	56	100-120 cm	shell	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	57	100-120 cm	bone	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	58	120-140 cm	radiocarbon	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	59	120-140 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	60	120-140 cm	sherds	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	61	120-140 cm	obsidian	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	62	120-140 cm	figurines	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	63	120-140 cm	shell	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	64	120-140 cm	bone	D.Z.I.J.
Itzímbaro	3-May	S5W1	4	65	120-140 cm	stone tool	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	66	120-140 cm	sherds	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	67	120-140 cm	obsidian	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	68	120-140 cm	figurines	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	69	120-140 cm	shell	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	70	140-160 cm	radiocarbon	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	71	140-160 cm	sherds	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	72	140-160 cm	sherds	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	73	140-160 cm	sherds	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	74	140-160 cm	obsidian	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	75	140-160 cm	shell	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	76	140-160 cm	special tool	D.Z.I.J.
Itzímbaro	4-May	S5W1	4	77	140-160 cm	figurines	D.Z.I.J.
Itzímbaro	4-May	S5W1	4-walls	78	100-160 cm	sherds	D.Z.I.J.
Itzímbaro	4-May	S5W1	4-walls	79	100-160 cm	shell	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	80	160-180 cm	sherds	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	81	160-180 cm	sherds	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	82	160-180 cm	obsidian	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	83	160-180 cm	figurines	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	84	160-180 cm	shell	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	85	160-180 cm	bone	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	86	180-200 cm	sherds	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	87	180-200 cm	obsidian	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	88	180-200 cm	shell	D.Z.I.J.
Itzímbaro	5-May	S5W1	4	89	180-200 cm	bone	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	90	180-200 cm	sherds	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	91	180-200 cm	figurines	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	92	180-200 cm	shell	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	93	180-200 cm	bone	D.Z.I.J.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Itzímbaro	6-May	S5W1	4	94	180-200 cm	broken olla	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	95	200-220 cm	radiocarbon	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	96	200-220 cm	radiocarbon	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	97	200-220 cm	sherds	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	98	200-220 cm	obsidian	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	99	200-220 cm	figurines	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	100	200-220 cm	shell	D.Z.I.J.
Itzímbaro	6-May	S5W1	4	101	200-220 cm	bone/teeth	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	102	220-240 cm	radiocarbon	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	103	220-240 cm	sherds	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	104	220-240 cm	figurines	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	105	220-240 cm	shell	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	106	220-240 cm	bone	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	107	240-260 cm	radiocarbon	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	108	240-260 cm	sherds	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	109	240-260 cm	sherds	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	110	240-260 cm	obsidian	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	111	240-260 cm	figurines	D.Z.I.J.
Itzímbaro	8-May	S5W1	4	112	240-260 cm	shell	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	113	240-260 cm	radiocarbon	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	114	240-260 cm	sherds	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	115	260-270 cm	radiocarbon	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	116	260-280 cm	sherds	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	117	260-280 cm	shell	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	118	260-280 cm	metate	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	119	280-300 cm	sherds	D.Z.I.J.
Itzímbaro	9-May	S5W1	4	120	20-300 cm	shell	D.Z.I.J.

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Mexiquito	25-May	S1E1	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	4	surface	sherds	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	5	surface	obsidian	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	6	surface	metate	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	7	surface	metate	I.J.R.P.E.
Mexiquito	25-May	S1E1	-	8	surface	stone tool	I.J.R.P.E.
Mexiquito	25-May	N1W1	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	25-May	N1W1	-	2	surface	obsidian	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	4	surface	obsidian	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	5	surface	malacate	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	6	surface	shell	I.J.R.P.E.
Mexiquito	26-May	S1W2	-	7	surface	polychrome sherd	I.J.R.P.E.
Mexiquito	26-May	S2W1	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	26-May	S2W1	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	26-May	S2W1	-	3	surface	obsidian	I.J.R.P.E.
Mexiquito	26-May	S2W1	-	4	surface	shell	I.J.R.P.E.
Mexiquito	26-May	S2W1	-	5	surface	metate	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	4	surface	obsidian	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	5	surface	mano/metate	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	6	surface	metate	I.J.R.P.E.
Mexiquito	27-May	S2W3	-	7	surface	stone tool	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	4	surface	obsidian	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	5	surface	metate	I.J.R.P.E.
Mexiquito	27-May	S1W4	-	6	surface	stone tool	I.J.R.P.E.
Mexiquito	29-May	N2W2	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	29-May	N2W2	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	29-May	N2W2	-	3	surface	obsidian	I.J.R.P.E.
Mexiquito	29-May	N2W2	-	4	surface	unknown material	I.J.R.P.E.
Mexiquito	29-May	N1W4	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	29-May	N1W4	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	29-May	N1W4	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	29-May	N1W4	-	4	surface	obsidian	I.J.R.P.E.

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Mexiquito	30-May	S2E3	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E3	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E3	-	3	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E3	-	4	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E3	-	5	surface	obsidian	I.J.R.P.E.
Mexiquito	30-May	S2E3	-	6	surface	mano	I.J.R.P.E.
Mexiquito	30-May	S1E4	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S1E4	-	2	surface	obsidian	I.J.R.P.E.
Mexiquito	30-May	S1E4	-	3	surface	copper ring	I.J.R.P.E.
Mexiquito	30-May	S2E5	-	1	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E5	-	2	surface	sherds	I.J.R.P.E.
Mexiquito	30-May	S2E5	-	3	surface	obsidian	I.J.R.P.E.
Mexiquito	30-May	S2E5	-	4	surface	malacate	I.J.R.P.E.
Mexiquito	30-May	S2E5	-	5	surface	stone tool	I.J.R.P.E.
Mexiquito	31-May	S1E8	1-NE	1	0-40 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1-SE	1	0-40 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1-SW	1	0-40 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1-NW	1	0-40 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	1	0-20 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	2	0-20 cm	obsidian	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	3	0-20 cm	figurine	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	4	20-40 cm	sherds	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	5	20-40 cm	obsidian	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	6	20-40 cm	figurine	I.J.R.P.E.
Mexiquito	31-May	S1E8	1	7	20-40 cm	shell	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	8	40-60 cm	sherds	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	9	40-60 cm	obsidian	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	10	40-60 cm	shell	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	11	40-60 cm	bone	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	12	40-60 cm	painted stucco	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	13	60-68 cm	sherds	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	14	60-68 cm	obsidian	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	15	60-68 cm	shell	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	16	60-68 cm	bone	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	17	68 cm	plaster floor	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	18	68-80 cm	sherds	I.J.R.P.E.
Mexiquito	1-Jun	S1E8	1	19	68-80 cm	obsidian	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	20	80-100 cm	radiocarbon	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	21	80-100 cm	radiocarbon	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	22	80-100 cm	radiocarbon	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	23	80-100 cm	sherds	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	24	80-100 cm	obsidian	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	25	80-100 cm	shell	I.J.R.P.E.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Mexiquito	2-Jun	S1E8	1	26	100-120 cm	sherds	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	27	100-120 cm	obsidian	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	28	100-120 cm	figurine	I.J.R.P.E.
Mexiquito	2-Jun	S1E8	1	29	100-120 cm	shell	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	30	120-140 cm	radiocarbon	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	31	120-140 cm	radiocarbon	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	32	120-140 cm	sherds	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	33	120-140 cm	obsidian	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	34	120-140 cm	shell	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	35	120-140 cm	bone	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	36	140-160 cm	sherds	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	37	140-160 cm	obsidian	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	38	140-160 cm	shell	I.J.R.P.E.
Mexiquito	3-Jun	S1E8	1	39	140-160 cm	bone	I.J.R.P.E.
Mexiquito	8-Jun	S1E8	1	40	140-160 cm	radiocarbon	J.P.
Mexiquito	8-Jun	S1E8	1	41	140-160 cm	radiocarbon	J.P.
Mexiquito	8-Jun	S1E8	1	42	140-160 cm	sherds	J.P.
Mexiquito	8-Jun	S1E8	1	43	140-160 cm	obsidian	J.P.
Mexiquito	8-Jun	S1E8	1	44	140-160 cm	shell	J.P.
Mexiquito	8-Jun	S1E8	1	45	140-160 cm	bone	J.P.
Mexiquito	8-Jun	S1E8	1	46	160-180 cm	sherds	J.P.
Mexiquito	8-Jun	S1E8	1	47	160-180 cm	obsidian	J.P.
Mexiquito	8-Jun	S1E8	1	48	160-180 cm	shell	J.P.
Mexiquito	8-Jun	S1E8	1	49	160-180 cm	bone	J.P.
Mexiquito	8-Jun	N1W1	2	1	0-20 cm	sherds	I.E.R.
Mexiquito	8-Jun	N1W1	2	2	20-40 cm	sherds	I.E.R.
Mexiquito	8-Jun	N1W1	2-NW	1	0-40 cm	sherds	I.E.R.
Mexiquito	8-Jun	N1W1	2-SW	1	0-40 cm	sherds	I.E.R.
Mexiquito	9-Jun	N1W1	2	3	40-60 cm	sherds	J.E.R.
Mexiquito	9-Jun	N1W1	2	4	40-60 cm	obsidian	J.E.R.
Mexiquito	9-Jun	N1W1	2	5	40-60 cm	bone	J.E.R.
Mexiquito	9-Jun	S1E8	1	50	160-180 cm	radiocarbon	I.P.
Mexiquito	9-Jun	S1E8	1	51	160-180 cm	sherds	I.P.
Mexiquito	9-Jun	S1E8	1	52	160-180 cm	obsidian	I.P.
Mexiquito	9-Jun	S1E8	1	53	160-180 cm	shell	I.P.
Mexiquito	9-Jun	S1E8	1	54	160-180 cm	bone	I.P.
Mexiquito	9-Jun	S1E8	1	55	180-200 cm	radiocarbon	J.P.I.
Mexiquito	9-Jun	S1E8	1	56	180-200 cm	sherds	J.P.I.
Mexiquito	9-Jun	S1E8	1	57	180-200 cm	obsidian	J.P.I.
Mexiquito	9-Jun	S1E8	1	58	180-200 cm	shell	J.P.I.
Mexiquito	9-Jun	S1E8	1	59	180-200 cm	bone	J.P.I.
Mexiquito	9-Jun	S1E8	1	60	200-220 cm	sherds	J.P.
Mexiquito	9-Jun	S1E8	1	61	200-220 cm	obsidian	J.P.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Mexiquito	9-Jun	S1E8	1	62	200-220 cm	shell	J.P.
Mexiquito	9-Jun	N1W1	2	6	60-80 cm	sherds	I.E.R.
Mexiquito	9-Jun	N1W1	2	7	60-80 cm	obsidian	I.E.R.
Mexiquito	9-Jun	N1W1	2	8	60-80 cm	shell	I.E.R.
Mexiquito	9-Jun	N1W1	2	9	60-80 cm	bone	I.E.R.
Mexiquito	10-Jun	N1W1	2	10	60-80 cm	sherds	J.E.R.
Mexiquito	10-Jun	N1W1	2	11	60-80 cm	obsidian	J.E.R.
Mexiquito	10-Jun	N1W1	2	12	80-100 cm	radiocarbon	J.E.R.
Mexiquito	10-Jun	N1W1	2	13	80-100 cm	sherds	J.E.R.I.
Mexiquito	10-Jun	N1W1	2	14	80-100 cm	obsidian	J.E.R.I.
Mexiquito	10-Jun	N1W1	2	15	80-100 cm	shell	J.E.R.I.
Mexiquito	10-Jun	S1E8	1	63	200-220 cm	radiocarbon	I.P.
Mexiquito	10-Jun	S1E8	1	64	200-220 cm	sherds	I.P.
Mexiquito	10-Jun	S1E8	1	65	200-220 cm	obsidian	I.P.
Mexiquito	10-Jun	S1E8	1	66	200-220 cm	shell	I.P.
Mexiquito	10-Jun	S1E8	1-east wall	67	150-220 cm	sherds	I.P.
Mexiquito	10-Jun	S1E8	1	68	213-221cm	intact floor piece	J.I.P.
Mexiquito	10-Jun	S1E8	1	69	213-221cm	sherds	J.P.
Mexiquito	10-Jun	S1E8	1	70	215-222 cm	sherds (below floor)	J.P.
Mexiquito	10-Jun	S1E8	1	71	220-240 cm	obsidian	J.P.
Mexiquito	10-Jun	S1E8	1	72	220-240 cm	shell	J.P.
Mexiquito	10-Jun	S1E8	1	73	220-240 cm	bone	J.P.
Mexiquito	10-Jun	S1E8	1	74	220-240 cm	sherds	J.P.
Mexiquito	10-Jun	N1W1	2	16	80-100 cm	radiocarbon	I.E.R.
Mexiquito	10-Jun	N1W1	2	17	80-100 cm	sherds	I.E.R.
Mexiquito	11-Jun	N1W1	2	18	80-100 cm	sherds	I.J.R.P.E.
Mexiquito	11-Jun	N1W1	2	19	80-100 cm	obsidian	I.J.R.P.E.
Mexiquito	11-Jun	N1W1	2	20	80-100 cm	bone	I.J.R.P.E.
Mexiquito	11-Jun	N1W1	2	21	100-120 cm	sherds	I.E.R.
Mexiquito	11-Jun	N1W1	2	22	100-120 cm	shell	I.E.R.
Mexiquito	11-Jun	N1W1	2	23	100-120 cm	obsidian	I.E.R.
Mexiquito	11-Jun	N1W1	2	24	100-120 cm	bone and teeth	I.E.R.
Mexiquito	11-Jun	N1W1	2	25	100-120 cm	malacate	I.J.R.P.E.
Mexiquito	14-Jun	N1W1	2	26	100-120 cm	sherds	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	27	100-120 cm	bone and teeth	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	28	100-120 cm	shell	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	29	120-140 cm	radiocarbon	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	30	120-140 cm	sherds	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	31	120-140 cm	obsidian	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	32	120-140 cm	bone	J.P.R.E.
Mexiquito	14-Jun	N1W1	2	33	120-140 cm	shell	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	1	0-20 cm	sherds	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	2	0-20 cm	obsidian	J.P.R.E.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Mexiquito	15-Jun	S1W2	3	3	20-40 cm	sherds	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	4	20-40 cm	obsidian	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	5	40-60 cm	sherds	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	6	40-60 cm	obsidian	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	7	40-60 cm	shell	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	8	40-60 cm	bone	J.P.R.E.
Mexiquito	15-Jun	S1W2	3	9	40-60 cm	unknown material	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	10	60-80 cm	sherds	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	11	60-80 cm	obsidian	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	12	60-80 cm	figurine	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	13	60-80 cm	shell	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	14	60-80 cm	bone	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	15	60-80 cm	malacate	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	16	80-100 cm	radiocarbon	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	17	80-100 cm	radiocarbon	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	18	80-100 cm	radiocarbon	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	19	80-100 cm	radiocarbon	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	20	80-100 cm	sherds	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	21	80-100 cm	obsidian	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	22	80-100 cm	shell	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	23	80-100 cm	bone	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	24	100-120 cm	radiocarbon	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	25	100-120 cm	sherds	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	26	100-120 cm	obsidian	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	27	100-120 cm	shell	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	28	100-120 cm	bone	J.P.R.E.
Mexiquito	16-Jun	S1W2	3	29	100-120 cm	mano	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	30	100-120 cm	radiocarbon	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	31	100-120 cm	sherds	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	32	100-120 cm	obsidian	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	33	100-120 cm	shell	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	34	120-140 cm	radiocarbon	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	35	120-140 cm	radiocarbon	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	36	120-140 cm	sherds	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	37	120-140 cm	obsidian	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	38	120-140 cm	shell	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	39	120-140 cm	hardened earth	J.P.R.E.
Mexiquito	17-Jun	S1W2	3-west wall	40	80-140 cm	sherds	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	41	140-160 cm	sherds	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	42	140-160 cm	obsidian	J.P.R.E.
Mexiquito	17-Jun	S1W2	3	43	140-160 cm	shell	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	44	160-180 cm	radiocarbon	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	45	160-180 cm	radiocarbon	J.P.R.E.

Site	Date	Sector	Pit	Bag	Level	Material	Personnel
Mexiquito	18-Jun	S1W2	3	46	160-180 cm	sherds	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	47	160-180 cm	obsidian	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	48	160-180 cm	shell	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	49	160-180 cm	bone	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	50	180-200 cm	radiocarbon	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	51	180-200 cm	sherds	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	52	180-200 cm	obsidian	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	53	180-200 cm	shell	J.P.R.E.
Mexiquito	18-Jun	S1W2	3	54	180-200 cm	stucco floor	J.P.R.E.
Mexiquito	19-Jun	S1W2	3	55	200-220 cm	sherds	J.P.R.E.
Mexiquito	19-Jun	S1W2	3	56	200-220 cm	obsidian	J.P.R.E.
Mexiquito	19-Jun	S1W2	3	57	200-220 cm	shell	J.P.R.E.
Mexiquito	19-Jun	S1W2	3	58	220-230 cm	radiocarbon	J.P.R.E.
Mexiquito	19-Jun	S1W2	3	59	220-230 cm	sherds	J.P.R.E.
Mexiquito	19-Jun	S1W1	-	1	surface	worked stone	J.P.R.E.
Mexiquito	23-Jun	S1E6	-	1	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E6	-	2	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E6	-	3	surface	obsidian	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	1	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	2	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	3	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	4	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	5	surface	obsidian	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	6	surface	stone tool	J.P.R.E.
Mexiquito	23-Jun	N1E7	-	7	surface	olla fragment	J.P.R.E.
Mexiquito	23-Jun	S2E7	-	1	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S2E7	-	2	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S2E7	-	3	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S2E7	-	4	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S2E7	-	5	surface	obsidian	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	1	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	2	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	3	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	4	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	5	surface	sherds	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	6	surface	obsidian	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	7	surface	mano/metate	J.P.R.E.
Mexiquito	23-Jun	S1E8	-	8	surface	stone tool	J.P.R.E.

Ceramic Analysis - La Queseria

Quesería

Quesería

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S1W1	-	1	SURFACE	12	0	1	0	0	5	1	1	1	4	4	0	0	0	0	0	1 IP, 2 LARGE ATTACH	1	0
S1W1	-	2	SURFACE	6	2	1	4	3	3	1	2	0	2	7	1	0	0	0	0		0	1
S1W1	-	6	SURFACE	5	0	1	3	2	2	2	2	1	1	2	0	0	0	0	0	1 POSSIBLE HOLLOW ATTACH SITE	1	0
S1W1	-	9	SURFACE	10	0	0	1	5	7	0	0	0	5	0	0	1	1	0	0	1 TAB FOOT, 1 MOD-ERN OLLA	0	0
S1W1	-	10	SURFACE	14	4	1	3	6	7	1	2	0	7	1	1	0	2	0	0	1 SQUARE BOTTOM FOOT, 1 WHOLE LOOP	1	0
S1W1	-	11	SURFACE	11	2	1	2	4	2	2	1	1	1	1	0	0	2	0	0	1 WHOLE LOOP, 1 HOLLOW APPEND	0	0
S1W1	-	12	SURFACE	18	4	2	3	2	0	3	2	0	2	4	0	1	0	0	1	1 ALMOST WHOLE LOOP	3	0
S1W1	-	14	SURFACE	18	7	2	6	6	5	4	4	3	4	4	0	3	1	0	0	1 NUB	4	0
S1W1	-	15	SURFACE	21	5	5	2	2	3	2	3	1	2	0	0	1	0	0	0	1 IP	4	1
S1W1	-	16	SURFACE	11	3	2	6	4	3	3	2	0	3	7	1	2	0	0	0		1	0
N1W1	-	6	SURFACE	21	3	2	1	3	2	0	2	0	3	7	2	0	1	0	0	1 TAB	1	2
N1W1	-	7	SURFACE	5	2	4	3	1	3	3	3	2	2	3	2	0	1	0	0	1 LARGE TRIANGLE FOOT	1	0
N1W1	-	8	SURFACE	13	2	4	3	6	3	1	1	2	4	2	1	1	0	0	0	1 STRAIGHT CAJETE WITH WIDE RIM, 1 TOOL	1	1
N1W1	-	9	SURFACE	10	5	3	3	3	5	2	4	0	6	7	1	0	2	0	0	1 TUBE, 2 WHOLE LOOPS	2	0
N1W1	-	11	SURFACE	14	6	4	4	5	2	6	3	1	3	3	2	0	3	0	0	1 CYLINDER FOOT, 1 MAMI-FORM, 1 BRO-KEN TRIANGLE FOOT	3	1
N1W1	-	12	SURFACE	10	5	2	6	4	3	3	4	1	0	1	0	0	0	0	0		1	2
N1W1	-	13	SURFACE	17	2	4	1	9	6	6	2	1	7	4	1	0	1	0	0	1 WHOLE LOOP	0	3
N1W1	-	14	SURFACE	20	4	3	1	4	2	2	2	2	4	1	2	0	1	0	0	1 HOLLOW APPEND.	1	0
N1W1	-	15	SURFACE	2	1	2	1	4	4	0	2	0	2	1	0	0	0	0	0		5	0
S1W2	-	2	SURFACE	MISSING BAG																		
S1W2	-	3	SURFACE	22	8	2	5	6	3	3	5	0	5	2	0	0	0	0	0		3	1
S1W2	-	4	SURFACE	11	3	4	1	3	1	2	0	1	2	1	0	1	0	0	0		1	4
S1W2	-	7	SURFACE	19	4	2	0	8	2	2	2	0	3	1	0	2	0	0	0		3	1
S1W2	-	8	SURFACE	25	1	4	4	8	4	3	1	2	2	2	0	1	1	0	0	1 SMALL TAB	0	0
S1W2	-	9	SURFACE	19	2	2	2	5	3	3	0	0	1	3	0	0	0	0	0		3	2
S1W2	-	13	SURFACE	11	6	3	3	4	4	4	2	0	0	6	3	0	0	0	0		0	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S1W2	-	16	SURFACE	13	4	2	1	2	0	1	0	1	2	0	0	0	1	0	0	1 NUB, 1 TUBE WITH DRILLED HOLE	1	2
S1W2/ S1W1	-	17	SURFACE	18	8	5	2	3	2	2	1	1	1	3	0	0	1	0	0	1 WHOLE LOOP	0	0
S1W2	-	18	SURFACE	17	4	4	1	5	7	0	4	1	1	0	0	0	1	0	0	1 SMALL TAB	3	4
S1W2	-	19	SURFACE	27	7	7	4	7	0	1	2	0	2	9	0	0	1	0	0	1 TRIANGLE FOOT	2	3
S2W1	-	1	SURFACE	5	0	1	5	6	5	2	3	0	11	14	0	0	0	0	0	1 LARGE LOOP	0	0
S2W1	-	3	SURFACE	15	5	1	8	13	5	3	1	2	6	15	0	3	0	0	0		3	2
S1W2	-	20	SURFACE	32	7	3	3	7	4	3	1	2	5	4	1	0	0	0	0		5	5
S1W2	-	21	SURFACE	24	12	7	5	2	8	2	4	0	3	7	0	0	1	0	0	1 SMALL TRIANGLE FOOT	4	0
S1W2	-	22	SURFACE	15	2	3	5	9	6	1	2	2	3	3	2	0	4	0	0	1TRI FOOT, 1 PARTIAL TAB/TRI, 2 HOLLOW FEET	1	2
S1W2	-	25	SURFACE	43	10	4	3	8	7	4	2	3	5	4	0	0	1	0	0	1 TAB	4	2
S1W2	-	26	SURFACE	22	5	6	4	4	7	4	6	2	3	3	2	1	1	0	0	1TRIANGLE FOOT, 1 INCENSARIO?	1	0
S1W2	-	30	SURFACE	25	5	7	3	6	3	1	2	0	1	2	0	0	1	0	1	1 NUB, 1 IP	5	5
S1W2	-	31	SURFACE	29	7	4	4	8	6	2	4	2	7	7	2	0	1	0	0	1 NUB	3	0
S2W2	-	2	SURFACE	13	5	6	4	4	4	3	3	2	12	8	3	1	2	0	0	2 TABS, 2 UNKNOWN	1	0
S2W2	-	5	SURFACE	3	1	0	4	4	5	1	0	1	6	5	1	1	1	0	0	1 TAB FOOT, 1 PLATE	0	0
S1W3	-	1	SURFACE	6	3	1	1	2	1	3	3	0	1	2	0	0	0	0	0		1	1
S1W3	-	2	SURFACE	6	4	4	3	3	3	2	2	1	1	1	2	0	1	1	0	1 NUB	0	0
S1W3	-	3	SURFACE	9	1	3	3	6	1	0	4	3	1	1	0	0	2	0	0	1 NUB, 1 MINI WHOLE LOOP, 1 DRILL HOLE	1	2
S1W3	-	4	SURFACE	13	4	1	1	6	6	2	2	1	0	3	0	0	1	0	0	1 TAB FOOT	0	1
S1W3	-	9	SURFACE	22	3	3	7	6	5	1	1	1	2	5	0	0	0	0	0		1	2
S1W3	-	10	SURFACE	28	8	0	3	10	7	1	3	0	4	2	0	0	1	0	0	1 PSEUDO LOOP	4	2
S1W3	-	11	SURFACE	22	7	3	0	8	1	1	1	1	5	5	1	0	0	0	0		2	2
S1W3	-	12	SURFACE	18	3	8	3	4	1	2	2	1	6	5	2	1	1	0	0	1 TAB FOOT	2	1
S1W3	-	13	SURFACE	19	1	6	3	4	3	5	2	0	1	1	0	0	1	0	0	1 NUB	1	0
S1W3	-	14	SURFACE	23	5	3	1	2	3	3	4	1	2	3	0	0	1	0	0	1 TAB, 1 UNKNOWN	3	2
N1W3	-	5	SURFACE	12	1	1	1	4	1	0	3	2	6	4	1	0	1	0	0	1 NUB	3	1
N1W3	-	6	SURFACE	15	0	4	1	2	3	0	1	0	2	4	0	0	1	0	0	1 ATTACH FOR TAB	0	0
N1W3	-	7	SURFACE	12	2	2	2	4	1	0	3	2	4	2	2	0	1	0	1	1 SHORT CYLINDER	1	1
N1W3	-	8	SURFACE	4	3	0	1	6	1	2	1	1	5	5	0	0	0	0	0	2 UNKNOWN	0	0
N1W3	-	9	SURFACE	18	5	4	3	3	11	1	1	3	3	5	1	0	2	0	0	1 TAB, 1 TRIANGLE FOOT	1	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N1W3	-	10	SURFACE	16	1	0	4	4	0	1	0	0	3	1	1	0	3	0	0	2 TRIANGLE FEET, 1 TAB	1	2
N1W3	-	11	SURFACE	8	2	2	3	2	3	0	0	2	5	1	1	0	1	0	0	1 ATTACH FOR TAB	0	0
N1W3	-	12	SURFACE	26	6	3	2	6	2	0	6	0	4	2	1	1	5	0	0	2 NUB, 3 TAB	6	3
N1W3	-	13	SURFACE	12	4	2	2	6	1	0	0	1	1	0	1	0	2	0	0	1 SMALL TRIANGLE FOOT, 1 NUB	2	1
N1W3	-	14	SURFACE	15	9	6	1	1	4	3	4	1	3	2	1	0	3	0	1	1 IP, 1 TAB, 2 NUB	2	1
N1W3	-	15	SURFACE	18	3	5	5	7	4	1	3	1	4	7	1	0	4	0	0	1 WHOLE LOOP, 1 NUB, 1 TRIANGLE FOOT, 1 TAB	2	0
N1W3	-	16	SURFACE	16	5	4	2	6	3	2	1	2	1	4	2	0	0	0	0	1 TUBE?	6	0
S1W3	-	16	SURFACE	6	6	2	0	4	1	1	2	0	1	2	0	0	0	0	0	HEMI CAJETE WITH ATTACH	1	0
S1W3	-	17	SURFACE	26	10	5	4	10	3	1	3	1	1	8	3	1	3	0	0	3 TABS	4	2
N1W2	-	1	SURFACE	21	1	3	2	2	8	3	0	2	5	6	0	0	1	0	0	1 SMALL TAB	0	0
N1W2	-	2	SURFACE	18	2	1	4	7	2	2	1	3	6	0	1	0	1	0	0	1 NUB	0	3
N1W2		2	SURFACE	16	1	6	1	8	6	1	1	2	2	4	1	1	2	0	0	1 NUB, 1 MINI LOOP	1	0
N1W2	-	10	SURFACE	22	5	5	8	14	12	6	4	1	7	8	0	0	0	0	0	2 OVAL LOOP	5	1
N1W2	-	11	SURFACE	23	2	6	1	7	2	4	0	0	0	8	0	1	2	0	0	2 TABS	1	1
N1W2	-	12	SURFACE	47	7	5	2	8	3	2	2	1	4	4	0	0	2	0	0	2 SMALL NUBS	2	2
N1W2	-	13	SURFACE	19	3	3	5	8	6	1	2	0	4	4	0	0	3	0	0	2 TRIANGLE FEET, 1 HOLLOW GLOBULAR	1	2
N1W2	-	14	SURFACE	18	5	2	4	6	8	0	1	1	6	7	1	0	2	0	0	1 HOLLOW GLOB-ULAR, 1 ELONGATE NUB	2	0
N1W2	-	19	SURFACE	31	9	1	1	13	1	1	2	4	1	0	2	0	1	0	0	1 NUB	2	1
N1W2	-	20	SURFACE	30	9	1	2	2	6	1	4	0	1	2	1	2	0	0	0		4	1
N1W2	-	21	SURFACE	11	1	0	2	4	6	1	1	0	2	3	0	1	1	0	0	1 NUB, 1 BASE IP	0	0
N2W2	-	1	SURFACE	MISSING BAG																		
N2W2	-	2	SURFACE	14	1	1	2	5	4	3	0	1	4	4	3	1	0	0	0		1	0
N2W2	-	3	SURFACE	12	5	2	2	3	4	1	1	0	0	3	1	0	0	0	0		0	0
N1W1	-	20	SURFACE	11	3	3	1	8	2	2	1	1	3	6	0	2	2	0	0	1 NUB, 1 TAB, 1 TUBE	2	1
N1W1	-	21	SURFACE	MISSING BAG																		
N2W3	-	1	SURFACE	3	2	0	3	4	3	0	1	0	2	6	2	0	4	0	0	2 TRIANGLE FEET, 2 NUBS	1	2
N2W3	-	2	SURFACE	6	1	0	1	5	2	4	0	0	3	7	1	0	1	0	0	1 TAB	1	0
N2W3	-	5	SURFACE	14	3	0	6	4	9	1	1	1	6	6	1	0	1	0	0	1 NUB	0	1

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N2W3	-	6	SURFACE	5	1	0	2	1	5	1	3	0	4	8	0	0	3	0	0	3 NUBS	0	0
N3W2	-	1	SURFACE	9	2	0	5	0	9	0	2	0	2	7	2	0	0	0	0	1 POSSIBLE MODERN HALF LOOP	0	0
N3W2	-	2	SURFACE	7	0	0	6	10	10	2	1	0	5	4	0	1	0	0	1	2 UNKNOWN	0	0
N3W2	-	6	SURFACE	9	3	0	4	6	11	1	1	3	5	9	2	0	1	0	1	1 BROKEN TAB/TRI FOOT	0	0
N3W2	-	7	SURFACE	4	3	0	3	8	20	4	1	0	11	10	0	0	2	0	1	1 CYLINDER FOOT, 1 CYLINDER	0	0
N3W2	-	8	SURFACE	8	3	3	6	2	10	3	5	2	7	6	2	0	0	0	0		0	1
N2W1	-	1	SURFACE	9	2	1	9	6	15	1	1	1	4	3	2	0	1	0	0	1 NUB	1	0
N2W1	-	2/1	SURFACE	8	1	2	1	7	7	3	3	1	6	5	1	0	1	0	1	1 CONICAL FOOT	1	0
N2W1	-	3	SURFACE	13	4	2	3	6	4	6	2	1	5	4	1	0	1	0	0	1 TAB	2	0
N2W1	-	4	SURFACE	8	3	3	2	8	3	2	1	1	3	3	4	0	0	0	1		1	1
N2W1	-	5	SURFACE	6	4	8	4	2	2	2	2	0	4	4	2	0	2	0	0	1 NUB, 1 WHOLE LOOP	2	2
N2W1	-	6	SURFACE	11	6	6	5	3	8	1	0	2	6	3	1	0	1	1	0	1 SMALL NUB	0	3
N2W1	-	9	SURFACE	18	5	4	1	5	11	2	3	3	3	4	1	0	1	1	0	1 TRIANGLE FOOT	0	2
N2W1	-	10	SURFACE	13	4	4	0	5	2	1	1	0	1	3	0	0	1	0	0	1 HOLLOW GLOB-ULAR	1	0
N2W1	-	12	SURFACE	18	6	3	3	3	7	5	4	1	3	2	1	0	0	0	0	1 UNKNOWN	1	1
N2W1	-	13	SURFACE	36	7	5	3	7	3	4	5	1	0	2	1	0	2	0	0	1 WHOLE LOOP, 1 CONICAL	2	0
N2W1	-	14	SURFACE	17	5	2	7	10	7	4	1	3	3	2	1	0	1	0	0		7	0
N2W1	-	15	SURFACE	26	7	2	3	6	6	3	1	1	4	6	2	0	0	0	0	1 CAJETE WITH BLACK RIM	1	0
N2W1	-	16	SURFACE	23	5	7	2	9	5	4	2	1	1	0	1	0	0	0	0	1 UNKNOWN	1	1
N2W1	-	17	SURFACE	16	5	4	4	4	4	2	1	2	1	7	2	0	1	0	0	1 WHOLE LOOP	3	0
N2W1	-	18	SURFACE	23	5	5	1	5	4	3	4	1	2	3	1	0	0	0	0		3	0
N2W1	-	23	SURFACE	21	3	5	3	4	6	4	2	2	7	7	2	0	2	0	0	1 WHOLE LOOP, 1 NUB	2	4
N2W1	-	24	SURFACE	12	2	1	3	6	2	3	2	3	2	6	1	0	0	0	0	1 TECOMATE WITH SHOULDER	2	1
N2W1	-	25	SURFACE	2	1	1	2	4	5	2	0	2	4	3	0	0	0	0	0		0	1
N2W1	-	26	SURFACE	15	2	3	6	6	3	5	1	3	4	7	1	0	0	0	0	1 RAISED INCISED SHERD	1	1
N3W1	-	1	SURFACE	16	3	7	0	1	11	4	4	0	2	2	0	1	0	0	0		2	0
N3W1	-	2	SURFACE	11	5	6	4	4	4	1	1	2	1	7	4	0	1	0	0	1 WHOLE LOOP	0	2
N3W1	-	4	SURFACE	16	7	2	5	4	5	1	3	0	0	3	2	0	2	0	1	1 LARGE TRIANGLE FOOT, 1 HOLLOW ATTACH	2	0

