

TECHNICAL UPDATE No. 1
of the
STANDARDS AND GUIDELINES
FOR ARCHEOLOGICAL INVESTIGATIONS IN MARYLAND

COLLECTIONS AND CONSERVATION STANDARDS

Supersedes and Incorporates Chapter VI. "Processing and Curation of Collections (Artifacts and Records)" from Standards and Guidelines for Archeological Investigations in Maryland, Shaffer and Cole, 1994.

Maryland Historical Trust

Revised 2005

PREFACE TO REVISED EDITION

In 1999, the Maryland Historical Trust Board of Trustees adopted *Technical Update No. 1: Collections and Conservation Standards*. *Technical Update No. 1* represented an expansion of the collection and curation guidelines originally published in *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). The purpose of these standards and guidelines is to ensure the long-term preservation of the state's irreplaceable archaeological heritage.

More than six years have passed since the adoption of *Technical Update No. 1*. During those years, Maryland Archaeological Conservation Laboratory staff and our clients (donors, consultants, researchers, etc.) have had considerable opportunity to evaluate the standards and guidelines outlined in *Technical Update No. 1* and to make recommendations for their improvement. Further, as digital technologies have enhanced our ability to recover and document significant archaeological data and information, it became clear that the curation of these electronic records needed to be addressed by *Technical Update No. 1*.

A subcommittee of the Division of Historical and Cultural Programs/ Maryland Historical Trust Collections Committee was formed to review *Technical Update No. 1* and to make suggestions for revisions in an effort to update the document. These revisions can be summarized as:

- (1) The addition of criteria for accepting donations of collections not received through compliance work;
- (2) Addition of a glossary of terms;
- (3) Addition of material on the preparation of digital and other electronic media for long-term collections curation;
- (4) Clarification and simplification of guidelines for preparation of collections for curation;
- (5) Correction of minor typographical and grammatical errors.

Further, there is an increase in the box fee to \$350, effective July 1, 2005. Grandfather provisions are outlined elsewhere in this document, and all grandfather provisions will end on June 30, 2007.

The Maryland Historical Trust greatly appreciates your interest in preserving Maryland's archaeological heritage.

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TABLE OF CONTENTS

	<u>Page</u>
PREFACE	i
ACKNOWLEDGMENTS	iii
TABLE OF CONTENTS	v
Introduction	1
Processing, Conservation and Collections Management of Artifacts and Records	2
A. Goal	3
B. Disposition and Curation of Collections	4
C. The Maryland State Archaeological Collections	6
D. Processing Material Remains	10
1. Cleaning	10
2. Labeling	10
3. Packaging	12
4. Selective Discarding	14
E. Conservation Standards	14
1. Definitions of Conservation Terms	15
2. Qualifications for a Professional Conservator	16
3. Collections Care Specialist	16
F. Archaeological Materials Which Require Consultation with a Conservator and Conservation Treatments	16
1. Wet Recovery of Material Remains	16
2. Artifacts Recovered from Dry Burial Environments	16
3. Human Remains	17
4. Other Types of Material Remains	17
G. Processing Associated Records	18
1. Required Records	18
2. Labeling	20
3. Packaging	20
H. Cataloging Material Remains and Records	20
I. Maryland Historical Trust - Collection Submittal Requirements	21
1. Transfer of Ownership	21
2. Collection Documentation	21
3. Collections Fee	22
4. Inspection	23
5. Shipping/Transmittal	24
J. Sources of Technical Information	24
APPENDICES	25-58
1. Collections Fee Policy	
2. Directory of Assistance	
3. Archaeological Conservators & Code of Ethics for Conservators	
4. Supplies for Collections Management and Conservation	
5. Glossary	
6. Bibliography	

Introduction

Archaeological collections -- artifacts and their associated documentation -- represent an extraordinary and valuable source of information about past human life and culture. In Maryland, archaeological evidence provides a significant source of information about prehistoric Native American cultures. Archaeological data recovered from sites occupied during the historic period usually contain important information not found in historical documents, and this evidence has greatly expanded our understanding of life in Maryland during the historic period. As new questions about the past and new techniques for analyzing material culture are developed, these collections are examined and reexamined for the potential insights they might yield. Materials from these collections are incorporated into educational programs such as museum exhibits, study collections, and teaching aids in the continuing effort to teach Marylanders about their rich and extensive history. Indeed, archaeological collections are as significant and valuable as the sites from which they come, and their preservation is a top priority of the Maryland Historical Trust.

In 1988, the Council for Maryland Archeology's Curation Committee issued a series of standards for the processing and curation of archaeological collections in Maryland. These standards formed the basis for a chapter on collections processing, care, and curation in *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). These standards were required of archaeologists undertaking archaeological investigations in Maryland in compliance with state and/or federal law. In 1998, the Maryland Historical Trust opened the Maryland Archaeological Conservation Laboratory in St. Leonard for the study, conservation, and storage of archaeological collections in the custody of the State. This facility provides storage space in a controlled environment, and collections are monitored and treated to maintain stability. In addition, Maryland's artifact collections are more accessible to archaeologists, museum curators, educators, and the interested public. In 1999, *Technical Update No. 1 of the Standards and Guidelines for Archeological Investigations in Maryland* was produced.

Since the publication of *Technical Update No. 1*, new developments in the fields of collections management and conservation, as well as new materials and treatment methods, have become available for long-term collections management. Further, as more and more archaeologists are studying existing collections, problems unique to archaeological collections management have been identified. Examples of these problems include artifact instability, the preservation and curation of paper and electronic records, and damage caused by unsuitable adhesive and labeling materials. In an effort to address these problems, the Maryland Historical Trust has revised the standards and guidelines for archaeological collections care. These revised standards and guidelines are presented here as *Technical Update No. 1 of the Standards and Guidelines for Archeological Investigations in Maryland*.

Additionally, *Technical Update No. 1* (Revised 2005) presents the regulations developed to implement the state's Collections Fee Policy. This policy was developed in an effort to offset some of the costs associated with long-term collections care. The policy was prepared using input from the archaeological community and from affected state agencies. A one-time fee of \$350.00 per box (see definition of box on pages 10-11) has been set, based on past and anticipated costs associated with the management of collections. This fee is intended as a supplement to the general budget in order to offset extra costs incurred in pest management, environmental controls, maintenance of the compact shelving units, and in the upgrade and monitoring of collections.

The goal of *Technical Update No. 1* (Revised 2005) is to provide updated information on collections management and conservation to assist archaeologists and others who provide the initial care for archaeological collections. This information is intended to establish the standards for collections care in Maryland. The standards presented here should be followed for all collections ultimately curated by the Trust, thus ensuring the same quality of care for all artifacts and facilitating the monitoring and maintenance of collections. The Trust fully recognizes the valuable role of project managers and principal investigators in the determination of curation and conservation priorities for their archaeological projects. The Trust strongly encourages project personnel to coordinate the establishment of priorities with the Trust as early in the planning process as possible. Trust collections managers and conservators are available for consultation to assist with determining priorities. The Trust reserves the right to waive all or portions of these standards for extraordinary circumstances.

The standards outlined in the following document have been developed to enhance the long-term preservation and accessibility of Maryland's archaeological collections. The Trust appreciates the cooperation of the archaeological community with the implementation of these standards. If readers of this document have any questions, please contact the Director of the Maryland Archaeological Conservation Laboratory.

Processing, Conservation, and Collections Management of Artifacts and Records

In 1990, the Department of the Interior/National Park Service issued "Curation of Federally-Owned and Administered Archeological Collections" (36CFR§79), which includes definitions, standards, guidelines, and procedures which federal agencies are required to follow in order to preserve archaeological collections. The regulations presented in 36 CFR§79 must be followed for federal compliance projects in Maryland, as appropriate. Although these regulations are legally applicable only to federal agencies' programs, they provide useful definitions and information that may be applied to the treatment of all archaeological collections.

A basic term of reference for *Technical Update No. 1* (Revised 2005) is **collection**, which is defined below (36CFR§79):

Collection means material remains that are excavated or removed during a survey, excavation or other study of a prehistoric or historic resource, **and associated records** that are prepared or assembled in connection with the survey, excavation or other study.

This document presents the standards and related discussion on the following items: the goal of the standards, disposition and curation of collections, the Maryland State Archaeological Collections, processing material remains and associated records, the Trust's collection submittal requirements, and sources of technical information. To obtain copies of the Trust's catalog sheets, Deed of Gift, Transfer Deed, and other collection documentation forms, contact the Trust's Office of Archeology or the Collections Manager at the Maryland Archaeological Conservation Laboratory. For conservation services information, contact the Lead Conservator of the Maryland Archaeological Conservation Laboratory.

