

**SUMMARY REPORT OF THE CTA CERAMICS
PROTOCOL COMMITTEE**

October 2010

Introduction

Members of the 2010 Council of Texas Archeologists Ceramics Protocol Committee include: Linda W. Ellis (Chair), Tim Perttula, Steve Tomka, Chris Lintz, Rebecca Shelton, Harry Shafer, John Arnn, Waldo Troell, Charles Frederick, and Darrell Creel

The study of ceramic technology is complex and there are about as many methods of analyzing pottery manufacture, use, and regional distribution as there are attributes to be studied and archeologists to study them. If the goal is to gain a better understanding of the universe of prehistoric ceramics in Texas then any guidelines we implement must enable all archeologists working in Texas to address the broadest range of research problems, without making those guidelines so detailed that they are cost prohibitive and/or limit our ability to pursue new lines of research as they arise. With this in mind, the committee was tasked with the following objectives:

- (1) How do other states approach standards? How would standards be implemented?
- (2) Identify "problem(s)/deficiencies." Why are guidelines/standards needed? What should they accomplish?
- (3) Possible solutions. What resources would it take to address the solutions? Do we have the resources?

Our first step was to gather information on the standards/guidelines for archeological analyses currently in place in other states. Information gathered from eight states (i.e., Arkansas, California, Colorado, Louisiana, Kentucky, Mississippi, New Mexico, and Oklahoma) indicates that most states have "reporting standards" that discuss artifact analyses in terms of general categories, descriptive terms, and overall presentation of the results of investigations. However, all are relatively vague with regard to artifact "analyses standards," indicating that specific aspects of artifact analyses should be determined by the research objectives of the individual project. Comparing the standards/guidelines in place in other states to those currently in place in Texas indicates that our standards/guidelines represent one of the more detailed statements on analysis standards/guidelines. Even so, there was a general consensus among the committee members that there was a need to explore the expansion of current Council of Texas Archeologists (CTA) standards/guidelines to accommodate more detailed ceramic studies geared to regional and cultural research problems.

To further explore the problem(s)/deficiencies in the current guidelines and identify how best to strengthen the analytical portions, the committee members began with a review of our current state of knowledge of prehistoric Texas ceramics. Since Texas includes at least six major prehistoric pottery traditions (i.e., Northeast and East [Caddo area], Central/North Central, Southeast, Central Coastal, High Plains/Panhandle, and the West/Trans-Pecos) with overlapping spatial and temporal relationships, the committee member most familiar with the spatial and temporal aspects of a specific ceramic region/tradition provided the following:

- An overview of the region and the relevant research questions for the area;
- The key ceramic attributes that would address those questions;
- How those fit with the current CTA standards/guidelines; and
- Suggestions for expanding the current CTA standards/guidelines to accommodate the key attributes from each region.

The objective was to find the commonalities in terms of regional research questions and the descriptive attributes that would address those questions, with the overall objective of developing a practical baseline standard applicable to the whole state. A summary of our results follows.

Spatial and Temporal Considerations

The manufacture and use of ceramic vessels by Native American groups that lived in what is now Texas is a common and widespread feature of distinctive archeological assemblages on sites across much of Texas (Figure 1). The variety and diversity of ceramic forms, decorations, manufacturing techniques, and functions is outstanding among the native groups, ranging from the Goose Creek and Rockport pottery of the semi-nomadic hunter-gatherers of the Texas coast; the Toyah and Henrietta ceramics of the buffalo hunters and farmers of the prairie-plains and Hill Country; the Puebloan and Antelope Creek ceramics of the Panhandle farmers and bison hunters; the impressive Jornada Mogollon ceramics of the El Paso area Puebloan groups; and the well-made and finely decorated ceramics of the Caddo groups that lived in East Texas. Despite what is known about the distribution of ceramics in Texas archeological sites, the relationship between Prehistoric and Historic cultural and technological ceramic traditions has yet to be fully established across much of the state, except perhaps for the clear continuity between prehistoric and historic Caddo ceramic traditions in East Texas and between the prehistoric and early historic Karankawan groups on the central Texas coast.