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N3W1	-	5	SURFACE	17	4	2	3	6	12	3	3	1	5	2	3	1	0	0	0		0	0
N3W1	-	6	SURFACE	MISSING BAG																		
N3W1	-	7	SURFACE	15	3	2	2	10	8	3	2	1	3	3	0	1	2	0	0	2 HOLLOW APPEND	0	1
N3W1	-	8	SURFACE	11	3	5	4	4	4	2	1	2	1	9	2	0	0	0	0		1	1
N3W1	-	9	SURFACE	13	6	7	5	8	10	4	2	1	2	8	2	0	1	0	0	1 TRIANGLE FOOT	1	0
N3W1	-	10	SURFACE	13	3	3	4	4	6	5	1	0	2	4	1	0	0	0	0		1	1
N3W1	-	14	SURFACE	11	4	4	2	4	11	4	0	0	1	3	1	0	1	0	0	1 NUB	2	0
N3W1	-	15	SURFACE	9	1	6	5	7	12	4	0	0	9	2	2	1	1	0	1	1 WHOLE LOOP	0	1
N3W1	-	16	SURFACE	8	1	6	6	7	10	4	3	1	9	7	1	0	2	0	0	1 LONG CONICAL, 1 BROKEN CYLINDER	0	1
N3W1	-	17	SURFACE	12	2	4	5	8	14	4	2	0	5	14	1	0	2	0	1	1 LARGE TAB, 1 HOLLOW APPEND.	1	4
N4W1	-	1	SURFACE	10	0	3	8	9	12	10	0	0	8	11	1	1	1	0	0	1 CYLINDER	1	0
N4W1	-	2	SURFACE	10	1	3	6	6	17	4	0	0	13	14	5	0	2	0	0	2 WHOLE LOOPS, SEVERAL LARGE LOOPS, 3 UNKNOWN	1	0
N4W1	-	3	SURFACE	9	2	5	9	10	10	4	0	0	12	7	3	0	0	0	1		0	1
N4W1	-	4	SURFACE	7	8	1	4	7	13	3	2	0	5	7	3	2	2	0	1	1 CYLINDER, 1 CYLINDER FOOT	2	0
N4W1	-	7	SURFACE	6	3	1	10	8	10	4	2	0	14	20	4	0	1	0	2	1 CONICAL FOOT	0	1
N4W1	-	8	SURFACE	2	2	1	10	4	6	2	0	0	14	13	3	2	2	0	0	2 CONICAL FOOT, 1 TUBE, 2 POSSIBLE ANNULAR BASES	0	2
N4W1	-	9	SURFACE	4	1	0	4	9	5	3	0	0	15	7	3	0	0	0	4		0	2
N4W1	-	10	SURFACE	15	3	3	2	3	3	7	2	1	15	12	2	0	0	0	0	2 STRAIGHT VASO WITH RIM	1	0
N4W1	-	11	SURFACE	7	0	1	6	16	7	3	1	1	10	20	2	0	1	0	1	1 NUB	0	5
N4W1	-	12	SURFACE	8	2	1	3	4	8	4	1	1	12	9	4	0	2	0	0	1 HOLLOW ATTACH, 1 CONICAL, 1 NUB	1	1
N4W1	-	13	SURFACE	8	1	0	4	2	4	5	0	0	12	3	2	0	0	0	0	1 LARGE ATTACH	0	0
N4W1	-	14	SURFACE	5	5	5	7	4	12	0	1	1	7	23	4	0	0	0	0	1 UNUSUAL PART LOOP	0	2
N4W1	-	15	SURFACE	6	2	2	4	8	9	4	0	0	14	16	3	0	2	0	0	1 NUB, 1 LONG CYLINDER	1	2
N1E1	-	1	SURFACE	3	0	0	10	3	4	2	1	0	21	12	2	0	0	0	0		1	0
N1E1	-	2	SURFACE	3	0	0	4	3	6	6	0	2	11	11	3	0	2	0	0	1WHOLE LOOP, 1 TAB	0	1
N1E1	-	3	SURFACE	6	0	0	7	1	6	1	1	1	9	11	3	0	1	0	0	1 NUB	0	0
N2E1	-	1	SURFACE	8	4	2	3	5	7	3	2	1	5	4	3	0	0	0	0		0	0
N2E1	-	2	SURFACE	3	1	0	2	11	3	3	1	1	9	9	2	0	1	0	0	1 WHOLE LOOP	0	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N2E1	-	3	surface	6	0	1	3	4	2	2	1	3	18	7	1	0	1	0	0	1 elongate nub	0	0
N1E2	-	1	surface	7	1	1	3	6	5	3	0	0	8	6	3	0	0	0	1		0	0
N1E2	-	2	surface	3	0	2	7	9	5	2	1	0	10	9	0	0	3	0	0	1 nub, 1 tab, 1 con-ical foot	0	1
N1E2	-	6	surface	4	2	1	3	4	2	1	2	0	20	13	6	0	2	0	0	1 whole loop, 1 cylinder	0	0
N1E2	-	7	surface	5	1	1	2	2	2	1	0	1	8	7	3	1	1	0	0	1 tab base	0	0
N1E2	-	8	surface	5	0	0	1	5	2	7	1	1	17	15	2	0	1	0	0	1 tab foot	0	0
N2E2	-	1	surface	3	1	0	6	4	5	4	1	1	8	8	5	0	1	0	0	1 small fat tab	2	0
N3E1	-	1	surface	19	4	6	14	10	2	3	1	2	5	3	0	0	0	0	0	1 IP	1	2
N3E1	-	2	surface	27	6	4	5	11	4	2	2	1	7	4	0	0	2	0	0	1 small cylinder	4	1
N4E1	-	1	surface	9	1	1	6	6	5	3	2	0	6	2	1	0	1	0	0	1 conical foot	0	0
N4E1	-	2	surface	8	4	1	7	5	4	4	4	3	5	2	2	1	3	0	0	1 whole loop, 1 nub, 1 conical	0	0
N4E1	-	3	surface	9	4	3	6	6	4	2	3	0	2	1	1	0	1	0	0	1 conical foot	2	0
N3E2	-	1	surface	12	1	2	3	9	3	0	4	1	7	1	0	0	1	0	0	1 malacate?, 1 large nub	2	1
N3E2	-	5	surface	9	0	1	4	5	5	4	2	2	3	3	3	0	0	0	0		2	1
N4E2	-	1	surface	13	3	0	11	13	7	2	2	1	10	13	0	0	1	1	0	1 nub	1	0
N4E2	-	4	surface	8	0	0	4	4	6	1	0	0	4	4	0	1	1	0	0	1 nub	2	0
N4E2	-	5	surface	13	1	1	4	4	9	5	2	1	7	5	0	0	2	0	0	2 triangle feet	0	0
N4E2	-	6	surface	9	1	0	3	6	9	2	1	1	14	12	0	0	2	0	0	1 whole loop, 1 at-tach w/ R.D. band	0	1
N4E2	-	7	surface	9	0	0	4	6	7	2	0	1	17	16	0	0	5	0	0	3 tabs, 2 nubs	1	1
N1E3	-	1	surface	5	0	1	3	5	4	3	1	0	11	7	1	0	1	0	0	1 triangle foot	0	0
N1E3	-	2	surface	5	0	0	3	7	1	1	0	2	14	15	4	0	1	0	0	1 large tab	1	0
N1E3 / N1E2	-	3	surface	5	0	0	6	5	4	2	0	2	15	12	1	0	0	0	0		0	1
N2E3	-	1	surface	6	0	0	6	3	8	5	0	0	4	3	0	0	1	0	0	1 whole loop	0	0
N2E3	-	2	surface	6	1	3	6	10	9	3	3	0	10	10	1	2	2	0	0	1 tab, 1 nub	1	1
N5E2	-	1	surface	8	2	0	4	8	4	1	0	1	7	7	2	0	0	0	1		2	1
N5E2	-	2	surface	7	0	0	4	6	10	1	0	0	15	11	2	0	2	0	0		0	3
N5E2	-	3	surface	10	1	0	6	7	12	2	3	1	10	14	0	1	2	0	0	1 large nub, 1 oval attach	1	0
N3E3	-	1	surface	14	4	0	2	6	7	1	3	2	3	3	0	2	0	0	0	1 large recurve	0	0
N3E3	-	4	surface	1	1	0	5	16	1	0	1	0	7	9	0	1	1	0	2	1 whole loop	1	0
N3E3	-	5	surface	10	1	0	8	7	7	2	1	1	1	7	2	0	0	0	0		0	0
N3E3	-	6	surface	7	0	3	2	4	4	2	0	0	2	3	0	0	1	0	0	1 nub	0	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N3E3	-	7	surface	4	0	1	4	4	8	3	0	0	12	6	1	0	1	0	1	1 whole loop	0	0
N1W2	1	1	0-20 cm	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0
N1W2	1-SE	1	0-30 cm	nothing diag-nostic																		
N1W2	1-NE	1	0-30 cm	nothing diag-nostic																		
N1W2	1-NW	1	0-30 cm	nothing diag-nostic																		
N1W2	1	3	20-40 cm	13	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	1 IP	0	0
N1W2	1	6	40-60 cm	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0		0	0
N1W2	1	7	40-60 cm	6	1	1	0	3	0	0	1	0	2	1	0	0	1	0	0	3 IP	0	0
N1W2	1	12	60-80 cm	5	0	0	0	1	1	0	0	2	1	0	0	0	0	0	0	1 IP	0	0
N1W2	1	17	80-100 cm	10	6	1	5	1	1	1	2	0	0	3	0	0	0	0	0		2	3
N3E4	-	1	surface	12	2	2	6	5	21	0	0	2	11	10	1	0	0	0	0		1	1
N3E4	-	2	surface	13	2	0	6	5	9	4	2	0	10	13	1	0	1	0	0	1 stumpy cylinder	0	2
N3E4	-	3	surface	11	2	1	2	9	17	1	0	1	6	11	2	0	0	0	0	2 unknown	1	1
N3E4	-	4	surface	13	3	2	3	15	11	1	0	0	16	9	3	0	0	0	1		1	0
N3E4	-	5	surface	7	2	1	5	7	9	4	2	0	8	3	0	0	0	0	0	1 tube?	1	0
N3E4	-	6	surface	10	1	1	10	10	5	0	4	0	3	9	1	0	1	0	0	1 whole loop	0	0
N4E3	-	1	surface	7	2	0	12	7	11	2	0	0	5	12	2	1	1	0	0	1 conical foot	0	0
N4E3	-	2	surface	10	4	2	8	6	8	2	3	0	12	10	4	0	2	0	0	1 tab foot, 1 coni-cal foot	0	0
N4E3	-	3	surface	11	6	2	2	5	6	2	2	1	12	13	1	0	1	0	0	1 conical foot	0	1
N4E3	-	4	surface	5	1	0	9	5	11	3	1	0	17	10	2	0	0	0	1	1 cajete w/ raised ridge	0	1
N4E3	-	5	surface	13	2	2	5	10	12	4	0	0	12	15	1	0	0	0	0	1 large loop	0	0
N4E3	-	6	surface	1	2	0	2	1	5	0	0	0	7	8	0	0	1	0	0	1 triangle foot	0	0
N1W2	1	24	80-100 cm	nothing diag-nostic																		
N1W2	1	26	100-120 cm	19	13	6	3	2	0	0	0	1	0	2	1	0	0	0	0	one base	1	0
N4E3	-	9	surface	6	0	0	4	10	7	2	0	0	10	9	1	0	0	0	0		0	0
N4E3	-	10	surface	9	1	0	3	4	5	1	1	0	4	8	2	0	0	0	0	olla neck	0	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N4E3	-	11	surface	10	2	0	4	7	8	2	0	0	12	24	1	0	2	0	0	2 conical feet	0	0
N2E4	-	1	surface	16	5	4	1	6	14	0	1	1	8	9	3	0	1	0	0	1 short conical	1	0
N2E4	-	2	surface	8	2	1	5	6	14	2	3	1	8	11	2	0	1	0	0	1 whole loop	1	0
N2E4	-	3	surface	12	0	6	5	8	16	0	1	0	13	13	2	1	1	0	0	1 cylinder foot, 2 unknown	2	0
N1W2	1 - S wall	35	u n - known	10	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0		0	1
N1W2	1 - W wall	38	u n - known	4	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0		0	0
N1W2	1	45	120-140 cm	17	9	2	2	1	8	0	4	1	0	1	0	0	0	0	0		1	1
N5E1	-	1	surface	11	1	1	3	10	2	2	4	2	5	3	2	0	1	0	0	1 tab foot	1	0
N5E1	-	2	surface	16	4	2	4	5	4	2	4	0	2	7	0	0	0	0	0		0	1
N5E1	-	3	surface	6	1	3	6	1	3	3	2	0	4	2	1	0	0	0	0		0	1
N5E1	-	4	surface	9	2	0	0	3	4	1	2	0	4	8	1	0	0	0	0	1 IP, 2 unknown	1	1
N5E1	-	5	surface	11	3	1	2	3	5	0	0	1	4	5	1	0	1	0	0	1 nub, 1 large plate	0	1
N5E1	-	6	surface	6	0	0	2	2	0	0	5	0	1	1	1	0	2	0	0	1 tri/tab foot, 1 whole loop	1	0
N1W2	1	54	120-140 cm	18	11	2	3	3	4	2	3	8	0	1	1	0	0	0	0	3 IP	1	0
N1W2	1 - N wall	56	u n - known	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
N5W1	-	2	surface	6	1	0	1	3	20	3	2	2	7	12	3	0	0	0	0		1	3
N5W1	-	3	surface	14	1	1	3	7	9	1	0	1	8	11	0	0	0	0	0		0	0
N5W1	-	4	surface	15	0	1	3	8	7	0	3	0	2	7	1	0	2	0	0	1 nub, 1 straight cylinder	0	1
N5W1	-	5	surface	8	5	2	3	7	11	1	1	2	3	9	0	0	0	0	0	1 plate	0	3
N5W1	-	6	surface	3	0	0	6	6	7	2	1	0	7	7	1	1	2	1	0	1 hollow attach, 1 stub cylinder	0	0
N5W1	-	7	surface	6	3	1	5	5	3	0	2	1	2	3	2	0	0	0	0		2	0
N5W1	-	8	surface	14	3	1	2	2	11	0	6	1	2	0	0	0	0	0	0	1 IP	1	4
N5W1	-	9	surface	6	1	0	1	2	10	0	5	1	2	5	1	1	1	2	0	1 nub	1	0
N5W1	-	10	surface	6	2	1	1	4	2	0	0	0	2	3	3	0	1	0	0	1 pseudo loop	0	0
N5W1	-	11	surface	18	3	3	2	4	4	0	5	0	2	3	1	0	2	0	0	2 tabs, 1 flask?, 2 incensarios?, 1 cajete with attach	0	1
N5W1	-	12	surface	8	2	1	1	4	5	1	2	0	4	2	0	0	1	0	0	1 nub	1	0
N1W2	1	64	140-160 cm	25	8	2	2	4	2	1	3	2	0	2	0	0	0	0	0	punched hole, 1 IP	1	1

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N1W2	1	68	140-160 cm	16	6	1	1	3	2	0	0	2	1	1	0	0	0	1	0	1 IP	1	0
N1W2	1 - E wall	71	un-known	16	6	0	6	1	4	0	0	0	0	0	0	0	2	0	0	nub feet?	1	1
N6E1	-	1	surface	10	2	0	3	8	7	0	0	1	3	6	2	0	1	0	0	1 round tab foot	0	0
N6E1	-	2	surface	4	1	1	0	9	4	2	1	0	10	1	2	0	1	0	0	1 broken tab	0	0
N6E1	-	3	surface	21	4	2	2	3	4	1	4	2	7	6	0	0	0	0	0	1 tube?	0	2
N6E1	-	4	surface	6	5	2	3	10	2	3	2	0	5	6	2	0	2	0	0	1 cylinder foot, 1 hollow globular	0	0
N6E1	-	5	surface	6	4	2	2	6	5	1	2	1	8	3	4	1	0	0	0		1	3
N6E1	-	6	surface	7	1	0	0	3	5	2	1	0	7	6	1	0	2	0	0	1 nub, 1 triangle foot	0	0
N6E1	-	7	surface	20	7	0	5	13	10	3	2	2	8	3	0	0	1	0	0	1 hollow append	2	3
N6E1	-	8	surface	22	9	3	5	10	12	2	0	3	6	6	2	1	2	0	0	2 nubs	3	0
N1W2	1 - S wall	74	un-known	7	2	1	1	0	0	0	2	1	0	0	0	0	0	0	0		2	0
N6W1		1	surface	3	1	0	3	5	6	1	2	0	6	11	2	1	1	0	0	1 nub, 1 possible hollow attach	0	0
N6W1		2	surface	4	3	3	1	3	9	4	2	1	3	15	0	1	0	0	0		0	0
N6W1		3	surface	9	3	2	4	4	4	2	1	0	5	7	1	0	2	0	0	1 whole loop, 1 nub	2	0
N1W2	1	83	160-180 cm	30	16	3	5	7	1	0	0	0	0	0	0	0	1	2	0	incense burner	4	2
N1W2	1	92	160-180 cm	26	9	2	3	6	3	1	3	0	1	4	3	0	0	1	0	3 bases	3	0
N1W2	1	97	180-200 cm	14	9	2	3	5	4	1	14	2	3	1	0	0	0	0	0	5 IP	5	0
N4W2	-	1	surface	18	5	2	4	7	11	2	2	0	12	12	1	1	0	0	0	1 pseudo loop on shoulder of re-curve	1	0
N4W2	-	2	surface	1	0	1	5	8	14	2	1	1	15	24	1	1	0	0	1	2 IP	0	0
N4W2	-	3	surface	8	0	1	3	7	6	1	3	1	14	15	0	2	1	0	0	1 nub	3	0
N4W2	-	4	surface	10	0	0	8	12	7	3	1	2	13	21	6	1	2	0	0	1 nub, 1 tab	0	1
N5W2	-	1	surface	2	0	0	5	2	9	0	1	0	6	7	2	0	0	0	0	1 oval attach	1	1
N5W2	-	2	surface	6	3	1	1	3	5	2	2	1	5	3	2	0	0	0	1		0	1
N5W2	-	3	surface	5	3	0	2	7	9	1	1	2	5	7	2	0	0	0	0	1 olla neck with attach	3	0
N5W2	-	4	surface	12	3	1	7	5	10	1	5	0	8	6	3	0	3	0	0	2 whole loops, 1 tab	3	2
N5W2	-	5	surface	15	2	1	2	6	4	4	1	0	9	10	1	0	1	0	1	1 tab foot	0	1

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N1W2	1	101	180-200 cm	18	3	3	1	4	1	0	7	0	0	1	0	0	0	0	0	2 IP	2	0
N1W2	1	112	200-220 cm	19	6	1	1	3	5	2	6	1	0	2	0	0	0	0	0		5	2
N13W2	-	1	surface	7	2	0	5	2	2	2	0	2	5	9	1	1	2	0	0	1 nub, 1 whole loop	1	0
N13W2	-	2	surface	9	3	0	2	10	4	1	2	0	4	5	0	0	0	2	0		1	0
N13W2	-	3	surface	4	3	0	2	5	5	0	1	0	3	6	1	1	1	0	0	1 whole loop, 1 probable hollow attach	1	0
N12W2	-	1	surface	16	2	0	4	8	11	2	4	1	18	4	2	0	0	0	0	1 large attach	0	0
N12W2	-	1	surface	12	4	1	3	7	2	0	0	1	10	16	3	0	4	0	1	2 tab, 1 short conical, 1 hollow attach	2	1
N12W2	-	2	surface	0	0	1	1	1	1	0	0	0	3	5	0	0	1	0	0	1 tab foot	0	0
N1W2	1	116	200-220 cm	12	13	5	4	4	2	6	8	0	2	2	0	1	0	0	0		8	3
N1W2	1	117	200-220 cm	16	7	1	0	1	3	3	3	1	3	0	1	0	0	0	0	1 IP	5	9
N6W2	-	1	surface	8	1	0	5	10	9	0	6	1	8	9	0	0	1	0	0	1 whole loop	1	0
N6W2	-	2	surface	8	2	1	6	10	4	4	1	0	6	8	3	1	1	0	0	1 nub	2	1
N6W2	-	3	surface	15	2	2	4	7	3	1	3	5	5	8	0	1	3	0	0	1 nub, 2 tabs	1	2
N6W2	-	4	surface	6	3	1	5	5	4	0	1	3	5	2	2	0	2	0	0	2 nubs	1	0
N1E4	-	1	surface	0	0	0	1	2	5	1	0	0	12	9	1	0	0	0	0		0	0
N1E4	-	2	surface	6	0	0	3	6	6	3	0	0	12	18	6	0	0	0	0	1 very large at-tach	0	0
N5E3	-	1	surface	12	0	0	4	5	11	0	0	0	9	18	3	0	3	0	2	1 tiny cylinder, 1 small tab, 1 nub	1	0
N5E3	-	2	surface	4	1	1	2	8	15	5	0	0	8	21	1	0	1	0	0	1 nub	0	0
N5E3	-	3	surface	7	0	0	8	4	17	0	2	0	16	13	2	0	1	0	0	1 large half loop, 1 tapering cylin-der	0	0
N5E3	-	4	surface	6	2	0	6	9	11	3	0	1	25	16	2	0	4	0	0	2 conical feet, 1 cylinder, 1 tab, 1 sherd with nubs	0	0
N5E3	-	5	surface	4	0	0	5	9	8	0	2	0	7	9	3	0	0	0	0		0	0
N3W1	2	1	0-20 cm	23	0	3	3	3	4	4	4	0	6	5	2	0	2	0	0		3	0
N3W1	2	2	0-20 cm	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0		1	0
N3W1	2	10	20-40 cm	20	3	1	1	0	0	1	1	0	2	1	0	1	0	0	0		2	0
N3W1	2	11	20-40 cm	8	5	1	5	3	6	3	3	2	2	2	0	1	0	0	0		4	0

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N3W1	2	12	20-40 cm	21	4	3	5	2	5	1	5	0	1	6	0	0	0	0	3		2	1
N3W1	2	13	20-40 cm	21	0	4	0	0	0	2	2	0	0	1	0	0	3	0	0		1	2
N1W2	1	123	220-240 cm	14	6	1	1	8	3	1	4	1	3	0	0	0	0	0	0		4	2
N1W2	1	124	220-240 cm	20	6	1	0	2	1	1	8	3	1	2	0	0	0	0	0	3 IP	5	4
N3W1	2	14	40-60 cm	31	3	2	0	5	0	1	3	0	0	0	0	1	1	0	0		3	0
N3W1	2	15	40-60 cm	8	5	2	0	2	6	2	2	0	7	3	2	1	5	0	0		1	0
N3W1	2	16	40-60 cm	26	5	3	3	0	0	1	3	0	1	1	0	0	0	0	0		3	1
N3W1	2	17	40-60 cm	24	7	2	3	1	3	0	2	1	1	2	0	0	1	0	1		4	3
N3W1	2	18	40-60 cm	12	10	0	1	4	6	2	5	0	7	5	1	0	0	0	0	1 tube	1	1
N3W1	2	19	40-60 cm	35	5	3	4	2	2	0	2	0	1	2	0	0	1	0	0		5	0
N1W2	1	131	220-240 cm	20	6	5	1	6	5	4	10	1	1	3	2	0	0	0	0	2 vaso?	3	5
N3W1	2	25	60-80 cm	14	2	0	3	1	4	5	4	1	2	7	4	0	3	1	0		0	1
N3W1	2	26	60-80 cm	11	6	4	6	2	4	2	2	2	0	0	0	0	0	0	0		2	2
N3W1	2	27	60-80 cm	23	3	2	1	5	1	1	3	0	1	1	0	0	1	0	0		3	1
N3W1	2	28	60-80 cm	19	2	5	4	3	0	2	1	4	0	3	0	1	1	0	0		3	2
N1W2	1	134	>240 cm	Nothing diag-nostic																		
N3W1	2	33	60-80 cm	22	2	3	2	5	3	0	5	3	1	5	0	1	0	0	0		5	1
N3W1	2	34	60-80 cm	16	0	2	2	4	2	0	3	0	1	2	2	0	0	0	0		1	0
N3W1	2	37	80-100 cm	17	5	6	3	4	4	3	3	4	3	2	0	0	0	0	0		2	1
N3W1	2	38	80-100 cm	14	5	3	5	6	1	3	2	1	1	1	1	0	2	0	0		2	3
N3W1	2	39	80-100 cm	17	6	5	8	4	4	1	7	3	0	3	1	1	1	0	0		2	0
N3W1	2	50	80-100 cm	10	5	2	4	1	4	1	1	1	2	1	0	0	0	0	0		5	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurved Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N3W1	2	52	100-120 cm	19	3	3	1	3	0	0	1	1	3	0	0	1	0	0	1		0	2
N3W1	2	53	80-100 cm	16	2	4	2	6	4	1	3	1	2	3	1	0	0	0	0		2	2
N5W2	3	1	0-20 cm	18	2	5	3	5	4	4	3	0	4	2	0	2	3	0	0	2 nubs, 1 pseudo loop	5	0
N5W2	3-NE	1	0-30 cm	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		1	0
N3W1	2	56	100-120 cm	26	2	3	3	2	4	3	5	1	0	0	0	1	0	0	0		1	1
N3W1	2	59	120-140 cm	9	1	1	2	1	1	1	2	0	2	2	0	0	0	0	0		0	0
N5W2	3	4	0-20 cm	11	0	0	0	1	1	1	1	0	1	3	0	0	1	0	0	1 triangle foot	2	0
N5W2	3	5	0-20 cm	6	2	3	0	2	2	0	3	0	4	7	0	0	2	0	1	2 nubs	1	0
N5W2	3	9	20-40 cm	19	3	5	1	2	5	0	1	1	2	4	0	0	0	0	0		2	1
N5W2	3	13	20-40 cm	5	0	0	0	3	0	0	0	0	1	2	0	0	1	0	0	1 triangle foot	1	0
N5W2	3	14	20-40 cm	nothing diag- nostic																		
N3W1	2	61	120-140 cm	36	2	3	2	3	1	4	5	4	2	3	0	0	0	0	0	1 IP, double re- curve	8	1
N3W1	2	64	140-150 cm	2	0	1	0	0	0	0	1	2	1	0	0	0	0	0	0		0	0
N3E2	4-SW	1	0-30 cm	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0
N3E2	4-SE	1	0-30 cm	nothing diag- nostic																		
N3E2	4-NE	1	0-30 cm	nothing diag- nostic																		
N3E2	4	1	0-40 cm	17	2	0	1	0	5	1	2	0	4	2	0	1	0	0	0		0	0
N3E2	4	12	40-60 cm	16	0	2	2	0	0	1	0	0	2	1	2	0	0	0	0		0	1
N3E2	4	16	60-80 cm	10	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0		0	0
N3E2	4	19	60-80 cm	5	5	3	1	0	2	0	0	0	0	1	0	0	0	0	0		0	0
N3E2	4	23	80-100 cm	5	0	1	2	0	0	1	2	0	0	2	0	0	2	0	0		0	0
N3E2	4	27	100-120 cm	6	2	0	0	1	0	0	0	0	2	1	1	0	0	0	0		0	0

Ceramic Analysis - Itzimbaro

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S5W1	-	1	surface	6	4	0	2	5	0	1	2	2	1	1	1	0	1	0	0	1 whole loop	1	1
S5W1	-	2	surface	4	0	0	6	11	1	0	6	1	2	4	2	0	1	0	0	1 partial tab?	1	0
S5W1	-	3	surface	11	9	3	6	11	4	0	4	3	1	6	2	1	2	0	0	1nub, 1 flat base	7	0
S5E1	-	1	surface	13	6	0	7	6	2	0	8	2	5	1	0	1	0	0	0		2	2
S5E1	-	2	surface	19	4	0	6	5	0	1	10	3	3	2	2	0	0	0	0	1 IP	0	0
S6W1	-	1	surface	7	3	0	10	8	4	4	10	1	7	13	1	0	2	0	1	2 nub feet	4	2
S5W2	-	1	surface	11	4	0	5	6	1	3	6	0	4	4	0	0	0	0	0		0	1
S5W2	-	2	surface	9	2	0	6	6	1	1	2	2	5	4	0	0	1	0	0	1 whole loop	1	0
S5W2	-	3	surface	9	5	1	8	8	3	1	6	4	6	4	2	0	1	0	0	1 whole loop	0	2
S5W2	-	4	surface	13	0	1	5	8	4	3	5	3	6	10	2	0	0	0	0		0	0
S5W2	-	5	surface	14	6	4	6	8	2	1	5	4	1	4	3	0	1	0	0	1 hollow cylinder	3	1
S5W2	-	6	surface	13	2	0	5	4	2	3	5	2	0	3	3	0	0	0	0	1 loop foot	1	0
S1E1	1-NE	1	0-30 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1E1	1-SE	1	0-30 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1E1	1	1	0-20 cm	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0		0	0
S1E1	1	3	20-40 cm	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		0	0
S4W1	-	1	surface	6	2	1	1	7	1	1	11	0	0	9	1	0	3	0	0	1 whole loop, 1 conical foot, 1 tab foot	0	0
S4W1	-	2	surface	7	3	0	2	4	1	1	8	3	3	0	0	0	0	0	0		4	0
S4W1	-	3	surface	1	1	1	2	2	0	2	5	6	1	1	0	0	0	0	0		0	0
S4W1	-	4	surface	14	2	1	9	9	4	1	13	5	1	5	0	1	1	0	1		5	1
S4W1	-	5	surface	bag missing																		
S4E1	-	1	surface	16	0	0	9	7	1	1	4	2	7	7	1	0	2	0	0	2 nub feet	0	0
S3E1	-	1	surface	6	1	0	4	5	0	0	3	0	3	3	2	0	4	0	0		1	0
S3E1	-	2	surface	3	1	0	6	6	0	1	5	2	1	8	2	1	4	0	0	4 nub feet	3	0
S3E1	-	3	surface	3	0	1	5	2	0	1	3	1	4	2	2	3	3	0	0		0	1
S2E1	-	1	surface	19	3	5	5	7	1	1	2	2	2	5	1	0	4	0	0	1 triangular foot, 1 tab foot, 2 nubs	1	0
S2E1	-	2	surface	35	3	0	6	6	2	0	4	1	2	2	2	0	1	0	0	1 vaso, 1 globular	4	0
S2E1	-	3	surface	16	2	1	6	6	0	1	3	1	7	12	0	0	3	0	0	3 triangular feet	0	2
S1E1	1	5	40-60 cm	0	0	0	1	2	1	0	0	0	1	2	0	0	0	0	0	2 unknown rims	1	0
S2E1	-	5	surface	16	2	1	2	4	1	0	2	0	4	0	1	1	2	0	0	1 nub, 1 tab	1	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S2E1	-	6	surface	7	2	1	3	1	0	1	0	2	7	5	1	1	3	0	0	1 nub, 1 tab, 1 globular	0	0
S2E1	-	7	surface	13	1	0	3	3	1	0	1	1	3	7	1	0	1	0	0	1 truncated cone foot	1	2
S2E2	-	1	sup.	7	0	2	1	3	1	0	0	1	4	2	1	1	6	0	2	3 nubs, 3 tabs	3	0
S2E2	-	2	surface	13	3	1	2	8	0	0	3	1	6	6	2	2	1	0	0	1 nub	4	0
S1E1	1	10	60-80 cm	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	1
S2E1	-	10	surface	12	2	2	0	0	1	0	0	0	2	1	0	0	2	0	0	1 triangle foot, 1 nub	0	0
S1E1	1	12	60-80 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1E1	1	14	80-100 cm	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	0
S1E1	-	1	surface	19	1	2	4	6	0	0	3	1	3	5	2	0	1	0	0	1 hollow apend-age, 1 nub	0	1
S1E1	-	2	surface	32	4	1	1	9	0	0	2	4	4	9	2	1	4	0	0	2 nub, 2 triangu-lar	4	0
S1E1	-	3	surface	10	1	0	3	4	0	1	1	0	1	4	0	1	2	0	0	1 whole loop, 1 conical foot	3	0
S1E1	-	4	surface	23	6	1	8	3	0	0	0	0	4	1	1	1	3	0	0	2 nub feet, 1 tab foot	0	2
S1E1	-	5	surface	17	0	8	4	10	1	1	4	2	7	7	2	2	3	1	0	1 nub, 2 hollow attach	0	0
S1E1	-	6	surface	13	6	2	3	8	2	1	2	2	4	5	0	3	2	0	0	2 nub feet	2	0
S1E1	-	7	surface	13	4	0	4	6	0	0	2	2	1	3	1	1	4	0	0	2 nub feet, 2 tab feet	4	1
S1E1	-	8	surface	12	5	3	4	8	2	0	2	3	2	4	0	2	1	0	0	1 tab foot	4	2
S1E2	-	1	surface	12	4	0	5	6	3	0	0	0	0	2	0	0	3	0	0	2 tab feet, 1 nub foot	2	2
S1E2	-	2	surface	5	2	0	2	2	0	0	6	0	8	8	1	1	4	0	0	1 nub, 1 tab, 2 tri-angular	1	0
N3E1	2-NE	1	0-30 cm	2	1	0	2	1	0	0	0	0	1	1	0	0	0	0	0		4	0
N3E1	2-SE	1	0-30 cm	(com-bined with above)																		
N3E1	2-SW	1	0-30 cm	(com-bined with above)																		
N3E1	2-NW	1	0-30 cm	(com-bined with above)																		