A. Goal

The goal of the following standards is to ensure that all archaeological collections generated by professional or avocational archaeologists in Maryland receive the same quality of processing, packaging, documentation, and curation, including stabilization of artifacts or conservation treatment if needed to preserve the artifact(s). Treatment of collections in accordance with these standards will help to provide long-term preservation of artifacts and records for present and future generations.

The terms *curation, conservation, and archival practices* are defined below.

Curation means *managing and preserving a collection according to professional museum and archival practices.* Curators manage the protection and preservation of collections through the services of professionals in the fields of conservation and collections management.

Conservation means *the preservation of cultural property for the future.* Conservation activities include examination, documentation, treatment, and preventive care, supported by research and education. (*American Institute for Conservation Directory*, 1998, "AIC Definitions of Conservation Terminology," p. 22).

Archival practices are those which promote the preservation of objects through the use of acid-free housing materials and labels and/or controlled environments. Housing materials may include acid-free boxes, papers, folders, and bags made from non-off-gassing products.

This document outlines overall procedures for the cleaning, labeling, cataloging, packaging, documenting, and curation of collections. The standards included in this document are not intended to substitute for more detailed laboratory methods and procedures. It is assumed that archaeologists will employ applicable current standards of professional knowledge in their curation of artifacts and records. The procedures and materials presented herein meet standards. Archaeological professionals are encouraged to manage and preserve collections according to curatorial and archival practices recommended in professional publications (see Bibliography) and by conservation and collections professionals for treatment and curation of archaeological materials and records.

The Trust depends on Principal Investigators and Project Managers to serve as curators for the sites they are investigating and to set priorities for stabilization and conservation of artifacts based on their knowledge of the archaeological resource. The Trust's Collections Manager and Lead Conservator are available to assist Project Managers with collections decisions and will provide recommendations for curation materials and conservation treatments.

The disposition of a project's artifacts and records as a collection should be decided prior to initiation of fieldwork and in consultation with the Trust. **Prior to contract award**, project archaeologists should contact the selected repository for its curation requirements.

B. Disposition and Curation of Collections

To ensure the long-term preservation of archaeological materials and associated records, and to provide access to collections, a repository should be selected which meets standards for curation and makes collections available for study. Federal curation standards provide a definition of the term *repository* that is applicable in the U.S.

Repository means a facility such as a museum, archaeological center, laboratory or storage facility managed by a university, college, museum, other educational or scientific institution, a federal, state or local government agency or Indian tribe that can provide professional, systematic and accountable curatorial services on a long-term basis (36 CFR§79).

A repository should have the capability to provide long-term curatorial services. Required factors include appropriate physical facilities, temperature and humidity controls, security, controlled access, fire protection and suppression, record maintenance and storage, routine inspection, and qualified staff. Collections generated by federal agencies and programs must be curated by an appropriate repository.

In addition to considering a repository's technical qualifications, the federal standards offer further guidance on how to select a suitable repository for a collection. In general, it is advisable to curate a collection in a repository which is located in the same state where the collection originated, and which maintains other collections from the same site, project area, or broader geographic region. Collections should not be subdivided

and stored in multiple locations, unless such storage is warranted due to conservation, research, exhibit, or other legitimate purposes. Finally, material remains and their associated records should be curated at the same repository in order to sustain the collection's integrity and research value.

The following state and federal facilities in Maryland currently meet the minimum standards for curation repositories:

- **The Maryland Archaeological Conservation Laboratory (MAC Lab)**
- **Historic St. Mary's City Archaeological Laboratory**
- **Museum Resource Center (MRCE, a National Park Service facility)**

Historic St. Mary's City curates collections recovered from sites within the St. Mary's City National Historic Landmark, the first capital of Maryland. The MRCE facility principally curates federally-owned collections. For other collections from Maryland, the Trust encourages their curation at the Maryland Archaeological Conservation Laboratory (see section C below), the principal repository for archaeological materials recovered from sites in Maryland. Sections D-H explain the Trust's procedures and guidelines for collections accepted for curation.

Situations may arise where a property owner requests to keep the material remains recovered from the owner's property. Under these circumstances, the archaeologist is requested to strongly encourage the owner to donate the collection to a suitable repository by explaining the reasons for appropriate curation and by providing information on incentives for such a donation (tax benefits, recognition in the community, ensuring accessibility for historical research for future generations). A repository may be willing to accept the entire collection and then loan selected items back to the property owner for display or study purposes if the owner satisfies requirements for loans outlined in the repository's collections policy. If a property owner insists on retaining possession of the artifacts recovered from private property, the items must be returned to the owner. A brochure developed by the Maryland Archaeological Conservation Laboratory is available that describes the benefits of donating archaeological collections to the state.

Prior to transferring material remains to property owners who will maintain ownership, the objects should be cataloged, processed, and packaged in accordance with professional standards. In addition, the objects should be thoroughly recorded, including photographing and drawing diagnostic artifacts and other objects critical to the interpretation of the archaeological resources. The Trust advocates the digital scanning of information to make it more accessible. The resulting documentation should be incorporated into any associated collection records, all of which should be deposited in a suitable repository along with a clear identification of the location of the transferred material remains in the owner's possession. Finally, it is recommended that the archaeologist provide the owner with written curatorial recommendations on how to store and handle the collection to avoid or minimize damage and deterioration of the

items. The owner should also be supplied with a copy of information on incentives for future donation of the collection to an appropriate repository, and sources for additional technical assistance and advice. The Maryland Archaeological Conservation Laboratory will provide informational brochures and technical advice on request.

C. The Maryland State Archaeological Collections

Archaeological collections curated by the State of Maryland consist of specimens from all periods of American prehistory and history, ranging in date from the Paleoindian period of 10,000 to 12,000 years ago through the twentieth century. An estimated total of over 7,000,000 artifacts -- representing thousands of archeological sites -- comprise the collections. The artifacts were recovered from archaeological surveys and excavations by state archaeologists, consultants, avocational archaeologists, and private donors. The artifacts and the contexts in which they were found constitute a major part of the surviving record of prehistoric Indians in Maryland. In addition to the artifacts, the state collections contain the associated records (field notes, photographs, maps, etc.) related to the material remains.

The archaeological collections are stored in a secure wing of the Maryland Archaeological Conservation Laboratory, the state facility built to preserve the archaeological resources of Maryland. Collections are stored in a humidity and temperature-controlled environment in two levels of compactable shelving designed to hold a standard storage box for artifacts. To meet standards, humidity is maintained at 50% RH +/- 2% and the temperature is maintained at 70° F +/- 5 degrees. Security is maintained by limiting access to storage by a card reader which is monitored in the security office. A computerized box inventory facilitates retrieval and use of the collections. The MAC Lab currently uses *Re:discovery*, a museum and archaeology-specific software. The state repository charges a one-time fee based on a standard box size or on the volume of space occupied by oversized objects. These fees are intended as a supplement to fund additional costs incurred in the long-term maintenance of the collections. The repository, which meets the requirements of the Collections Policy of the Maryland Historical Trust and the Division of Historical and Cultural Programs, as well as federal standards for a curation facility, is located at the Jefferson Patterson Park and Museum in St. Leonard, Maryland.

Most state archaeological collections were moved to the Maryland Archaeological Conservation Laboratory in February 1998. Some collections are housed in other locations for research and exhibition.

The Maryland State Archaeological Collections are curated and made available for study and exhibit. The following criteria were developed for donations to the state of collections not generated by compliance projects.

1. Archaeological collections offered for donation to the state shall meet the following mandatory criteria developed by the Collections Committee of the Division of Historical and Cultural Programs (DHCP):

- The collection is relevant to and consistent with DHCP collection mission, purposes, and activities, as specified in the *DHCP General Collections Policy*.
- The collection is being offered for donation without excessive or burdensome restrictions or conditions on the donation, including restrictions on the future research, educational use, exhibition, treatment, or disposition of the collection.
- The donor can provide evidence of free and clear title to all materials in the collection, and is willing to sign a Deed of Gift or other written evidence of transfer of ownership title, including all copyright and trademark rights; or if the donor cannot provide evidence of donor's free and clear title, at the discretion of the Collections Committee (the Committee) the donation may be accepted with a Quitclaim Deed of Gift or other acceptable transfer from the donor.
- The Division of Historical and Cultural Programs is able to satisfactorily curate the collection, including carrying out any needed conservation treatments, and making it available for research, education, and exhibition purposes.