The use of ceramics in what is now Texas began as early as ca. 500 B.C. in parts of East Texas and Southeast Texas, and continued until as late as the nineteenth century among a number of different Native American groups across the state (Table 1). In much of the state, the manufacture of pottery did not begin until as late as the eighth century A.D. and later. By ca. A.D. 1200-1300, ceramics were a very significant part of the material culture of aboriginal peoples—including mobile hunter-gatherers as well as sedentary farmers—in Southeast and coastal Texas, among Caddo and Jornada Mogollon groups, and among the Plains Village communities in the Texas Panhandle and the North Central Texas prairies.

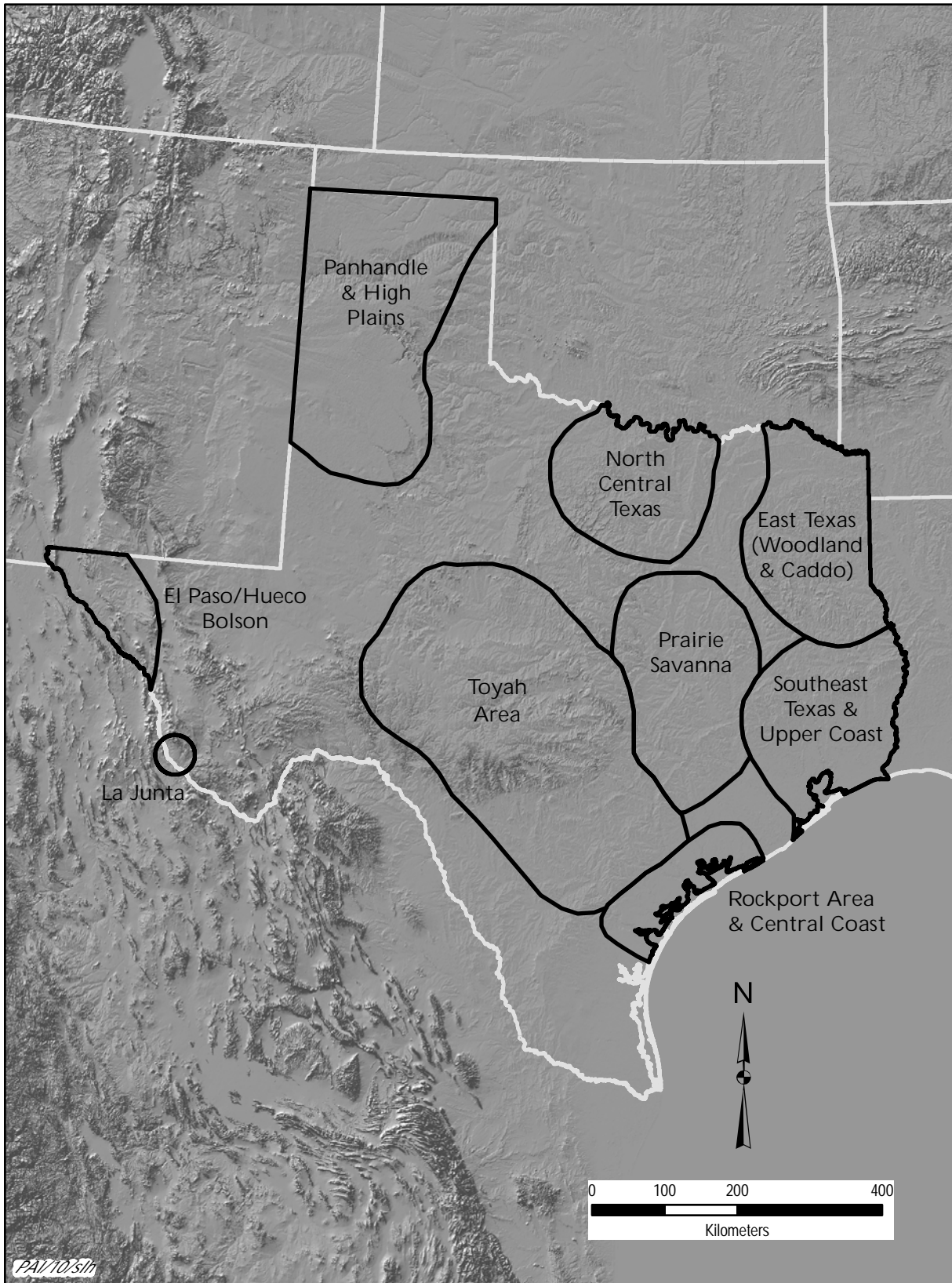


Figure 1. The distribution of areas with prehistoric and/or early historic ceramics in Texas. Figure prepared by Sandra L. Hannum.

Table 1. Chronological information on the adoption and use of ceramics by native groups in Texas.*

Area	First Appearance	Period of Use
East Texas	ca. 500 B.C.	ca. 500 B.C.-AD 1830s
Southeast Texas	ca. 500 B.C.	ca. 500 B.C.-A.D. 1700
Prairie Savanna	ca. 50 B.C.	ca. 50 B.C.-late 17 th century
Trans-Pecos	ca. A.D. 200	ca. A.D. 200-1880
Panhandle and High Plains	ca. A.D. 200	ca. A.D. 200-17 th century
Rockport area and Central Coast	ca. A.D. 700	ca. A.D. 700-1700
North Central Texas	ca. A.D. 750	ca. A.D. 750-1800
Central Texas/Toyah Area	ca. A.D. 900	ca. A.D. 900-1700
La Junta area	ca. A.D. 1200/1250	ca. A.D. 1200/1250-1750+
Lower Pecos	ca. A.D. 1500	ca. A.D. 1500-1700

*see Regional Summaries document, Ellis and Perttula 2010; chapters in Perttula 2004; Perttula et al. 1995; Shafer 2008; Suhm and Jelks 1962; Nancy Kenmotsu, October 2010 personal communication; Andy Cloud, October 2010 personal communication.