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N3E1	2	1	0-20 cm	3	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1 sherd with plaster	0	0
N3E1	2	3	20-40 cm	19	5	0	3	1	1	1	0	1	2	0	0	0	4	0	0		1	0
N1E1	-	1	surface	11	0	1	3	6	0	1	2	2	2	2	1	0	0	0	0		1	1
N1E1	-	2	surface	8	1	0	5	2	3	1	1	4	3	0	1	0	1	0	0	1 whole loop	0	0
N1E1	-	3	surface	4	2	0	3	5	0	2	1	1	3	3	0	1	1	0	0	1 nub	1	0
N1E1	-	4	surface	18	1	1	2	7	2	0	4	1	3	3	2	0	3	0	0	1 conical foot, 1 tab foot, 1 whole loop	1	0
N3E1	2	5	20-40 cm	(combined with above)																		
N3E1	2	6	40-60 cm	2	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0		0	1
N2E1	-	1	surface	5	0	1	3	3	0	0	3	2	1	0	1	0	0	0	0		0	0
N2W1	-	1	surface	2	2	0	0	1	0	0	1	0	0	0	0	1	0	0	0		0	0
N2E2	-	1	surface	7	2	0	4	3	2	4	4	6	0	0	0	0	0	0	0		0	0
N2E2	-	2	surface	7	2	0	5	5	2	1	1	2	2	3	0	0	1	0	0	1 whole loop	1	0
N2E2	-	3	surface	9	1	0	3	7	1	0	6	6	1	2	0	0	0	0	0	1 tube	0	0
N2E2	-	4	surface	9	4	3	2	6	3	1	3	4	1	1	1	0	0	0	1		1	1
N2E2	-	5	surface	6	3	0	8	9	2	3	7	2	0	2	0	0	1	0	0	1 pseudo loop	1	1
N3E1	-	1	surface	5	3	1	6	3	0	0	0	0	2	8	0	0	1	0	0	1 nub	1	0
N3E2	-	1	surface	7	1	1	7	7	0	1	2	0	2	5	1	0	2	0	0	2 tab feet	0	0
N3E2	-	2	surface	3	0	2	2	5	1	1	3	1	4	1	3	0	1	0	0	1 pseudo loop	1	0
N4E1	-	1	surface	7	0	2	6	3	0	2	4	0	7	8	0	0	2	0	0	1 nub, 1 conical foot	0	0
N4E1	-	2	surface	9	1	2	5	10	0	0	1	1	2	7	0	0	1	0	1	1 triangular foot	1	0
N3E1	2	8	40-60 cm	(combined with above)																		
N3E1	2	10	60-80 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
N3E1	2	11	60-80 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S2E1	3-NW	1	0-30 cm	nothing diagnostic																		
S2E1	3-SW	1	0-30 cm	nothing diagnostic																		

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S2E1	3-SE	1	0-30 cm	nothing diagnostic																		
S2E1	3-NE	1	0-30 cm	nothing diagnostic																		
S2E1	-	10	surface	2	1	0	0	4	0	0	1	0	4	1	0	0	1	0	0	1 tab foot	0	0
N1E2	-	1	surface	5	2	0	0	0	1	1	2	3	1	0	2	0	1	0	0	1 whole loop	3	0
N1E2	-	2	surface	11	2	3	3	6	3	2	2	0	3	3	2	0	1	0	0	1 nub foot	1	0
N1E2	-	3	surface	bag missing																		
N1E2	-	4	surface	4	4	0	1	3	1	1	2	1	1	2	1	0	3	0	0	2 nubs, 1 whole loop	1	0
N1E2	-	5	surface	4	2	0	2	1	0	0	2	1	5	0	0	0	1	0	0	1 whole loop	0	1
N1E2	-	6	surface	7	4	0	6	6	0	0	2	1	2	0	1	0	1	0	0	1 loop	1	0
N1E2	-	7	surface	20	3	2	3	7	1	1	4	0	6	1	1	0	2	0	0	1 nub, 1 triangular foot	2	1
N1E2	-	11	surface	7	5	2	4	2	4	1	4	1	2	1	0	0	1	0	0	1 nub	2	0
N1E2	-	12	surface	8	3	0	7	2	0	1	4	1	1	0	0	0	0	0	0		1	0
S2E1	3	1	0-40 cm	40	4	2	7	5	0	1	0	3	4	3	0	0	5	0	1	2 tubes	4	0
S2E1	3	2	0-40 cm	18	3	1	0	1	0	0	0	0	0	0	0	0	2	0	0	clay bead?	0	0
S2E1	3	8	0-40 cm	27	3	1	1	1	0	0	2	1	1	1	0	0	0	0	0	1 IP, 1 tiny rim	3	0
S2E1	3	11	40-60 cm	38	7	1	0	4	1	1	2	0	1	2	0	0	3	0	0	2 unknown rims, hollow ring	5	2
S2E1	3	18	60-80 cm	8	2	0	1	1	0	0	1	1	2	0	0	0	0	0	0		2	0
S2E1	3	24	60-80 cm	36	4	2	2	8	0	0	2	2	1	2	0	0	2	0	0	1 hollow, 1 nub	6	0
S2E1	3	32	80-100 cm	13	6	1	3	7	0	0	2	2	0	1	0	0	3	0	0	1 tube, 1 hollow, 1 decorative horn	2	0
S2E1	3	37	100-120 cm	15	4	0	0	2	0	0	2	0	1	0	0	0	1	0	0	1 tube	1	0
S2E1	3	44	120-140 cm	16	2	0	3	2	0	0	1	2	1	1	0	1	1	0	0		3	0
N4E2	-	1	surface	6	7	0	9	6	0	0	4	0	2	5	0	0	0	0	0		4	0
N4E2	-	2	surface	13	3	0	4	4	1	0	0	0	2	3	1	0	5	0	0	whole loop, triangle foot, tab foot, 2 nubs	0	1
N5E2	-	1	surface	10	2	0	4	3	1	0	1	2	2	3	0	0	2	0	0	2 triangular supports	3	1
N5E2	-	2	surface	5	1	0	3	5	0	0	3	1	3	2	1	0	0	0	0		3	2
N5E1	-	1	surface	7	2	0	2	3	1	0	1	0	6	1	1	0	1	0	0	1 whole loop	3	0
N3E2	-	5	surface	1	0	1	3	2	0	0	1	0	0	1	0	0	1	0	0	1 whole loop	0	0

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
N2E2	-	10	surface	2	3	0	2	0	0	0	2	0	1	0	0	0	0	0	0		2	0
S2E1	3	48	120-140 cm	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0		1	0
S2E1	3	55	140-160 cm	41	5	4	0	5	0	0	1	1	1	0	0	0	4	0	0	1 nub, 1 whole loop, 2 tab	7	0
S2E1	3-walls	59	100-160 cm	nothing diagnostic																		
S2E1	3	66	160-180 cm	57	5	3	1	2	0	0	1	3	0	1	0	0	0	0	0		5	0
S2E1	3	67	160-180 cm	34	1	0	1	3	0	1	3	0	0	2	0	0	2	0	0	1 bead?	7	0
S2E1	3	76	180-200 cm	29	1	0	1	7	0	0	1	0	1	3	0	0	1	0	0		3	0
S2E1	3	83	180-200 cm	32	1	1	1	3	0	0	0	3	0	2	0	3	2	0	0	1 tube	3	0
S2E1	3	90	200-220 cm	26	2	0	1	2	2	0	0	2	1	0	0	1	4	0	0	4 IP	5	0
S2E1	3	99	200-220 cm	18	2	1	0	4	0	0	3	1	2	2	0	1	3	0	0	2 IP	1	0
S2E1	3	108	220-240 cm	14	2	2	1	3	1	0	3	2	1	2	0	2	5	0	0	1 loop	1	0
S2E1	3	109	220-240 cm	19	3	2	4	2	1	1	3	3	4	2	0	1	0	0	0	1 vaso?, 2 beads	3	0
S2E1	3	115	220-240 cm	5	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0		1	0
S5W1	4-NE	1	0-30 cm	nothing diagnostic																		
S5W1	4-SE	1	0-30 cm	nothing diagnostic																		
S5W1	4-SW	1	0-30 cm	nothing diagnostic																		
S5W1	4-NW	1	0-30 cm	nothing diagnostic																		
S5W1	4	1	0-40 cm	10	3	1	0	6	0	5	4	2	1	2	0	3	0	1	0	3 base	2	1
S5W1	4	2	0-40 cm	3	2	3	1	1	1	3	8	0	1	4	0	0	0	0	0	3 base	2	2
S5W1	4	3	0-40 cm	5	4	1	1	5	1	1	9	3	1	0	0	0	1	0	0	3 base	4	0
S5W1	4	4	0-40 cm	13	5	1	4	3	1	0	5	1	0	0	0	0	0	0	0	2 base, 1 IP	5	0
S5W1	4	9	40-60 cm	11	3	3	3	6	2	1	2	5	0	0	0	0	0	0	0	1 base, 3 IP	4	0
S5W1	4	10	40-60 cm	11	3	1	2	5	0	0	0	1	0	1	0	1	0	0	0		2	0
S5W1	4-ext	16	0-40 cm	10	4	1	0	5	2	3	1	1	0	3	0	0	0	0	0	2 base	2	2
S5W1	4-ext	19	40-60 cm	13	0	3	1	2	0	0	2	1	1	2	0	0	0	0	0	2 round base, 2 flat base	3	0
			60-80 cm	1	1	1	1	3	0	0	1	1	2	0	0	0	1	0	0		0	0
S5W1	4	25	60-80 cm	bag missing																		

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S5W1	4	30	60-80 cm	10	2	4	0	4	0	2	3	5	0	0	0	0	0	0	0	1 flat base	5	1
S5W1	4	31	60-80 cm	10	4	2	0	2	0	0	1	2	1	0	0	0	0	0	0	3 unknown rims, 1 gourd shaped vessel??	0	0
			80-100 cm	1	0	0	0	6	0	3	3	1	0	0	2	0	0	0	0		0	0
S5W1	4	40	80-100 cm	2	1	1	0	7	0	2	1	1	0	0	0	0	1	0	0	1 IP	2	1
S5W1	4	41	80-100 cm	14	2	0	3	1	0	0	0	3	3	2	0	0	3	0	0	2 IP	2	0
S5W1	4	42	80-100 cm	11	6	3	4	7	0	0	7	1	2	0	0	0	0	0	0	1 flat base, 1 double recurve	5	0
S5W1	4-wall	47	80-100 cm	2	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0		0	0
S5W1	4	51	100-120 cm	6	5	10	1	0	1	0	7	3	1	0	0	0	1	0	0	4 IP	3	0
S5W1	4	52	100-120 cm	7	1	4	3	3	2	4	2	2	0	2	0	0	0	0	0		2	2
S5W1	4	53	100-120 cm	1	2	0	1	0	0	1	2	1	0	0	0	0	0	1?	0		1	0
S5W1	4	59	120-140 cm	3	3	0	1	2	2	1	1	3	1	0	0	0	1	0	0	1 flat base	1	1
S5W1	4	60	120-140 cm	5	5	0	3	1	1	2	1	8	0	1	0	0	0	0	0	1 IP	0	1
S5W1	4	66	120-140 cm	5	1	1	1	3	0	1	2	2	0	1	0	0	1	0	0	3 IP, 1 base	2	1
S5W1	4	71	140-160 cm	6	1	0	2	3	0	1	4	7	0	1	0	0	1	1	0	2 IP	2	0
S5W1	4	72	140-160 cm	5	4	0	1	2	1	2	1	2	0	1	0	0	0	1	0	1 IP	1	1
S5W1	4	73	140-160 cm	9	2	0	0	3	2	1	2	1	0	0	2	1?	0	0	0		2	2
S5W1	4-wall	78	100-160 cm	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S5W1	4	80	160-180 cm	8	2	1	3	0	0	0	1	2	0	0	0	0	0	0	0		1	2
S5W1	4	81	160-180 cm	6	0	2	0	2	0	1	0	0	0	0	0	0	1	0	0	1 spout?	0	0
S5W1	4	86	180-200 cm	3	4	2	0	0	0	0	0	0	0	0	0	1	0	0	2	1 IP	0	0
S5W1	4	90	180-200 cm	7	6	1	1	0	0	1	0	1	0	2	0	0	0	0	1		0	0
S5W1	4	97	200-220 cm	2	1	0	3	0	0	0	0	1	0	0	0	0	0	0	0	2 IP	1	3
S5W1	4	103	220-240 cm	5	4	3	0	0	0	0	0	0	0	0	0	0	1	0	0		1	0
S5W1	4	108	240-260 cm	8	3	7	4	0	0	3	0	0	0	1	0	0	1	0	0	2 odd shape rims	0	1
S5W1	4	109	240-260 cm	4	3	3	2	0	0	0	0	0	0	0	1	0	0	0	0	1 IP	0	0
S5W1	4	114	240-260 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S5W1	4	116	260-280 cm	2	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0		0	0
S5W1	4	119	280-300 cm	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0		0	0

Ceramic Analaysis - Mexiquito

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S1E1	-	1	surface	10	0	0	4	4	0	0	0	1	5	2	1	0	1	0	0		0	0
S1E1	-	2	surface	6	1	0	2	1	0	0	1	0	0	2	0	0	0	0	0		2	0
S1E1	-	3	surface	5	1	0	4	1	1	1	0	0	1	2	0	0	0	0	0		0	0
S1E1	-	4	surface	3	0	1	2	1	1	0	0	0	4	2	2	0	0	0	0		0	1
N1W1	-	1	surface	1	1	4	2	0	0	0	0	0	1	0	0	0	0	0	0		0	0
S1W2	-	1	surface	4	2	1	13	0	1	0	0	0	2	1	1	0	1	0	0		0	0
S1W2	-	2	surface	4	1	2	3	0	0	0	0	0	3	0	0	0	0	0	0		1	0
S1W2	-	3	surface	3	0	0	4	1	0	0	0	0	3	3	0	0	0	0	0		1	0
S2W1	-	1	surface	7	1	0	5	1	0	0	1	0	2	1	3	0	2	0	0	molcajete	1	0
S2W1	-	2	surface	2	1	0	3	1	0	0	0	0	2	1	1	0	1	0	0		0	0
S2W3	-	1	surface	1	4	0	3	5	2	1	0	0	1	1	1	0	2	0	0		0	0
S2W3	-	2	surface	5	2	2	4	1	1	0	0	0	3	3	0	0	0	0	0		1	1
S2W3	-	3	surface	4	0	0	3	1	0	0	0	0	1	2	0	1	1	0	0		0	0
S1W4	-	1	surface	2	1	2	3	3	0	1	0	0	1	1	1	0	1	0	0		1	0
S1W4	-	2	surface	2	0	0	4	0	0	0	0	0	1	2	5	0	1	0	0		0	0
S1W4	-	3	surface	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0		0	0
N2W2	-	1	surface	9	0	0	6	1	0	1	1	0	3	2	0	0	1	0	0		1	0
N2W2	-	2	surface	11	1	3	1	1	0	0	1	0	1	5	2	0	1	0	0		0	0
N1W4	-	1	surface	7	0	2	7	2	0	0	0	1	3	1	1	0	1	0	0		1	0
N1W4	-	2	surface	4	1	0	4	3	1	1	0	0	1	2	1	0	1	0	0		1	0
N1W4	-	3	surface	5	3	1	6	0	0	1	0	0	2	1	1	0	0	0	0		0	0
S2E3	-	1	surface	1	0	9	4	0	0	0	0	2	5	2	2	0	1	0	0		2	1
S2E3	-	2	surface	3	0	0	7	1	0	0	0	0	9	4	2	0	1	0	0	1 drilled, 2 vaso	0	0
S2E3	-	3	surface	2	1	0	8	1	0	0	0	0	3	7	1	0	2	0	0		0	1
S2E3	-	4	surface	6	1	1	5	2	1	0	0	0	2	5	1	0	3	0	0		1	0
S1E4	-	1	surface	5	0	1	5	0	0	0	0	0	3	1	0	0	0	0	0	molcajete	1	0
S2E5	-	1	surface	5	0	2	4	1	1	0	0	1	4	3	0	0	1	0	0		0	0
S2E5	-	2	surface	2	0	0	3	0	0	0	0	0	3	7	0	1	1	0	0		0	0
S1E8	1-NE	1	0-40 cm	no diag-nostics																		
S1E8	1-SE	1	0-40 cm	no diag-nostics																		

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S1E8	1-SW	1	0-40 cm	no diagnostics																		
S1E8	1-NW	1	0-40 cm	no diagnostics																		
S1E8	1	1	0-20 cm	18	1	1	1	0	1	0	0	0	2	3	2	0	1	0	0		4	0
S1E8	1	4	20-40 cm	14	8	3	3	0	0	0	0	2	2	1	0	1	0	0	0		0	0
S1E8	1	8	40-60 cm	23	9	3	2	1	1	0	0	1	0	4	0	0	1	0	0	malacate?	1	0
S1E8	1	13	60-68 cm	12	3	0	1	1	0	0	0	0	0	2	0	0	0	0	0		2	0
S1E8	1	18	68-80 cm	5	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0		0	0
S1E8	1	23	80-100 cm	10	1	0	0	1	0	0	0	1	0	4	0	0	2	0	0		0	0
S1E8	1	26	100-120 cm	24	1	1	0	0	2	0	0	1	3	1	0	0	1	0	1		0	0
S1E8	1	32	120-140 cm	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1E8	1	36	140-160 cm	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1E8	1	42	140-160 cm	included with above																		
S1E8	1	46	160-180 cm	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0		0	0
N1W1	2	1	0-20 cm	no diagnostics																		
N1W1	2	2	20-40 cm	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		0	0
N1W1	2-NW	1	0-40 cm	no diagnostics																		
N1W1	2-SW	1	0-40 cm	no diagnostics																		
N1W1	2	3	40-60 cm	9	0	0	8	1	0	1	1	0	1	1	0	0	0	0	0	pot stand? Drilled sherd	0	0
S1E8	1	51	160-180 cm	included with above																		
S1E8	1	56	180-200 cm	6	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0		2	0
S1E8	1	60	200-220 cm	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		1	0
N1W1	2	6	60-80 cm	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	drilled sherd	0	0
N1W1	2	10	60-80 cm	included with above																		
N1W1	2	13	80-100 cm	5	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	tube fragment	0	0
S1E8	1	64	200-220 cm	included with above																		
S1E8	1 - E wall	67	150-220 cm	no diagnostics																		

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S1E8	1	69	213-221cm	Not found																		
N1W1	2	17	80-100 cm	Included with above																		
N1W1	2	18	80-100 cm	No diagnostics																		
N1W1	2	21	100-120 cm	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0		0	1
N1W1	2	26	100-120 cm	Included with above																		
N1W1	2	30	120-140 cm	No diagnostics																		
S1W2	3	1	0-20 cm	No diagnostics																		
S1W2	3	3	20-40 cm	No diagnostics																		
S1W2	3	5	40-60 cm	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1 IP	0	0
S1W2	3	10	60-80 cm	11	2	8	2	0	1	0	0	0	1	0	2	0	2	0	0	1 malacate?	0	0
S1W2	3	20	80-100 cm	3	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	cajete base	0	0
S1W2	3	25	100-120 cm	7	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1W2	3	31	100-120 cm	Included with above																		
S1W2	3	36	120-140 cm	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1W2	3 - W wall	40	80-140 cm	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
S1W2	3	41	140-160 cm	2	5	0	0	0	0	0	0	2	0	0	0	0	0	0	0		0	0
S1W2	3	46	160-180 cm	10	5	2	4	0	0	0	0	0	0	1	2	0	1	0	0		0	0
S1W2	3	51	180-200 cm	8	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0		0	0
S1W2	3	55	200-220 cm	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0		1	0
S1W2	3	59	220-230 cm	No diagnostics																		
S1E6	-	1	surface	11	0	1	6	2	0	1	0	0	4	3	4	0	1	0	0		1	0
S1E6	-	2	surface	12	2	1	4	1	2	0	0	0	3	0	1	0	1	0	0		0	0
N1E7	-	1	surface	3	1	1	4	1	0	0	0	0	0	4	0	0	1	0	0		1	0
N1E7	-	2	surface																			
N1E7	-	3	surface	3	1	1	1	1	0	0	0	1	2	0	0	0	0	0	0		1	0
N1E7	-	4	surface	4	3	0	3	1	0	0	0	1	1	3	0	0	1	0	0		1	0
S2E7	-	1	surface	4	0	0	4	0	2	1	0	0	4	1	0	0	0	0	0		0	1

Sector	Pit	Bag	Level	Straight Cajete	Hemi. Cajete	Out. Cajete	Olla	Plain Tecomate	Round Rim Tecomate	Raised Rim Tecomate	Recurve Bowl	Open Bowl	Attach. Site	Partial Loop	Half Loop	Annular Base	Other Foot	Infl. Cajete	Flare Rim Tecomate	Other	Incised	R.D. Band
S2E7	-	2	surface	8	0	0	6	0	1	1	0	1	3	2	0	0	2	0	0		0	0
S2E7	-	3	surface	10	1	0	5	1	1	0	0	0	2	5	1	1	0	0	0		0	0
S2E7	-	4	surface	4	3	1	1	0	0	0	0	0	2	4	0	0	1	0	0		2	0
S1E8	-	1	surface	4	0	0	1	1	0	0	0	0	3	5	2	0	3	0	0	molcajete	1	0
S1E8	-	2	surface	4	0	0	4	3	0	0	0	0	4	8	0	0	1	0	0		0	0
S1E8	-	3	surface	3	0	0	5	2	2	0	0	0	4	2	0	0	0	0	0		0	0
S1E8	-	4	surface	3	0	0	2	1	1	0	0	3	4	3	2	0	0	0	0		1	0
S1E8	-	5	surface	6	1	0	3	0	0	0	1	1	1	5	3	1	1	0	0		0	0
S1E8	1	70	215-222 cm	5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0		1	0
S1E8	1	74	220-240 cm	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		1	0

Appendix 3: Diameter and Thickness Measurements

Cajetes

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	24	6.39	7.36	7.19	6.98
Quesería	2	32	6.69	7.39	7.71	7.26
Quesería	2	26	7.64	8	7.94	7.86
Quesería	2	30	10.99	10.36	11.76	11.04
Quesería	2	20	10.25	8.89	9.16	9.43
Quesería	2	22	7.99	8.18	8.41	8.19
Quesería	2	18	8.11	11.61	10.64	10.12
Quesería	2	10	6.41	6.29	7.13	6.61
Quesería	2	24	8.61	8.35	5.91	7.62
Quesería	2	14	3.34	5.38	5.65	4.79
Quesería	2	16	7.61	10.15	5.67	7.81
Quesería	2	24	8.93	8.94	9.69	9.19
Quesería	2	20	10.99	9.68	10.53	10.40
Quesería	2	18	11.27	11.37	10.84	11.16
Quesería	2	16	7.21	7.82	7.4	7.48
Quesería	2	22	7.45	8.88	7.1	7.81
Quesería	2	16	5.66	5.4	3.97	5.01
Quesería	2	18	3.92	5.7	5.29	4.97
Quesería	2	18	7.45	8.1	8.86	8.14
Quesería	2	24	6.77	7.68	8.5	7.65
Quesería	2	20	10.28	9.66	7.94	9.29
Quesería	2	12	5.71	7.16	6.24	6.37
Quesería	2	16	5.26	6.93	7.31	6.50
Quesería	2	12	6.88	5.63	6.27	6.26
Quesería	2	20	5.1	6.81	6.68	6.20
Quesería	2	12	7.4	7.4	6.26	7.02
Quesería	2	18	7.81	10.48	10.49	9.59
Quesería	2	16	5.51	6.67	6.16	6.11
Quesería	2	16	6.99	6.6	6.81	6.80
Quesería	2	18	5.52	6.51	6.54	6.19
Quesería	2	18	6.4	5.64	4.95	5.66
Quesería	2	20	6.59	9.86	9.99	8.81
Quesería	2	12	6.44	7.3	6.12	6.62
Quesería	2	24	8.16	9.31	9.47	8.98
Quesería	2	18	7.45	7.14	8.54	7.71
Quesería	2	18	6.49	6.91	6.9	6.77
Quesería	2	10	6.68	7.61	7.5	7.26
Quesería	2	16	6.63	5.87	7.93	6.81
Quesería	2	20	4.9	9.74	8.83	7.82

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	14	3.34	6.4	6.69	5.48
Quesería	2	20	6.5	7.85	7.12	7.16
Quesería	2	18	8.7	8.77	8.66	8.71
Quesería	2	16	6.41	9.34	10.4	8.72
Quesería	2	22	6.2	9.76	8.9	8.29
Quesería	2	22	4.92	6.84	6.4	6.05
Quesería	2	20	7.4	8.63	8.62	8.22
Quesería	2	16	5.44	7.75	8.86	7.35
Quesería	2	16	6.35	8.63	8.1	7.69
Quesería	2	16	4.74	7.18	8.9	6.94
Quesería	2	18	7.23	7.9	8.09	7.74
Quesería	2	20	12.11	9.36	8.4	9.96
Quesería	2	22	11.89	12.34	12.83	12.35
Quesería	2	20	9.96	10.5	10.42	10.29
Quesería	2	30	6.35	9.64	9.59	8.53
Quesería	2	26	6.2	10.7	10.19	9.03
Quesería	2	16	10.7	9.78	7.45	9.31
Quesería	2	10	3.9	4.59	4.22	4.24
Quesería	2	18	5.79	7.22	5.77	6.26
Quesería	2	20	9.4	11.41	10.76	10.52
Quesería	2	12	5.07	4.78	6.4	5.42
Quesería	2	20	8.84	9.25	9.28	9.12
Quesería	2	22	7.7	7.65	9.11	8.15
Quesería	2	24	6.64	7.45	7.95	7.35
Quesería	2	26	9.86	11.32	10.86	10.68
Quesería	2	20	6.39	7.8	7.51	7.23
Quesería	2	16	11.51	10.74	10.68	10.98
Quesería	2	18	8.07	9.62	10.05	9.25
Quesería	2	18	8.42	8.31	8.83	8.52
Quesería	2	20	7.48	9.88	10.34	9.23
Quesería	2	20	5.18	6.85	6.85	6.29
Quesería	2	16	8.41	8.62	8.02	8.35
Quesería	2	14	7.43	8.04	6.99	7.49
Quesería	2	14	5.33	6.24	6.66	6.08
Quesería	2	16	6.86	7.38	5.53	6.59
Quesería	2	18	8.14	8.4	7.12	7.89
Quesería	2	12	4.8	6.22	6.66	5.89
Quesería	2	20	7.62	8.17	7.73	7.84
Quesería	2	20	9.79	7.81	7.38	8.33
Quesería	2	16	5	6.63	6.54	6.06
Quesería	2	14	3.82	5.52	5.81	5.05
Quesería	2	16	6.01	6.8	6.85	6.55

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	20	8.8	9.8	9.5	9.37
Quesería	2	16	7.2	7.19	7.24	7.21
Quesería	2	14	6.27	7.23	7.15	6.88
Quesería	2	16	7.62	9.02	8.78	8.47
Quesería	2	16	5.3	5.96	5.89	5.72
Quesería	2	14	3.98	7.17	6.64	5.93
Quesería	2	16	5.43	6.68	5.9	6.00
Quesería	2	22	7.62	9.47	7.13	8.07
Quesería	2	16	6.83	8.19	8.57	7.86
Quesería	2	28	9.94	11.11	10	10.35
Quesería	2	16	6.3	7.5	6.63	6.81
Quesería	2	14	7.14	9.85	9.46	8.82
Quesería	2	18	5.95	6.83	6.74	6.51
Quesería	2	20	10.96	12.78	12.77	12.17
Quesería	2	18	7.6	9.44	9.8	8.95
Quesería	2	20	11.34	12.58	11.78	11.90
Quesería	2	16	5.13	7.03	6.78	6.31
Quesería	2	14	7.29	5.72	6.62	6.54
Quesería	2	42	11.37	15.98	15.84	14.40
Quesería	2	26	6.57	9.8	8.5	8.29
Quesería	2	18	6.48	6.43	5.54	6.15
Quesería	2	22	10.65	13	14.78	12.81
Quesería	2	20	8.88	9.16	9.44	9.16
Quesería	2	24	7.16	7.33	7.51	7.33
Quesería	2	16	6.25	7.02	6.9	6.72
Quesería	2	18	3.91	7.7	7.65	6.42
Quesería	2	20	9.73	12.69	11.87	11.43
Quesería	2	14	3.9	5.08	4.92	4.63
Quesería	2	18	5.43	5.54	5.71	5.56
Quesería	2	18	10.08	10.03	6.63	8.91
Quesería	2	14	8.71	7.38	7.9	8.00
Quesería	2	22	5.52	7.46	8.48	7.15
Quesería	2	20	6.07	7.93	7.17	7.06
Quesería	2	22	6.31	7.21	9.14	7.55
Quesería	2	16	6.09	6.28	4.29	5.55
Quesería	2	14	7.5	8.52	8.34	8.12
Quesería	2	16	7.2	7.67	8.09	7.65
Quesería	2	20	9.44	12.43	11.96	11.28
Quesería	2	22	8.16	9.94	10.07	9.39
Quesería	2	30	9.35	9	8	8.78
Quesería	2	18	11.15	11.27	11.33	11.25
Quesería	2	30	9.31	9.59	10.01	9.64

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	20	6.61	7.75	7.18	7.18
Quesería	2	26	10.31	10.92	10.13	10.45
Quesería	2	18	4.96	7.88	5.01	5.95
Quesería	2	26	6.62	7.66	7.43	7.24
Quesería	2	20	8.99	8.73	7.07	8.26
Quesería	2	14	7.16	6.16	6.96	6.76
Quesería	2	22	9.06	9.81	9.37	9.41
Quesería	2	16	7	8.37	9.13	8.17
Quesería	2	16	6.96	8.62	9.08	8.22
Quesería	2	14	4.76	5.92	5.74	5.47
Quesería	2	12	4.75	4.78	4.91	4.81
Quesería	2	20	10.02	8.33	8.29	8.88
Quesería	2	22	5.72	6.9	7.05	6.56
Quesería	2	20	5.39	7.44	7.5	6.78
Quesería	2	22	5.86	8.19	7.9	7.32
Quesería	2	14	6.92	6.89	6.04	6.62
Quesería	2	22	10.92	10.15	8.51	9.86
Quesería	2	16	8.4	11.92	12.78	11.03
Quesería	2	22	9.91	8.84	8.6	9.12
Quesería	2	14	6.29	6.04	5.21	5.85
Quesería	2	16	6.63	6.88	7.08	6.86
Quesería	2	16	5.97	6.41	6.21	6.20
Quesería	2	18	7.94	7.91	7.67	7.84
Quesería	2	22	5.1	7.34	6.67	6.37
Quesería	2	16	4.94	5.5	6.43	5.62
Quesería	2	20	6.75	8.96	7.54	7.75
Quesería	2	30	13.74	11.19	8.27	11.07
Quesería	2	14	8.13	8.91	9.07	8.70
Quesería	2	24	11.8	10.02	10.17	10.66
Quesería	2	30	9.27	10.21	10.99	10.16
Quesería	2	20	8.56	9.94	7.98	8.83
Quesería	2	26	8.81	11.54	9.08	9.81
Quesería	2	22	9.15	9.12	9.81	9.36
Quesería	2	20	5.74	7.53	7.27	6.85
Quesería	2	16	5.4	7.28	7.07	6.58
Quesería	2	14	6.17	5.54	6.54	6.08
Quesería	2	16	5.8	6.59	6.2	6.20
Quesería	2	18	5.06	7.13	6.59	6.26
Quesería	2	14	6.52	6.95	6.73	6.73
Quesería	2	12	4.94	7.29	7.18	6.47
Quesería	2	14	5.31	5.72	5.51	5.51
Quesería	2	26	8.43	7.91	7.74	8.03

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18	6.95	6.91	7.04	6.97
Quesería	2	24	9.46	9.34	9.37	9.39
Quesería	2	18	8.62	12.42	12.46	11.17
Quesería	2	16	10.49	8.92	8.73	9.38
Quesería	2	12	6.27	6.67	5.92	6.29
Quesería	2	18	5.95	6.93	7.15	6.68
Quesería	2	18	6.6	9.07	9.18	8.28
Quesería	2	20	8.52	8.97	9.07	8.85
Quesería	2	16	6.13	6.6	6.46	6.40
Quesería	2	14	5.32	5.56	5.4	5.43
Quesería	2	20	9.65	9.01	9.93	9.53
Quesería	2	20	8.14	8.66	8.49	8.43
Quesería	2	16	8.14	8.85	8.9	8.63
Quesería	2	22	6.54	8.3	8.45	7.76
Quesería	2	22	6.98	10.16	8.32	8.49
Quesería	2	26	6.58	7.53	8.9	7.67
Quesería	2	24	7.45	9.53	7.39	8.12
Quesería	2	16	7.54	6.25	5.81	6.53
Quesería	2	16	7.61	8.12	7.4	7.71
Quesería	2	14	4.65	5.48	5.36	5.16
Quesería	2	14	10.23	9.83	8.11	9.39
Quesería	2	16	6.83	7.53	5.87	6.74
Quesería	2	24	10.49	10.93	9.5	10.31
Quesería	2	26	11.14	10.47	9.9	10.50
Quesería	2	20	9.38	9.31	9.41	9.37
Quesería	2	22	9.07	8.91	7.04	8.34
Quesería	2	20	9.53	9.51	9.56	9.53
Quesería	2	16	8.48	7.96	6.73	7.72
Quesería	2	10	3.38	5.01	5.66	4.68
Quesería	2	18	6.27	6.18	6.58	6.34
Quesería	2	20	3.96	5	5.22	4.73
Quesería	2	24	6.94	9.01	10.56	8.84
Quesería	2	32	9.57	9.31	9.66	9.51
Quesería	2	18	9.04	9.23	9.2	9.16
Quesería	2	24	6.95	7.96	8.41	7.77
Quesería	2	20	12.43	12.59	10.32	11.78
Quesería	2	22	9.96	10.17	10.04	10.06
Quesería	2	22	5.42	6.16	6.4	5.99
Quesería	2	18	5.27	5.72	5.45	5.48
Quesería	2	26	7.43	7.57	7.36	7.45
Quesería	2	18	9.96	10.94	9.61	10.17
Quesería	2	16	5.6	6.83	6.22	6.22