Items to consider in making this determination include:

- 1) Is there or can the DHCP obtain adequate space, technical facilities, funding, and professional personnel to curate the collection to professional standards?
- 2) Can the collection be maintained so its information and other values are not lost through deterioration, and can records be maintained to professional archival standards?
 - a) Will extensive conservation treatments be required to maintain the collection and make it available for research, education, or exhibition purposes?
 - b) Will extensive copying and/or treatment of records be required (e.g. onto acid-free paper, reproduction of non-archival maps, photographs, etc.)?
- 3) Is the collection accessible and usable by qualified researchers?
 - a) Are there good collection records, and if so, are those records organized and useable without extensive DHCP efforts?
 - b) Is the donor proposing to place restrictions on use or exhibition?
- 4) Can the collection be made available for exhibition or educational purposes, subject to reasonable security precautions?

2. Discretionary Criteria (at least one of the following criteria must be met in addition to the five mandatory criteria previously listed):

- The collection has substantial research, education, or exhibit value relating to the prehistory, history, or cultures of Maryland.

Items to consider in making this determination include:

- 1) Does the collection have clear provenience (information on location of origin)?
- 2) Does the collection totally or substantially originate from Maryland?
- 3) Was the collection professionally excavated using scientific archaeological methods and techniques?
- 4) Does the collection include original, associated records, (e.g., field notes, maps, drawings, photographs, reports) or copies of such records, and if so, what is the quality of those records?

- The collection has substantial educational value.

Items to consider in making this determination include:

- 1) Does the collection have exemplary specimens of the types of artifacts found in Maryland, and that could be used, for example, in developing study collections?
- 2) Does the collection have artifacts that could be used for hands-on programs and activities by educators and archaeologists? It must be recognized that these artifacts could be lost or damaged during these activities, and must therefore be considered “expendable.”
- 3) Can the educational artifacts be removed from the collection without compromising its research potential?
- 4) Does the collection contain artifacts not already available in other collections for educational purposes (e.g., is the collection duplicative or redundant)?
- 5) Does the collection have materials that are particularly illustrative of important technological changes or developments?

- The collection has substantial exhibition value.

Items to consider in making this determination include:

- 1) Does the collection contain artifacts whose degree of completeness and/or rarity make them of exhibit quality, or artifacts that display traits that could be useful in illustrating certain aspects about the past?
- 2) Can the exhibit-quality artifacts be removed from the collection without compromising the collection’s research value?
- 3) Does the collection contain artifacts that could be used for exhibit purposes that are not already available in other collections?
- 4) Are materials in the collection stable enough to be exhibited?
- 5) Does the collection require special mounts or other treatments to be safely exhibited?

3. If a collection contains human remains, the Committee should take into consideration the Division’s capability to comply with statutory responsibilities regarding the inventory, treatment, and disposition of human remains and associated funerary objects.

Items to be considered in making this determination include:

- a) Do the remains date to the prehistoric or historic period?
- b) Do the provisions of the federal Native American Graves Protection and Repatriation Act (NAGPRA) apply to the collection?
- c) Does an inventory of the human remains, and, if applicable, associated funerary objects, exist and, if so, does it include information such as the number of individuals, age, sex, cultural/ethnic affiliation, and provenance (location of origin) of the remains?
- d) Have lineal descendants or, in the case of American Indian human remains, culturally-affiliated State or federally recognized tribes been identified or filed a claim for the remains? Are there likely to be culturally-affiliated State or federally-recognized tribes that will wish to claim the remains?

4. Acquisitions which meet the above criteria will be considered for accession in the following order:

- Archaeological collections generated as a result of professional or avocational archaeological investigations which represent well-provenienced and documented data and that meet the collections and conservation standards published in *Technical Update No. 1 of the Standards and Guidelines for Archeological Investigations in Maryland* (Revised 2005).
- Archaeological collections which are in boxes or cataloged with site-specific provenience data.
- Archaeological collections from anywhere which, though lacking site-specific provenience data, can be considered representative of a specific local area or region of the state, or of the history and development of archaeology in Maryland.
- Archaeological artifacts which are of exhibit or education value, or are of artistic, research, or exhibition value even though they lack provenience information.

All new collections slated for curation by the Maryland Historical Trust must meet these standards in order to preserve the artifacts and associated records. In order to ensure that the collections in their care meet requirements for long-term preservation, the Trust may refuse to accept any new collections that fail to meet standards. Working as partners, the state repository and the archaeological community can make a difference in the quality of preservation of cultural resources.

Agencies or individuals considering donation of their collections to the state, researchers desiring to study the collections, or those requiring further information

regarding the collections policy should contact the Maryland Archaeological Conservation Laboratory Collections Manager.

D. Processing Material Remains

Archaeological investigations often produce material remains from the area under study. The federal regulations provide the following definition of *material remains*:

Material remains means artifacts, objects, specimens and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve or recover a prehistoric or historic resource.

Material remains may comprise a wide variety of items, including: architectural elements, artifacts of human manufacture, natural objects used by humans, waste or debris resulting from the manufacture or use of human-made or natural materials, organic materials, human remains, elements of shipwrecks, components of petroglyphs or art works, environmental or chronometric specimens, and paleontological specimens recovered in direct physical association with a prehistoric or historic resource. The nature and composition of the material remains will prescribe its specific handling and treatment. However, the general procedures listed below must be followed in the processing of material remains.

1. Cleaning

All artifacts must be cleaned. Professional standards should be followed so as to preserve information. (Exceptions to cleaning: Artifacts designated for special studies, such as blood residue analysis, can be curated in an unwashed state. These artifacts must be packaged separately from the rest of the collection. The packaging must be archival and stable. Containers with these special artifacts must be clearly marked, and any specific instructions must accompany the artifacts. The artifact inventory must note the artifacts' unwashed condition.)

2. Labeling

The value of a collection is in the maintenance of provenience for the cultural material. Good labeling techniques ensure that provenience information is retained. If an artifact becomes separated from its bag or is removed for study or exhibit purposes, the label ensures that the object's provenience is retained and that the object may be returned to its appropriate place in the collection.

a. All artifacts must be labeled with provenience information including, at minimum, the official state site number (or X number for isolated finds) and official state lot number.

The Trust's curation facility employs a lot number system for labeling and cataloging. The label consists of the official state inventory number, represented as a trinomen (for example, 18BA25) and the official state lot number. In Maryland, provenience resides in the lot number. For material remains not associated with an inventoried site, a Maryland Random Finds Number, or "X Number," should be used in place of the site number. The Trust's Office of Research Survey and Registration designates official site numbers. The "X number" is considered a catalog number tied to a provenience and will be issued per project by the Maryland Archaeological Conservation Laboratory Collections Manager. See Chapter V. D.1 of the Standards and guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994) for an explanation of the site and "X number" system.

Beneath the site or "X number," a lot number is designated. Lot numbers may refer to one object or to a group of objects from one provenience unit (such as objects recovered from a level within an excavation unit, or one section of a surface collection). Each artifact or group of artifacts from a different provenience unit must have its own lot number. Lot numbers are assigned sequentially and are keyed to their collection's catalog (see sections D.2.h and F. below). **The Collections Manager at the Maryland Archaeological Conservation Laboratory must be contacted to obtain the next available lot number for any previously-recorded site.** This requirement is essential, in order to ensure that lot numbers are not duplicated during subsequent work at the same archaeological site.