While we have a good working knowledge of the ages and durations of the various ceramic traditions in Texas, for more detailed considerations of the age of specific sites with ceramics, as well as the rapidity and tempo of ceramic assemblage changes, more refined approaches are needed to establish with precision the absolute age of Native ceramics. First, this can be done by the application of modern statistical analyses to radiocarbon dating of AMS samples from occupations with features associated with ceramics, as well as the direct dating of the ceramics themselves. Sites with 10-20 radiocarbon assays are suited for an analysis of ¹⁴C dates using a Bayesian modeling approach. This methodology is now quite widely used and well accepted and permits one to speak with statistical confidence about chronological relationships and allows for important hypothesis creation and testing. Future analyses of large suites of radiocarbon dates from aboriginal sites in Texas with ceramics may want to consider Bayesian methods in calibrating radiocarbon dates from various archaeological contexts instead of using mean methods, for established refined chronological estimates of the construction of specific features as well as the probable duration of different occupations (Bronk Ramsey 2009; Levy et al. 2008; Kidder et al. 2010:131-132, 142). Secondly, the luminescence dating of ceramics has been applied with some considerable success in a variety of settings—and on different ceramic wares—in North America, but its use for more refined dating is only in its infancy in Texas. Given the abundance of ceramics of several different kinds and styles at many prehistoric and early historic sites in Texas, the luminescence dating of both plain and decorated sherds recovered in situ from these many sites should be routinely explored on both testing and data recovery projects in the region since it is a method “that dates the manufacture and use of...ceramic objects [that] provide a closer relationship between the target event [when a site is occupied] and the dated event [the age determined by the luminescence on a sherd]. Luminescence is particularly well suited for the dating of ceramics since the method measures the time elapsed since vessels were last heated, usually corresponding to manufacture or use” (Lipo et al. 2005:535).