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18	4.71	5.38	7.06	5.72
Quesería	2	14	7.15	7.16	9.45	7.92
Quesería	2	12	6.06	6.12	6.15	6.11
Quesería	2	16	7.35	7.51	7.2	7.35
Quesería	2	18	8.43	8.64	8.37	8.48
Quesería	2	16	6.25	7.17	7.57	7.00
Quesería	2	14	8.9	8.97	8.81	8.89
Quesería	2	10	5.52	5.75	5.94	5.74
Quesería	2	14	7.55	7.96	8.77	8.09
Quesería	2	20	6.71	6.81	6.53	6.68
Quesería	2	12	5.87	5.55	6.21	5.88
Quesería	2	12	3.82	5.77	5.76	5.12
Quesería	2	24	8.37	9.64	9.13	9.05
Quesería	2	18	10.21	10.87	11.38	10.82
Quesería	2	16	12.52	12.92	12.68	12.71
Quesería	2	14	6.44	6.11	5.81	6.12
Quesería	2	18	7.94	7.44	7.84	7.74
Quesería	2	18	6.67	7.79	7.76	7.41
Quesería	2	20	9.97	10.62	11.17	10.59
Quesería	2	20	7.85	8.25	8.28	8.13
Quesería	1	26	10.95	12.36	10.68	11.33
Quesería	1	18	7.99	7.75	7.01	7.58
Quesería	1	24	6.53	5.99	5.58	6.03
Quesería	1	30	8.3	9.55	8.87	8.91
Quesería	1	22	8.72	8.5	9.71	8.98
Quesería	1	28	9.6	8.98	9.6	9.39
Quesería	1	32	7.63	7.83	5.98	7.15
Quesería	1	26	6.08	6.99	6.78	6.62
Quesería	1	26	5.59	6.88	5.81	6.09
Quesería	1	18	8.29	8.45	6.87	7.87
Quesería	1	16	4.65	5.24	5.32	5.07
Quesería	1	20	10.66	7.97	10.25	9.63
Quesería	1	12	4.86	4.55	3.17	4.19
Quesería	1	20	10.23	11.74	12.95	11.64
Quesería	1	18	11.97	10.38	8.46	10.27
Quesería	1	16	5.02	6.54	5.1	5.55
Quesería	1	20	8.26	10.47	10.65	9.79
Quesería	1	28	8.58	8.35	6.14	7.69
Quesería	1	22	8.24	8.31	6.39	7.65
Quesería	1	28	6.16	7.44	7.92	7.17
Quesería	1	26	10.42	10.85	11.39	10.89
Quesería	1	16	6.18	5.59	3.91	5.23

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	24	5.34	7.85	8.32	7.17
Quesería	1	20	7.05	6.93	5.87	6.62
Quesería	1	16	5.68	5.26	5.78	5.57
Quesería	1	18	5.17	5.14	6.95	5.75
Quesería	1	24	6.05	4.44	8.54	6.34
Quesería	1	20	10.68	11.81	12.43	11.64
Quesería	1	22	6.54	6.11	6.73	6.46
Quesería	1	22	5.84	6.29	6.28	6.14
Quesería	1	22	10.17	10.17	8.64	9.66
Quesería	1	18	6.88	8.42	6.72	7.34
Quesería	1	26	9.89	11.5	10.81	10.73
Quesería	1	18	9.66	9.21	8.25	9.04
Quesería	1	20	8.72	9.69	9.36	9.26
Quesería	1	14	5.61	5.93	5.31	5.62
Quesería	1	20	6.01	7.23	6.39	6.54
Quesería	1	20	4.15	5.36	5.16	4.89
Quesería	1	20	9.34	8.97	7.32	8.54
Quesería	1	48	11.31	11.07	7.26	9.88
Quesería	1	24	8.78	8.71	7.01	8.17
Quesería	1	30	7.69	6.7	8.01	7.47
Quesería	1	26	5.53	6.53	6.37	6.14
Quesería	1	26	5.35	5.14	6.23	5.57
Quesería	1	22	6.09	6.03	4.38	5.50
Quesería	1	18	5.61	5.91	3.7	5.07
Quesería	1	22	4.77	6.35	5.81	5.64
Quesería	1	24	11.82	15.79	11.76	13.12
Quesería	1	28	5.97	7.75	7.73	7.15
Quesería	1	24	7.93	7.62	10.41	8.65
Quesería	1	10	5.29	4.17	3.91	4.46
Quesería	1	16	4.04	5.29	5.19	4.84
Quesería	1	24	7.63	7.34	6.85	7.27
Quesería	1	26	9.14	8.55	8.91	8.87
Quesería	1	28	5.83	8.56	4.51	6.30
Quesería	1	26	7.95	8.62	7.4	7.99
Quesería	1	22	5.9	5.82	5.55	5.76
Quesería	1	16	4.72	5.7	4.2	4.87
Quesería	1	14	5.24	5.14	4	4.79
Quesería	1	18	5.36	4.64	4.82	4.94
Quesería	1	30	6.68	7.53	10.34	8.18
Quesería	1	24	11.51	12.24	12.1	11.95
Quesería	1	12	4.43	4.96	5.39	4.93
Quesería	1	20	6.53	8.07	7.33	7.31

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	24	8.09	7.35	9.15	8.20
Quesería	1	20	5.43	5.43	5.04	5.30
Quesería	1	14	5.41	5.18	3.65	4.75
Quesería	1	16	4.79	4.33	4.81	4.64
Quesería	1	24	6.3	6.44	4.35	5.70
Quesería	1	16	6.3	7.54	5.46	6.43
Quesería	1	22	12.55	11.6	12.35	12.17
Quesería	1	18	6.04	6.07	5.96	6.02
Quesería	1	16	5.22	6.66	5.45	5.78
Quesería	1	16	4.36	4.84	5.04	4.75
Quesería	1	26	11.76	13.53	13.62	12.97
Quesería	1	18	5.11	5.02	5.05	5.06
Quesería	1	20	8.18	8.3	8.37	8.28
Quesería	1	12	6.51	6.54	7.39	6.81
Quesería	1	20	3.87	7.01	7.26	6.05
Quesería	1	18	5.74	5.53	5.03	5.43
Quesería	1	20	6.47	7.54	8.08	7.36
Quesería	1	24	8.71	7.79	5.66	7.39
Quesería	1	22	6.05	6.47	6.56	6.36
Quesería	1	22	5.13	6.68	2.75	4.85
Quesería	1	20	9.96	9.44	10.49	9.96
Quesería	1	22	3.31	7.55	7.48	6.11
Quesería	1	18	5.35	6.9	6.72	6.32
Quesería	1	20	7.04	6.86	7.33	7.08
Quesería	1	18	6.93	4.63	4.67	5.41
Quesería	1	14	5.46	6.93	6.21	6.20
Quesería	1	24	6.16	7.08	7.24	6.83
Quesería	1	22	11.93	12.24	11.79	11.99
Quesería	1	16	6.2	7.44	6.55	6.73
Quesería	1	12	5.35	5.16	7.16	5.89
Quesería	1	22	8.72	8.48	8.89	8.70
Quesería	1	18	6.15	6.85	7.07	6.69
Quesería	1	24	6.18	5.52	5.38	5.69
Quesería	1	16	5.87	5.82	5.27	5.65
Quesería	1	16	5.12	5.69	6.7	5.84
Quesería	1	32	6.93	7.3	7.57	7.27
Quesería	1	16	5.62	6.12	5.87	5.87
Quesería	1	18	4.65	4.7	4.62	4.66
Quesería	1	14	3.28	5.76	5.31	4.78
Quesería	1	22	3.74	6.17	5.87	5.26
Quesería	1	16	4.55	6.62	5.89	5.69
Quesería	1	22	8.26	10.55	10.22	9.68

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	22	7.49	6.07	5.87	6.48
Quesería	1	20	3.76	5.45	5.77	4.99
Quesería	1	16	7.92	8	7.19	7.70
Quesería	1	16	7.93	7.44	7.29	7.55
Quesería	1	14	5.17	5.8	4.84	5.27
Quesería	1	18	5.21	3.26	4.96	4.48
Quesería	1	18	3.96	5.91	4.96	4.94
Quesería	1	16	5.4	6.97	7.47	6.61
Quesería	1	20	7.11	5.66	6.28	6.35
Quesería	1	14	5.37	5.29	5.37	5.34
Quesería	1	14	6.75	8.63	7.99	7.79
Quesería	1	22	8.68	9.4	11.18	9.75
Quesería	1	20	7.25	7.3	6.49	7.01
Quesería	1	22	4.85	5.14	5.7	5.23
Quesería	1	10	5.24	4.46	4.99	4.90
Quesería	1	14	4.8	6.14	5.9	5.61
Quesería	1	18	4.95	6.37	6	5.77
Quesería	1	22	7.99	8.89	8.41	8.43
Quesería	1	20	6.34	6.51	5.77	6.21
Quesería	1	22	5.07	6.65	6.23	5.98
Quesería	1	20	5.67	7.18	7.21	6.69
Quesería	1	14	4.52	4.59	4.35	4.49
Quesería	1	16	5.08	6.49	6.68	6.08
Quesería	1	12	4.09	8.11	6.17	6.12
Quesería	1	32	6.62	6.49	8.56	7.22
Quesería	1	24	6.3	6.34	6.74	6.46
Quesería	1	22	5.56	7.5	7.3	6.79
Quesería	1	30	5.78	6.31	6.58	6.22
Quesería	1	14	4.06	4.84	4.89	4.60
Quesería	1	14	5.51	6.53	5.74	5.93
Quesería	1	22	5.75	5.67	6.56	5.99
Quesería	1	28	9.5	9.38	9.08	9.32
Quesería	1	18	6.2	6.62	7.09	6.64
Quesería	1	34	5.59	6.97	6.57	6.38
Quesería	1	22	5.39	5.31	5.52	5.41
Quesería	1	18	4.76	5.42	5.13	5.10
Quesería	1	22	6.58	8.94	7.16	7.56
Quesería	1	18	5.08	5.55	7.28	5.97
Quesería	1	18	7.69	8.63	8.72	8.35
Quesería	1	20	6.65	7.27	6.99	6.97
Quesería	1	16	6.44	5.95	5.5	5.96
Quesería	1	20	8.12	7.72	5.87	7.24

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	24	7.02	8.61	8.37	8.00
Quesería	1	20	5.28	6.42	6.04	5.91
Quesería	1	20	6.37	5.27	5.7	5.78
Quesería	1	18	8.52	7.68	8.5	8.23
Quesería	1	16	5.53	6.11	5.41	5.68
Quesería	1	22	5.39	6.19	5.72	5.77
Quesería	1	8	5.53	5.99	5.61	5.71
Quesería	1	16	5.48	6.05	6.2	5.91
Quesería	1	10	3.31	4.45	4.96	4.24
Quesería	1	14	4.84	6.63	7.13	6.20
Quesería	1	16	5.7	5.46	5.76	5.64
Quesería	1	14	5.72	6	6.79	6.17
Quesería	1	18	4.66	7.1	7.18	6.31
Quesería	1	22	6.16	5.77	6.3	6.08
Quesería	1	20	6.12	5.83	5.43	5.79
Quesería	1	14	4.3	5.4	5.45	5.05
Quesería	1	20	5.07	5.9	5.47	5.48
Quesería	1	12	5.47	5.97	4.07	5.17
Quesería	1	20	4.48	6.03	5.12	5.21
Quesería	1	16	6.2	8.83	8.59	7.87
Quesería	1	24	4.51	5.88	4.91	5.10
Quesería	1	20	7.03	7	7.02	7.02
Quesería	1	22	8.39	6.37	7.92	7.56
Quesería	1	20	7.43	8.13	7.41	7.66
Quesería	1	12	5.38	6.48	6.6	6.15
Quesería	1	16	3.33	5.03	4.63	4.33
Quesería	1	24	5.34	7.34	6.89	6.52
Quesería	1	12	5.46	5.55	5.52	5.51
Quesería	1	22	6.07	6.91	5.89	6.29
Quesería	1	12	7.09	7.25	7.33	7.22
Quesería	1	18	9.89	9.94	4.7	8.18
Quesería	1	18	9.4	10.64	10.91	10.32
Quesería	1	10	6.09	5.35	5.98	5.81
Quesería	1	16	7.96	7.18	8.26	7.80
Quesería	1	22	7.34	7.87	7.55	7.59
Quesería	1	20	7.6	7.37	7.66	7.54
Quesería	1	26	6.72	8.31	7.26	7.43
Quesería	1	18	6.08	6.07	6.32	6.16
Quesería	1	16	4.56	5.76	4.83	5.05
Quesería	1	16	4.51	5.56	5.98	5.35
Quesería	1	18	5.95	3.62	3.07	4.21
Quesería	1	14	3.13	5.92	5.39	4.81

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	14	6.21	7.27	7.17	6.88
Quesería	1	26	12.15	11.74	9.58	11.16
Quesería	1	16	4.57	5.81	5.73	5.37
Quesería	1	20	6.17	6.97	7.14	6.76
Quesería	1	20	5.96	5.94	6.59	6.16
Quesería	1	12	4.48	5.24	5.24	4.99
Quesería	1	22	9.79	9.14	9.48	9.47
Quesería	1	20	4.37	5.22	5.35	4.98
Quesería	1	26	9.95	11.8	11.04	10.93
Quesería	1	24	7.6	7.84	8.5	7.98
Quesería	1	32	13.23	12.32	10.28	11.94
Quesería	1	30	7.23	9.24	9.13	8.53
Quesería	1	24	8.5	9.54	8.76	8.93
Quesería	1	12	5.1	3.81	3.63	4.18
Quesería	1	14	5.31	4.41	4.47	4.73
Quesería	1	24	7.26	8.56	7.3	7.71
Quesería	1	16	8.3	8.21	7.92	8.14
Quesería	1	22	6.48	6.43	8.73	7.21
Quesería	1	20	8.55	8.46	8.56	8.52
Quesería	1	26	5.83	6.41	5.69	5.98
Quesería	1	22	6.8	8.81	8.83	8.15
Quesería	1	22	7.37	8.93	10.1	8.80
Quesería	1	18	7.23	7.28	7.16	7.22
Quesería	1	20	6.69	8	7.99	7.56
Quesería	1	16	7.35	7.58	7.53	7.49
Quesería	1	18	7.18	5.86	6.31	6.45
Quesería	1	14	5.54	6.34	6.09	5.99
Quesería	1	22	6.88	8.65	8.64	8.06
Quesería	1	18	7.61	8.15	7.38	7.71
Quesería	1	16	6.72	7.47	7.31	7.17
Quesería	1	14	7.45	5.63	4.72	5.93
Quesería	1	20	10.48	10.98	10.95	10.80
Quesería	1	18	7.04	7.37	7.12	7.18
Quesería	1	20	4.24	5.7	4.96	4.97
Quesería	1	16	7.4	7.5	7.27	7.39
Quesería	1	22	5.05	6.01	5.14	5.40
Quesería	1	22	8.7	7.58	6.34	7.54
Quesería	1	14	4.41	6.97	6.2	5.86
Quesería	1	18	8.23	8.21	8.54	8.33
Quesería	1	28	6.78	8.11	7.57	7.49
Quesería	1	26	7.05	6.67	6.51	6.74
Quesería	1	22	9.21	11.56	11	10.59

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	18	4.65	4.94	4.66	4.75
Quesería	1	24	7.93	8.76	8.76	8.48
Quesería	1	14	5.23	6.6	6.41	6.08
Quesería	1	22	8.58	8.97	8.13	8.56
Quesería	1	20	8.51	8.93	7.54	8.33
Quesería	1	24	5.54	7.55	7.35	6.81
Quesería	1	18	6.15	6.23	6.25	6.21
Quesería	1	16	5.42	4.47	5.13	5.01
Quesería	1	24	7.94	9.05	8.5	8.50
Quesería	1	14	4.44	5.55	5.26	5.08
Quesería	1	18	7.24	8	8.89	8.04
Quesería	1	20	5.07	5.55	5.4	5.34
Quesería	1	16	5.43	5.24	4.3	4.99
Quesería	1	18	9.12	9.06	9.04	9.07
Quesería	1	20	10.51	9.96	9.9	10.12
Quesería	1	18	6.07	7.22	7.09	6.79
Quesería	1	24	5.55	4.2	5.88	5.21
Quesería	1	18	7.98	9.18	6.97	8.04
Quesería	1	22	10.29	11.2	10.3	10.60
Quesería	1	18	3.23	6	6.44	5.22
Quesería	1	14	4.5	4.01	3.98	4.16
Quesería	1	12	5.3	4.91	5.44	5.22
Quesería	1	30	7	7.43	7.77	7.40
Quesería	1	22	8.09	8.1	7.97	8.05
Quesería	1	18	5.26	6.39	6.08	5.91
Quesería	1	16	4.93	4.37	4.2	4.50
Quesería	1	32	10.04	9.44	8.68	9.39
Quesería	1	26	9.02	10.47	10.66	10.05
Quesería	1	30	10.19	9.01	9.45	9.55
Quesería	1	18	5.95	6.14	6.04	6.04
Quesería	1	26	5.87	6.93	6.08	6.29
Quesería	1	16	4.71	5.56	6.44	5.57
Quesería	1	26	13.55	10.6	10.87	11.67
Quesería	1	20	5.49	6.45	6.18	6.04
Quesería	1	18	7.43	8.68	6.34	7.48
Quesería	1	16	8.25	8.51	8.26	8.34
Quesería	1	22	9.33	9.5	9.44	9.42
Quesería	1	20	7.12	6.83	7.21	7.05
Quesería	1	26	9.81	10.02	10.37	10.07
Quesería	1	20	6.27	7.58	7.35	7.07
Quesería	1	24	10.32	10.62	9.87	10.27
Quesería	1	28	7.48	8.2	8.06	7.91

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	22	7.84	6.68	6.67	7.06
Quesería	1	20	7.08	6.9	5.78	6.59
Quesería	1	16	5.28	6.16	3.92	5.12
Quesería	1	18	5.75	7	8.46	7.07
Quesería	1	16	6.05	5.68	5.05	5.59
Quesería	1	20	10.92	11.64	11.24	11.27
Quesería	1	22	7.14	7.77	7.13	7.35
Quesería	1	16	6.17	5.69	5.65	5.84
Quesería	1	20	9.44	8.58	7.28	8.43
Quesería	1	16	5	6.85	5.7	5.85
Quesería	1	20	7.98	8.16	8.42	8.19
Quesería	1	20	4.95	4.52	4.59	4.69
Quesería	1	20	9.73	8.74	9.03	9.17
Quesería	1	22	7.06	6.22	7.44	6.91
Quesería	1	22	6.29	6.17	5.96	6.14
Quesería	1	24	6.52	6.52	4.47	5.84
Quesería	1	24	7.65	9.31	9.01	8.66
Quesería	1	16	5.8	6.23	3.46	5.16
Quesería	1	28	9.33	8.89	8.42	8.88
Quesería	1	18	9.29	9.93	8.69	9.30
Quesería	1	24	7.57	7.72	7.64	7.64
Quesería	1	22	10.43	11.1	10.21	10.58
Quesería	1	14	6.75	6.81	6.28	6.61
Quesería	1	20	5.39	5.69	5.79	5.62
Quesería	1	22	11.58	13.32	12.21	12.37
Quesería	1	20	6.43	7.15	6.82	6.80
Quesería	1	22	6.13	5.64	5.5	5.76
Quesería	1	26	7.82	8.59	7	7.80
Quesería	4	16	6.91	7.97	7.71	7.53
Quesería	4	12	7.7	6.43	7.61	7.25
Quesería	4	16	6.93	6.81	6.17	6.64
Quesería	4	14	6.42	4.31	4.09	4.94
Quesería	4	20	6.82	6.57	5.96	6.45
Quesería	4	28	7.74	7.63	7.25	7.54
Quesería	2	14	4.77	5.19	5.61	5.19
Quesería	2	18	7.64	6.94	7.94	7.51
Quesería	2	26	8.1	7.72	9.46	8.43
Quesería	2	20	7.48	8.14	7.93	7.85
Quesería	2	16	6.44	7.87	7.97	7.43
Quesería	2	22	6.28	7.06	7.47	6.94
Quesería	2	18	6.63	6.93	6	6.52
Itzímbaro	3	24	6.84	6.58	5	6.14

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	22	9.81	9.66	9.45	9.64
Itzímbaro	3	16	5.43	5.46	5.49	5.46
Itzímbaro	3	32	9.18	9.95	9.41	9.51
Itzímbaro	3	16	6.48	7.57	6.9	6.98
Itzímbaro	3	7	5.41	5.45	5.49	5.45
Itzímbaro	3	20	6.83	5.77	5.43	6.01
Itzímbaro	3	28	6.4	6.45	6.36	6.40
Itzímbaro	3	24	5.75	5.76	5.86	5.79
Itzímbaro	3	22	7.28	7.32	6.09	6.90
Itzímbaro	3	10	7.76	7.67	8.08	7.84
Itzímbaro	3	14	5.49	5.56	4.53	5.19
Itzímbaro	3	14	4.62	4.26	4.59	4.49
Itzímbaro	3	18	6.84	8.1	7.51	7.48
Itzímbaro	3	16	7.59	7.57	6.79	7.32
Itzímbaro	3	22	12.04	8.46	8.62	9.71
Itzímbaro	3	14	7.82	7.7	6.55	7.36
Itzímbaro	3	16	4.81	5.94	5.53	5.43
Itzímbaro	3	16	4.64	5.44	5.3	5.13
Itzímbaro	3	20	6	6.51	6.77	6.43
Itzímbaro	3	14	6.03	6.77	8.21	7.00
Itzímbaro	3	12	4.13	3.63	3	3.59
Itzímbaro	3	14	5.35	5.7	5.4	5.48
Itzímbaro	3	18	7.36	7	6.96	7.11
Itzímbaro	3	20	7.15	7.73	7.9	7.59
Itzímbaro	3	12	4.65	4.65	4.59	4.63
Itzímbaro	3	16	6	5.99	5.41	5.80
Itzímbaro	3	14	4.63	4.22	3	3.95
Itzímbaro	3	16	4.72	5.45	5.39	5.19
Itzímbaro	3	18	6.16	6.28	6.46	6.30
Itzímbaro	3	16	5.96	6.15	3.8	5.30
Itzímbaro	3	14	5.68	5.78	5.28	5.58
Itzímbaro	3	18	4.94	5.31	5.17	5.14
Itzímbaro	3	14	3.84	5.18	5.09	4.70
Itzímbaro	3	14	10.45	8.4	5.33	8.06
Itzímbaro	3	16	3.63	4.3	4.5	4.14
Itzímbaro	3	14	5.82	5.73	5.39	5.65
Itzímbaro	3	16	4.86	4.95	4.92	4.91
Itzímbaro	3	20	6.06	6.96	6.91	6.64
Itzímbaro	3	14	5.74	5.62	4.75	5.37
Itzímbaro	3	14	7.67	7.6	7.35	7.54
Itzímbaro	3	16	7.87	7.7	8.68	8.08
Itzímbaro	3	16	6.24	6.13	5.15	5.84

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	22	6.51	7.11	6.33	6.65
Itzímbaro	3	18	5.5	7.16	7.36	6.67
Itzímbaro	3	14	5.77	6.15	6.13	6.02
Itzímbaro	3	22	9.82	9.96	10.09	9.96
Itzímbaro	3	22	12.27	9.86	10.76	10.96
Itzímbaro	3	16	5.96	5.93	5.02	5.64
Itzímbaro	3	18	6.92	7.45	7.4	7.26
Itzímbaro	3	14	5.83	6.89	6.3	6.34
Itzímbaro	3	18	6.42	6.1	5.84	6.12
Itzímbaro	3	10	5.64	6.27	5.58	5.83
Itzímbaro	3	22	9.87	9.52	9.29	9.56
Itzímbaro	3	18	5.27	5.09	5.22	5.19
Itzímbaro	3	12	4.97	4.34	3.58	4.30
Itzímbaro	3	20	6.57	6.67	6.6	6.61
Itzímbaro	3	14	4.78	5.04	4.87	4.90
Itzímbaro	3	20	8.3	8.28	7.77	8.12
Itzímbaro	3	10	6.12	6.79	5.87	6.26
Itzímbaro	3	18	7.82	7.86	8.36	8.01
Itzímbaro	3	20	5.81	6.81	7.24	6.62
Itzímbaro	3	12	4.96	4.58	4.93	4.82
Itzímbaro	3	16	6.64	6.87	6.21	6.57
Itzímbaro	3	14	5.15	5.24	5.64	5.34
Itzímbaro	3	12	4.32	4.48	4.49	4.43
Itzímbaro	3	20	6.21	6.78	6.99	6.66
Itzímbaro	3	32	9.29	8.88	9.18	9.12
Itzímbaro	3	18	7.32	7.72	7.22	7.42
Itzímbaro	3	18	6.01	5.55	4.72	5.43
Itzímbaro	3	16	7.87	6.56	4.84	6.42
Itzímbaro	3	26	8.78	10.1	9.76	9.55
Itzímbaro	3	16	5.49	5.18	5.48	5.38
Itzímbaro	3	16	5.1	5.12	5.3	5.17
Itzímbaro	3	18	7.84	8.23	8.58	8.22
Itzímbaro	3	18	4.3	6.06	6.89	5.75
Itzímbaro	3	16	6.81	7.52	7.63	7.32
Itzímbaro	3	14	6.24	7.75	7.25	7.08
Itzímbaro	3	14	5.38	5.4	5.78	5.52
Itzímbaro	3	20	6.34	7.37	6.88	6.86
Itzímbaro	3	20	7.28	7.8	7.36	7.48
Itzímbaro	3	18	6.6	6.86	6.42	6.63
Itzímbaro	3	18	5.12	5.03	4.85	5.00
Itzímbaro	3	16	5.85	6.57	6.08	6.17
Itzímbaro	3	16	6.94	6.86	7.48	7.09

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	14	5.72	5.93	5.9	5.85
Itzímbaro	3	18	7.1	7.77	8.12	7.66
Itzímbaro	3	22	6.64	6.67	6.43	6.58
Itzímbaro	3	20	8.71	8.59	8.24	8.51
Itzímbaro	3	14	5.73	5.83	5.93	5.83
Itzímbaro	3	16	9.04	8.68	8.36	8.69
Itzímbaro	3	18	7.1	7.47	6.64	7.07
Itzímbaro	3	16	4.04	3.86	4.57	4.16
Itzímbaro	3	20	8.82	8.64	8.57	8.68
Itzímbaro	3	18	6.95	7.07	6.98	7.00
Itzímbaro	3	14	6.43	7.01	8	7.15
Itzímbaro	3	28	11.07	7.53	8.43	9.01
Itzímbaro	3	12	5.22	4.34	4.08	4.55
Itzímbaro	3	24	7.31	6.63	6.42	6.79
Itzímbaro	3	18	4.91	5.37	5.31	5.20
Itzímbaro	3	10	6.89	6.96	5.22	6.36
Itzímbaro	3	18	5.53	5.73	6.15	5.80
Itzímbaro	3	22	6.06	6.47	5.61	6.05
Itzímbaro	3	18	6.56	6.82	6.97	6.78
Itzímbaro	3	14	4.75	5.24	5.56	5.18
Itzímbaro	3	20	6.78	7.48	5.98	6.75
Itzímbaro	3	16	8.84	9.45	6.31	8.20
Itzímbaro	3	18	7	8	8.65	7.88
Itzímbaro	3	14	6.14	6.06	5.58	5.93
Itzímbaro	3	20	6.91	6.62	6.64	6.72
Itzímbaro	3	24	5.56	6.11	6.51	6.06
Itzímbaro	3	30	6.7	6.65	7.33	6.89
Itzímbaro	3	20	6.86	9.33	8.65	8.28
Itzímbaro	3	18	5.89	5.19	5.69	5.59
Itzímbaro	3	22	7.43	7.91	8.3	7.88
Itzímbaro	3	16	4.2	7.11	6.79	6.03
Itzímbaro	3	18	7.01	6.37	7.29	6.89
Itzímbaro	3	20	7.72	8.71	8.38	8.27
Itzímbaro	3	16	5.59	5.59	5.47	5.55
Itzímbaro	3	16	5.19	6.64	5.87	5.90
Itzímbaro	3	18	7	7.24	7.41	7.22
Itzímbaro	3	16	6.23	6.65	7.02	6.63
Itzímbaro	3	16	4.99	5.55	4.69	5.08
Itzímbaro	3	12	4.22	5.16	4.73	4.70
Itzímbaro	3	26	2.68	9.14	7.78	6.53
Itzímbaro	4	12	6.49	6.38	6.36	6.41
Itzímbaro	4	18	6.52	6.4	6.41	6.44

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	4	26	9.02	9.12	9.62	9.25
Itzímbaro	4	20	7.25	8.24	8.13	7.87
Itzímbaro	4	28	10.88	11.14	9.7	10.57
Itzímbaro	4	16	7.15	6.36	6.2	6.57
Itzímbaro	4	20	9.28	9.16	9.43	9.29
Itzímbaro	4	14	5.54	5.3	5.48	5.44
Itzímbaro	4	14	5.83	6.6	6.75	6.39
Itzímbaro	4	16	10.2	7.58	9.94	9.24
Itzímbaro	4	10	5.38	5.25	4.26	4.96
Itzímbaro	4	16	4.46	5.55	4.91	4.97
Itzímbaro	4	20	6.45	6.32	6.26	6.34
Itzímbaro	4	20	5.44	6.65	6.61	6.23
Itzímbaro	4	12	5.36	5.48	5.54	5.46
Itzímbaro	4	18	6.99	6.95	7.5	7.15
Itzímbaro	4	18	7.18	7.44	7.36	7.33
Itzímbaro	4	22	5.16	5.98	7.14	6.09
Itzímbaro	4	10	6.33	6.98	6.19	6.50
Itzímbaro	4	22	11.55	12.9	13.19	12.55
Itzímbaro	4	18	6.03	5.79	5.41	5.74
Itzímbaro	4	16	5.25	5.83	5.35	5.48
Itzímbaro	4	18	6.28	6.52	6.35	6.38
Itzímbaro	4	22	7.65	8.22	8.17	8.01
Itzímbaro	4	14	6.86	7.06	6.9	6.94
Itzímbaro	4	26	5.23	4.4	5.16	4.93
Itzímbaro	4	18	5.1	5.82	5.79	5.57
Itzímbaro	4	16	5.15	5.45	5.4	5.33
Itzímbaro	4	18	5.34	7.18	7.14	6.55
Itzímbaro	4	14	5.66	5.03	4.62	5.10
Itzímbaro	4	12	7.16	5.21	4.31	5.56
Itzímbaro	4	16	4.27	5.11	4.22	4.53
Itzímbaro	4	24	11.52	11.27	9.14	10.64
Itzímbaro	4	12	6.11	5.6	3.04	4.92
Itzímbaro	4	24	8.75	9.68	9.11	9.18
Itzímbaro	4	18	9.06	8.87	7.03	8.32
Itzímbaro	4	16	5.93	6.29	5.3	5.84
Itzímbaro	4	20	8.79	8.76	9.38	8.98
Itzímbaro	4	16	8.29	9.42	9.19	8.97
Itzímbaro	4	20	8.45	8.11	7.45	8.00
Itzímbaro	4	24	10.83	10.31	8.97	10.04
Itzímbaro	4	18	8.89	8.13	8.69	8.57
Itzímbaro	4	18	5.48	5.13	5.8	5.47
Itzímbaro	4	18	4.37	5.03	5.29	4.90