Archaeologists may add additional designations following the official site and lot numbers, if desired, to suit individual cataloging and analysis needs, e.g., full provenience system utilized. Please contact the Collections Manager for any questions or concerns regarding the lot numbers.

b. Artifacts are to be marked using a clear Acryloid B-72 undercoat before marking, and a topcoat of clear Acryloid B-72 applied to form a protective sandwich around ink. A permanent archival quality ink is to be used. If application of the topcoat smears the lettering by dissolving the base coat, try a different ink or apply a coating of Arkon P-90 or Acryloid B-67 as a topcoat, since these resins use a different solvent type (mineral spirits or benzine). Care must be exercised when using mineral spirits or benzine as the fumes are hazardous to health and the solvent tends to creep across a surface. Dark artifacts can be prepared for marking with an undercoat using titanium dioxide in Acryloid B-72, or marked on an undercoat of clear Acryloid-B72 with archival-quality contrasting waterproof ink. Materials such as gesso are not recommended, as recent studies show that it yellows and peels with time. Polymers such as bakelite, rubber, and plastics should not be labeled, but placed in well-labeled bags. Archaeologists must employ the best current standards of professional knowledge in labeling artifacts with ink, sealant, and white backing when needed. Consult the supply

list in the appendix or contact the Collections Manager at the Maryland Archaeological Conservation Laboratory for a list of acceptable marking materials and procedures.

c. Artifacts too small to be marked, or impractical to mark for other reasons (such as fragility or unwashed condition), are to be placed in perforated polyethylene zip-lock bags (minimum thickness = 4 mil) or other acceptable packaging material (see item 3.a below). Provenience information on the label must include site and lot number, surface area, test pit or unit, and coordinates when available. Bags with small artifacts are then placed in a general provenience bag on which full provenience information, including level/layer, excavator(s), collector(s) and date of collection are to be applied. It must be written in permanent black marker on the bag's exterior, and must be duplicated with permanent, fade-proof ink (such as Pigma) on an archivally-stable tag (such as acid-free and lignin-free paper, Mylar, or tyvek) enclosed in the bag.

d. If individual classes of artifacts are present in bulk (e.g., over 200 pieces of window glass from one provenience), only 10% of the objects need to be individually labeled. These types of artifacts may include: shell, fire cracked rock, flakes, window glass, nails, brick, non-human bone, slag, mortar, and coal. All diagnostic artifacts, however, must be labeled, as feasible. If questions regarding artifact labeling arise, contact the Collections Manager of the Maryland Archaeological Conservation Laboratory.

e. All other classes of archaeological material (e.g., processed floral and soil samples) must be assigned a lot number and appropriately labeled with provenience information.

f. All collections must be accompanied by a catalog (see section F) which includes a key clearly translating the labeling system employed to record the provenience information. The catalog is very important for future use of the collection.

3. Packaging

a. Artifacts must be stored in perforated, permanently marked, polyethylene zip-lock plastic bags (minimum thickness = 4 mil), as feasible. Tiny or delicate objects must be stored in archivally-stable, acid-free materials with appropriate padding and protection (see item D.3.e below). Perforation of plastic bags or other airtight packaging is necessary to allow air exchange and avoid cargo sweat.

b. All plastic bags must be permanently labeled on the exterior and on an interior tag with appropriate provenience information. Provenience information must be written in permanent black marker on the bag's exterior,

and must be duplicated with permanent archival ink on an archivally-stable tag (such as acid-free paper, Mylar, or tyvek) enclosed in the bag.

c. Artifacts must be grouped and bagged by provenience, and separated by material type within the provenience. Exceptions may be warranted for small lot sizes and for legitimate research, conservation, and exhibit purposes. Stabilization of some materials such as metals may require microenvironments. However, the documentation accompanying the collection must provide an explanation and justification for the organization system employed.

d. All other classes of material remains (such as floral and faunal samples) must be placed in acceptable, sealed, perforated containers and permanently labeled with the provenience information (including site and lot numbers).

e. Archivally-stable, acid-free packing materials must be used for packaging all objects. Fragile and delicate objects must be specially packaged to ensure proper protection during shipping and storage. The Trust recommends the use of small acid-free boxes padded with acid-free foam core or ethafoam blocks. For oversize items, contact the Collections Manager for appropriate packaging recommendations. The Collections Manager will consult with the state's conservators to provide guidelines for packaging and supporting fragile or oversized artifacts to create safe and archivally-stable shipment and storage.

f. All artifacts must be placed in acid-free materials to provide adequate protection for shipping and for final storage at a repository. Artifacts should be packaged by sequential lot number whenever possible, to increase accessibility for researchers. Coroplast boxes are a standard for artifact boxes due to their durability, resistance to wetting, and the ability to create a limited controlled environment.

The Maryland Archaeological Conservation Laboratory requires the use of inert 3 mil coroplast boxes by all depositors in the state repository to protect collections from the danger of water if the sprinkler system should discharge.

The MAC Lab accepts two box sizes. These box sizes use the shelf space in the state repository most efficiently, expanding the storage capacity significantly.

- standard records box (12.5" wide x 15" long x 10" high) with the lid (13" x 16" x 10.5")
- half-size box (12.5" wide x 15" long x 5" high).

Coroplast boxes are available at cost from the Maryland Archaeological Conservation Laboratory. The MAC Lab staff orders these boxes in large quantities, resulting in per box savings which are passed on to consumers. For

more information regarding box materials, sizes, sources, and cost, contact the Collections Manager.

g. Specialized storage containers or packaging materials may be utilized, if warranted. However, use of alternative materials requires the prior written approval of the Collections Manager at the Maryland Archaeological Conservation Laboratory, due to shelf configuration and space requirements.

h. All artifact containers must have temporary labels to identify the containers' contents, provenience, and lot numbers. The repository will provide labels for storage.

i. Standard boxes or containers should weigh no more than 40 pounds when full.

4. Selective Discarding

Certain types of material **may** have questionable long-term research value and thus may not warrant permanent curation with the collection. These materials **may** include: brick, mortar, slag, coal, shell, and recent 20th/21st century debris (i.e., less than 50 years old). It may be more prudent to discard these items following analyses, rather than to permanently curate the materials with the collection. The collection's catalog must specify the types and quantities of discarded materials, along with a justification for the selected discard, **including means and location**, and a note **in the catalog** that the items were discarded. **The discard of bulk artifacts such as fire-cracked rock, window glass, shell, and other materials is a topic of ongoing national discussion. As curation storage space is filled and curation box fees rise, archaeologists and institutions curating archaeological artifacts are discussing the need for rigorous discard policies that minimize the loss of important archaeological information.**

The Collections Manager at the Maryland Archaeological Conservation Laboratory is available to principal investigators for further guidance regarding the selective discard of material remains, but will not make decisions for the principal investigators.

E. Conservation Standards

Artifacts excavated from archaeological sites should be preserved. Preservation can be accomplished by preventive conservation techniques using controlled environments or by simple cleaning, desalination, drying, and coating. In some cases, full conservation treatments using chemical or mechanical cleaning, electrolytic reduction, and other special techniques are required. A conservator should provide an assessment to determine which artifacts need treatment and what type of treatment would be most effective in terms of preservation and cost. The significance of artifact(s) in terms of

curatorial priority must be determined by the principal investigator. Artifacts that are low in curatorial priority or need minimal treatment are best treated with simple stabilization techniques to minimize deterioration, followed by placement in a preventive conservation program, which includes appropriate storage materials, mounts, and environmental conditions. When developing a scope of work, if the nature of the site suggests that artifact conservation will be necessary, a conservator should be consulted and arrangements should be made for consultation during the planning phase and for site visits during excavation. There is no generic prescription for stabilization and conservation of artifacts. Each artifact is individual not only in its significance, which is determined by the principal investigator, but in the degree and type of deterioration. A professional conservator must perform artifact condition evaluations. Through examination of the artifacts, condition and degree of degradation can be established. The conservator will then be able to recommend the most cost-effective and safest methods for preserving information and artifacts. Recommendations for minimal preservation of the artifacts must include treatment to eliminate conditions causing deterioration. Having a conservator on call while in the field will provide quick response to a request for help, reduce the loss of information through rapid deterioration, and reduce the cost of stabilization and treatment of artifacts.

1. **Definitions of conservation terms:** These definitions are taken from the *American Institute for Conservation Directory*, 1998, "AIC Definitions of Conservation Terminology," p. 22.

Conservation Treatment means *the deliberate alteration of the chemical and/or physical aspects of cultural property, aimed primarily at prolonging its existence.* Treatment may include intervention by means of chemical or mechanical procedures to remove disfiguring coatings, corrosion products, or stains; to repair objects; and to apply materials which will stabilize and protect surfaces of artifacts from handling and environmental changes during future study, interpretation and exhibit. All conservation treatments and information discovered in treatment activities are documented in a permanent archival format. Any treatment process intended to return cultural property to a known or assumed state, often through the addition of non-original material, is called **restoration**.

Stabilization means *treatment procedures intended to maintain the integrity of cultural property and to minimize deterioration.* Stabilization is preservation through minimal intervention to prolong the existence of the cultural property and prevent loss of informational content. Methods of stabilization include control of the environment in which the artifact(s) or collections are stored or exhibited, mounts, consolidation treatments, surface treatments, simple implementation of maintenance and handling procedures, and pest management.