Finally, during CTA Ceramics Protocol Committee discussions, several committee members emphasized how important it is for archeologists to be consistent in using concepts derived from geography, ecology, and archeology when referring to the spatial distribution and extent of material culture (in this case, ceramics) as seen in the archeological record. First, material culture as documented in the archeological record may not be the same as that seen and documented in ethnographic cultures; second, the distribution of material culture—as defined by archeologists—may not be identical to the distribution of specific peoples, or necessarily can be equated with a specific group of peoples; and third, defining the landscape inhabited by prehistoric groups may always be difficult to achieve, and archeologists are complicating it by interchangeably referring to areas, regions, etc. as if they were equivalent (see Arnn 2010; Ellis and Perttula 2010). Clarity is needed in the use of regionally-specific archeological, geographical, and ecological terms.

Research Issues

The consideration of relevant research issues is an important part of the development of current perspectives of the study of aboriginal ceramics in Texas. Typically research questions focused on ceramic analysis are driven by research designs or may be extracted from regional overviews, where such exist, that summarize the state of scientific knowledge about a specific topic and/or region (i.e., Mercado-Allinger et al. 1996; Kenmotsu and Perttula 1993).

During recent meetings by the members of the CTA ceramics protocol committee, five major ceramic regions/traditions have been identified in Texas: (1) Woodland and Caddo in East Texas; (2) Gulf Coast; (3) North Texas/Prairie Savanna/Central Texas; (4) Panhandle/Plains; and the (5) Trans-Pecos. We recognize that each region has region-specific research issues that address phenomena that are unique to its cultural-historical context and/or its prevailing hunter-gatherer and agricultural adaptations. The individual documents that summarize the regional trends in ceramic adoption, changes in ceramic types and traditions through time, intra-regional variation in ceramic assemblages, and relationships with neighboring traditions as seen through the identification of non-local ceramic vessels and sherds, should be consulted for details related to unique research questions when working within the particular region (see Ellis and Perttula 2010; Shafer 2010). Similarly, when working with ceramic assemblages dating to or extending into the Colonial period, the document summarizing selected research issues related to Colonial period ceramics should be consulted (Tomka 2010). These documents are provided as both relatively comprehensive for some regions as well as brief summaries of what is known about ceramic technology in another specific region or a particular time period. The research issues presented in the regional summaries are not intended to stifle creativity nor limit research directions. They are simply intended as starting points and minimal guidance regarding what is known or what is not known about ceramic manufacture and use.

While, as noted above, each region has some research issues that are specific to it, overall the following research questions or research orientations are common to all regardless of region and/or temporal concern:

- I. The adoption of ceramics and their use has been discussed in terms of three broad patterns: (a) the earliest dates of adoption; (b) the evolution of ceramic

styles during the prehistoric times; and (c) the effects of colonial period forces on aboriginal ceramic technology.

II. Defining chronological position/affiliation and temporal relationships between wares/styles. Defining the chronological sequence of ceramic types is not unlike the use of projectile points as index markers, and has the potential to create fine-tuned chronologies. It is often the very first step in beginning meaningful research in an area and goes hand-in-hand with typical culture historical undertakings (common to all regional summaries).

III. Determining typological assignments through the use of technological attributes such as basic surface treatments and decorative elements. The definition of ceramic types or wares is critical since the types are the constructs of the culture-historical frameworks and are often equated with specific groups of people (e.g., Leon Plain = Toyah People). Nonetheless, due to factors such as the degradation of surface treatments, difficulties in identifying certain attributes (e.g., variation in ceramic color due to washes, slips, clay colors derived from firing) categorizing sherds, particularly small ones, into typological groups is not fool-proof (see Panhandle/Plains summary by Lintz [2010]). Nevertheless, typological assignments should be attempted utilizing the most current ceramic type (and variety) classifications

IV. As well as issues dealing with chronology and cultural-historical relationships, the study of prehistoric ceramic assemblages provides valuable information about Native American cultural adaptations. To address a broader range of research objectives, ceramic analyses must be comprehensive enough to capture the array of stylistic and technological diversity found on any one group of ceramics. This means expanding our analyses to include ceramic technological variables that more effectively address these broader objectives.