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	4	16	6.77	7.21	6.63	6.87
Itzímbaro	4	24	11.27	10.51	10.45	10.74
Itzímbaro	4	20	6.52	6.75	7.76	7.01
Itzímbaro	4	24	14	12.69	11.12	12.60
Itzímbaro	4	16	5.9	5.92	6.11	5.98
Itzímbaro	4	14	4.28	5.08	5.09	4.82
Itzímbaro	4	24	14.73	8.71	5.63	9.69
Itzímbaro	4	28	7.19	8.06	7.6	7.62
Itzímbaro	4	22	7.67	7.43	7.96	7.69
Itzímbaro	4	22	7.36	7.42	7.17	7.32
Itzímbaro	4	22	6.4	7.6	7.1	7.03
Itzímbaro	4	12	5.06	5.43	5.5	5.33
Itzímbaro	4	14	6.14	6.43	5.5	6.02
Itzímbaro	4	12	5.42	5.59	5.3	5.44
Itzímbaro	4	14	5.33	4.48	2.97	4.26
Itzímbaro	4	16	7.24	7.52	7.1	7.29
Itzímbaro	4	14	4.51	4.87	4.89	4.76
Itzímbaro	4	20	9.8	9.19	7.75	8.91
Itzímbaro	4	16	4.71	6.65	6.27	5.88
Itzímbaro	4	22	7.05	5.41	3.87	5.44
Itzímbaro	4	20	8.55	8.27	8.57	8.46
Itzímbaro	4	14	5.53	5.76	6	5.76
Itzímbaro	4	24	8.64	7.38	8.08	8.03
Itzímbaro	4	14	4.89	5.31	4.91	5.04
Itzímbaro	4	16	6.06	6.55	6.25	6.29
Itzímbaro	4	10	4.55	5.16	6.06	5.26
Itzímbaro	4	22	7.82	8.75	8.4	8.32
Itzímbaro	4	22	4.85	4.84	4.83	4.84
Itzímbaro	4	16	5.77	6.01	5.82	5.87
Itzímbaro	4	18	5.75	5.2	5.09	5.35
Itzímbaro	4	20	6.19	5.36	3.96	5.17
Itzímbaro	4	22	7.47	5.77	4.56	5.93
Mexiquito	1	24	7.25	7.3	7.24	7.26
Mexiquito	1	22	9.92	11.03	9.89	10.28
Mexiquito	1	16	6.86	6.35	6.9	6.70
Mexiquito	1	20	4.46	5.46	5.56	5.16
Mexiquito	1	24	7.73	7.37	6.88	7.33
Mexiquito	1	24	7.39	7.36	7.75	7.50
Mexiquito	1	18	6.06	6.82	7.19	6.69
Mexiquito	1	16	6.05	6.04	5.85	5.98
Mexiquito	1	20	6.75	6.76	6.73	6.75
Mexiquito	1	18	6.35	6.33	6.52	6.40

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Mexiquito	1	16	6.11	6.93	7	6.68
Mexiquito	1	10	5.19	5.31	4.88	5.13
Mexiquito	1	16	5.24	7.96	7.71	6.97
Mexiquito	1	18	5.73	6.77	7.21	6.57
Mexiquito	1	16	5.03	4.5	4.11	4.55
Mexiquito	1	16	7.48	7.95	8.12	7.85
Mexiquito	1	18	8	6.36	5.34	6.57
Mexiquito	1	22	7.79	7.42	7.43	7.55
Mexiquito	1	20	6.67	7.25	7.32	7.08
Mexiquito	1	20	8.1	8.44	9.47	8.67
Mexiquito	1	16	5.93	7.1	6.11	6.38
Mexiquito	1	20	7.61	7.95	7.1	7.55
Mexiquito	1	12	4.86	7.16	5.14	5.72
Mexiquito	1	22	8.68	7.96	8.32	8.32
Mexiquito	1	22	6.96	7.47	7.72	7.38
Mexiquito	1	16	7.2	6.01	5.51	6.24
Mexiquito	1	18	6.93	6.81	7.06	6.93
Mexiquito	1	20	6.5	7.89	7.32	7.24
Mexiquito	1	16	6.42	6.68	6.08	6.39
Mexiquito	1	14	6.17	6.21	6.15	6.18
Mexiquito	1	32	10.71	10.72	10.74	10.72
Mexiquito	1	20	9.12	9.95	9.54	9.54
Mexiquito	1	16	6.55	6.38	6.28	6.40
Mexiquito	1	20	6.93	6.68	7.1	6.90
Mexiquito	1	12	5.21	5.17	5.29	5.22
Mexiquito	1	22	8.11	8.55	7.84	8.17
Mexiquito	2	18	5.77	5.62	4.23	5.21
Mexiquito	2	20	6.49	6.4	5.63	6.17
Mexiquito	2	20	6.82	6.62	6.65	6.70
Mexiquito	2	16	4.7	6.28	6.13	5.70
Mexiquito	2	20	5.74	5.26	5.2	5.40
Mexiquito	2	22	6.71	7.96	7.72	7.46
Mexiquito	2	18	6.16	3.72	4.05	4.64
Mexiquito	2	18	9.04	9.13	9.17	9.11
Mexiquito	3	20	5.77	5.94	6.39	6.03
Mexiquito	3	22	8.06	7.45	7.21	7.57
Mexiquito	3	14	4.74	4.78	4.73	4.75
Mexiquito	3	20	5.63	6.83	6.8	6.42
Mexiquito	3	38	10.25	9.16	8.27	9.23
Mexiquito	3	12	4.41	5.01	4.92	4.78
Mexiquito	3	16	4.78	6.04	5.83	5.55
Mexiquito	3	24	7.59	7.55	7.6	7.58

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Mexiquito	3	18	6.25	5.1	5.48	5.61
Mexiquito	3	16	4.66	3.29	4.01	3.99
Mexiquito	3	12	5.12	4.63	5.08	4.94
Mexiquito	3	22	8.01	9.83	9.72	9.19
Mexiquito	3	18	6.93	7.6	6.63	7.05
Mexiquito	3	16	5.35	5.14	5.7	5.40
Mexiquito	3	28	9.24	8.05	7.88	8.39
Mexiquito	3	22	8.56	9.87	9.84	9.42
Mexiquito	1	24	10.38	10.18	10.28	10.28

Tecomates

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	16	8.28	7.49	7.45	7.74
Quesería	2	16	5.19	6.83	5.98	6.00
Quesería	2	20	17.61	18.66	19.21	18.49
Quesería	2	12	19.98	18.17	12.35	16.83
Quesería	2	20	13.69	12.64	14.28	13.54
Quesería	2	20	14.98	14.98	18.9	16.29
Quesería	2	18	10.36	10.36	8.98	9.90
Quesería	2	16	17.63	11.91	11.43	13.66
Quesería	2	22	9.14	9.06	8.37	8.86
Quesería	2	20	8.63	11.04	18.94	12.87
Quesería	2	18	12.26	12.24	13.47	12.66
Quesería	2	16	7.97	9.73	9.5	9.07
Quesería	2	20	9.88	10.3	15.6	11.93
Quesería	2	20	10.53	9.25	8.29	9.36
Quesería	2	18	17.32	15.17	13.2	15.23
Quesería	2	18	13.8	13.91	12.6	13.44
Quesería	2	26	12.12	12.85	12.7	12.56
Quesería	2	16	8.3	8.41	5.22	7.31
Quesería	2	20	18.83	19.47	11.85	16.72
Quesería	2	20	6.44	6.35	4.94	5.91
Quesería	2	14	12.49	7.82	7.69	9.33
Quesería	2	16	7.99	9.7	6.84	8.18
Quesería	2	22	10.84	10	9.91	10.25
Quesería	2	24	7.23	6.62	6.72	6.86
Quesería	2	18	13.15	14.86	9.63	12.55
Quesería	2	22	11.13	12.1	11.36	11.53
Quesería	2	20	10.77	10.96	10.11	10.61
Quesería	2	16	12.18	9.92	7.28	9.79
Quesería	2	14	9.53	11.33	10.23	10.36
Quesería	2	20	20.68	17.44	14.66	17.59

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18	18.38	14.05	11.6	14.68
Quesería	2	14	10.49	7.63	7.05	8.39
Quesería	2	18	13.8	10.73	9.13	11.22
Quesería	2	22	19.33	12.28	10.45	14.02
Quesería	2	24	24.96	12.56	11.29	16.27
Quesería	2	24	14.25	9.57	9.43	11.08
Quesería	2	16	7.96	6.41	7.17	7.18
Quesería	2	22	16.91	8.15	7.52	10.86
Quesería	2	20	19.84	15.05	9.37	14.75
Quesería	2	26	10.61	11.42	10.98	11.00
Quesería	2	24	18.04	12.94	12.38	14.45
Quesería	2	22	15.4	12.52	13.4	13.77
Quesería	2	24	8.48	7.04	6.7	7.41
Quesería	2	24	23.07	19.2	21.23	21.17
Quesería	2	18	10.93	10.71	9.85	10.50
Quesería	2	22	6.15	8.06	7.9	7.37
Quesería	2	16	24.04	16.82	11.1	17.32
Quesería	2	14	16.7	11.27	7.2	11.72
Quesería	2	14	19.77	9.86	8.13	12.59
Quesería	2	24	7.24	7	8.59	7.61
Quesería	2	22	17.98	16.48	9.08	14.51
Quesería	2	16	22.3	12.97	10.2	15.16
Quesería	2	18	16.33	14.66	14.98	15.32
Quesería	2	18	9.4	9.13	9.43	9.32
Quesería	2	14	7.46	9.68	7.86	8.33
Quesería	2	14	5.55	7.49	7.78	6.94
Quesería	2	16	10.36	11.44	9.73	10.51
Quesería	2	20	20.79	11.75	8.41	13.65
Quesería	2	22	27.3	23.56	15.6	22.15
Quesería	2	24	17.16	18.05	12.18	15.80
Quesería	2	12	16.82	10.85	8.79	12.15
Quesería	2	26	30.53	14.57	21.27	22.12
Quesería	2	14	15.52	14.9	14.34	14.92
Quesería	2	22	16.62	16.29	13.35	15.42
Quesería	2	26	9.37	10.03	8.54	9.31
Quesería	2	22	13.93	12.76	12.64	13.11
Quesería	2	20	8.76	9.89	9.02	9.22
Quesería	2	18	9.99	9.67	9.87	9.84
Quesería	2	20	6.88	6.9	7.27	7.02
Quesería	2	16	11.33	10.86	10.86	11.02
Quesería	2	24	5.79	9.23	7.11	7.38
Quesería	2	26	15.49	11.63	11.25	12.79

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18	20.66	20.22	11.66	17.51
Quesería	2	14	15.22	9.58	7.71	10.84
Quesería	2	14	20.77	14.63	13.82	16.41
Quesería	2	24	16.24	9.76	8.08	11.36
Quesería	2	16	22.49	12.19	11.68	15.45
Quesería	2	18	6.62	9.27	8.47	8.12
Quesería	2	32	11.73	11.83	10.69	11.42
Quesería	2	20	10.66	9.71	9.21	9.86
Quesería	2	26	7.08	7.83	7.92	7.61
Quesería	2	22	23.88	19.18	13.32	18.79
Quesería	2	14	12.69	10.51	9.41	10.87
Quesería	2	26	10.58	7.03	6.61	8.07
Quesería	2	18	7.76	9.7	10.11	9.19
Quesería	2	12	10.91	11.92	10.45	11.09
Quesería	2	20	10.11	8.31	7.34	8.59
Quesería	2	16	14.75	14.83	13.52	14.37
Quesería	2	26	16.29	19.77	20.33	18.80
Quesería	2	26	11.78	12.43	10.97	11.73
Quesería	2	20	14.67	8.4	7.24	10.10
Quesería	2	24	6.55	7.87	7.78	7.40
Quesería	2	22	7.46	8.17	8.35	7.99
Quesería	2	18	10.79	13.53	12.62	12.31
Quesería	2	22	18.93	20.22	12.71	17.29
Quesería	2	22	14.24	8.71	7.8	10.25
Quesería	2	18	10.71	9.67	9.1	9.83
Quesería	2	30	6.78	5.32	7.15	6.42
Quesería	2	36	25.25	22.51	21.27	23.01
Quesería	2	26	11.75	11.7	9	10.82
Quesería	2	28	7.51	11.07	12.95	10.51
Quesería	2	26	10.08	9.58	8.95	9.54
Quesería	2	28	9.54	9.8	11.1	10.15
Quesería	2	20	13.02	10.53	9.82	11.12
Quesería	2	26	11.06	12.8	12.58	12.15
Quesería	2	18	7.38	7.3	4.88	6.52
Quesería	2	22	13.15	15.33	16.54	15.01
Quesería	2	16	20.7	10.48	8.06	13.08
Quesería	2	20	14.61	13	14.77	14.13
Quesería	2	36	14.68	13.94	13.25	13.96
Quesería	2	20	15.05	10.49	9.4	11.65
Quesería	2	18	23.29	22.01	20.61	21.97
Quesería	2	22	9.67	9.37	8.65	9.23
Quesería	2	24	7.96	8.66	9.25	8.62

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18	19.34	12.89	9.97	14.07
Quesería	2	14	8.66	7.62	7.17	7.82
Quesería	2	16	16.96	12.42	13.67	14.35
Quesería	2	18	21.57	11.87	11.25	14.90
Quesería	2	22	18.77	9.23	10.41	12.80
Quesería	2	22	19.14	15.5	14.58	16.41
Quesería	2	22	9.56	7.41	7.12	8.03
Quesería	2	16	16.49	9.48	9.35	11.77
Quesería	2	16	15.21	15.2	13.47	14.63
Quesería	2	18	7.48	7.6	6.7	7.26
Quesería	2	34	17.91	15.08	14.31	15.77
Quesería	2	16	4.66	6.09	5.51	5.42
Quesería	2	20	18.61	12.1	8.5	13.07
Quesería	2	22	10.55	10.53	8.73	9.94
Quesería	2	12	10.85	10.98	9.21	10.35
Quesería	2	14	9.06	8.1	7.95	8.37
Quesería	2	16	11	6.72	5.23	7.65
Quesería	2	16	18.6	9.77	9.13	12.50
Quesería	2	30	16.81	11.26	9.56	12.54
Quesería	2	28	13.48	9.05	8.41	10.31
Quesería	2	26	8.9	8.84	9.1	8.95
Quesería	2	22	12.36	11.65	11.78	11.93
Quesería	2	24	20.11	11.72	9.83	13.89
Quesería	2	22	12.32	7.34	4.82	8.16
Quesería	2	28	11.16	10.92	11.14	11.07
Quesería	2	30	23.85	22.27	21.04	22.39
Quesería	2	26	7.38	5.71	5.67	6.25
Quesería	2	18	15.27	11.38	9.11	11.92
Quesería	2	22	14.55	7.36	6.51	9.47
Quesería	1	22	17.53	16.73	14.83	16.36
Quesería	1	20	22.3	21.31	8.54	17.38
Quesería	1	26	22.23	22.06	13.01	19.10
Quesería	1	18	6.55	6.75	4.14	5.81
Quesería	1	16	5	6.67	7	6.22
Quesería	1	22	20.25	12	9.8	14.02
Quesería	1	20	11.41	7.73	7.72	8.95
Quesería	1	18	7.07	7.35	5.93	6.78
Quesería	1	22	20.44	8.12	7.8	12.12
Quesería	1	18	21.33	10.4	10.7	14.14
Quesería	1	28	21.12	20.06	19.79	20.32
Quesería	1	26	23.22	24.52	23.94	23.89
Quesería	1	24	13.95	13.5	9.85	12.43

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	22	16.8	11.16	10.07	12.68
Quesería	1	18	12.22	11.88	7.24	10.45
Quesería	1	16	13.5	9.93	9.41	10.95
Quesería	1	24	10.4	12.38	7.31	10.03
Quesería	1	18	7.09	6.41	8.07	7.19
Quesería	1	32	17.16	12.5	10.33	13.33
Quesería	1	28	19.47	8.85	8.86	12.39
Quesería	1	20	21.38	12.41	9.78	14.52
Quesería	1	30	19.63	20.16	9.11	16.30
Quesería	1	12	13.57	13.44	10.79	12.60
Quesería	1	20	18.9	10.7	10.54	13.38
Quesería	1	12	5.79	7.75	6.74	6.76
Quesería	1	14	15.19	9.68	9.86	11.58
Quesería	1	22	9.18	13.52	13.37	12.02
Quesería	1	34	23.37	22.25	21.66	22.43
Quesería	1	36	10.77	10.15	12.93	11.28
Quesería	1	14	10.82	10.99	5.65	9.15
Quesería	1	22	18.41	18.53	16.72	17.89
Quesería	1	24	20.16	12.61	13.51	15.43
Quesería	1	14	4.9	5.8	6.6	5.77
Quesería	1	20	15.28	10.64	7.66	11.19
Quesería	1	14	8.09	8.12	8.13	8.11
Quesería	1	22	4.96	5.42	5.4	5.26
Quesería	1	20	8.48	10.25	10.58	9.77
Quesería	1	20	7.81	9.09	10.78	9.23
Quesería	1	18	5.3	6.09	6.44	5.94
Quesería	1	14	5.32	6.26	6.27	5.95
Quesería	1	14	12.6	9.26	6.53	9.46
Quesería	1	20	12.11	11.34	12.6	12.02
Quesería	1	22	7.97	7.72	7.64	7.78
Quesería	1	30	17.42	11.52	9.54	12.83
Quesería	1	24	19.83	16.64	12.92	16.46
Quesería	1	22	17.46	13.72	4.7	11.96
Quesería	1	12	9.68	9.73	7.94	9.12
Quesería	1	20	6.76	6.07	6.47	6.43
Quesería	1	16	4.29	5.75	5.76	5.27
Quesería	1	12	4.23	4.4	5.4	4.68
Quesería	1	14	7.29	8.42	8.32	8.01
Quesería	1	20	4.76	5.84	6.12	5.57
Quesería	1	26	17.28	13.69	12.29	14.42
Quesería	1	26	6.13	4.64	5.14	5.30
Quesería	1	20	20.3	12.36	7.35	13.34

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	16	8.47	8.87	8.67	8.67
Quesería	1	20	5.13	4.85	5.66	5.21
Quesería	1	20	4.65	5.61	5.88	5.38
Quesería	1	12	8.74	9.47	8.89	9.03
Quesería	1	18	8.35	8.29	8.11	8.25
Quesería	1	26	10.48	9.5	8.53	9.50
Quesería	1	22	22.1	16.86	13.6	17.52
Quesería	1	18	14.35	12.28	8.35	11.66
Quesería	1	12	9.04	9.47	9.44	9.32
Quesería	1	16	6.4	7.99	7.48	7.29
Quesería	1	20	10.03	10.38	10.25	10.22
Quesería	1	24	18.72	15.39	13.73	15.95
Quesería	1	16	9.88	8.85	10.05	9.59
Quesería	1	22	5.68	5.93	5.84	5.82
Quesería	1	24	10.83	11.37	11.28	11.16
Quesería	1	20	17	14.04	10.6	13.88
Quesería	1	18	6.12	7.06	7.01	6.73
Quesería	1	22	4.44	6.79	7.8	6.34
Quesería	1	20	4.97	5.58	7.09	5.88
Quesería	1	24	7.78	8.15	8.66	8.20
Quesería	1	18	5.56	5.78	5.79	5.71
Quesería	1	20	6.66	8.27	8.02	7.65
Quesería	1	24	12.56	11.73	11.01	11.77
Quesería	1	24	10.2	9.77	9.8	9.92
Quesería	1	20	8.46	8.44	8.19	8.36
Quesería	1	32	8.35	9.81	9.71	9.29
Quesería	1	20	12.25	11.1	10.65	11.33
Quesería	1	26	15.27	12.06	11.77	13.03
Quesería	1	12	8	8.85	7.07	7.97
Quesería	1	20	17.22	13.63	12.08	14.31
Quesería	1	22	4.9	5.88	6.4	5.73
Quesería	1	26	12.91	12.65	8.38	11.31
Quesería	1	42	12.7	9.21	7	9.64
Quesería	1	22	10.36	9.78	10.24	10.13
Quesería	1	26	10.72	10.06	10.55	10.44
Quesería	1	18	9.94	9.99	9.61	9.85
Quesería	1	22	9.81	10.18	8.29	9.43
Quesería	1	18	6.38	7.31	7.55	7.08
Quesería	1	20	12.49	8.45	8.49	9.81
Quesería	1	18	12.34	9.02	9.01	10.12
Quesería	1	32	19.61	16.18	16.68	17.49
Quesería	1	22	20.25	13.35	10.32	14.64

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	20	16.85	10.52	10.29	12.55
Quesería	1	24	8.93	10.06	9.26	9.42
Quesería	1	22	14.16	9.4	8.53	10.70
Quesería	1	16	17.49	10.97	9.92	12.79
Quesería	1	26	7.37	7.77	7.17	7.44
Quesería	1	18	9.39	9.43	8.5	9.11
Quesería	1	18	10.84	11.76	12.09	11.56
Quesería	1	34	21.34	19.26	18.62	19.74
Quesería	1	28	19.44	8.07	6.76	11.42
Quesería	1	26	15.07	10.63	9.72	11.81
Quesería	1	18	19.08	17.81	14.68	17.19
Quesería	1	16	14.11	10.48	9.04	11.21
Quesería	1	18	12.26	12.13	12.1	12.16
Quesería	1	30	12.87	12.79	12.04	12.57
Quesería	1	14	5.81	6.77	8.44	7.01
Quesería	1	18	7.27	7.49	6.75	7.17
Quesería	1	24	19	7.36	7.97	11.44
Quesería	1	26	20.67	11.22	8.58	13.49
Quesería	1	26	22.62	16.96	13.93	17.84
Quesería	1	28	13.01	13.98	20.77	15.92
Quesería	1	16	9.91	23.94	11.2	15.02
Quesería	1	16	5.7	5.94	5.93	5.86
Quesería	1	14	10.39	10.61	9.65	10.22
Quesería	1	22	11.04	12.4	11.32	11.59
Quesería	1	20	16.3	11.7	10.66	12.89
Quesería	1	18	12.6	7.42	6.48	8.83
Quesería	1	16	6.6	7.33	6.96	6.96
Quesería	1	18	8.15	9.18	9.18	8.84
Quesería	1	12	13.34	8.75	6.57	9.55
Quesería	1	24	16.27	12.86	8.69	12.61
Quesería	1	26	9.53	10.43	11.33	10.43
Quesería	1	20	14.54	10.25	10.24	11.68
Quesería	1	32	14.01	12.45	10.2	12.22
Quesería	1	24	11.05	11.3	10.71	11.02
Quesería	1	22	6.9	6.71	7.22	6.94
Quesería	1	26	7.28	8.24	8.59	8.04
Quesería	1	20	7.78	7.58	6.98	7.45
Quesería	1	20	5.7	5.45	5.15	5.43
Quesería	2	24	11.61	9.5	8.01	9.71
Quesería	2	22	17.18	10.53	7.27	11.66
Quesería	2	22	15.79	12.27	11.6	13.22
Quesería	2	22	20.33	16.24	14.74	17.10

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	16	13.28	12.3	11.04	12.21
Quesería	2	20	21.23	12.96	10.1	14.76
Quesería	2	16	15.5	10.78	9.24	11.84
Quesería	2	18	10.58	12	10.74	11.11
Quesería	2	22	9.32	9.05	8.98	9.12
Quesería	2	22	12.55	11.6	8.92	11.02
Quesería	2	20	7.89	11.02	11.45	10.12
Quesería	2	24	15.11	9.92	8.67	11.23
Quesería	2	16	14.4	10.34	9.42	11.39
Quesería	2	26	6.36	6.88	7.05	6.76
Quesería	2	24	16.82	10.55	8.78	12.05
Quesería	2	16	20.45	8.93	8.18	12.52
Quesería	2	24	22.68	11.85	10.95	15.16
Quesería	2	18	18.6	15.58	14.16	16.11
Quesería	2	22	22.44	17.54	13.94	17.97
Quesería	2	18	17.05	10.35	9.91	12.44
Quesería	2	18	13.69	8.92	9.98	10.86
Quesería	2	16	11.71	11.29	10.5	11.17
Quesería	2	12	13.79	10.97	11.12	11.96
Quesería	2	18	13.9	12.09	9.69	11.89
Quesería	2	26	7.56	7.3	6.63	7.16
Quesería	2	12	10.64	9.13	10.57	10.11
Quesería	2	18	10.7	12.46	12.85	12.00
Quesería	2	24	10.91	10.51	10.81	10.74
Quesería	2	22	21.16	18.06	17.52	18.91
Quesería	2	24	14.49	13.32	11.08	12.96
Quesería	2	20	5.94	6.05	5.13	5.71
Quesería	2	16	8.22	8.71	7.92	8.28
Quesería	2	18	8.86	8.14	8.01	8.34
Quesería	2	12	12.62	12.5	12.49	12.54
Quesería	2	18	18.73	13.94	14.17	15.61
Quesería	2	20	19.43	14	8.84	14.09
Quesería	2	20	11.49	9.65	9.83	10.32
Quesería	2	20	20.93	11.94	9.38	14.08
Quesería	2	24	24.27	13.73	11.2	16.40
Quesería	2	22	7.79	7.46	7.17	7.47
Quesería	2	18	7.27	6.53	6.76	6.85
Quesería	2	16	21.85	11.62	9.53	14.33
Quesería	2	18	7.92	6.06	4.05	6.01
Quesería	surface	24	22.63	14.16	11.28	16.02
Quesería	surface	26	26	25.12	25.02	25.38
Quesería	surface	22	27.33	21.07	17.2	21.87

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	surface	22	21.5	17.63	15.67	18.27
Quesería	surface	24	24.12	19.51	15.15	19.59
Quesería	surface	16	17.39	6.14	5.95	9.83
Quesería	surface	18	22.96	20.17	13.86	19.00
Quesería	surface	24	12.72	10.86	10.78	11.45
Quesería	surface	22	19.65	11.8	11.05	14.17
Quesería	surface	22	12.79	11.82	11.09	11.90
Quesería	surface	16	12.68	20.62	12.65	15.32
Quesería	surface	14	18.1	9.23	8.53	11.95
Quesería	surface	18	16.51	10.11	9.4	12.01
Quesería	surface	16	16.5	15.1	10.25	13.95
Quesería	surface	16	16.6	9.1	8.62	11.44
Quesería	surface	30	24.25	24.09	21.01	23.12
Quesería	surface	22	27.28	15.54	13.29	18.70
Quesería	surface	22	20.16	15.42	11.53	15.70
Quesería	surface	24	21.58	16.96	15.76	18.10
Quesería	surface	22	22.12	17.1	15.32	18.18
Quesería	surface	28	18.69	18.65	25.29	20.88
Quesería	surface	30	21.08	20.18	17.34	19.53
Quesería	surface	28	22.09	19.17	17.56	19.61
Quesería	surface	24	16.45	14.49	14.95	15.30
Quesería	surface	36	22.25	16.83	15.74	18.27
Quesería	surface	16	15.6	10.23	10.1	11.98
Quesería	surface	22	16.48	10.63	9.72	12.28
Quesería	surface	20	21.54	20.03	18.31	19.96
Quesería	surface	30	21.59	17.01	15	17.87
Quesería	surface	26	25.71	24.76	25.11	25.19
Quesería	surface	22	20.81	16.71	15.7	17.74
Quesería	surface	22	24.55	9	9.59	14.38
Quesería	surface	20	21.98	16.72	12.76	17.15
Quesería	surface	20	22.2	13.48	11.11	15.60
Quesería	surface	22	25.66	17.47	19.99	21.04
Quesería	surface	34	19.94	12.47	13.08	15.16
Quesería	surface	24	14.02	21.44	18.49	17.98
Quesería	surface	22	28.34	19.82	13.5	20.55
Quesería	surface	18	23.38	18.83	19.43	20.55
Quesería	surface	20	19.54	16.48	14.02	16.68
Quesería	surface	20	12.42	11	9.64	11.02
Quesería	surface	16	16.72	11.85	8.1	12.22
Quesería	surface	20	16.94	14.07	12.39	14.47
Quesería	surface	16	20.47	13.09	11.9	15.15
Quesería	surface	32	17.09	16.39	14.74	16.07

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	surface	34	19.76	15.95	16.18	17.30
Quesería	surface	18	14.88	10	12.78	12.55
Quesería	surface	30	30.38	13.39	10.49	18.09
Quesería	surface	30	20.21	16.95	13.08	16.75
Quesería	surface	28	23.7	7.62	8.37	13.23
Quesería	surface	18	22.85	14.04	14.41	17.10
Quesería	surface	30	19.92	14.88	12.57	15.79
Quesería	surface	22	25.35	19.45	18.13	20.98
Quesería	surface	34	27.56	19.98	16.87	21.47
Itzímbaro	3	16	9.37	9	6.65	8.34
Itzímbaro	3	22	11.61	11.13	10.34	11.03
Itzímbaro	3	18	9.73	10.07	10.39	10.06
Itzímbaro	3	22	13.37	10.45	11.55	11.79
Itzímbaro	3	20	6.66	7.85	8.86	7.79
Itzímbaro	3	24	7.92	6.02	7.35	7.10
Itzímbaro	3	16	9.48	9.49	8.11	9.03
Itzímbaro	3	18	9.94	9.74	8.24	9.31
Itzímbaro	3	18	10.54	8.54	7.06	8.71
Itzímbaro	3	22	10.66	12.15	11.6	11.47
Itzímbaro	3	20	5.02	5.23	4.8	5.02
Itzímbaro	3	20	12.9	13.26	12.13	12.76
Itzímbaro	3	24	10.5	10.37	10.42	10.43
Itzímbaro	3	20	7.48	7.72	7.75	7.65
Itzímbaro	3	16	6.46	6.44	5.25	6.05
Itzímbaro	3	22	5.45	5.17	4	4.87
Itzímbaro	3	16	5.28	5.55	5.7	5.51
Itzímbaro	3	18	7.21	7.2	6.7	7.04
Itzímbaro	3	20	11.01	12.92	11.51	11.81
Itzímbaro	3	20	6.87	7.44	7.02	7.11
Itzímbaro	3	22	4.58	4.22	4.55	4.45
Itzímbaro	3	16	6.35	6.55	7.25	6.72
Itzímbaro	3	16	5.76	5.24	6.1	5.70
Itzímbaro	3	20	6.6	7.97	7.98	7.52
Itzímbaro	3	18	7.79	7.61	7.8	7.73
Itzímbaro	3	22	5.64	4	4.9	4.85
Itzímbaro	3	16	8.18	9.59	9.28	9.02
Itzímbaro	3	16	6.84	8.08	6.06	6.99
Itzímbaro	3	16	6.25	6.22	6.66	6.38
Itzímbaro	3	20	5.61	4.95	6.36	5.64
Itzímbaro	3	14	9.01	9.38	8.67	9.02
Itzímbaro	3	22	10.68	8.97	6.48	8.71
Itzímbaro	3	16	4.94	5.25	5.75	5.31

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	22	10.18	10.34	10.47	10.33
Itzímbaro	3	26	14.61	8.68	9.36	10.88
Itzímbaro	3	22	6.31	6.53	5.77	6.20
Itzímbaro	3	28	8.94	8.91	9.38	9.08
Itzímbaro	3	22	6.14	6.69	6.24	6.36
Itzímbaro	3	16	6.33	6.59	6.88	6.60
Itzímbaro	4	22	10.16	10.57	9.92	10.22
Itzímbaro	4	22	8.79	8.85	8.63	8.76
Itzímbaro	4	22	19.37	17.38	16.8	17.85
Itzímbaro	4	18	16.68	9.38	9.55	11.87
Itzímbaro	4	20	5.71	8.41	7.8	7.31
Itzímbaro	4	10	5.41	5.52	5.01	5.31
Itzímbaro	4	20	9.95	11.85	7.11	9.64
Itzímbaro	4	14	6.36	6.41	6.41	6.39
Itzímbaro	4	16	9.13	10.71	6.16	8.67
Itzímbaro	4	20	7.9	7.84	6.63	7.46
Itzímbaro	4	20	8.69	7.68	6.12	7.50
Itzímbaro	4	18	7.5	8.3	8.5	8.10
Itzímbaro	4	22	18.25	13.07	7.78	13.03
Itzímbaro	4	14	7.77	8.14	7.44	7.78
Itzímbaro	4	18	20.6	16.27	21.43	19.43
Itzímbaro	4	16	8.25	8.34	8.09	8.23
Itzímbaro	4	16	12.75	11.83	11.78	12.12
Itzímbaro	4	14	7.76	7.4	5.51	6.89
Itzímbaro	4	20	8.07	8.14	7.99	8.07
Itzímbaro	4	24	11.83	7.93	7.49	9.08
Itzímbaro	4	26	10.18	5.61	5.2	7.00
Itzímbaro	4	16	19.6	10.7	16.76	15.69
Itzímbaro	4	26	9.62	10.73	10.59	10.31
Itzímbaro	4	18	8	8.05	6	7.35
Itzímbaro	4	16	8.38	8.33	6.43	7.71
Itzímbaro	4	16	9.14	6.95	5.98	7.36
Itzímbaro	4	16	10.26	8.83	6.43	8.51
Itzímbaro	4	16	7.34	7.41	6.41	7.05
Itzímbaro	4	22	16.18	12.39	12.06	13.54
Itzímbaro	4	20	9.54	9.41	8.3	9.08
Itzímbaro	4	20	12.03	9.05	9.13	10.07
Itzímbaro	4	14	7.4	8.5	8.9	8.27
Itzímbaro	4	18	17.21	9.31	11.34	12.62
Itzímbaro	4	14	10.22	9.17	8.82	9.40
Itzímbaro	4	20	9.31	8.98	7.91	8.73
Itzímbaro	4	24	12.08	11.67	10.56	11.44

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	4	22	12.86	8.73	7.88	9.82
Itzímbaro	4	20	6.8	5.57	5.78	6.05
Itzímbaro	4	20	8.39	8.06	8.17	8.21
Itzímbaro	4	22	13.57	17.92	16.8	16.10
Itzímbaro	4	16	14.62	11.7	12.47	12.93
Itzímbaro	4	20	11.29	10.11	9.04	10.15
Itzímbaro	4	20	10.29	7.5	7.07	8.29
Itzímbaro	4	22	20.08	13.19	12.06	15.11
Itzímbaro	4	16	21.35	12.83	10.76	14.98
Itzímbaro	4	18	7.59	7.71	6.75	7.35
Itzímbaro	4	22	10.87	11.13	11.48	11.16
Itzímbaro	4	18	9.94	9.2	7.36	8.83
Itzímbaro	4	14	17.92	12.94	11.14	14.00
Itzímbaro	4	16	7.88	7.83	7.43	7.71
Itzímbaro	4	18	13.07	12.1	8.83	11.33
Itzímbaro	4	22	8.18	8.22	7.62	8.01
Itzímbaro	4	16	7.32	6.71	5.82	6.62
Mexiquito	1	22	4.71	6.13	6.58	5.81
Mexiquito	1	16	19.19	11.64	11.74	14.19
Mexiquito	1	22	7.76	7.77	6.13	7.22
Mexiquito	2	14	6.8	6.21	6.56	6.52
Mexiquito	3	26	6.14	5.86	6.66	6.22
Mexiquito	1	26	11	14.4	16.3	13.90
Mexiquito	1	22	7.1	10.3	15.4	10.93
Mexiquito	1	24	10.7	10.5	10.5	10.57
Mexiquito	3	18	8.4	6.9	7.5	7.60
Mexiquito	surface	20	10.2	9.9	9.9	10.00
Mexiquito	surface	20	11.5	14.6	14	13.37
Mexiquito	surface	18	7.3	14.5	7.8	9.87
Mexiquito	surface	20	11.5	9.6	14.8	11.97