Preventive Conservation means the mitigation of deterioration and damage to cultural property through the formulation and implementation of policies and procedures for the following: appropriate environmental conditions, handling and maintenance procedures for storage, exhibition, packing, transport, and use;

integrated pest management; emergency preparedness and response; and reformatting/duplication.

2. Qualifications for a Professional Conservator

The American Institute for Conservation (AIC), a national association of professional conservators, has established ethical standards for its members. Conservators must have practical experience, a broad range of theoretical and scientific knowledge, and be committed to maintaining high standards and an ethical performance of duties. A copy of the "AIC Code of Ethics and Standards of Practice" is included in the appendix. A brochure guide, "How to Choose a Conservator," may be obtained from the AIC. The Foundation of the AIC (FAIC) has a Conservation Services Referral System which provides, on request, a computer-generated list of conservators who have met peer review, practice conservation in the specialty of inquiry, and are located near the inquirer.

- 3. Collections Care Specialist** means an individual who is trained and experienced in specific preventive care activities. **Preventive Conservation** is performed by Collections Care Specialists trained in collections care, which includes proper packaging, maintenance of environmental conditions suitable to preservation of the collections, handling of collections, and integrated pest management. They work closely with conservators to maintain the proper conditions for collections.

F. Archaeological Materials Which Require Consultation with a Conservator and Conservation Treatments

- 1. Wet Recovery of Material Remains:** Material remains recovered from submerged sites or waterlogged contexts (such as a marshy area or soil levels beneath the water table) require special handling and treatment to ensure the stability and long-term preservation of the objects. Wet conditions often promote excellent preservation of certain materials, particularly organic remains (such as wood, leather, cloth, and botanical remains). However, once these materials are excavated and removed from their wet environment, rapid deterioration will occur unless the items are appropriately and promptly treated. Projects involving or anticipating the recovery of wet material remains must include provisions and funding for the appropriate treatment of those materials by a trained professional conservator. It is prudent to have a conservator on call to assist in the recovery of wet materials in the field due to the fragility and rapid deterioration of wet materials upon excavation from the burial environment.
- 2. Artifacts recovered from dry burial environments:** Like wet material remains, certain other types of materials also require professional handling and treatment to ensure their long-term preservation. These artifacts have been subjected to wet/dry cycles and are never totally dry. Such items may include metal objects (buttons, buckles, hardware) or organic materials (bone implements, leather) which will deteriorate without proper stabilization and treatment. The Trust

strongly recommends consultation with a professional conservator prior to excavation to determine budgetary needs and procedures for processing materials to best preserve and stabilize the artifacts. Prior to beginning field work, arrangements can be made for a professional conservator to be on call to assist with difficult removal and stabilization of fragile artifacts. The Trust strongly requests the conservation of significant unstable material remains **prior** to curation of the collection and before collections from State compliance projects are submitted to a repository. Items which particularly warrant conservation include those unstable objects recovered from a provenience that is critical to the site's interpretation, as well as exhibit-quality objects. Projects that anticipate the recovery of unstable material remains (such as well and privy excavations or intensive historic site investigations) must include provisions and funding for the appropriate treatment of those materials by a trained professional conservator.

The Maryland Archaeological Conservation Laboratory may refuse to accept collections with unconserved or unstable material remains. To maintain a storage environment suitable for long-term preservation, it may be necessary for the repository to refuse storage space for unstable materials that have not been conserved. For additional guidance on the treatment of material remains, contact the State's conservators. For consultation on preservation partnerships, contact the Director of the Maryland Archaeological Conservation Laboratory.

- 3. Human Remains:** In general, the Trust does not encourage the excavation and long-term curation of human remains, unless those remains are imminently threatened by natural or human forces, or unless the remains have outstanding research potential. Procedures for the treatment of human remains and associated grave goods may vary, depending on the anticipated final disposition of the remains and the wishes of descendants or culturally-affiliated groups. Treatment procedures must be established **prior** to initiating any excavation of human remains or undertaking a project that anticipates their recovery. Any treatment decisions must conform with applicable federal and state legislation, regulations, and policies in addition to Chapter VIII.C of *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), which presents a more detailed discussion of special provisions related to human remains and cemeteries.

Contact the Trust's Office of Archeology for guidance and information on the appropriate handling and treatment of human remains and associated grave goods.

- 4. Other Types of Material Remains:** Other types of material remains (specimens, flotation and soil samples, etc.) must be appropriately processed before curation. Projects proposing or anticipating the recovery of these types of material remains should include adequate provisions in the budget for

appropriate processing and specialized analyses. If sufficient funding is not available for analyses, the materials should be appropriately processed and packaged to ensure their long-term preservation for future analyses. Only soil samples retained for back-up analyses should be curated without prior processing. If not processed, soil samples retained for back-up analyses should be fumigated and/or freeze-dried.

Contact the Maryland Archaeological Conservation Laboratory Collections Manager for further guidance and assistance regarding the processing and storage of other types of material remains.

G. Processing Associated Records

Archaeological investigations also generate important associated records, in addition to the materials recovered. 36CFR§79 defines *associated records* as follows:

Associated records means original records (or copies thereof) that are prepared, assembled, and document efforts to locate, evaluate, record, study, preserve, or recover a prehistoric or historic resource.

These records may encompass a broad variety of materials including: field notes, maps, drawings, photographs, slides, negatives, films, video and audio tapes, oral histories, artifact inventories, computer disks and diskettes, manuscripts, reports, remote sensing data, public records, archival records, and administrative records relating to the archaeological investigations. The materials contain essential documentation of the archaeological research and warrant appropriate treatment to ensure their long-term preservation for future researchers. Conservation records are also important documents in the history of the artifacts and contain information about artifact materials, use, and manufacture. These documents are important to the archaeological record and for long-term preservation of collections.

The scope of a given archaeological investigation will determine the kinds of associated records produced for a project. To ensure the most complete preservation for the future, MHT requests that in addition to the continued submittal of acid-free copies of reports and records, all digital files be submitted in a format which can be migrated according to the best practices currently available. Please consult with the MAC Lab Collections Manager concerning compatible formats for migration of data. The nature and composition of the resulting records will prescribe their specific handling and treatment. However, the following general procedures must be followed in the processing of associated records:

1. Required Records

- a. Two archivally-stable copies of all original project records, field and laboratory, must be prepared and submitted for curation with the collection.** The original on acid-free paper and one copy on acid-free paper by

a heat fusion process (laser and Xerox dry process) are acceptable; any originals that are not archivally-stable must be submitted with two copies on acid-free paper or one acid-free copy with a digital copy. Original records submitted should be legible, unbound, and unpunched. Copies should be double-sided (if feasible), and on 8½" by 11" paper. Digital copies of documents should be in a format that will facilitate migration of data according to best current practices.

b. All associated photographic documentation must be submitted for curation with the collection. Transparency slides, negatives, and contact sheets based on chemical processing are the preferred forms of photographic documentation; however, digital images will be accepted. If submitting digital images, uncompressed TIFF (Tagged Image File Format) files submitted on CD-R (not CD-RW) disks are preferred. The CD-R insert must be marked with the date, the name of the project or grant producing the images, the firm or individual submitting the disk, and the name(s) of the photographers(s). An inventory sheet with the same information and also listing the file names, or a print-out equivalent to a contact sheet with a thumbnail of each image, must accompany the disk, preferably in the case insert. Translucent polypropylene cases are recommended for storage of CDs. Label inserts should be on acid-free paper. Do not mark on the CD as the inks may damage the disk. (Used with permission, State of Delaware, draft guidelines for digital data.)

c. All conservation records, including treatment records, stabilization and assessment records, photographs, and materials analysis data must be submitted for curation with the collection. Conservation records must meet the requirements of section 1.a. above. These records will be kept in the permanent conservation files for artifacts.

d. An inventory of all associated records and a catalog of photographic materials, along with an explanation of labels, must accompany all collections (see section H below).

e. A digital copy of the computerized artifact catalog should be submitted with the hard copy records, if available. Consult the Collections Manager to determine suggested media and format. Microsoft Excel and Access are currently used at the MAC Lab, along with a database in Re:Discovery software. Digital information submitted on CD-R (not CD-RW) disks is preferred. Label inserts should be on acid-free paper. Do not mark on the CD as inks may damage the disk. The CD-R insert must be marked with the date, the name of the project or grant producing the data, and the firm or individual submitting the disk. An inventory sheet with the same information and also listing the file names must accompany the disk. (Used with permission, State of Delaware, draft guidelines for digital data.)