V. Identifying pottery manufacture, distribution, and regional interaction spheres. The study of pottery traditions is one of the more fruitful avenues through which to study regional interaction among prehistoric and historic groups. Whether it is through the movement of highly decorated wares or the identification and tracking of clay sources represented in pottery (i.e., instrumental neutron activation analysis and petrographic analysis), the movement of vessels offers tangible evidence of regional interaction between groups (common to all regional summaries).

VI. Technology of manufacture and use. The study of technological traditions focuses on the study of ceramic manufacture (i.e., non-decorative production steps of ceramic vessels). It is at the core of defining manufacturing processes shared by communities of peoples, and in some respects it is a more reliable indicator of technological traditions (as well as cultural identity) than observable ceramic decorative motifs. The study of ceramic use focuses on what happens to ceramics during their use-life. It is an integral aspect of ceramic analysis in that these analyses provide a comprehensive view of how ceramics function within a given community or society.

VII. Exploring the role of ceramic production and use in hunter-gatherer land-use and subsistence. While ceramic manufacture and use is nearly ubiquitous among horticulturalist and agriculturalist groups across the world, much research has been conducted recently to understand why some hunter-gatherer groups adopted the use of pottery despite their highly mobile land-use systems. One of the most interesting avenues of research is the relationship between the adoption of ceramic technology and intensification of food production that would be allowed by a more efficient means for extracting nutrients once they are already captured, collected, or harvested. The reoccurrence of ceramics within riverine settings or on the coastal plains may be related to this phenomenon (see East Texas Woodland and Caddo overview by Perttula [2010] and the Coastal Ceramic overview by Ellis [2010]).

VIII. Linking prehistoric pottery traditions to historic social groups. In Texas we have few instances where a particular prehistoric pottery tradition has been linked to an ethnohistorically documented group (i.e., the Karankawa, the Caddo, and the Wichita in historic times). The relationship of a number of other named types such as Leon Plain and Goliad Ware to prehistoric antecedents is not known or only tenuous, yet the ability to make such linkages has significant implications for understanding social group patterns and affiliations at different times and places (see the Central Texas overview by Arnn et al. [2010] and the Colonial Period discussion by Tomka [2010]).

Beyond these generalized research topics, a number of specific themes also have been highlighted in the individual regional summaries. In general, the greater the accumulated knowledge about aboriginal ceramic manufacture and use for a particular region or theme, the more varied the research issues that can and should be developed on specific projects. While it is the case that chronological concerns are the initial building blocks of research, the lack of chronological control does not have to always limit research on ceramic technology across the board.

Ceramic Methods and Attributes

In the broadest sense, research questions pertaining to prehistoric ceramics should be relevant to the specific region or regions where the ceramics were found, as should the specific ceramic attributes needed to answer those questions. This is the case no matter which classificatory system one chooses to use by virtue of the fact that any ceramic classification scheme (or typology) is simply a construct useful for organizing our data into categories based on some perceived similarity that reflects relevant aspects of particular research topics (e.g., Dunnell 1971). Thus, several potential groupings could exist within any one ceramic data set. Since no one classification scheme can effectively address all research questions, this committee does not propose the use of any one specific ceramic typology over another because each classification scheme or typology must be appropriate for the research topics under investigation. Nor do we attempt to outline and categorize in detail the full range of ceramic attributes that may be relevant to all prehistoric ceramic research problems in Texas. We do, however, recognize the deficiencies in many of the ceramic analyses that appear in reports done in recent years. Thus, it was the consensus of the committee that some enhancement of the current CTA guidelines regarding the analysis of prehistoric ceramics was needed. Our challenge was to find a way to expand the current

guidelines without making them so detailed that they would be cost prohibitive and/or limit our ability to pursue new lines of research as they arise.