Ollas

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	14-inner neck	9.62	12.39	8.72	10.24
Quesería	2	20-neck	8.18	15.56	15.77	13.17
Quesería	2	14-neck	13.12	7.67	9.88	10.22
Quesería	2	26-neck	11.31	14.3	14.12	13.24
Quesería	2	20-neck	7	6.8	6.95	6.92
Quesería	2	22-neck	8.69	10.87	9.1	9.55
Quesería	2	22-inner neck	8.16	7.5	8.51	8.06

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18-neck	8.84	9.98	10.37	9.73
Quesería	2	18-neck	9.7	10.33	10.49	10.17
Quesería	2	22-inner neck	6.23	11.64	10.25	9.37
Quesería	2	24-neck	12.93	16.42	16.22	15.19
Quesería	2	22-neck	15.33	10.02	10.1	11.82
Quesería	2	22-neck	10.64	10.92	10.17	10.58
Quesería	2	32-neck	19.62	23.92	13.63	19.06
Quesería	2	26-neck	9.66	11.75	13.32	11.58
Quesería	2	16-neck	8.98	11.17	10.41	10.19
Quesería	2	20-neck	11.39	12.56	16.51	13.49
Quesería	2	26-neck	15.9	14.23	10.7	13.61
Quesería	2	42-neck	14.62	14.16	14.15	14.31
Quesería	2	8-neck	4.97	5.88	5.75	5.53
Quesería	2	26-neck	11.41	16.33	17	14.91
Quesería	2	22-neck	10.97	13.24	7.22	10.48
Quesería	2	26-neck	13.41	13.69	14.7	13.93
Quesería	2	24-neck	8.8	9.84	12.21	10.28
Quesería	2	16-neck	11.71	11.88	11.97	11.85
Quesería	2	28-neck	10.29	10.76	11.07	10.71
Quesería	2	16-rim	9.17	11.29	10.15	10.20
Quesería	2	24-inner rim	9.47	9.59	9.25	9.44
Quesería	2	30-inner rim	12.07	11.56	11.12	11.58
Quesería	2	14-inner neck	10.87	7.85	7.01	8.58
Quesería	2	12-rim	9.98	8.8	7.37	8.72
Quesería	2	18-rim	17.89	9.93	8.57	12.13
Quesería	2	20-rim	7.89	10.56	10.22	9.56
Quesería	2	22-rim	10.37	12.89	10.12	11.13
Quesería	2	12-rim	7	8.45	8.62	8.02
Quesería	2	26-rim	18.49	10.4	8.7	12.53
Quesería	2	30-rim	9.28	10.98	11.82	10.69
Quesería	2	20-rim	8.84	10.25	9.53	9.54
Quesería	2	24-rim	13.69	10.31	11.7	11.90
Quesería	2	20-largest diam.	6.92	7.84	5.3	6.69
Quesería	2	26-rim	13.9	11.96	11.03	12.30
Quesería	2	20-rim	5.02	8.01	5.69	6.24
Quesería	1	14-rim	5.33	5.29	3.81	4.81
Quesería	1	28-inner rim	24.63	20.73	19.08	21.48
Quesería	1	18-inner neck	8.17	11.98	13.75	11.30
Quesería	1	22-rim	6.61	6.87	5.46	6.31
Quesería	1	34-rim	22.66	28.27	27.05	25.99
Quesería	1	20-rim	7.7	10.06	10.76	9.51
Quesería	1	18-rim	7.23	6.08	6.59	6.63

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	22-inner neck	11.28	12.03	12.3	11.87
Quesería	1	22-rim	7.23	6.92	7.45	7.20
Quesería	1	14-rim	18.5	12.45	8.81	13.25
Quesería	1	28-rim	12.01	9.89	10.17	10.69
Quesería	1	20-rim	9.85	10.77	11.26	10.63
Quesería	1	26-rim	12.21	11.28	9.53	11.01
Quesería	1	24-rim	8.75	10.41	10.23	9.80
Quesería	1	22-rim	11.27	10.92	11.2	11.13
Quesería	1	12-inner neck	8.69	8.36	7.72	8.26
Quesería	1	16-inner neck	9.01	7.22	7.02	7.75
Quesería	1	28-rim	7.53	7.02	6.8	7.12
Quesería	1	16-rim	11.1	10.62	8.87	10.20
Quesería	1	28-rim	12.5	14.9	14.5	13.97
Quesería	1	26-rim	13.1	10.74	9.04	10.96
Quesería	1	18-rim	5.76	6.37	5.5	5.88
Quesería	1	22-rim	7.5	8.75	8.4	8.22
Quesería	1	16-rim	15.25	16.87	16.88	16.33
Quesería	1	16-rim	6.77	7.53	7.65	7.32
Quesería	1	22-rim	9.63	8.86	8.99	9.16
Quesería	1	26-rim	15.24	10.87	9.99	12.03
Quesería	1	32-rim	11.07	11.87	11.15	11.36
Quesería	1	30-inner neck	22.52	16.67	13.52	17.57
Quesería	1	30-rim	10.6	10.22	6.55	9.12
Quesería	1	20-rim	11.49	11.43	11.05	11.32
Quesería	1	24-rim	10.84	11.3	11.11	11.08
Quesería	1	16-inner neck	5.61	6.46	5.64	5.90
Quesería	1	30-rim	12.55	13.56	14.08	13.40
Quesería	1	22-rim	9.39	8.2	7.51	8.37
Quesería	4	18-rim	8.19	5.89	6.13	6.74
Quesería	4	10-inner neck	8.79	7.13	9.27	8.40
Quesería	4	24-rim	10.56	11.75	10.59	10.97
Quesería	2	18-rim	17.21	16.14	16.2	16.52
Quesería	2	22-rim	20.93	17.11	16.79	18.28
Quesería	2	14-rim	7.4	7.51	7.21	7.37
Quesería	2	18-rim	14.98	12.73	11.86	13.19
Quesería	2	22-inner neck	9.9	10	9.53	9.81
Quesería	2	22-rim	17.62	19.83	20.07	19.17
Quesería	2	28-rim	25.96	26.07	19.56	23.86
Quesería	2	24-rim	20.96	17.42	14.48	17.62
Quesería	2	18-rim	13.51	11.08	10.77	11.79
Quesería	2	12-inner neck	17.98	12.94	10.22	13.71
Quesería	2	32-rim	18.82	17.21	18.34	18.12

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	14-rim	8.3	7.69	8.38	8.12
Quesería	2	4-rim	3.57	2.98	2.95	3.17
Quesería	2	20-rim	19.81	13.97	9.7	14.49
Quesería	2	32-inner neck	9.69	8.68	7.66	8.68
Quesería	2	24-rim	10.64	11.75	12.33	11.57
Quesería	2	16-inner neck	13.8	15.57	9.35	12.91
Quesería	2	28-outer neck	11.17	12.18	12.42	11.92
Quesería	surface	22-rim	15.99	17.02	18.19	17.07
Quesería	surface	20-rim	17.93	16.62	16.93	17.16
Quesería	surface	28-rim	17.94	17	16.75	17.23
Quesería	surface	20-rim	25.85	21.67	24.4	23.97
Quesería	surface	20-rim	11.4	17.95	18.9	16.08
Quesería	surface	20-rim	16.56	16.54	13.54	15.55
Quesería	surface	34-rim	13.31	15.9	8.9	12.70
Itzímbaro	3	20-rim	11.55	11.78	12.95	12.09
Itzímbaro	3	26-rim	11.33	11.16	12.22	11.57
Itzímbaro	3	30-neck	9.98	9.29	7.58	8.95
Itzímbaro	3	24-neck	12.97	11.74	12.73	12.48
Itzímbaro	3	38-neck	9.61	8.1	8.53	8.75
Itzímbaro	3	16-rim	8.15	9.54	9.47	9.05
Itzímbaro	3	20-rim	9.9	9.14	7.78	8.94
Itzímbaro	3	14-rim	4.16	4.9	5.7	4.92
Itzímbaro	3	14-rim	7.28	8.12	8.11	7.84
Itzímbaro	3	20-rim	15.86	18.18	19.69	17.91
Itzímbaro	3	10-rim	5.96	6.91	7.72	6.86
Itzímbaro	4	8-rim	4.27	6.17	3.73	4.72
Itzímbaro	4	12-neck	3.95	3.65	3.55	3.72
Itzímbaro	4	24-rim	9.09	9.63	10.19	9.64
Itzímbaro	4	26-rim	14.05	16.45	19.05	16.52
Itzímbaro	4	24-rim	7.45	7.35	7.31	7.37
Itzímbaro	4	28-rim	12.87	13.24	12.7	12.94
Itzímbaro	4	18-rim	3.91	5.08	6.04	5.01
Itzímbaro	4	24-rim	19.74	14.34	14.38	16.15
Itzímbaro	4	10-neck	11.64	10.4	6.68	9.57
Itzímbaro	4	12-rim	8.81	8.49	9.14	8.81
Itzímbaro	4	22-rim	17.61	17.7	19.8	18.37
Itzímbaro	4	20-rim	19.71	20	19.34	19.68
Itzímbaro	4	20-neck	12.22	12.51	8.6	11.11
Itzímbaro	4	18-neck	9.41	8.91	8.82	9.05
Itzímbaro	4	20-rim	10.64	17.67	12.3	13.54
Itzímbaro	4	18-rim	10.96	11.07	10.45	10.83
Itzímbaro	3	18-neck	8.61	9.72	10.41	9.58

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	10-rim	6.83	4.84	4.86	5.51
Itzímbaro	3	24-rim	10.08	10.8	10.69	10.52
Itzímbaro	3	24-neck	5.55	6.68	6.75	6.33
Itzímbaro	4	18-rim	11.2	8.68	8.92	9.60
Itzímbaro	4	12-neck	8.7	6.65	9.2	8.18
Itzímbaro	4	12-neck	7.73	6.96	6.84	7.18
Itzímbaro	4	26-rim	17.1	13.8	13.16	14.69
Itzímbaro	4	30-rim	19.35	20	16.97	18.77
Itzímbaro	4	26-rim	23.09	15.74	15.88	18.24
Itzímbaro	4	28-rim	7.58	8.53	8.24	8.12
Mexiquito	1	16-rim	8.41	8.98	9.38	8.92
Mexiquito	1	22-neck	9.07	9.31	9.04	9.14
Mexiquito	1	12-rim	5.16	4.99	5.09	5.08
Mexiquito	2	22-rim	17.94	7.79	5.81	10.51
Mexiquito	2	28-rim	17.14	9.5	10.64	12.43
Mexiquito	2	26-rim	8.29	8.38	6.33	7.67
Mexiquito	2	7-neck	8.7	4.89	4.73	6.11
Mexiquito	2	28-rim	5.87	6.3	6.69	6.29
Mexiquito	2	14-neck	10.2	10.13	8.3	9.54
Mexiquito	3	24-rim	11.28	13.72	13.83	12.94
Mexiquito	3	8-neck	6.6	6	6.51	6.37
Mexiquito	3	28-rim	7.46	9.71	8.68	8.62
Mexiquito	3	26-rim	9.76	5.23	5.2	6.73
Mexiquito	3	20-rim	7.47	6.35	7.4	7.07
Mexiquito	3	22-rim	6.52	7.71	8.03	7.42
Mexiquito	3	30-rim	15.12	13.19	9.86	12.72
Mexiquito	3	28-neck	7.93	12	11.63	10.52
Mexiquito	1	18-rim	6.54	6.67	5.36	6.19
Mexiquito	1	30-rim	11.62	8.42	5.1	8.38
Mexiquito	1	16-neck	13.2	13.99	12.74	13.31

Open Bowls

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	24	4.44	8.79	9.95	7.73
Quesería	2	30	7.58	8.12	5.72	7.14
Quesería	2	22	10.24	14.43	16.86	13.84
Quesería	2	12	5.44	4.48	5.91	5.28
Quesería	2	24	11.93	7.45	14.93	11.44
Quesería	2	24	15.97	16.05	13.53	15.18
Quesería	2	32	9.37	14.24	14.79	12.80

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	36	10.14	11.84	6.06	9.35
Quesería	2	24	11.04	7.77	7.68	8.83
Quesería	2	26	12.73	12.67	10.81	12.07
Quesería	2	42	5.97	5.3	11.79	7.69
Quesería	2	32	10.58	12.52	12.55	11.88
Quesería	2	26	14.14	10.27	8.82	11.08
Quesería	2	30	7.49	9.07	6.29	7.62
Quesería	2	22	6.32	7.36	6.39	6.69
Quesería	2	30	13.53	11.59	9.69	11.60
Quesería	2	34	14.27	9.48	10.02	11.26
Quesería	2	22	9.47	11.18	10.58	10.41
Quesería	2	14	8.38	7.26	7.01	7.55
Quesería	2	28	12.55	11.55	12.03	12.04
Quesería	2	30	20.95	16.99	16.5	18.15
Quesería	2	32	9.45	7.48	9.2	8.71
Quesería	1	42	11.67	7.08	12.95	10.57
Quesería	1	30	11.49	4.62	4.91	7.01
Quesería	1	26	11.54	10.58	11.03	11.05
Quesería	1	18	9.07	8.26	8.42	8.58
Quesería	1	28	8.4	7.48	9.43	8.44
Quesería	1	26	9.02	9.25	8.25	8.84
Quesería	1	24	13.45	13.87	14.38	13.90
Quesería	1	18	8.01	8.35	9.17	8.51
Quesería	1	32	9.87	10.45	12.31	10.88
Quesería	1	28	8.29	9.2	6.27	7.92
Quesería	1	38	11.13	9.78	12.78	11.23
Quesería	1	18	5.37	5.76	4.74	5.29
Quesería	1	30	11.87	8.84	8.53	9.75
Quesería	1	20	8.51	8.94	8.57	8.67
Quesería	1	24	9.08	9.03	9.54	9.22
Quesería	1	24	7.67	9.69	8.88	8.75
Quesería	1	32	9.66	9.43	8.27	9.12
Quesería	1	20	6.85	7.81	7.72	7.46
Quesería	1	32	16.41	14.06	11.74	14.07
Quesería	4	34	9.8	9.67	6.39	8.62
Itzímbaro	3	22	11	6.84	6.82	8.22
Itzímbaro	3	28	10.3	8.58	7.91	8.93
Itzímbaro	3	28	8.81	6.99	7.35	7.72
Itzímbaro	3	20	9.53	10.09	8.25	9.29
Itzímbaro	3	22	7.15	8.27	9.45	8.29
Itzímbaro	3	30	11.21	10.09	10.02	10.44
Itzímbaro	3	26	8.23	8.77	6.19	7.73

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	3	26	6.66	9.13	5.9	7.23
Itzímbaro	3	22	9.17	6.45	5.85	7.16
Itzímbaro	3	30	8.22	7.59	8.3	8.04
Itzímbaro	3	30	6.85	7.16	5.12	6.38
Itzímbaro	3	34	12.66	12.34	10.16	11.72
Itzímbaro	3	30	8.11	6.4	5.76	6.76
Itzímbaro	3	26	5.16	8.21	7.11	6.83
Itzímbaro	4	32	9.1	11.55	6.62	9.09
Itzímbaro	4	20	9.7	9.55	7.82	9.02
Itzímbaro	4	30	9.52	11.64	9.18	10.11
Itzímbaro	4	28	9.36	8.84	8.5	8.90
Itzímbaro	4	22	10.78	9.05	7.62	9.15
Itzímbaro	4	30	8.53	9.06	7.67	8.42
Itzímbaro	4	28	12.26	12.35	10.67	11.76
Itzímbaro	4	22	9.86	9.49	8.37	9.24
Itzímbaro	4	28	10.77	11.03	6.91	9.57
Itzímbaro	4	28	8.74	7.46	7.96	8.05
Itzímbaro	4	26	9.15	11.93	11.39	10.82
Itzímbaro	4	28	10.75	6.52	6.4	7.89
Itzímbaro	4	32	9.55	6.03	6.76	7.45
Mexiquito	1	32	8.98	8.86	7.24	8.36
Mexiquito	1	16	6.56	6.81	6.33	6.57
Mexiquito	1	24	9	9.3	9	9.10
Mexiquito	1	20	6.9	7.3	7.3	7.17
Mexiquito	1	26	10.7	7.5	8.9	9.03
Mexiquito	surface	20	9.8	9.8	8.5	9.37

Recurved Bowls

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	18-inner curve	6.46	9.85	7.88	8.06
Quesería	2	22-inner rim	7.05	7.55	8.14	7.58
Quesería	2	22-inner rim	9.96	9.97	4.92	8.28
Quesería	2	24-inner rim	6.44	7.68	6.52	6.88
Quesería	2	26-inner rim	7.15	8.19	9.1	8.15
Quesería	2	22-inner rim	7.98	9.69	5.54	7.74
Quesería	2	32-inner rim	8.27	7.86	8.26	8.13
Quesería	2	20-inner rim	4.8	6.24	6.64	5.89
Quesería	2	26-inner rim	4.6	5.98	7.88	6.15
Quesería	2	30-outer curve	7.12	7.65	8.3	7.69
Quesería	2	26-inner rim	9.94	10.43	10.85	10.41
Quesería	2	30-inner rim	7.22	7.05	7.99	7.42

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	2	24-inner rim	7.55	12.05	12.43	10.68
Quesería	2	28-inner rim	5.7	9	6.43	7.04
Quesería	2	24-inner rim	4.85	8.73	7.92	7.17
Quesería	2	26-inner rim	7.2	8.43	8.66	8.10
Quesería	2	26-inner rim	9.1	7.96	9.05	8.70
Quesería	2	32-outer curve	8.06	7.45	7.17	7.56
Quesería	2	30-outer curve	13.87	9.7	12.13	11.90
Quesería	2	24-inner rim	6.26	8.01	8.23	7.50
Quesería	2	24-outer curve	7.34	8.13	8.84	8.10
Quesería	2	22-inner rim	7.03	7.93	8.27	7.74
Quesería	2	34-inner rim	6.2	6.21	9.66	7.36
Quesería	2	34-inner rim	9.07	7.67	7.51	8.08
Quesería	2	34-inner rim	6.26	6.54	6.6	6.47
Quesería	2	36-inner rim	6.96	7.49	6.9	7.12
Quesería	2	30-inner rim	13.45	16.04	11.7	13.73
Quesería	2	26-inner rim	8.59	6.83	8.06	7.83
Quesería	2	30-inner rim	14.5	9.66	8.57	10.91
Quesería	2	32-inner rim	12.12	10.83	11.05	11.33
Quesería	2	32-inner rim	8.31	11.61	7.88	9.27
Quesería	2	26-inner rim	5.49	8.7	8.79	7.66
Quesería	2	28-inner rim	9.1	8.31	8.16	8.52
Quesería	2	30-inner rim	9.15	7.62	6.43	7.73
Quesería	2	30-inner rim	6.37	5.98	6.71	6.35
Quesería	2	24-inner rim	10.35	13.42	10.56	11.44
Quesería	2	26-inner rim	8.14	8.72	7.99	8.28
Quesería	2	32-inner rim	9.97	10.86	10.4	10.41
Quesería	2	28-inner rim	5.51	6.63	6.91	6.35
Quesería	2	32-inner rim	5.93	7.6	4.87	6.13
Quesería	2	24-inner rim	5.51	5.23	5.63	5.46
Quesería	2	22-inner rim	5.82	6.22	6.69	6.24
Quesería	2	24-inner rim	7.55	9.96	6.34	7.95
Quesería	2	24-inner rim	6.76	8.67	5.37	6.93
Quesería	2	34-inner rim	6.68	11.12	7.8	8.53
Quesería	1	32-inner rim	8.34	8.38	9.24	8.65
Quesería	1	34-outer curve	6.9	7.57	6.28	6.92
Quesería	1	30-inner rim	7.23	7.21	7.66	7.37
Quesería	1	30-inner rim	6.93	7.43	6.51	6.96
Quesería	1	20-inner rim	5.79	4.27	3.3	4.45
Quesería	1	26-inner rim	7.61	6.91	6.81	7.11
Quesería	1	28-inner rim	7.42	8.3	8.74	8.15
Quesería	1	24-inner rim	6.81	5.72	7.03	6.52
Quesería	1	30-inner rim	9.41	8	6.97	8.13

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Quesería	1	20-inner rim	5	6.38	5.45	5.61
Quesería	1	22-inner rim	5.76	5.58	5.52	5.62
Quesería	1	24-inner rim	4.09	4.6	4.33	4.34
Quesería	1	36-inner rim	6.85	6.56	11.65	8.35
Quesería	1	30-inner rim	7.49	7.05	6.04	6.86
Quesería	1	34-inner rim	7.82	8.74	7.5	8.02
Quesería	1	30-inner rim	5.35	6.53	7.92	6.60
Quesería	1	26-inner rim	6.05	6.49	6.46	6.33
Quesería	1	28-inner rim	9.73	10	9.12	9.62
Quesería	1	44-inner rim	11.37	9.13	9.84	10.11
Quesería	1	34-inner rim	6.43	7.14	4.7	6.09
Quesería	1	38-outer curve	7.05	9.04	9.19	8.43
Quesería	1	36-inner rim	8.24	8.49	5.13	7.29
Itzímbaro	3	38-outer curve	11.19	9.05	8.31	9.52
Itzímbaro	3	26-inner rim	9.35	7.42	7.52	8.10
Itzímbaro	3	22-inner rim	12.72	9.74	6.78	9.75
Itzímbaro	3	28-outer curve	11.76	11.3	10.92	11.33
Itzímbaro	3	20-inner rim	13.64	10.35	8.41	10.80
Itzímbaro	3	24-inner rim	12.26	6.06	5.65	7.99
Itzímbaro	3	20-inner rim	9.67	8.39	6.96	8.34
Itzímbaro	3	24-inner rim	4.55	7.94	7.7	6.73
Itzímbaro	3	26-inner rim	6.62	5.16	5.31	5.70
Itzímbaro	3	26-inner rim	3.37	7.22	6.79	5.79
Itzímbaro	3	28-inner rim	16.82	12.84	4.25	11.30
Itzímbaro	3	24-inner rim	7.13	7.51	7.51	7.38
Itzímbaro	3	18-inner rim	6.33	5.73	4.68	5.58
Itzímbaro	3	18-inner rim	8.2	8.13	7.6	7.98
Itzímbaro	4	44-inner rim	11.38	10.81	7.82	10.00
Itzímbaro	4	32-inner rim	11.5	11.05	7.51	10.02
Itzímbaro	4	28-inner rim	9.77	6.72	4.64	7.04
Itzímbaro	4	24-inner rim	7.25	7.76	6.66	7.22
Itzímbaro	4	26-inner rim	12.72	5.24	13.24	10.40
Itzímbaro	4	32-inner rim	10.37	9.16	6.27	8.60
Itzímbaro	4	20-inner rim	5.9	10.04	9.45	8.46
Itzímbaro	4	26-inner rim	14.98	13.93	9.39	12.77
Itzímbaro	4	40-inner rim	18.56	18.79	7.21	14.85
Itzímbaro	4	24-inner rim	6.25	11.95	12.17	10.12
Itzímbaro	4	28-inner rim	11.19	6.61	6.28	8.03
Itzímbaro	4	34-inner rim	15.04	13.77	7.61	12.14
Itzímbaro	4	30-outer curve	9.48	6.55	6.25	7.43
Itzímbaro	4	28-inner rim	15.19	11.51	12.05	12.92
Itzímbaro	4	26-inner rim	12.76	12.87	10.15	11.93

Site	Pit	Diameter (in cm)	Thickness 1 (in mm)	Thickness 2 (in mm)	Thickness 3 (in mm)	Average Thickness
Itzímbaro	4	30-inner rim	7.6	9.13	9.17	8.63
Itzímbaro	4	26-inner rim	10.28	9.61	4.7	8.20
Itzímbaro	4	28-outer curve	6.7	7.69	7.75	7.38
Itzímbaro	4	24-inner rim	5.01	5.22	5	5.08
Itzímbaro	4	26-inner rim	14.1	15.24	12.6	13.98
Itzímbaro	4	38-inner rim	11.32	11.48	9.92	10.91
Itzímbaro	4	36-inner rim	13.6	12.74	10.38	12.24
Itzímbaro	4	32-inner rim	7.56	13.95	14.23	11.91
Itzímbaro	4	42-inner rim	8.3	8.01	5.5	7.27
Itzímbaro	4	38-outer curve	10.87	9.84	9.77	10.16
Itzímbaro	4	36-outer curve	7.67	10.98	10.78	9.81

Appendix 4: Obsidian Analysis

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Quesería	23 Jan.	S1W1	-	3	surface	obsidian	M.F.F.Z.I.J.	19	14	3	2	5			2	2	1
Quesería	23 Jan.	N1W1	-	2	surface	obsidian	M.F.F.Z.I.J.	14	11	3	0	1			1	0	0
Quesería	24 Jan.	N1W1	-	16	surface	obsidian	M.F.F.Z.I.J.	1	1	0	0	0			0	0	0
Quesería	24 Jan.	S1W2	-	1	surface	obsidian	M.F.F.Z.I.J.	20	13	5	2	6			4	0	2
Quesería	25 Jan.	S1W2	-	15	surface	obsidian	F.F.Z.I.J.	35	31	4	0	12			11	1	0
Quesería	25 Jan.	S2W1	-	2	surface	obsidian	F.F.Z.I.J.	18	13	4	1	4			4	0	0
Quesería	26 Jan.	S1W2	-	27	surface	obsidian	F.F.Z.I.J.	1	0	1	0	0			0	0	0
Quesería	26 Jan.	S2W2	-	3	surface	obsidian	F.F.Z.I.J.	8	4	3	1	3			1	1	1
Quesería	27 Jan.	S1W3	-	5	surface	obsidian	F.F.Z.I.J.	19	15	3	1	6			3	2	1
Quesería	28 Jan.	N1W3	-	2	surface	obsidian	F.F.Z.I.J.D.	85	65	17	3	26			21	2	3
Quesería	30 Jan.	N1W3	-	17	surface	obsidian	F.F.Z.I.J.	9	7	2	0	0			0	0	0
Quesería	30 Jan.	S1W3	-	18	surface	obsidian	F.F.Z.I.J.	10	7	3	0	2			1	1	0
Quesería	30 Jan.	N1W2	-	3	surface	obsidian	F.F.Z.I.J.	57	45	9	3	22			18	2	2
Quesería	31 Jan.	N1W2	-	17	surface	obsidian	F.F.Z.I.J.	17	14	3	0	4			2	2	0
Quesería	31 Jan.	N2W2	-	6	surface	obsidian	F.F.Z.I.J.	34	31	2	1	3			2	0	1
Quesería	1 Feb.	N1W1	-	18	surface	obsidian	F.F.Z.I.J.	15	7	5	3	5			3	0	2
Quesería	1 Feb.	N2W3	-	3	surface	obsidian	F.F.Z.I.J.	13	8	4	1	5			4	0	1
Quesería	1 Feb.	N3W3	-	1	surface	obsidian	F.Z.I.J.D	3	1	1	1	1			0	0	1
Quesería	1 Feb.	N3W2	-	4	surface	obsidian	F.Z.I.J.D	14	10	3	1	2			2	0	0
Quesería	2 Feb.	N3W2	-	10	surface	obsidian	F.F.Z.I.J.	3	1	2	0	1			1	0	0
Quesería	2 Feb.	N2W1	-	8	surface	obsidian	F.F.Z.I.J.	7	6	0	1	2			1	0	1
Quesería	3 Feb.	N2W1	-	20	surface	obsidian	F.F.Z.I.J.	23	21	1	1	4			4	0	0
Quesería	3 Feb.	N3W1	-	3	surface	obsidian	F.F.Z.I.J.	1	1	0	0	0			0	0	0
Quesería	4 Feb.	N3W1	-	11	surface	obsidian	F.Z.I.J.D	1	1	0	0	0			0	0	0
Quesería	6 Feb.	N3W1	-	19	surface	obsidian	F.Z.I.J.D	2	0	2	0	1			0	1	0
Quesería	6 Feb.	N4W1	-	6	surface	obsidian	F.Z.I.J.D	29	23	6	0	4	1		4	0	0
Quesería	7 Feb.	N1E2	-	4	surface	obsidian	F.F.Z.I.J.	13	6	5	2	3			2	0	1

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Quesería	7 Feb.	N2E2	-	2	surface	obsidian	F.F.Z.I.J.	4	2	2	0	2			1	1	0
Quesería	8 Feb.	N3E1	-	3	surface	obsidian	F.F.Z.I.J.	6	4	2	0	0			0	0	0
Quesería	8 Feb.	N4E1	-	4	surface	obsidian	F.F.Z.I.J.	1	1	0	0	0			0	0	0
Quesería	8 Feb.	N3E2	-	2	surface	obsidian	F.F.Z.I.J.	1	1	0	0	0			0	0	0
Quesería	9 Feb.	N3E2	-	6	surface	obsidian	F.F.Z.I.J.	4	3	1	0	2			2	0	0
Quesería	9 Feb.	N4E2	-	8	surface	obsidian	F.F.Z.I.J.	24	15	9	0	2			2	0	0
Quesería	9 Feb.	N1E3	-	6	surface	obsidian	F.F.Z.I.J.	5	4	1	0	1			1	0	0
Quesería	10 Feb.	N2E3	-	3	surface	obsidian	F.F.Z.I.J.	6	3	2	1	0			0	0	0
Quesería	10 Feb.	N5E2	-	4	surface	obsidian	F.F.Z.I.J.	36	24	10	2	10			8	0	2
Quesería	15 Feb.	N3E3	-	2	surface	obsidian	F.F.I.J.	21	11	7	3	6			3	0	3
Quesería	16 Feb.	N1W2	1	2	0-20 cm	obsidian	F.F.I.J.	1	0	1	0	0			0	0	0
Quesería	16 Feb.	N1W2	1	4	20-40 cm	obsidian	F.F.I.J.	4	2	2	0	0			0	0	0
Quesería	17 Feb.	N1W2	1	14	60-80 cm	obsidian	F.F.I.J.	8	5	3	0	1			0	1	0
Quesería	20 Feb.	N1W2	1	18	80-100 cm	obsidian	Z.J.	12	9	0	3	4			1	0	3
Quesería	20 Feb.	N3E4	-	8	surface	obsidian	F.F.I.	8	7	1	0	0			0	0	0
Quesería	20 Feb.	N4E3	-	7	surface	obsidian	F.F.I.	38	21	14	3	4			1	1	2
Quesería	20 Feb.	desc.	-	1	surface	obsidian	F.F.I.	9	5	3	1	3			2	0	1
Quesería	21 Feb.	N4E3	-	13	surface	obsidian	F.F.I.	8	5	3	0	0			0	0	0
Quesería	21 Feb.	desc.	-	2	surface	obsidian	F.F.I.	35	25	9	1	5			3	2	0
Quesería	21 Feb.	N1W2	1	29	100-120 cm	obsidian	Z.J.	10	4	6	0	4			3	1	0
Quesería	21 Feb.	N2E4	-	5	surface	obsidian	F.F.I.	17	10	7	0	3			2	1	0
Quesería	21 Feb.	N1W2	1 - S wall	36	unknown	obsidian	F.F.Z.I.J.	6	4	1	1	3			2	0	1
Quesería	21 Feb.	N1W2	1 - W wall	39	unknown	obsidian	F.F.Z.I.J.	1	0	1	0	0			0	0	0
Quesería	22 Feb.	N1W2	1	46	120-140 cm	obsidian	Z.J.	15	10	3	2	2			0	0	2
Quesería	22 Feb.	N5E1	-	7	surface	obsidian	F.F.I.	31	24	4	3	7			2	2	3
Quesería	22 Feb.	N5W1	-	13	surface	obsidian	F.F.I.	54	44	9	1	12			11	0	1
Quesería	22 Feb.	N5E2	-	7	surface	obsidian	F.F.I.	16	14	2	0	4			3	1	0
Quesería	23 Feb.	N1W2	1	62	140-160 cm	obsidian	Z.J.	9	7	1	1	3			1	1	1