2. Labeling

a. All project records and packaging must contain permanent labels.

Labels must identify, at a minimum, the project name, site number, and date of preparation. Labels should be written directly on the records or sleeves, as appropriate.

b. All photographic documentation must be clearly labeled. Labels must contain, at a minimum, the site number, date the photograph was taken, a description of the subject of the photograph (feature/square, layer/level), and the direction of view, as appropriate.

3. Packaging

a. All records must be packaged using archivally-stable, acid-free materials. Containers must be permanently labeled.

b. All photographic documentation must be stored in archivally-stable, acid-free containers. Contact the MAC Lab *prior* to packaging for a list of approved materials. Containers must be permanently labeled.

H. Cataloging Material Remains and Records

All collections, including the material remains and associated records, must be inventoried. An itemized descriptive catalog must also accompany each collection. The catalog must provide a detailed description of the items, identifying and classifying the archaeological materials and records according to best current professional standards. The catalog maintains an essential record of the objects represented. Should an item ever become lost, stolen, or deteriorate beyond recognition, the catalog may be the only surviving record of that item. Catalogs are a means of obtaining information about a collection or specific items within the collection without handling the actual objects themselves. A detailed catalog will help minimize the need for subsequent handling of the objects. In addition to item-specific descriptions and provenience, the catalog should specify the collector or donor's name, project name, official Maryland site and lot numbers, and date of collection. To obtain samples of the Trust's standard specimen and photograph catalog, contact the Collections Manager.

Catalogs are frequently prepared and maintained in a computer database. The Trust requires that a digital copy of any computer database be submitted with the collection for permanent curation. Two archivally-stable paper (acid-free) copies of the catalog must *always* accompany the collection. Consult the Collections Manager to determine suggested media and format. Microsoft Excel and Access are currently used at the MAC Lab, along with an artifact catalog database in Re:Discovery software.

I. Maryland Historical Trust - Collection Submittal Requirements

To submit a collection to the Trust for permanent curation in the Maryland Archaeological Conservation Laboratory, the following procedures must be followed:

1. **Transfer of Ownership (or Custody).** Prior to acceptance of a collection, the Trust requires a signed Deed of Gift transferring ownership of the materials to the Trust. The consulting archaeologist is responsible for informing the project sponsor or property owner about the necessity for executing the Deed of Gift prior to transmitting the collection. In unusual circumstances, the Trust may make exceptions to the signed Deed of Gift requirement. However, prior written consent of the Director of the Maryland Archaeological Conservation Laboratory is required before acceptance of a collection without a Deed of Gift. For collections owned by State of Maryland agencies other than the Maryland Historical Trust, a signed interagency Letter of Agreement and Transfer Deed is required. The Trust recognizes that ownership of federal collections cannot be transferred. For federal collections that will be placed in the State's custody, a signed agreement, negotiated between the MAC Lab and the responsible federal agencies, shall be in place. The Trust recognizes that collections agreements may take considerable time to execute, and it will agree to take temporary custody of a federal collection without a signed agreement upon written confirmation from the agency that the agreement is forthcoming.
2. **Collection Documentation.** Certain documentation must accompany each collection submitted to the Trust for curation. The Collections Manager at the Maryland Archaeological Conservation Laboratory may provide the sample forms mentioned below. Comparable forms may be used, **provided** those forms contain the same information in a similar format. All documentation must be submitted on acid-free paper. The following items constitute the required documentation that must be submitted with each collection:
 - a. A completed document which transfers ownership of the collection to the Trust or authorizes the Trust to provide curatorial services:

DEED OF GIFT (for collections from non-state or non-federal ownership)
AGREEMENTS FOR CURATORIAL SERVICES (for federally-owned collections and other exceptional circumstances)
LETTER OF AGREEMENT and TRANSFER DEED (for state-owned collections).
 - b. **Two copies of a typed and complete MHT ARCHAEOLOGICAL SPECIMEN CATALOG**, or an MHT-approved equivalent. These must be submitted on acid-free paper as an original and one copy. Standard catalog forms and instructions are available from the Collections Manager at the Maryland Archaeological Conservation Laboratory.

- c. **A list of all associated records (see item G.1.d above).**
 - d. **A list of conserved objects, along with the conservator's report of conservation treatment(s) and photographic documentation.**
 - e. **A list of those objects needing conservation treatment, with a justification of why the material was not conserved by the current project.** Consultation with the State's Lead Conservator is required.
 - f. **A completed ARTIFACT COLLECTION BOX INVENTORY FORM.** This inventory lists the sites, lot numbers, and general contents of each individually numbered box, and is necessary to incorporate collections into the MHT computerized collection control system.
 - g. **A completed COLLECTION AND RECORD TRANSMITTAL FORM.**
3. **Collections Fee.** The intent of the collections fee is to insure the long-term care, accessibility, and availability of the State's archaeological collections for the benefit of current and future generations of scholars, educators, museum professionals, and other interested persons. ***Fees apply in particular to collections generated as a result of government-mandated laws, regulations, and procedures which require archaeological investigations to evaluate, preserve, or mitigate archaeological resources as a result of government funded, permitted, or approved projects.*** Fees generated by this policy will supplement costs for management of archaeological collections at the Maryland Archaeological Conservation Laboratory. Revenue generated by implementation of this fee policy will be deposited in a Maryland Historical Trust non-lapsing special fund account as supplemental income designated for use in analysis, conservation, and collections management activities directly related to the preservation of the collections.

The collections fee consists of a one-time charge of \$350.00 per standard box ***and applies to collections that become the property of the State of Maryland.*** The dimensions of a standard box, allowing for lid size, are ***not greater*** than 16 inches long by 13 inches wide by 10 3/4 inches high (1.3 cu. ft. volume), the size which fits in the shelving at the State repository. Boxes half as high but the same width and length will be charged a one time fee of \$200.00. One-quarter box or less will be charged \$100.00. For oversize objects, the fee is calculated based on the volume of the standard box. For each artifact volume or portion thereof, divide by 1.3 cu ft. and multiply by \$350.00 to get the fee. Standard boxes made of coroplast will be available for purchase at the MAC Lab repository at cost plus shipping. Projects initiated before July 1, 2005 may be grandfathered under the old fee ***for a period of no more than two years.*** The

Collections Manager must be notified in advance and documentation provided *if a request is made for grandfather status. All grandfathering provisions end on June 30, 2007.*

Payment of Collections Fees. Consult with the Collections Manager to determine the amount of fee to be paid and to whom to make checks payable. The payment check must accompany the delivery of the collection.

The Client or Sponsor of each archaeological investigation that generates a collection is responsible for paying the fee. Collections will not be accepted until the fee is paid.

New Collections Exemption. New collections donated to the Maryland Historical Trust are exempt from the collections fee if they are:

- a. Donated by avocational archaeologists or interested persons from their personal collections.
- b. Donated by professional archaeologists, or private landowners, who generated the collections as a result of emergency or research-related investigations which were not related to county, state, or federally-mandated compliance projects; or
- c. Generated by archaeological investigations on properties owned by, or under easement to, the Trust, or by projects receiving Trust grants or loans for archaeological investigations.

Memoranda of Agreement for Curation and Preservation of Collections. Institutions and county, state, and federal government agencies with substantial collections currently curated by the State are encouraged to enter into formal agreements for the long-term care of collections. To develop agreements for Federal collections, please contact the Federal Curator. The terms of the agreement with an institution or agency will provide funds to curate and upgrade the existing collections to modern standards.

4. **Inspection.** Acceptance of any collection is subject to inspection and approval by the Collections Manager at the Maryland Archaeological Conservation Laboratory.

Through inspection, the Trust strives to ensure adequacy of artifact and record processing, packaging, and documentation. Collections not meeting the minimum requirements stipulated herein will be returned to the donor at the donor's expense. For this reason, close coordination with the MAC Lab's Collections Manager is required. For large collections (more than 10 boxes), pre-shipment inspection by the Collections Manager at the donor's facility is recommended. For questions, contact the Director of the Maryland Archaeological Conservation Laboratory.

5. Shipping/Transmittal

Shipment/transmittal of collections is the responsibility of the donor. Collections should be packaged using inert material and sufficiently secured to avoid any in-shipment damage. Delivery must be in person, unless special arrangements are made. Collections will not be accepted unless the MAC Lab's Collections Manager receives notification at least 48 hours prior to delivery and issues written or verbal approval for the transmittal.