With that in mind, each member of the committee reviewed the various regional summaries/overviews (Ellis and Perttula 2010) with an eye toward finding the commonalities in ceramic research questions, analytical methods and techniques, and the use of specific ceramic attributes. Assessing the commonalities between the regions led us to a baseline suite of ceramic attributes that are common to all regional ceramic research, and would therefore be applicable statewide. Therefore, this committee proposes that all analyses of prehistoric ceramic sherd assemblages conducted in Texas should include, but certainly not be limited to, five basic ceramic attribute categories. (Since whole vessels are rarely found in Texas sites with ceramics, except perhaps in the East Texas Caddo area and in the El Paso area, they are not the primary focus of this discussion.) The analytical weight of those attributes will vary from region to region because analytical variation is a product of the existence of regionally distinct ceramic manufacturing traditions, as well as the use and distribution of wares specific to those regions.

Each sherd in an analyzed sample from an archeological site should include recorded observations on five basic ceramic attributes:

- Paste Morphology— This should include aspects of: (a) Paste Constituency—the type of non-plastic inclusions (e.g., sand, bone, grog) and the predominant size range of non-plastic inclusions (e.g., medium-sized sand grains, large crushed bone fragments), and (b) Paste Texture—the general morphology and configuration of the crystalline components, amorphous material, and voids as observed in cross-section (e.g., smooth, laminated, contorted). To facilitate these observations, it is suggested that a fresh break along the edge of each sherd be microscopically examined.
- Exterior and interior surface treatment—Aspects of surface finishing regardless of decorative treatment (i.e., dry-smoothing, floating, and burnishing) should be recorded for each sherd in the analyzed sample.
- Exterior and interior decorative treatment—Embellishment beyond surface treatment that adds to the detail of the overall surface and can involve additions to (or over) the existing surface finish (e.g., slips, glazes, washes, appliqués), displacement of the existing surface (e.g., incising, stamping, punctating), or some combination of both. As with surface treatment, the presence of one technique does not necessarily preclude the presence of another (e.g., Rice 1987).
- Vessel form – For whole vessels, this would include data such as orifice and base diameter and estimated volume. In the absence of whole vessels, the general aspects of vessel form can be assessed through attributes such as thickness, diameter, and gross morphological category (i.e., body, base, and rim). Additional attributes should be recorded for each rim in the assemblage, including: rim profile, rim form, lip profile, and lip decoration.
- Firing Attributes – Firing atmosphere can be discerned from the variability in color and oxidation patterns. Although many variables affect color (e.g., clay composition and the temperature and duration of the firing atmosphere), color generally provides an indication of whether or not pottery was fired in an oxidizing (lighter colors such

as those in the tan, orange, light brown to red range) or nonoxidizing (dark colors such as dark brown, gray or black) environment (see Rice 1987).

Additional Considerations:

We think it is important that all the sherds in a recovered ceramic assemblage be analyzed to a basic analytical level of detail. More specific and detailed analyses of ceramic assemblages are predicated on the research problems being posed, and the appropriate sample sizes of sherds needed to address the research problems, with one caveat: regardless of the level of investigation, assemblages of less than 200 sherds should be examined in detail to ensure that the technological and stylistic data obtained is as analytically robust as possible, and that the maximum information is obtained from smaller assemblages (which often characterize certain regions and ceramic traditions in Texas).

In larger assemblages (>200 sherds), it is incumbent upon the ceramic researcher to state, and justify, the quantitative scale of analysis that will be employed when conducting detailed sherd analysis. Some larger assemblages may warrant 100 percent detailed analysis, while others will rely on a detailed analysis of a sample of sherds. The goal in either case is to obtain sufficient information from an assemblage to characterize its stylistic and technological diversity and insure that a representative sample of plain and decorated rim and body sherds, rim will be subjected to analysis.