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Quesería	23 Feb.	N1W2	1 - E wall	70	unknown	obsidian	Z.J.I.	10	6	4	0	1			1	0	0
Quesería	23 Feb.	N6E1	-	9	surface	obsidian	F.D.I.	188	151	28	9	50			31	15	4
Quesería	24 Feb.	N1W2	1 - S wall	75	unknown	obsidian	Z.J.	4	4	0	0	0			0	0	0
Quesería	24 Feb.	N1W2	1	84	160-180 cm	obsidian	Z.J.	14	9	5	0	4			4	0	0
Quesería	24 Feb.	N6W1	-	4	surface	obsidian	F.D.I.	45	32	11	2	14			10	2	2
Quesería	27 Feb.	N1W2	1	93	160-180 cm	obsidian	Z.J.	7	5	1	1	2			0	1	1
Quesería	27 Feb.	N1W2	1	98	180-200 cm	obsidian	Z.J.	4	4	0	0	0			0	0	0
Quesería	27 Feb.	N4W2	-	5	surface	obsidian	F.F.I.	42	31	10	1	4			4	0	0
Quesería	27 Feb.	N5W2	-	6	surface	obsidian	F.F.I.	31	24	5	2	8			2	4	2
Quesería	28 Feb.	N1W2	1	102	180-200 cm	obsidian	Z.J.	10	8	2	0	0			0	0	0
Quesería	28 Feb.	N13W2	-	4	surface	obsidian	F.D.I.	35	24	11	0	16		1	16	0	0
Quesería	28 Feb.	N12W2	-	3	surface	obsidian	F.D.I.	42	29	12	1	19			17	1	1
Quesería	28 Feb.	desc.	-	3	surface	obsidian	F.D.I.	13	11	1	1	6			5	0	1
Quesería	1 Mar.	N6W2	-	5	surface	obsidian	F.F.Z.	47	40	7	0	22			19	3	0
Quesería	2 Mar.	N1E4	-	3	surface	obsidian	F.D.I.Z.	9	3	5	1	2			1	0	1
Quesería	3 Mar.	N5E3	-	7	surface	obsidian	F.D.I.Z.										
Quesería	7 Mar.	N3W1	2	3	0-20 cm	obsidian	F.F.Z.	4	2	2	0	1			1	0	0
Quesería	7 Mar.	N3W1	2	5	20-40 cm	obsidian	F.F.Z.I.J.	4	2	1	1	1			0	0	1
Quesería	8 Mar.	N1W2	1	125	220-240 cm	obsidian	I.F.	9	6	3	0	0			0	0	0
Quesería	8 Mar.	N3W1	2	20	40-60 cm	obsidian	Z.D.	7	3	3	1	3			1	1	1
Quesería	8 Mar.	N3W1	2	29	60-80 cm	obsidian	Z.D.	5	3	1	1	2			0	1	1
Quesería	9 Mar.	N3W1	2	35	60-80 cm	obsidian	Z.F.	2	2	0	0	0			0	0	0
Quesería	9 Mar.	N3W1	2	41	80-100 cm	obsidian	F.F.Z.I.J.	8	6	2	0	0			0	0	0
Quesería	9 Mar.	N3W1	2	54	100-120 cm	obsidian	F.Z.	3	2	1	0	0			0	0	0
Quesería	9 Mar.	N5W2	-	9	surface	obsidian	F.I.J.	13	5	6	2	4			2	0	2
Quesería	9 Mar.	N5W2	3	2	0-20 cm	obsidian	F.I.J.	20	15	3	2	7			6	1	2
Quesería	10 Mar.	N3W1	2	57	100-120 cm	obsidian	F.Z.	1	1	0	0	0			0	0	0
Quesería	10 Mar.	N3W1	2	60	120-140 cm	obsidian	Z.D.	3	2	1	0	0			0	0	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Quesería	10 Mar.	N5W2	3	6	0-20 cm	obsidian	I.F.	39	26	10	3	17			10	4	3
Quesería	10 Mar.	N5W2	3	10	20-40 cm	obsidian	I.F.	6	4	1	1	4			2	1	1
Quesería	13 Mar.	N5W2	3	15	0-40 cm	obsidian	F.I.	1	1	0	0	0			0	0	0
Quesería	13 Mar.	N3W1	2	62	120-140 cm	obsidian	Z.F.	4	3	1	0	0			0	0	0
Quesería	13 Mar.	N5W2	-	11	surface	obsidian	F.I.	4	1	3	0	0			0	0	0
Quesería	14 Mar.	N3E2	4	2	0-40 cm	obsidian	F.F.Z.I.J.	6	5	1	0	1			1	0	0
Quesería	15 Mar.	N3E2	4	10	40-60 cm	obsidian	F.F.Z.I.J.	1	1	0	0	0			0	0	0
Quesería	16 Mar.	N3E2	4	24	80-100 cm	obsidian	F.F.Z.I.J.	1	0	1	0	0			0	0	0
Quesería	17 Mar.	N3E2	4	30	100-120 cm	obsidian	F.F.Z.I.J.	1	1	0	0	0			0	0	0
TOTAL								1504	1092	337	75	388	1	1	272	59	59

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Itzímbaro	21 Mar.	S5W1	-	4	surface	obsidian	F.Z.I.J.D.	16	12	4	0	4			1	3	0
Itzímbaro	21 Mar.	S6W1	-	2	surface	obsidian	F.Z.I.J.D.	3	2	1	0	1			1	0	0
Itzímbaro	21 Mar.	S5W2	-	7	surface	obsidian	F.Z.I.J.D.	21	17	3	1	4			3	0	1
Itzímbaro	22 Mar.	S1E1	1	2	0-20 cm	obsidian	F.Z.I.J.D.	5	4	1	0	2			2	0	0
Itzímbaro	22 Mar.	S1E1	1	4	20-40 cm	obsidian	F.Z.I.J.D.	9	8	1	0	5			4	1	0
Itzímbaro	22 Mar.	S4W1	-	6	surface	obsidian	F.D.I.	37	20	16	1	8			6	1	1
Itzímbaro	22 Mar.	S4E1	-	2	surface	obsidian	F.D.I.	2	2	0	0	2			2	0	0
Itzímbaro	23 Mar.	S3E1	-	4	surface	obsidian	F.Z.I.	8	7	1	0	2		1	2	0	0
Itzímbaro	23 Mar.	S2E1	-	4	surface	obsidian	F.Z.I.	39	26	12	1	18			17	0	1
Itzímbaro	23 Mar.	S1E1	1	6	40-60 cm	obsidian	F.J.	3	0	2	1	1			0	0	1
Itzímbaro	23 Mar.	S2E2	-	3	surface	obsidian	F.Z.I.	2	1	1	0	2			1	1	0
Itzímbaro	23 Mar.	S1E1	1	11	60-80 cm	obsidian	F.J.	1	1	0	0	1			1	0	0
Itzímbaro	24 Apr.	S1E1	1	13	60-80 cm	obsidian	F.J.	1	0	1	0	0			0	0	0
Itzímbaro	24 Mar.	S1E1	-	9	surface	obsidian	F.Z.I.	23	18	5	0	17			16	0	1
Itzímbaro	24 Mar.	S1E2	-	3	surface	obsidian	F.Z.I.	9	6	3	0	4			4	0	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Itzímbaro	27 Mar.	N3E1	2	2	0-20 cm	obsidian	F.F.Z.I.J.	3	3	0	0	2			2	0	0
Itzímbaro	27 Mar.	N3E1	2	4	20-40 cm	obsidian	F.F.Z.I.J.	10	8	2	0	4			4	0	0
Itzímbaro	28 Mar.	N1E1	-	5	surface	obsidian	F.Z.I.J.	5	3	1	1	3			1	1	1
Itzímbaro	28 Mar.	N3E1	2	7	40-60 cm	obsidian	F.Z.I.J.	1	1	0	0	1			1	0	0
Itzímbaro	30 Mar.	N2E2	-	6	surface	obsidian	F.Z.I.J.	5	3	2	0	0			0	0	0
Itzímbaro	30 Mar.	N3E1	-	2	surface	obsidian	F.Z.I.J.	1	1	0	0	0			0	0	0
Itzímbaro	31 Mar.	N3E2	-	3	surface	obsidian	D.Z.I.J.	3	2	1	0	1			1	0	0
Itzímbaro	31 Mar.	N4E1	-	3	surface	obsidian	D.Z.I.J.	14	13	1	0	6			6	0	0
Itzímbaro	4 Apr.	S2E1	3-NW	2	0-30 cm	obsidian	F.Z.I.J.	1	1	0	0	1			1	0	0
Itzímbaro	4 Apr.	S2E1	3-SW	2	0-30 cm	obsidian	F.Z.I.J.	1	1	0	0	1			1	0	0
Itzímbaro	4 Apr.	S2E1	-	11	surface	obsidian	F.Z.I.J.	10	8	2	0	6			4	2	0
Itzímbaro	5 Apr.	N1E2	-	8	surface	obsidian	F.I.P.	8	7	1	0	4			3	1	0
Itzímbaro	5 Apr.	S2E1	3	3	0-40 cm	obsidian	Z.J.	13	11	2	0	7			7	0	0
Itzímbaro	6 Apr.	S2E1	3	9	0-40 cm	obsidian	F.Z.I.J.	3	3	0	0	3			3	0	0
Itzímbaro	6 Apr.	S2E1	3	12	40-60 cm	obsidian	F.Z.I.J.	8	5	3	0	4	1		4	0	0
Itzímbaro	6 Apr.	S2E1	3	19	60-80 cm	obsidian	F.Z.I.J.	5	4	1	0	1			1	0	0
Itzímbaro	7 Apr.	S2E1	3	25	60-80 cm	obsidian	Z.I.J.D.	7	3	2	2	6			4	0	2
Itzímbaro	7 Apr.	S2E1	3	33	80-100 cm	obsidian	Z.I.J.D.	14	10	4	0	3			3	0	0
Itzímbaro	11 Apr.	S2E1	3	38	100-120 cm	obsidian	Z.I.J.D.	4	3	0	1	1			0	0	1
Itzímbaro	11 Apr.	S2E1	3	45	120-140 cm	obsidian	Z.I.J.D.	1	1	0	0	1			1	0	0
Itzímbaro	10 Apr.	N4E2	-	3	surface	obsidian	Z.I.D.	4	0	4	0	0			0	0	0
Itzímbaro	10 Apr.	N5E2	-	3	surface	obsidian	Z.I.D.	4	4	0	0	2			2	0	0
Itzímbaro	10 Apr.	N5E1	-	2	surface	obsidian	Z.I.D.	2	2	0	0	0			0	0	0
Itzímbaro	12 Apr.	S2E1	3	49	120-140 cm	obsidian	Z.I.J.D.	3	3	0	0	2			2	0	0
Itzímbaro	12 Apr.	S2E1	3	56	140-160 cm	obsidian	Z.I.J.D.	8	5	3	0	6			6	0	0
Itzímbaro	24 Apr.	S2E1	3-walls	60	100-160 cm	obsidian	F.Z.I.J.	3	3	0	0	3			3	0	0
Itzímbaro	24 Apr.	S2E1	3	68	160-180 cm	obsidian	F.Z.I.J.	20	17	3	0	13			12	1	0
Itzímbaro	24 Apr.	S2E1	3	77	180-200 cm	obsidian	F.Z.I.J.	8	8	0	0	8			8	0	0
Itzímbaro	25 Apr.	S2E1	3	84	180-200 cm	obsidian	F.Z.I.J.	21	20	1	0	12			12	0	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Itzímbaro	25 Apr.	S2E1	3	91	200-220 cm	obsidian	F.Z.I.J.	16	13	1	2	12			10	0	2
Itzímbaro	26 Apr.	S2E1	3	100	200-220 cm	obsidian	F.Z.I.J.	3	2	1	0	2			1	1	0
Itzímbaro	26 Apr.	S2E1	3	110	220-240 cm	obsidian	F.Z.I.J.	10	9	0	1	5			3	1	1
Itzímbaro	27 Apr.	S2E1	3	116	220-240 cm	obsidian	F.Z.I.J.	1	1	0	0	1			1	0	0
Itzímbaro	27 Apr.	S5W1	4-SW	2	0-30 cm	obsidian	F.Z.I.J.	1	1	0	0	0			0	0	0
Itzímbaro	28 Apr.	S5W1	4	5	0-40 cm	obsidian	F.Z.I.J.	10	5	5	0	1	1		1	0	0
Itzímbaro	28 Apr.	S5W1	4	13	40-60 cm	obsidian	F.Z.I.J.	2	2	0	0	0			0	0	0
Itzímbaro	1 May	S5W1	4-ext	17	0-40 cm	obsidian	F.Z.I.J.	2	2	0	0	0			0	0	0
Itzímbaro	1 May	S5W1	4-ext	23	40-60 cm	obsidian	F.Z.I.J.	3	3	0	0	0			0	0	0
Itzímbaro	1 May	S5W1	4	26	60-80 cm	obsidian	F.Z.I.J.	6	6	0	0	0			0	0	0
Itzímbaro	2 May	S5W1	4	32	60-80 cm	obsidian	F.Z.I.J.	2	2	0	0	0			0	0	0
Itzímbaro	2 May	S5W1	4	43	80-100 cm	obsidian	F.Z.I.J.	13	10	3	0	2			2	0	0
Itzímbaro	3 May	S5W1	4	54	100-120 cm	obsidian	D.Z.I.J.	5	5	0	0	0			0	0	0
Itzímbaro	3 May	S5W1	4	61	120-140 cm	obsidian	D.Z.I.J.	6	4	2	0	0			0	0	0
Itzímbaro	4 May	S5W1	4	67	120-140 cm	obsidian	D.Z.I.J.	1	1	0	0	0			0	0	0
Itzímbaro	4 May	S5W1	4	74	140-160 cm	obsidian	D.Z.I.J.	5	5	0	0	0			0	0	0
Itzímbaro	5 May	S5W1	4	82	160-180 cm	obsidian	D.Z.I.J.	2	1	1	0	0			0	0	0
Itzímbaro	5 May	S5W1	4	87	180-200 cm	obsidian	D.Z.I.J.	1	1	0	0	0			0	0	0
Itzímbaro	6 May	S5W1	4	98	200-220 cm	obsidian	D.Z.I.J.	4	3	1	0	2			1	1	0
Itzímbaro	8 May	S5W1	4	110	240-260 cm	obsidian	D.Z.I.J.	2	2	0	0	0			0	0	0
TOTAL								464	355	98	11	197	2		171	14	12

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Mexiquito	25 May	S1E1	-	5	surface	obsidian	I.J.R.P.E.	25	14	11	0	14	1		7	7	0
Mexiquito	25 May	N1W1	-	2	surface	obsidian	I.J.R.P.E.	2	0	2	0	2			0	2	0
Mexiquito	26 May	S1W2	-	4	surface	obsidian	I.J.R.P.E.	23	16	7	0	11	1		9	2	0
Mexiquito	26 May	S2W1	-	3	surface	obsidian	I.J.R.P.E.	12	9	3	0	2			2	0	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Mexiquito	27 May	S2W3	-	4	surface	obsidian	I.J.R.P.E.	20	12	7	1	12	1		8	4	0
Mexiquito	27 May	S1W4	-	4	surface	obsidian	I.J.R.P.E.	28	18	9	1	12	3		6	5	1
Mexiquito	29 May	N2W2	-	3	surface	obsidian	I.J.R.P.E.	7	5	2	0	4			3	1	0
Mexiquito	29 May	N1W4	-	4	surface	obsidian	I.J.R.P.E.	10	6	4	0	4	1		3	1	0
Mexiquito	30 May	S2E3	-	5	surface	obsidian	I.J.R.P.E.	59	39	20	0	31			15	16	0
Mexiquito	30 May	S1E4	-	2	surface	obsidian	I.J.R.P.E.	89	53	31	5	38	3	1	18	16	4
Mexiquito	30 May	S2E5	-	3	surface	obsidian	I.J.R.P.E.	138	74	61	3	54	2		28	24	2
Mexiquito	31 May	S1E8	1	2	0-20 cm	obsidian	I.J.R.P.E.	2	1	1	0	1			1	0	0
Mexiquito	31 May	S1E8	1	5	20-40 cm	obsidian	I.J.R.P.E.	6	2	4	0	2			2	0	0
Mexiquito	1 June	S1E8	1	9	40-60 cm	obsidian	I.J.R.P.E.	9	7	2	0	4			4	0	0
Mexiquito	1 June	S1E8	1	14	60-68 cm	obsidian	I.J.R.P.E.	4	3	1	0	2			1	1	0
Mexiquito	1 June	S1E8	1	19	68-80 cm	obsidian	I.J.R.P.E.	4	4	0	0	0			0	0	0
Mexiquito	2 June	S1E8	1	24	80-100 cm	obsidian	I.J.R.P.E.	4	3	1	0	1			1	0	0
Mexiquito	2 June	S1E8	1	27	100-120 cm	obsidian	I.J.R.P.E.	9	8	1	0	9			8	1	0
Mexiquito	3 June	S1E8	1	33	120-140 cm	obsidian	I.J.R.P.E.	8	8	0	0	3			3	0	0
Mexiquito	3 June	S1E8	1	37	140-160 cm	obsidian	I.J.R.P.E.	9	9	0	0	2			2	0	0
Mexiquito	8 June	S1E8	1	43	140-160 cm	obsidian	J.P.	1	1	0	0	1			1	0	0
Mexiquito	8 June	S1E8	1	47	160-180 cm	obsidian	J.P.	5	5	0	0	2			2	0	0
Mexiquito	9 June	N1W1	2	4	40-60 cm	obsidian	J.E.R.	16	3	13	0	11			4	7	0
Mexiquito	9 June	S1E8	1	52	160-180 cm	obsidian	I.P.	4	4	0	0	0			0	0	0
Mexiquito	9 June	S1E8	1	57	180-200 cm	obsidian	J.P.I.	9	8	1	0	0			0	0	0
Mexiquito	9 June	S1E8	1	61	200-220 cm	obsidian	J.P.	3	3	0	0	1			1	0	0
Mexiquito	9 June	N1W1	2	7	60-80 cm	obsidian	I.E.R.	7	4	2	1	3	1		1	1	1
Mexiquito	10 June	N1W1	2	11	60-80 cm	obsidian	J.E.R.	10	6	4	0	7			3	4	0
Mexiquito	10 June	N1W1	2	14	80-100 cm	obsidian	J.E.R.I.	6	4	2	0	3			1	2	0
Mexiquito	10 June	S1E8	1	65	200-220 cm	obsidian	I.P.	2	2	0	0	1			1	0	0
Mexiquito	10 June	S1E8	1	71	220-240 cm	obsidian	J.P.	3	3	0	0	1		1	1	0	0
Mexiquito	11 June	N1W1	2	19	80-100 cm	obsidian	I.J.R.P.E.	1	1	0	0	1			1	0	0
Mexiquito	11 June	N1W1	2	23	100-120 cm	obsidian	I.E.R.	1	0	1	0	1			0	1	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	Total	# Gray	# Black	# Green	# Blades	# Points	Other	# Gray Blades	# Black Blades	# Green Blades
Mexiquito	14 June	N1W1	2	31	120-140 cm	obsidian	J.P.R.E.	3	3	0	0	3			3	0	0
Mexiquito	15 June	S1W2	3	2	0-20 cm	obsidian	J.P.R.E.	1	0	1	0	0			0	0	0
Mexiquito	15 June	S1W2	3	4	20-40 cm	obsidian	J.P.R.E.	2	1	1	0	1			1	0	0
Mexiquito	15 June	S1W2	3	6	40-60 cm	obsidian	J.P.R.E.	9	4	5	0	5			0	5	0
Mexiquito	16 June	S1W2	3	11	60-80 cm	obsidian	J.P.R.E.	45	24	21	0	27			11	16	0
Mexiquito	16 June	S1W2	3	21	80-100 cm	obsidian	J.P.R.E.	26	14	11	1	9			6	3	0
Mexiquito	16 June	S1W2	3	26	100-120 cm	obsidian	J.P.R.E.	3	1	2	0	0			0	0	0
Mexiquito	17 June	S1W2	3	32	100-120 cm	obsidian	J.P.R.E.	3	3	0	0	3			3	0	0
Mexiquito	17 June	S1W2	3	37	120-140 cm	obsidian	J.P.R.E.	3	2	1	0	0			0	0	0
Mexiquito	17 June	S1W2	3	42	140-160 cm	obsidian	J.P.R.E.	7	6	1	0	4			3	1	0
Mexiquito	18 June	S1W2	3	47	160-180 cm	obsidian	J.P.R.E.	1	0	1	0	0		1	0	0	0
Mexiquito	18 June	S1W2	3	52	180-200 cm	obsidian	J.P.R.E.	1	1	0	0	1			1	0	0
Mexiquito	19 June	S1W2	3	56	200-220 cm	obsidian	J.P.R.E.	1	1	0	0	0			0	0	0
Mexiquito	23 June	S1E6	-	3	surface	obsidian	J.P.R.E.	19	16	3	0	9			7	2	0
Mexiquito	23 June	N1E7	-	5	surface	obsidian	J.P.R.E.	48	32	16	0	23	2		14	9	0
Mexiquito	23 June	S2E7	-	5	surface	obsidian	J.P.R.E.	39	32	7	0	18			15	3	0
Mexiquito	23 June	S1E8	-	6	surface	obsidian	J.P.R.E.	61	49	12	0	30			21	9	0
TOTAL								808	524	272	12	373	15		222	143	8

Appendix 5: Figurine Analysis

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Animals	Unknown
Quesería	23 Jan.	S1W1	-	4	surface	figurine	M.F.F.Z.I.J.	9	2	2	1	9	9	4
Quesería	23 Jan.	N1W1	-	5	surface	figurines	M.F.F.Z.I.J.	5	1	2	1	0	0	1
Quesería	24 Jan.	N1W1	-	10	surface	figurines	M.F.F.Z.I.J.	10	3	3	0	0	0	4
Quesería	24 Jan.	S1W2	-	5	surface	figurines	M.F.F.Z.I.J.	10	3	2	0	0	0	5
Quesería	25 Jan.	S1W2	-	14	surface	figurines	F.F.Z.I.J.	12	1	2	1	0	0	8
Quesería	25 Jan.	S2W1	-	4	surface	figurines	F.F.Z.I.J.	2	0	0	0	0	0	2
Quesería	26 Jan.	S1W2	-	28	surface	figurines	F.F.Z.I.J.	3	0	1	1	0	0	1
Quesería	26 Jan.	S2W2	-	4	surface	figurines	F.F.Z.I.J.	2	0	0	0	0	0	2
Quesería	27 Jan.	S1W3	-	7	surface	figurines	F.F.Z.I.J.	6	0	1	0	1	0	4
Quesería	28 Jan.	N1W3	-	1	surface	figurines	F.F.Z.I.J.D.	7	1	1	0	0	0	5
Quesería	30 Jan.	N1W3	-	18	surface	figurines	F.F.Z.I.J.	2	0	1	0	0	0	1
Quesería	30 Jan.	S1W3	-	19	surface	figurines	F.F.Z.I.J.	3	0	0	1	0	0	2
Quesería	30 Jan.	N1W2	-	8	surface	figurines	F.F.Z.I.J.	5	0	1	1	1	0	2
Quesería	31 Jan.	N1W2	-	18	surface	figurines	F.F.Z.I.J.	8	4	1	0	0	0	3
Quesería	31 Jan.	N2W2	-	5	surface	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
Quesería	1 Feb.	N1W1	-	17	surface	figurines	F.F.Z.I.J.	5	2	1	0	0	0	2
Quesería	1 Feb.	N2W3	-	4	surface	figurines	F.F.Z.I.J.	bag	missing					
Quesería	1 Feb.	N3W2	-	5	surface	figurines	F.Z.I.J.D	1	0	0	0	0	0	1
Quesería	2 Feb.	N2W1	-	7	surface	figurines	F.F.Z.I.J.	9	5	1	0	1	0	2
Quesería	3 Feb.	N2W1	-	21	surface	figurines	F.F.Z.I.J.	12	1	1	0	1	0	9
Quesería	4 Feb.	N3W1	-	13	surface	figurines	F.Z.I.J.D	13	0	3	0	0	0	10
Quesería	6 Feb.	N3W1	-	20	surface	figurines	F.Z.I.J.D	1	0	0	0	0	0	1
Quesería	6 Feb.	N4W1	-	5	surface	figurines	F.Z.I.J.D	12	3	3	0	0	0	6
Quesería	7 Feb.	N1E1	-	4	surface	figurines	F.F.Z.I.J.	4	1	1	0	0	1	1
Quesería	7 Feb.	N1E2	-	5	surface	figurines	F.F.Z.I.J.	5	0	0	0	1	0	4
Quesería	8 Feb.	N3E1	-	4	surface	figurines	F.F.Z.I.J.	5	2	1	0	0	0	2
Quesería	8 Feb.	N4E1	-	6	surface	figurines	F.F.Z.I.J.	2	0	0	0	0	0	2

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Animals	Unknown
Quesería	8 Feb.	N3E2	-	3	surface	figurines	F.F.Z.I.J.	3	1	1	0	0	1	0
Quesería	9 Feb.	N3E2	-	7	surface	figurines	F.F.Z.I.J.	2	0	0	0	0	0	2
Quesería	9 Feb.	N4E2/N4E1?	-	9	surface	figurines	F.F.Z.I.J.	6	2	0	0	0	0	4
Quesería	9 Feb.	N1E3	-	7	surface	figurines	F.F.Z.I.J.	3	0	0	0	0	0	3
Quesería	10 Feb.	N2E3	-	4	surface	figurines	F.F.Z.I.J.	4	0	0	0	0	0	4
Quesería	10 Feb.	N5E2	-	5	surface	figurines	F.F.Z.I.J.	2	1	0	0	1	0	0
Quesería	15 Feb.	N3E3	-	9	surface	figurines	F.F.I.J.	4	1	0	0	0	0	3
Quesería	16 Feb.	N1W2	1	5	20-40 cm	figurines	F.F.I.J.	1	0	0	0	0	0	1
Quesería	17 Feb.	N1W2	1	10	40-60 cm	figurines	F.F.I.J.	2	0	0	1	0	0	1
Quesería	17 Feb.	N1W2	1	13	60-80 cm	figurines	F.F.I.J.	2	0	1	0	0	0	1
Quesería	20 Feb.	N3E4	-	9	surface	figurines	F.F.I.	4	2	0	0	0	0	2
Quesería	20 Feb.	N4E3	-	8	surface	figurines	F.F.I.	3	0	0	1	0	0	2
Quesería	20 Feb.	N1W2	1	23	80-100 cm	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
Quesería	21 Feb.	N1W2	1	28	100-120 cm	figurines	Z.J.	3	0	0	0	0	0	3
Quesería	21 Feb.	N4E3	-	14	surface	figurines	F.F.I.	4	0	1	0	0	0	3
Quesería	21 Feb.	N2E4	-	6	surface	figurines	F.F.I.	3	0	0	0	0	0	3
Quesería	21 Feb.	N1W2	1-S wall	37	unknown	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
Quesería	22 Feb.	N1W2	1	47	120-140 cm	figurines	Z.J.	3	0	1	1	0	0	1
Quesería	22 Feb.	N5E1	-	8	surface	figurines	F.F.I.	14	5	6	0	0	0	3
Quesería	22 Feb.	N5W1	-	14	surface	figurines	F.F.I.	7	1	5	0	0	0	1
Quesería	23 Feb.	N1W2	1	63	140-160 cm	figurines	Z.J.	4	0	1	0	0	0	3
Quesería	23 Feb.	N1W2	1-E wall	69	unknown	figurines	Z.J.I.	4	2	1	0	0	0	1
Quesería	23 Feb.	N5W1/N6E1?	-	10	surface	figurines	F.D.I.	10	2	2	1	0	1	4
Quesería	24 Feb.	N1W2	1-S wall	76	unknown	figurines	Z.J.	1	0	0	0	0	0	1
Quesería	24 Feb.	N1W2	1	85	160-180 cm	figurines	Z.J.	1	0	0	0	0	0	1
Quesería	24 Feb.	N6W1		5	surface	figurines	F.D.I.	4	1	0	0	1	0	2
Quesería	27 Feb.	N1W2	1	99	180-200 cm	figurines	Z.J.	3	2	1	0	0	0	0
Quesería	27 Feb.	N4W2	-	6	surface	figurines	F.F.I.	4	0	1	0	0	1	2
Quesería	27 Feb.	N5W2	-	7	surface	figurines	F.F.I.	6	0	2	0	2	0	2
Quesería	28 Feb.	N1W2	1	103	180-200 cm	figurines	Z.J.	1	0	0	1	0	0	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Animals	Unknown
Quesería	28 Feb.	N1W2	1	110	200-220 cm	figurines	Z.J.	1	0	1	0	0	0	0
Quesería	28 Feb.	N12W2	-	4	surface	figurines	F.D.I.	1	1	0	0	0	0	0
Quesería	1 Mar.	N1W2	1	119	200-220 cm	figurines	I.J.	4	1	1	0	0	0	2
Quesería	1 Mar.	N6W2	-	6	surface	figurines	F.F.Z.	6	0	3	0	0	0	3
Quesería	7 Mar.	N3W1	2	6	20-40 cm	figurines	F.F.Z.I.J.	4	0	0	1	1	0	2
Quesería	8 Mar.	N1W2	1	126	220-240 cm	figurines	I.F.	4	0	1	0	0	0	3
Quesería	8 Mar.	N3W1	2	21	40-60 cm	figurines	Z.D.	10	1	0	1	0	0	8
Quesería	8 Mar.	N3W1	2	31	60-80 cm	figurines	Z.D.	2	0	1	1	0	0	0
Quesería	9 Mar.	N3W1	2	36	60-80 cm	figurines	Z.F.	4	1	0	0	1	0	2
Quesería	9 Mar.	N3W1	2	40	80-100 cm	figurines	F.F.Z.I.J.	6	0	2	0	0	0	4
Quesería	9 Mar.	N5W2	-	10	surface	figurines	F.I.J.	1	0	0	0	1	0	0
Quesería	9 Mar.	N5W2	3	3	0-20 cm	figurines	F.I.J.	3	0	1	1	0	0	1
Quesería	10 Mar.	N3W1	2	58	100-120 cm	figurines	F.Z.	3	0	0	0	0	0	3
Quesería	10 Mar.	N5W2	3	7	0-20 cm	figurines	I.F.	4	2	0	1	0	0	1
Quesería	10 Mar.	N5W2	3	11	20-40 cm	figurines	I.F.	6	1	0	0	1	0	4
Quesería	13 Mar.	N3W1	2	63	120-140 cm	figurines	Z.F.	1	0	0	0	0	0	1
Quesería	14 Mar.	N3E2	4-SW	2	0-30 cm	figurines	F.F.Z.I.J.	1	0	1	0	0	0	0
Quesería	14 Mar.	N3E2	4	3	0-40 cm	figurines	F.F.Z.I.J.	3	0	0	1	0	0	2
Quesería	15 Mar.	N3E2	4	11	40-60 cm	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
Quesería	16 Mar.	N3E2	4	20	60-80 cm	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
Quesería	9 Feb.	N4E2	-	9	surface	figurines	F.F.Z.I.J.	1	0	1	0	0	0	0
Quesería	3 Mar.	N5E3	-	7	surface	figurines	F.F.Z.I.J.	1	0	0	0	0	0	1
TOTAL								332	56	63	17	22	13	179

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Aniamsl	Unknown
Itzímbaro	21 Mar.	S5W1	-	5	surface	figurines	F.Z.I.J.D.	2	0	0	0	0	0	2
Itzímbaro	21 Mar.	S5E1	-	3	surface	figurines	F.Z.I.J.D.	2	0	0	1	0	0	1
Itzímbaro	21 Mar.	S6W1	-	3	surface	figurines	F.Z.I.J.D.	1	0	1	0	0	0	0
Itzímbaro	21 Mar.	S5W2	-	8	surface	figurines	F.Z.I.J.D.	1	0	0	0	0	0	1
Itzímbaro	22 Mar.	S4W1	-	7	surface	figurines	F.D.I.	3	1	0	1	0	1	0

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Aniamsl	Unknown
Itzímbaro	22 Mar.	S4E1	-	3	surface	figurines	F.D.I.	1	0	1	0	0	0	0
Itzímbaro	23 Mar.	S3E1	-	6	surface	figurines	F.Z.I.	6	0	0	2	0	0	4
Itzímbaro	23 Mar.	S1E1	1	7	40-60 cm	figurines	F.J.	2	1	0	0	0	0	1
Itzímbaro	23 Mar.	S2E1	-	8	surface	figurines	F.Z.I.	5	1	0	0	0	0	4
Itzímbaro	23 Mar.	S2E2	-	4	surface	figurines	F.Z.I.	5	1	0	1	0	0	3
Itzímbaro	24 Mar.	S1E1	-	10	surface	figurines	F.Z.I.	10	2	2	0	1	0	5
Itzímbaro	24 Mar.	S1E2	-	4	surface	figurines	F.Z.I.	3	0	1	1	0	0	1
Itzímbaro	28 Mar.	N1E1	-	6	surface	figurines	F.Z.I.J.	8	1	3	0	1	0	3
Itzímbaro	30 Mar.	N2E2	-	7	surface	figurines	F.Z.I.J.	2	0	1	0	0	0	1
Itzímbaro	31 Mar.	N4E1	-	4	surface	figurines	D.Z.I.J.	4	0	1	0	0	0	3
Itzímbaro	5 Apr.	N1E2	-	9	surface	figurines	F.I.P.	5	2	2	0	0	0	1
Itzímbaro	5 Apr.	S2E1	3	4	0-40 cm	figurines	Z.J.	5	0	0	2	0	0	3
Itzímbaro	6 Apr.	S2E1	3	13	40-60 cm	figurines	F.Z.I.J.	1	0	0	0	0	0	1
Itzímbaro	7 Apr.	S2E1	3	26	60-80 cm	figurines	Z.I.J.D.	3	0	0	1	0	0	2
Itzímbaro	7 Apr.	S2E1	3	34	80-100 cm	figurines	Z.I.J.D.	1	0	0	0	0	0	1
Itzímbaro	11 Apr.	S2E1	3	39	100-120 cm	figurines	Z.I.J.D.	1	0	0	0	0	0	1
Itzímbaro	10 Apr.	N4E2	-	4	surface	figurines	Z.I.D.	3	0	2	0	0	0	1
Itzímbaro	10 Apr.	N5E2	-	4	surface	figurines	Z.I.D.	2	1	0	0	0	0	1
Itzímbaro	12 Apr.	S2E1	3	50	120-140 cm	figurines	Z.I.J.D.	1	0	0	0	0	0	1
Itzímbaro	12 Apr.	S2E1	3	57	140-160 cm	figurines	Z.I.J.D.	4	0	0	1	1	0	2
Itzímbaro	24 Apr.	S2E1	3-walls	61	100-160 cm	figurines	F.Z.I.J.	2	1	0	1	0	0	0
Itzímbaro	24 Apr.	S2E1	3	69	160-180 cm	figurines	F.Z.I.J.	7	0	0	1	0	0	6
Itzímbaro	24 Apr.	S2E1	3	78	180-200 cm	figurines	F.Z.I.J.	1	0	0	0	1	0	0
Itzímbaro	25 Apr.	S2E1	3	85	180-200 cm	figurines	F.Z.I.J.	1	0	0	0	0	0	1
Itzímbaro	26 Apr.	S2E1	3	101	200-220 cm	figurines	F.Z.I.J.	1	0	0	0	0	1	0
Itzímbaro	27 Apr.	S5W1	4-NW	2	0-30 cm	figurines	F.Z.I.J.	1	1	0	0	0	0	0
Itzímbaro	28 Apr.	S5W1	4	6	0-40 cm	figurines	F.Z.I.J.	6	0	1	1	0	1	3
Itzímbaro	28 Apr.	S5W1	4	14	40-60 cm	figurines	F.Z.I.J.	1	0	1	0	0	0	0
Itzímbaro	1 May	S5W1	4-ext	18	0-40 cm	figurines	F.Z.I.J.	bag	missing					
Itzímbaro	1 May	S5W1	4	27	60-80 cm	figurines	F.Z.I.J.	1	0	0	0	0	0	1