J. Sources of Technical Information

The Maryland Archaeological Conservation Laboratory provides information on collections care upon request. Fact sheets are issued which provide guidance and recommendations on acceptable collection processing and packaging materials (inks, markers, boxes, sealants, etc.). An updated List of Suppliers for collections care and conservation materials is produced annually. To obtain copies of the current fact sheets and the List of Suppliers, contact the Collections Manager or Lead Conservator at the Maryland Archaeological Conservation Laboratory. For additional information and assistance regarding processing and curation, contact the Collections Manager. For assistance with conservation questions, please contact the Lead Conservator or other MAC Lab conservation program staff.

Appendices

Appendix 1

COLLECTIONS FEE POLICY

Department of Housing and Community Development
Division of Historical and Cultural Programs
Collections Committee
Archaeological Collections Fee Policy

I. Statement of Purpose and Background

The archaeological collections from the State of Maryland represent an invaluable resource for the advancement of knowledge, preservation of evidence from past cultures, and use for research, education, publication, and exhibition purposes. The State of Maryland has made a substantial financial commitment to the long-term maintenance of these collections according to modern museum standards. The State of Maryland has funded the construction of the Maryland Archaeological Conservation (MAC) Lab at the Jefferson Patterson Park and Museum (JPPM), administered by the Maryland Historical Trust (MHT). Initial funding for the staffing and operating of the conservation and collection management programs of the new MAC Lab are anticipated to be at a minimal level. MHT and its museum and archaeology programs are committed to the continued care of existing collections while pursuing the preservation of new archaeological collections and records. While fees have not been charged in the past for newly acquired collections, this policy has been drafted to begin charging fees, under specific circumstances, to help insure adequate funding to maintain the collections to modern museum and professional archaeological standards (such as 36 CFR 79).

The intent of this policy is to insure the long-term care, accessibility, and availability of the state's archaeology collections for the benefit of current and future generations of scholars, educators, museums professionals, and other interested persons. This collections fee policy has been developed during a period of government restructuring. The state government is looking for partnerships in preserving the past. The State of Maryland cannot afford to provide centuries of collection care for all who wish to donate collections to the State. ***Fees apply in particular to collections generated as a result of government-mandated laws, regulations and procedures which require archaeological investigations to evaluate, preserve or mitigate archaeological resources as a result of government funded, permitted or approved projects.*** Those firms and governments involved in compliance or legislatively required archaeological research are the principal institutions whose fees will supplement the state's long-term care efforts. Fees generated by this policy will supplement costs for management of the collections at the MAC Lab. The goal of this policy is to encourage the donation of archaeological collections from throughout the State of Maryland to the state's central collections facility for the benefit of current and future generations of Marylanders.

This policy establishes a fee structure pertaining to certain aspects of the care and maintenance of newly acquired artifacts in the state's collections. Revenue generated by the implementation of this fee policy will be deposited in the MHT non-lapsing special fund account as supplemental income designated for use in analysis, conservation, and management activities directly related to the collections. This policy establishes equitable fees and formal agreements for services relating to archaeological collections placed in the care of MHT at the MAC Lab.

The Division of Historical and Cultural Programs' Collections Committee, working with the Council for Maryland Archaeology, has reviewed various options for estimating fee charges and recommends the 'per box method' which is standard practice where fees are charged. The Committee reviewed and decided against developing fees based on different costs associated with different types of collections. It was determined that varied fees were not desirable for historic vs. prehistoric, wet site vs. dry site, and other factors that reflect extremely long-term cost differences in conservation of artifacts in the collections donated. Nor did the persons developing and responding to earlier drafts of this policy feel that different fees for different phases of archaeological fieldwork were an acceptable approach for fee estimation or determination. These more complicated approaches were rejected in favor of the standard 'per box' fee approach.

This fee policy is an addendum to the Division's General Collections Policy. Necessary revisions to the Standards and Guidelines for Archeological Investigations in Maryland (Archaeology Guidelines) for matters pertaining to the deposit of collections at the MAC Lab will be developed in cooperation with affected parties. Formal adoption of the policy is planned for the fall of 1997. Project sponsors and contract archaeologists will be responsible for estimating and including the per box fee for estimates for all new projects which begin after the formal adoption of the final policy.

II. Review and Approval Process

MHT, located within the Maryland Department of Housing and Community Development (DHCD), is mandated by state law to be the official state repository for Maryland State Archaeological Collections. JPPM will manage these state collections effective upon completion and occupancy of the MAC Lab in late 1997. This collections fee policy has been developed by the Division's Collections Committee and reviewed by the MHT Advisory Committee on Archaeology, MHT Board of Directors, JPPM Advisory Committee, Council for Maryland Archaeology (CFMA) Curation Committee and full CFMA membership, local, state, and federal agencies, the consulting community and other concerned parties. The policy has been distributed for comment through the Maryland State Clearinghouse. Following review and revision which incorporates appropriate comments from these groups, the final policy has been approved by the MHT Board of Trustees and the Secretary of Housing and Community Development.

III. Collections Fee

- A. (1) The collections care fee is a one-time fee per standard size box. The current fee is shown in Attachment A.
- (2) The size of a standard box, allowing for lid size, is 16" long by 13" wide by 10-3/4" high (1.3 cu. ft. volume), the size that the shelves at the MAC Lab have been designed to

accommodate. Boxes half as high but the same width and length will be charged at half the fee for a standard box. For oversize objects, the fee is the standard box fee for each 1.3 cu. ft. of volume or portion thereof. Standard boxes will be available for purchase at the MAC Lab at cost plus shipping cost to interested persons.

- (3) The collections must be accompanied by original records and a copy of the records on archival quality paper.
- (4) The client or sponsor of each archaeological investigation which generates a collection is responsible for paying the fee. Collections will not be accepted until the fee is paid.
- (5) The collections fee is based on the assumption that when the collections are received by MHT at JPPM, they are in stable condition, as defined in the addendum to the Archaeology Guidelines.

B. Existing Collections Exemption: Institutions and county, state, and federal government agencies with substantial collections currently curated by MHT are encouraged to enter into formal agreements for the long-term care of the collections. Those agreements, upon the consent of both parties, may provide for funding by the institution or government agency to assist in the upgrade of existing collections to modern standards.

C. New Collections Exemption: New collections donated to MHT are exempt from this policy if they are:

- (1) Donated by avocational archaeologists or interested persons from their personal collections;
- (2) Donated by professional archaeologists or private landowners who generated the collections as a result of emergency or research related investigations which were not related to county, state, or federally mandated compliance projects; or
- (3) Generated by archaeological investigations on properties owned or under easement to MHT or projects receiving MHT grants or loans for archaeological investigations.

This exemption recognizes the contributions that avocational archaeologists, landowners, and professional archaeologists have made to preserving archaeological collections. The exemption acknowledges the value of these collections to the public, the fairness of not charging fees when these collections are donated for the long-term public good, and the fairness of not charging professional archaeologists and others for collections obtained prior to the implementation of this fee policy.

D. Revision of Collections Standards and Guidelines: An addendum to the Archaeology Guidelines will establish minimum standards for the preparation of collections and

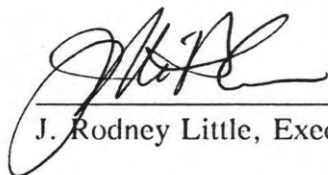
records, to insure compliance with acceptable museum practices and federal archaeological standards (36 CFR Part 79).

The collections' care addendum to the Archaeological Guidelines will be developed and submitted to concerned parties for review, prior to adoption. Following this review process, the addendum will be adopted by MHT and distributed to concerned parties for use in implementing this collections fee policy.

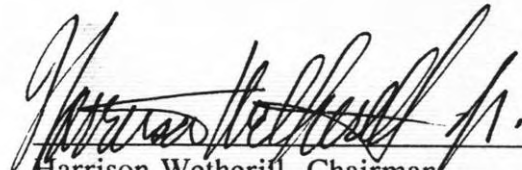
E. Method of Fee Determination: The collections fee is based on the projected cost per year per box to maintain a collection to professional standards. The fee is based on an analysis of the cost of accessioning, monitoring, controlling climate, conserving, and auditing a collection long-term at the MAC Lab. However, charging an annual fee per box based on actual curation cost would be unreasonably costly to project sponsors and would significantly discourage the donation of collections to MHT for the benefit of the public. Therefore, a one-time-only fee will cover the cost of collections care for the first twelve years, following which the State will assume future costs for curation of the collection.