When appropriate to the research problem, we also encourage the use of special analyses. Because many paste attributes and exterior and interior surface treatments are ambiguous when observed macroscopically, we urge the systematic performance of petrographic analyses on ceramic assemblages. Similarly, we encourage project archeologists to systematically collect comparative samples of local clays available near recorded sites. Other physicochemical studies such as instrumental neutron activation analysis (INAA) and residue analysis will contribute valuable information on the intra- and inter-site spatial patterning of ceramics, as well as their use. Such samples will be critical in the study of ceramic manufacture, as well as the distribution of ceramic wares and people across the landscape.

Finally, the ceramic analysis included in the final report should contain a discussion of the ceramic research and analytical approach and methods employed in the study, as well as a summary presentation of the ceramic findings. We also recommend illustrations and/or photographs (preferably color) of rim sherds, decorated sherds, and whole vessels in the ceramic analysis section of the final report.

Recommendations of the CTA Ceramics Protocol Committee

The Council of Texas Archeologists (CTA) Ceramics Protocol Committee recommends the adoption of the proposed guidelines outlined above concerning the need to ground ceramic analysis of Native ceramic sherds, vessels, and assemblages in Texas in: (a) regionally relevant research issues/research problems, and (b) by employing a consistent set of attributes and analytical methods. Our recommendations are not viewed as a replacement of the existing CTA's Guidelines for Professional Performance Standards. Instead, these proposed guidelines for ceramic analysis are to be seen as a necessary

augmentation of the now current data analysis guidelines, primarily by providing a greater degree of specificity and analytical detail concerning the development of selected research questions that warrant attention by ceramic analysts in different parts of the state, as well as steps that should be followed in the conduct of ceramic research.

For instance, we concur with the CTA Guidelines that address Pre-analysis Considerations (Section 5.1.1.2) that the analysis of native ceramics should be performed by individuals with a demonstrated competence in ceramic analysis and a familiarity with regional ceramic archeological data. In addition, we recommend that analytical competency be defined as adherence to the CTA Analysis Guidelines (Section 5.2) as amended by the protocol proposed by this committee. Furthermore, we propose that as the agency responsible for the review of both state and federal projects and undertakings that involve the analysis of ceramic data as part of completing Antiquities Code of Texas and National Historic Preservation Act projects, the Archeology Division at the Texas Historical Commission (THC) ensure that ceramic analysts employed by Cultural Resource Management (CRM) firms meet the CTA guidelines for professional performance standards.

We recognize that following the recommendations of the CTA Ceramics Protocol Committee may have financial implications by potentially increasing the costs of certain CRM projects within an already highly competitive market. To ensure that all projects that yield Native ceramic assemblages will therefore adhere to the guidelines put forth in this document, we recommend that the CTA adopt this protocol as constituting the minimal ceramic research and analytical standards required by the CTA Guidelines for Professional Performance Standards that should be adhered to by CRM firms working in Texas. More importantly, as the State's oversight agency, we recommend that the THC serve as the arbiter of compliance by CTA members to these guidelines. In addition, and in the spirit of analytical consistency, we also recommend that the THC require that all State agencies with their own archeological staff be held to the same research and analytical standards as members of the CTA.

History has shown that research questions and analytical methods change over time as information accumulates and as new theoretical paradigms arise over time. Therefore, we view this document and the supporting regional and topical summaries as constantly evolving through accumulated knowledge and changes in research perspectives and priorities. As a result, we recommend that the CTA support the periodic update of this and other adopted research protocols. We also recommend that this effort should include nominal financial support from the CTA to ensure that these updates can be regularly completed.

Finally, the CTA Ceramics Protocol Committee strongly urges greater communication between archeologists across the state to raise the level of shared knowledge as well as the quality of archeological research that is being performed. To this effect, we recommend that institutions be identified that will house and make available in the public domain the results (data bases) of specialized analysis performed on archeological materials, including the specialized analyses of Native ceramics. At a minimum, information derived from INAA, and petrographic analysis (including image libraries of petrographic thin sections) should be maintained, periodically updated, and made available to researchers across the state. The creation, maintenance, and update of such databases and image libraries

containing the results of these specialized ceramic analyses should be supported by the CTA and the THC.

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