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Aniamsl	Unknown
Itzímbaro	2 May	S5W1	4	33	60-80 cm	figurines	F.Z.I.J.	2	0	1	0	1	0	0
Itzímbaro	2 May	S5W1	4	44	80-100 cm	figurines	F.Z.I.J.	3	0	1	0	2	0	0
Itzímbaro	3 May	S5W1	4	55	100-120 cm	figurines	D.Z.I.J.	2	0	0	0	0	0	2
Itzímbaro	3 May	S5W1	4	62	120-140 cm	figurines	D.Z.I.J.	2	0	2	0	0	0	0
Itzímbaro	4 May	S5W1	4	68	120-140 cm	figurines	D.Z.I.J.	1	0	1	0	0	0	0
Itzímbaro	4 May	S5W1	4	77	140-160 cm	figurines	D.Z.I.J.	1	0	1	0	0	0	0
Itzímbaro	5 May	S5W1	4	83	160-180 cm	figurines	D.Z.I.J.	1	0	0	0	0	0	1
Itzímbaro	6 May	S5W1	4	91	180-200 cm	figurines	D.Z.I.J.	1	0	0	1	0	0	0
Itzímbaro	6 May	S5W1	4	99	200-220 cm	figurines	D.Z.I.J.	1	1	0	0	0	0	0
Itzímbaro	8 May	S5W1	4	104	220-240 cm	figurines	D.Z.I.J.	1	0	0	1	0	0	0
Itzímbaro	8 May	S5W1	4	111	240-260 cm	figurines	D.Z.I.J.	1	0	0	0	0	0	1
TOTAL								118	13	22	15	7	3	58

Site	Date	Sector	Pit	Bag	Level	Material	Personnel	# Total	Heads	Bodies	Arms	Legs	Animals	Unkown
Mexiquito	31 May	S1E8	1	3	0-20 cm	figurine	I.J.R.P.E.	1	0	0	1	0	0	0
Mexiquito	31 May	S1E8	1	6	20-40 cm	figurine	I.J.R.P.E.	1	1	0	0	0	0	0
Mexiquito	2 June	S1E8	1	28	100-120 cm	figurine	I.J.R.P.E.	1	0	0	0	0	0	1
Mexiquito	16 June	S1W2	3	12	60-80 cm	figurine	J.P.R.E.	1	0	1	0	0	0	0
TOTAL								4	1	1	1	0	0	1

Appendix 6: Raw Point Count Data

Sample	Epidote	Amphibole	Biotite	Weathered Feldspar	Trachy-andesite	Quartz	Poly. Quartz	Plagioclase	Chert	Other	Void	Matrix	Total # Inclusions	Total	Coarse%	Fine %	Void %
S2-06-1	0	3	6	37	1	55	0	2	21	142	33	285	267	585	45.64	48.72	5.64
S2-06-2	0	9	2	44	0	54	0	4	0	144	43	212	257	512	50.20	41.41	8.40
S2-06-3	1	0	1	1	49	35	31	14	0	144	24	309	276	609	45.32	50.74	3.94
S2-06-4	1	2	0	14	20	54	12	7	2	155	33	292	267	592	45.10	49.32	5.57
S2-06-5	0	1	1	9	3	78	10	18	0	150	30	398	270	698	38.68	57.02	4.30
S2-06-6	0	1	0	22	25	42	11	11	0	136	52	175	248	475	52.21	36.84	10.95
S2-06-7	1	1	5	85	0	51	3	1	0	137	16	226	284	526	53.99	42.97	3.04
S2-06-8	1	5	2	81	0	63	0	10	0	120	18	355	282	655	43.05	54.20	2.75
S2-06-9	0	5	4	36	0	87	21	11	1	93	42	212	258	512	50.39	41.41	8.20
S2-06-10	1	1	8	12	6	80	4	19	6	118	45	309	255	609	41.87	50.74	7.39
S2-06-11	0	0	3	16	0	113	8	17	0	122	21	277	279	577	48.35	48.01	3.64
S2-06-12	2	0	2	24	0	61	1	7	0	175	28	419	272	719	37.83	58.28	3.89
S2-06-13	0	1	16	70	0	67	2	6	0	112	26	324	274	624	43.91	51.92	4.17
S2-06-14	0	0	2	67	7	48	12	6	0	121	37	223	263	523	50.29	42.64	7.07
S2-06-15	2	2	3	24	6	62	14	5	0	150	32	280	268	580	46.21	48.28	5.52
S2-06-16	0	6	4	34	6	59	10	34	0	119	28	275	272	575	47.30	47.83	4.87
S2-06-17	1	3	6	51	8	28	30	11	0	145	17	271	283	571	49.56	47.46	2.98
S2-06-18	9	3	2	34	7	70	21	6	3	111	34	191	266	491	54.18	38.90	6.92
S2-06-19	0	3	7	76	0	40	0	7	1	145	21	288	279	588	47.45	48.98	3.57
S2-06-20	7	1	6	22	0	61	23	16	0	111	53	180	247	480	51.46	37.50	11.04
S2-06-21	1	2	2	41	2	36	10	3	3	165	35	283	265	583	45.45	48.54	6.00
S2-06-22	1	2	6	15	10	42	21	15	0	152	36	210	264	510	51.76	41.18	7.06
S2-06-23	1	0	3	57	1	25	15	4	0	136	58	211	242	511	47.36	41.29	11.35
S2-06-24	0	6	4	109	0	35	1	2	0	90	53	208	247	508	48.62	40.94	10.43
S2-06-25	0	2	4	20	0	97	17	21	3	118	18	361	282	661	42.66	54.61	2.72
S2-06-26	1	1	3	23	0	64	15	20	0	144	29	256	271	556	48.74	46.04	5.22
S2-06-27	1	0	5	66	0	24	14	5	1	141	43	292	257	592	43.41	49.32	7.26

Sample	Epidote	Amphibole	Biotite	Weathered Feldspar	Trachy-andesite	Quartz	Poly. Quartz	Plagioclase	Chert	Other	Void	Matrix	Total # Inclusions	Total	Coarse%	Fine %	Void %
S2-06-28	4	2	8	17	0	85	9	21	0	115	39	317	261	617	42.30	51.38	6.32
S2-06-29	3	0	11	26	0	88	15	24	0	117	16	271	284	571	49.74	47.46	2.80
S2-06-30	6	0	6	37	5	44	13	15	0	133	41	297	259	597	43.38	49.75	6.87
S2-06-31	1	2	12	78	0	35	2	3	0	147	20	261	280	561	49.91	46.52	3.57
S2-06-32	0	6	6	70	0	67	6	1	0	124	20	349	280	649	43.14	53.78	3.08
S2-06-33	4	1	3	32	1	30	11	13	0	141	64	240	236	540	43.70	44.44	11.85
S2-06-34	5	0	4	30	0	97	17	2	1	98	46	347	254	647	39.26	53.63	7.11
S2-06-35	1	4	10	66	2	53	6	6	1	124	27	248	273	548	49.82	45.26	4.93
S2-06-36	1	13	4	46	0	47	1	2	0	140	46	288	254	588	43.20	48.98	7.82
S2-06-37	6	2	6	49	0	92	30	4	0	83	28	267	272	567	47.97	47.09	4.94
S2-06-38	1	14	1	68	0	56	8	5	0	129	18	215	282	515	54.76	41.75	3.50
S2-06-39	2	0	0	4	84	23	5	4	0	142	36	195	264	495	53.33	39.39	7.27
S2-06-40	0	0	6	10	10	77	10	17	0	134	36	419	264	719	36.72	58.28	5.01
S2-06-41	2	0	1	9	12	25	21	6	1	175	48	286	252	586	43.00	48.81	8.19
S2-06-42	0	3	1	105	1	45	1	2	0	114	28	245	272	545	49.91	44.95	5.14
S2-06-43	1	5	0	79	0	38	7	2	0	138	30	336	270	636	42.45	52.83	4.72
S2-06-44	0	0	7	14	1	86	17	25	0	128	22	450	278	750	37.07	60.00	2.93
S2-06-45	0	0	5	12	0	115	9	28	0	127	4	354	296	654	45.26	54.13	0.61
S3-06-1	0	0	1	21	0	49	6	21	1	177	24	262	276	562	49.11	46.62	4.27
S3-06-2	0	3	3	27	9	48	4	7	0	155	44	324	256	624	41.03	51.92	7.05
S3-06-3	0	4	6	57	0	31	7	2	0	166	27	251	273	551	49.55	45.55	4.90
S3-06-4	3	7	4	12	2	68	62	5	1	106	30	396	270	696	38.79	56.90	4.31
S3-06-5	1	1	1	39	1	51	6	6	0	149	45	270	255	570	44.74	47.37	7.89
S3-06-6	2	0	2	24	0	53	9	23	0	156	31	249	269	549	49.00	45.36	5.65
S3-06-7	0	1	3	22	0	67	14	19	0	133	41	286	259	586	44.20	48.81	7.00
S3-06-8	1	3	2	41	0	51	14	18	6	127	37	387	263	687	38.28	56.33	5.39
S3-06-9	0	2	5	30	0	54	11	3	0	154	41	269	259	569	45.52	47.28	7.21
S3-06-10	0	2	3	46	2	55	16	11	0	132	33	325	267	625	42.72	52.00	5.28
S3-06-11	0	6	9	24	0	100	26	13	1	93	28	246	272	546	49.82	45.05	5.13

Sample	Epidote	Amphibole	Biotite	Weathered Feldspar	Trachy-andesite	Quartz	Poly. Quartz	Plagioclase	Chert	Other	Void	Matrix	Total # Inclusions	Total	Coarse%	Fine %	Void %
S3-06-12	0	2	1	18	0	29	10	37	1	158	44	256	256	556	46.04	46.04	7.91
S3-06-13	0	1	7	34	0	46	11	5	1	156	39	256	261	556	46.94	46.04	7.01
S3-06-14	0	1	4	21	0	56	11	18	0	157	32	255	268	555	48.29	45.95	5.77
S3-06-15	0	0	10	10	0	89	39	16	0	82	54	281	246	581	42.34	48.36	9.29
S3-06-16	0	2	5	19	0	50	22	17	0	131	54	284	246	584	42.12	48.63	9.25
S3-06-17	0	2	8	36	0	73	20	29	0	107	25	312	275	612	44.93	50.98	4.08
S3-06-18	1	0	8	28	3	102	9	16	0	107	26	374	274	674	40.65	55.49	3.86
S3-06-19	0	3	3	10	1	105	21	7	0	122	28	217	272	517	52.61	41.97	5.42
S3-06-20	0	5	11	16	0	55	41	2	6	119	45	428	255	728	35.03	58.79	6.18
S3-06-21	0	1	7	32	0	86	15	26	0	118	15	227	285	527	54.08	43.07	2.85
S3-06-22	0	7	9	25	0	66	22	8	1	134	28	386	272	686	39.65	56.27	4.08
S3-06-23	0	0	9	18	0	51	22	26	0	117	57	209	243	509	47.74	41.06	11.20
S3-06-24	0	3	8	18	0	76	16	6	0	118	55	227	245	527	46.49	43.07	10.44
S3-06-25	0	1	3	27	7	56	13	11	0	154	28	195	272	495	54.95	39.39	5.66
S3-06-26	7	2	4	22	0	99	19	8	0	116	23	299	277	599	46.24	49.92	3.84
S3-06-27	2	4	11	19	1	81	10	11	0	129	32	341	268	641	41.81	53.20	4.99
S3-06-28	2	2	4	35	0	64	8	16	0	133	36	341	264	641	41.19	53.20	5.62
S3-06-29	1	0	1	35	2	82	20	14	0	106	39	295	261	595	43.87	49.58	6.55
S3-06-30	2	0	2	24	0	64	13	28	0	113	54	276	246	576	42.71	47.92	9.38
S3-06-31	1	0	4	17	0	89	16	20	0	111	42	446	258	746	34.58	59.79	5.63
S3-06-32	0	0	5	27	0	62	18	0	0	135	53	246	247	546	45.24	45.05	9.71
S3-06-33	3	3	9	13	1	104	25	7	0	100	35	318	265	618	42.88	51.46	5.66
S3-06-34	0	1	4	21	4	62	18	10	0	146	34	227	266	527	50.47	43.07	6.45
S3-06-35	0	1	1	14	6	22	20	12	3	160	61	260	239	560	42.68	46.43	10.89
S3-06-36	1	3	2	13	3	85	42	7	0	90	54	263	246	563	43.69	46.71	9.59
S3-06-37	0	1	1	25	0	45	14	7	0	166	41	251	259	551	47.01	45.55	7.44
S3-06-38	1	2	0	19	6	49	20	21	3	142	37	354	263	654	40.21	54.13	5.66
S3-06-39	4	1	2	28	5	38	24	5	1	137	55	324	245	624	39.26	51.92	8.81
S3-06-40	2	3	4	17	0	86	28	7	0	125	28	378	272	678	40.12	55.75	4.13

Sample	Epidote	Amphibole	Biotite	Weathered Feldspar	Trachy-andesite	Quartz	Poly. Quartz	Plagioclase	Chert	Other	Void	Matrix	Total # Inclusions	Total	Coarse%	Fine %	Void %
S3-06-41	0	0	1	15	0	51	30	9	4	115	75	296	225	596	37.75	49.66	12.58
S3-06-42	8	0	1	17	1	32	24	3	8	106	100	230	200	530	37.74	43.40	18.87
S3-06-43	1	0	6	36	0	59	42	8	2	91	55	280	245	580	42.24	48.28	9.48
S3-06-44	0	5	2	17	0	100	33	11	0	111	21	349	279	649	42.99	53.78	3.24
S3-06-45	1	0	3	28	0	48	21	16	0	141	42	361	258	661	39.03	54.61	6.35
S1-06-1	0	0	2	0	54	0	0	2	0	178	64	277	236	577	40.90	48.01	11.09
S1-06-2	3	0	3	0	51	4	0	50	0	143	46	242	254	542	46.86	44.65	8.49
S1-06-3	0	1	1	116	0	64	28	4	0	49	37	249	263	549	47.91	45.36	6.74
S1-06-4	0	4	2	62	2	53	32	26	0	88	31	313	269	613	43.88	51.06	5.06
S1-06-5	2	1	2	51	7	41	14	5	0	147	30	265	270	565	47.79	46.90	5.31
S1-06-6	8	3	5	60	5	35	25	10	0	103	46	243	254	543	46.78	44.75	8.47
S1-06-7	1	3	2	24	1	72	20	6	0	141	30	338	270	638	42.32	52.98	4.70
S1-06-8	3	1	1	42	2	83	18	5	0	109	36	333	264	633	41.71	52.61	5.69
S1-06-9	0	0	3	69	0	82	18	4	0	80	44	201	256	501	51.10	40.12	8.78
S1-06-10	20	1	4	29	0	48	29	12	0	104	53	358	247	658	37.54	54.41	8.05
S1-06-11	7	1	2	47	2	40	21	10	0	132	38	322	262	622	42.12	51.77	6.11
S1-06-12	0	0	3	37	0	98	33	8	0	87	34	373	266	673	39.52	55.42	5.05
S1-06-13	0	2	3	27	13	70	28	13	0	124	20	433	280	733	38.20	59.07	2.73
S1-06-14	0	0	5	46	4	54	26	19	0	109	37	456	263	756	34.79	60.32	4.89
S1-06-15	5	2	2	46	1	37	27	3	0	138	39	297	261	597	43.72	49.75	6.53
S1-06-16	5	3	6	71	0	87	25	10	0	66	27	314	273	614	44.46	51.14	4.40
S1-06-17	4	3	3	32	7	49	15	25	0	128	34	319	266	619	42.97	51.53	5.49
S1-06-18	3	1	9	65	0	94	9	33	0	42	44	205	256	505	50.69	40.59	8.71
S1-06-19	0	0	2	62	0	74	19	28	0	59	56	288	244	588	41.50	48.98	9.52
S1-06-20	4	0	1	61	0	45	9	16	0	105	59	373	241	673	35.81	55.42	8.77
S1-06-21	3	0	1	57	3	58	33	18	0	95	32	391	268	691	38.78	56.58	4.63
S1-06-23	10	3	0	40	0	86	8	10	0	90	53	269	247	569	43.41	47.28	9.31
S1-06-24	4	0	3	59	0	72	10	12	0	97	43	282	257	582	44.16	48.45	7.39
S1-06-25	0	2	3	50	3	41	16	13	0	136	36	229	264	529	49.91	43.29	6.81

Sample	Epidote	Amphibole	Biotite	Weathered Feldspar	Trachy-andesite	Quartz	Poly. Quartz	Plagioclase	Chert	Other	Void	Matrix	Total # Inclusions	Total	Coarse%	Fine %	Void %
S1-06-26	5	0	4	48	0	91	25	10	0	84	33	252	267	552	48.37	45.65	5.98
S1-06-27	4	2	8	63	0	84	20	17	0	76	26	214	274	514	53.31	41.63	5.06
S1-06-28	0	0	0	21	0	49	21	6	0	150	53	291	247	591	41.79	49.24	8.97
S1-06-29	0	0	0	20	0	128	20	11	1	70	50	349	250	649	38.52	53.78	7.70
S1-06-30	0	1	9	44	1	93	6	27	3	55	61	421	239	721	33.15	58.39	8.46
S1-06-31	2	1	2	0	34	31	4	44	0	117	65	368	235	668	35.18	55.09	9.73
S1-06-32	0	2	4	73	0	45	7	0	2	116	51	294	249	594	41.92	49.49	8.59
S1-06-33	0	0	0	60	0	80	21	9	5	91	34	258	266	558	47.67	46.24	6.09
S1-06-34	4	0	5	51	2	84	16	13	2	64	59	381	241	681	35.39	55.95	8.66
S1-06-35	9	2	8	62	2	65	13	11	0	85	43	263	257	563	45.65	46.71	7.64
S1-06-36	1	1	0	41	0	98	21	7	0	78	53	300	247	600	41.17	50.00	8.83
S1-06-37	9	1	3	38	0	99	16	4	0	94	36	350	264	650	40.62	53.85	5.54
S1-06-38	2	1	3	63	1	66	14	6	0	99	45	374	255	674	37.83	55.49	6.68
S1-06-39	0	3	0	41	0	93	14	15	0	65	69	295	231	595	38.82	49.58	11.60
S1-06-40	0	0	4	25	0	93	6	39	0	82	51	185	249	485	51.34	38.14	10.52
S1-06-41	3	2	23	60	0	78	16	9	0	48	61	258	239	558	42.83	46.24	10.93
S1-06-42	6	0	8	30	0	42	25	7	0	120	62	343	238	643	37.01	53.34	9.64
S1-06-43	19	0	5	41	0	60	12	7	0	119	37	255	263	555	47.39	45.95	6.67
S1-06-44	3	0	1	22	0	90	22	12	0	112	38	414	262	714	36.69	57.98	5.32
S1-06-45	4	2	11	18	0	74	24	6	0	128	33	279	267	579	46.11	48.19	5.70
S1-06-46	5	2	3	33	0	47	21	5	0	124	60	329	240	629	38.16	52.31	9.54

Appendix 7: Strength Test Data

Brick	Width (m)	Thickness (m)	bt^2	Highest Force (N)	TRS	Comments
1-0a	1.80E-02	6.80E-03	8.34E-07	1.25E+02	7.87E+06	
1-0b	1.91E-02	7.30E-03	1.02E-06	5.00E+01	2.58E+06	
1-0c	1.02E-02	7.30E-03	5.44E-07		0.00E+00	
1-0d	1.41E-02	8.50E-03	1.02E-06	8.30E+01	4.28E+06	
1-10a	1.60E-02	7.60E-03	9.24E-07	5.80E+01	3.29E+06	
1-10b	1.60E-02	7.50E-03	9.00E-07	5.90E+01	3.44E+06	approximate values
1-10c	1.31E-02	7.40E-03	7.17E-07	6.60E+01	4.83E+06	
1-10d	1.60E-02	7.70E-03	9.49E-07	7.30E+01	4.04E+06	
1-20a	1.63E-02	7.90E-03	1.02E-06	3.90E+01	2.01E+06	
1-20b	1.53E-02	7.30E-03	8.15E-07	3.70E+01	2.38E+06	
1-20c	1.29E-02	6.80E-03	5.96E-07	2.20E+01	1.94E+06	
1-20d	1.27E-02	7.30E-03	6.77E-07	3.10E+01	2.40E+06	
1-30a	1.53E-02	7.30E-03	8.15E-07	0.00E+00	0.00E+00	broke with tester
1-30b	1.44E-02	8.10E-03	9.45E-07	9.70E+00	5.39E+05	
1-30c	1.13E-02	9.60E-03	1.04E-06	1.41E+01	7.12E+05	
1-30d	1.32E-02	8.60E-03	9.76E-07	1.19E+01	6.38E+05	
1-40a	1.60E-02	8.00E-03	1.02E-06	6.12E+00	3.14E+05	
1-40b	1.38E-02	7.40E-03	7.56E-07	1.02E+01	7.07E+05	
1-40c	1.21E-02	7.00E-03	5.93E-07	0.00E+00	0.00E+00	broke with tester
1-40d	1.40E-02	7.30E-03	7.46E-07	4.36E+00	3.07E+05	
12-0a	1.21E-02	6.90E-03	5.76E-07	1.13E+02	1.03E+07	
12-0b	1.30E-02	7.90E-03	8.11E-07	8.29E+01	5.37E+06	
12-0c	1.07E-02	8.40E-03	7.55E-07	1.10E+02	7.67E+06	
12-0d	1.20E-02	7.40E-03	6.57E-07	9.40E+01	7.51E+06	
12-10a	1.11E-02	6.90E-03	5.28E-07	0.00E+00	0.00E+00	broke with tester
12-10b	1.66E-02	9.30E-03	1.44E-06	5.96E+01	2.18E+06	
12-10c	1.19E-02	7.40E-03	6.52E-07	3.84E+01	3.09E+06	
12-10d	1.37E-02	8.30E-03	9.44E-07	7.16E+01	3.98E+06	
12-20a	1.38E-02	7.80E-03	8.40E-07	1.32E+01	8.23E+05	
12-20b	1.66E-02	7.80E-03	1.01E-06	2.06E+01	1.07E+06	
12-20c	1.52E-02	7.40E-03	8.32E-07	2.40E+01	1.51E+06	
12-20d	1.51E-02	7.70E-03	8.95E-07	1.81E+01	1.06E+06	
12-30a	1.30E-02	8.30E-03	8.96E-07	1.78E+01	1.04E+06	
12-30b	1.64E-02	8.20E-03	1.10E-06	1.44E+01	6.87E+05	
12-30c	1.74E-02	8.30E-03	1.20E-06	1.34E+01	5.86E+05	
12-30d	1.44E-02	7.90E-03	8.99E-07	1.49E+01	8.70E+05	
12-40a	1.72E-02	8.10E-03	1.13E-06	2.78E+00	1.29E+05	
12-40b	1.84E-02	7.30E-03	9.81E-07	0	0.00E+00	broke with tester
12-40c	1.43E-02	8.00E-03	9.15E-07	0	0.00E+00	broke with tester
12-40d	1.00E+00	1.00E+00	1.00E+00	0	0.00E+00	broke during firing
77-0a	1.29E-02	6.10E-03	4.80E-07	1.32E+02	1.44E+07	

Brick	Width (m)	Thickness (m)	bt^2	Highest Force (N)	TRS	Comments
77-0b	1.15E-02	6.90E-03	5.48E-07	8.97E+01	8.60E+06	
77-0c	1.20E-02	6.60E-03	5.23E-07	4.95E+00	4.97E+05	problems loading
77-0d	1.43E-02	6.20E-03	5.50E-07	9.63E+01	9.20E+06	
77-10a	1.55E-02	7.30E-03	8.26E-07	5.93E+01	3.77E+06	
77-10b	1.33E-02	6.90E-03	6.33E-07	6.72E+01	5.57E+06	
77-10c	1.68E-02	7.00E-03	8.23E-07	4.69E+01	2.99E+06	
77-10d	1.33E-02	6.90E-03	6.33E-07	4.60E+01	3.81E+06	
77-20a	1.46E-02	6.90E-03	6.95E-07	2.98E+01	2.25E+06	
77-20b	1.44E-02	6.90E-03	6.86E-07	2.89E+01	2.21E+06	
77-20c	1.51E-02	6.80E-03	6.98E-07	3.31E+01	2.49E+06	
77-20d	1.21E-02	7.10E-03	6.10E-07	2.96E+01	2.55E+06	
77-30a	1.59E-02	7.60E-03	9.18E-07	1.93E+01	1.11E+06	
77-30b	1.81E-02	6.90E-03	8.62E-07	2.27E+01	1.38E+06	
77-30c	1.70E-02	7.70E-03	1.01E-06	1.99E+01	1.04E+06	
77-30d	1.47E-02	7.40E-03	8.05E-07	1.88E+01	1.22E+06	
77-40a	1.71E-02	7.50E-03	9.62E-07	4.97E+00	2.71E+05	
77-40b	1.75E-02	7.70E-03	1.04E-06	8.65E+00	4.38E+05	
77-40c	1.76E-02	7.00E-03	8.62E-07	4.51E+00	2.75E+05	
77-40d	1.82E-02	7.50E-03	1.02E-06	3.82E+00	1.96E+05	
03-0a	1.31E-02	6.70E-03	5.88E-07	2.32E+02	2.07E+07	
03-0b	1.38E-02	6.20E-03	5.30E-07	2.30E+02	2.28E+07	
03-0c	1.41E-02	6.50E-03	5.96E-07	2.44E+02	2.15E+07	
03-0d	1.24E-02	6.50E-03	5.24E-07	1.50E+02	1.50E+07	
03-10a	1.13E-02	6.70E-03	5.07E-07	6.18E+01	6.39E+06	
03-10b	1.21E-02	6.60E-03	5.27E-07	8.41E+01	8.38E+06	
03-10c	1.33E-02	6.80E-03	6.15E-07	7.88E+01	6.73E+06	
03-10d	1.09E-02	7.00E-03	5.34E-07	5.03E+01	4.95E+06	
03-20a	1.71E-02	7.20E-03	8.86E-07	7.28E+01	4.31E+06	
03-20b	1.22E-02	7.10E-03	6.15E-07	2.98E+01	2.54E+06	
03-20c	1.55E-02	7.20E-03	8.04E-07	6.77E+01	4.42E+06	
03-20d	1.19E-02	6.80E-03	5.50E-07	3.88E+01	3.70E+06	
03-30a	1.60E-02	8.60E-03	1.18E-06	2.48E+01	1.10E+06	
03-30b	1.40E-02	7.40E-03	7.67E-07	2.33E+01	1.59E+06	
03-30c	1.33E-02	7.50E-03	7.48E-07	2.57E+01	1.80E+06	
03-30d	1.37E-02	7.70E-03	8.12E-07	2.09E+01	1.35E+06	
03-40a	1.31E-02	7.60E-03	7.57E-07	5.23E+00	3.63E+05	
03-40b	1.40E-02	8.00E-03	8.96E-07	0	0.00E+00	
03-40c	1.70E-02	7.90E-03	1.06E-06	8.98E+00	4.44E+05	
03-40d	1.71E-02	8.00E-03	1.09E-06	9.51E+00	4.56E+05	
67-0a	1.00E-02	5.70E-03	3.25E-07	6.08E+01	9.82E+06	
67-0b	9.40E-03	6.00E-03	3.38E-07	1.07E+02	1.66E+07	
67-0c	7.80E-03	5.50E-03	2.36E-07	1.11E+02	2.48E+07	
67-0d	9.40E-03	6.60E-03	4.09E-07	7.85E+01	1.01E+07	

Brick	Width (m)	Thickness (m)	bt^2	Highest Force (N)	TRS	Comments
67-10a	1.13E-02	6.70E-03	5.07E-07	6.00E+01	6.21E+06	
67-10b	1.05E-02	6.60E-03	4.57E-07	0.00E+00	0.00E+00	file overwritten
67-10c	1.25E-02	6.50E-03	5.28E-07	8.14E+01	8.09E+06	
67-10d	1.17E-02	6.90E-03	5.57E-07	3.07E+01	2.89E+06	
67-20a	1.53E-02	7.30E-03	8.15E-07	2.11E+01	1.36E+06	
67-20b	1.02E-02	7.70E-03	6.05E-07	1.85E+01	1.61E+06	
67-20c	8.70E-03	8.60E-03	6.43E-07	1.28E+00	1.04E+05	
67-20d	1.42E-02	6.50E-03	6.00E-07	1.46E+01	1.28E+06	
67-30a	1.19E-02	7.40E-03	6.52E-07	1.43E+01	1.16E+06	
67-30b	1.29E-02	7.10E-03	6.50E-07	9.47E+00	7.65E+05	
67-30c	1.49E-02	8.30E-03	1.03E-06	1.24E+01	6.33E+05	
67-30d	1.33E-02	8.10E-03	8.73E-07	8.32E+00	5.01E+05	
13-0a	1.20E-02	6.80E-03	5.55E-07	5.76E+01	5.45E+06	
13-0b	1.09E-02	6.70E-03	4.89E-07	5.65E+01	6.06E+06	
13-0c	9.20E-03	7.10E-03	4.64E-07	3.13E+01	3.54E+06	
13-0d	8.30E-03	7.50E-03	4.67E-07	3.81E+01	4.28E+06	
13-10a	1.50E-02	6.90E-03	7.14E-07	4.08E+00	3.00E+05	
13-10b	1.37E-02	8.10E-03	8.99E-07	5.17E+01	3.02E+06	
13-10c	1.33E-02	7.30E-03	7.09E-07	4.02E+01	2.98E+06	
13-10d	1.29E-02	7.00E-03	6.32E-07	2.98E+01	2.48E+06	
13-20a	1.49E-02	7.20E-03	7.72E-07	1.72E+01	1.17E+06	
13-20b	1.50E-02	6.90E-03	7.14E-07	1.76E+01	1.29E+06	
13-20c	1.58E-02	6.90E-03	7.52E-07	2.04E+01	1.43E+06	
13-20d	1.43E-02	7.00E-03	7.01E-07	1.60E+01	1.20E+06	
13-30a	1.69E-02	8.30E-03	1.16E-06	9.05E+00	4.08E+05	
13-30b	1.21E-02	7.50E-03	6.81E-07	1.41E+00	1.09E+05	
13-30c	1.27E-02	6.70E-03	5.70E-07	0	0.00E+00	broke with tester
13-30d	1.00E+00	1.00E+00	1.00E+00	0	0.00E+00	broke in firing
13-40a	1.55E-02	7.70E-03	9.19E-07	0	0.00E+00	broke with tester
13-40b	1.39E-02	8.10E-03	9.12E-07	0	0.00E+00	broke with tester
13-40c	1.46E-02	8.80E-03	1.13E-06	1.58E+00	7.34E+04	
13-40d	1.49E-02	8.10E-03	9.78E-07	0	0.00E+00	broke with tester
2-0a	1.13E-02	6.60E-03	4.92E-07	5.06E+01	5.40E+06	
2-0b	1.26E-02	6.70E-03	5.66E-07	7.47E+01	6.93E+06	
2-0c	1.08E-02	7.00E-03	5.29E-07	7.44E+01	7.38E+06	
2-0d	9.00E-03	6.70E-03	4.04E-07	5.79E+01	7.53E+06	
2-10a	1.32E-02	8.80E-03	1.02E-06	4.26E+01	2.19E+06	
2-10b	1.12E-02	7.00E-03	5.49E-07	4.31E+01	4.13E+06	
2-10c	1.19E-02	7.70E-03	7.06E-07	3.78E+01	2.81E+06	
2-10d	1.19E-02	7.20E-03	6.17E-07	5.07E+00	4.31E+05	
2-20a	1.17E-02	7.50E-03	6.58E-07	2.64E+01	2.10E+06	
2-20b	1.16E-02	7.50E-03	6.53E-07	2.69E+01	2.16E+06	
2-20c	1.26E-02	7.20E-03	6.53E-07	1.96E+01	1.57E+06	

Brick	Width (m)	Thickness (m)	bt^2	Highest Force (N)	TRS	Comments
2-20d	1.12E-02	6.90E-03	5.33E-07	1.95E+01	1.92E+06	
2-30a	1.23E-02	8.50E-03	8.89E-07	1.91E+01	1.13E+06	
2-30b	1.07E-02	7.10E-03	5.39E-07	7.60E+00	7.40E+05	
2-30c	1.18E-02	7.30E-03	6.29E-07	0	0.00E+00	broke with tester
2-30d	1.18E-02	7.10E-03	5.95E-07	9.93E+00	8.76E+05	