F. Amendment of Collections Fee Policy: On the second anniversary of the adoption of this policy, the State in cooperation with the archaeological community, *and government and other interested parties* will review the policy to assess impact and effectiveness. If revisions to the policy are warranted, this policy will be reviewed and revised following the procedures in Section II. Therefore, the policy may be amended periodically. Proposed changes to fees will be based on operating experience at JPPM and similar repositories, and changes in curation standards and legal requirements. Prior to adoption of policy amendments, notice will be given to contract archaeologists and government agencies to allow sufficient time to incorporate changed fees or procedures into future project costs.

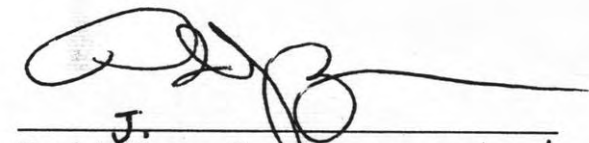
This Collections Fee Policy is hereby approved and adopted, effective as of July 1, 1999.



J. Rodney Little, Executive Director

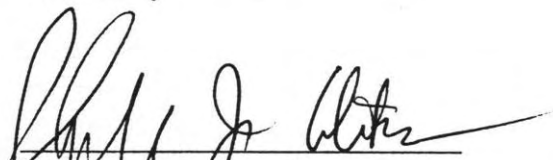


Harrison Wetherill, Chairman
Maryland Historical Trust Board of
Trustees



J.
Patricia Payne, Secretary, Maryland
of Housing and Community
Development

Approved for legal form and
sufficiency



Assistant Attorney General

ATTACHMENT A

COLLECTION CURATION FEES
REVISED 2005

\$350.00 per standard box

ATTACHMENT B:

REVISED 2005

Basis for Estimate of Per Box Cost for Collections Care

A standard per box one-time only fee has been estimated based on an analysis of current costs for receiving, upgrading, documenting, monitoring, managing, conserving, and maintaining the collections to meet state guidelines and professional standards as defined in *Technical Update No.1 of the Standards and Guidelines for Archeological Investigations in Maryland, Collections and Conservation Standards*, and the DHCP Collections Policy. Computation is based on curation of a standard box as defined in *Technical Update No. 1* (Revised 2005). (16" x 13" x 10 ¾") (1.3 cu. ft.).

The newly prepared estimate for curation costs at the Maryland Archaeological Conservation Laboratory is as follows:

ANNUAL OPERATING EXPENSE

Collections Management Staff salaries including fringe benefits	\$178,794
Collections Manager	100%
Administrator of Research and Collections	50%
Deputy Director	25%
Lead Conservator	50%
Students	20%
Interns	100%
Director	10%
Maintenance	
Staff	\$ 135,760
Equipment maintenance agreements (Shelving, water, sprinklers, conservation)	\$ 26,263
Utilities	\$ 109,893
Data Management	
Database software support	\$ 4,500
Supplies	\$ 10,700
(Boxes, bags, acid-free paper, folders, ink, and silica gel)	
Total	\$ 465,910

These costs do not take inflation into account. Therefore adjustments may be made for future collections deposited in the repository. The MAC Lab is designed to hold 10,584 boxes on the compactable shelving and the box equivalent of 5000 boxes in space for oversize items. Using a total of 15,584 box equivalents, and dividing it into the cost of maintaining collections in the MAC Lab (\$465,910), provides an annual per box cost of \$29.90. To cover the initial cost of curation for 12 years, the MAC Lab proposes to charge a fee of **\$350**, and after 12 years, the MAC will assume the full cost of curating the collection. The funds generated would be used to supplement costs for supplies and special needs incurred in curation of the collections.

Per Box Estimate Summary

One box is 1.3 cu. ft.

Number of boxes or equivalents = 15,584

Annual Cost per box = \$29.90 ($\$465,910 \div 15,584$)

Cost per box x 12 years = \$359 ($12 \times \29.90)

Appendix 2

DIRECTORY OF ASSISTANCE

Division of Historical and Cultural Programs

Office of Archeology

Maureen Kavanagh	Chief	kavanagh@dhcd.state.md.us	(410) 514-7660
Susan Langley	State Underwater Archeologist	langley@dhcd.state.md.us	(410) 514-7662
Charles Hall	State Terrestrial Archeologist	hall@dhcd.state.md.us	(410) 514-7665
Dennis Curry	Senior Archeologist, Arch. Research Unit	curry@dhcd.state.md.us	(410) 514-7664

Office of Preservation Services

Elizabeth Cole	Administrator of Archeological Services	cole@dhcd.state.md.us	(410) 514-7631
Dixie Henry	Preservation Officer	henry@dhcd.state.md.us	(410) 514-7638

Office of Research, Survey & Registration

Maureen Kavanagh	Archeological Survey Administrator	kavanagh@dhcd.state.md.us	(410) 514-7659
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Office of Museum Services

Wayne Clark	Director	clarkw@dhcd.state.md.us	(410) 514-7612 (410) 586-8511
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Maryland Archaeological Conservation Laboratory

Julia A. King	Director	king@dhcd.state.md.us	(410) 586-8551
Betty Seifert	Deputy Director	seifert@dhcd.state.md.us	(410) 586-8578
Howard Wellman	Lead Conservator	wellman@dhcd.state.md.us	(410) 586-8577
Becky Morehouse	Collections Manager	morehouse@dhcd.state.md.us	(410) 586-8583
Sara Rivers Cofield	Federal Curator	rivers@dhcd.state.md.us	(410) 586-8589

MRCE-Museum Resource Center-National Park Service

Robert Sonderman	Senior Archaeologist	Bob_Sonderman@nps.gov	(301) 341-0707
Marian Creveling	Collections Manager	Marian_Creveling@nps.gov	(301) 341-0709

HSMC-Historic St. Mary's City

Silas Hurry	Curator of Collections and Archaeological Laboratory Director	sdhurry@smcm.edu	(240) 895-0973
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Appendix 3

ARCHAEOLOGICAL CONSERVATORS (Updates to list are available on request)

(Includes information available from the American Institute for Conservation on conservation and conservators)

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Code of Ethics for Conservators

(Included to provide information for the Project Manager who may not be familiar with conservators and the standards and guidelines which form the ethical framework in which a conservator must perform their treatments.)

Directory of Conservators and Conservation Information

Information about conservation resources and conservators is available from the following:

American Institute for Conservation 1717 K Street, N.W., Suite 301
Washington, D.C. 20006.
(202) 452-9545, Fax (202) 452-9328.
E-mail: InfoAIC@aol.com

Write or call the AIC for information regarding membership, publications, annual meetings, and policies.

Foundation of the AIC 1717 K Street, N.W., Suite 301
Washington, D.C. 20006.
(202) 452-9545, Fax (202) 452-9328.
E-mail: InfoAIC@aol.com

Contact the FAIC for the Conservation Services Referral System. "The purpose of the Referral System is to educate public and private cultural institutions as well as the general public about conservation practices and to help them locate and select professional conservation services. The system provides users with an informational brochure and a computer-generated list of conservation professionals to meet their specific collection care needs."

Conservators currently available in the Maryland Area for consultation and treatment of artifacts:

Fellows:

Meg Loew Craft Daytime Phone: (410) 433-0038
Baltimore, MD FAX: (410) 433-0038

Donna K. Strahan Evening Phone: (301) 864-8387
Baltimore, MD FAX: (410) 752-4797

Professional Associates:

Ann Boulton Daytime Phone: (410) 578-0145
Baltimore MD FAX: (410) 578-0145

Nancy Davis Daytime Phone: (301) 498-9209
Laurel, MD FAX: (301) 498-9209

Professional Associates Continued:

Nikki J. Goodman
Lusby, MD

Daytime Phone: (888) 528-4117
(703) 276-1806

Jeffrey C. Kimball
Arlington, VA

Phone: (703) 527-9785

Christina C. Sweet
Washington DC

Evening Phone: (703) 204-0785
FAX: (202) 782-3573

Catherine Valentour
Washington DC

Daytime Phone: (202) 265-2162

Associates:

Lynn Arden
Alexandria, VA

Phone: (703) 299-9513

Michael Grinkrug
Potomac, MD

Phone: (301) 983-0902
FAX: (301) 294-0228

Sharon Koehler
Farmville, VA

Phone: (804) 223-1756

Yunhui Mao
Baltimore, MD

Daytime Phone: (410) 547-9000
FAX: (410) 752-4797

Curtiss Peterson
Smithfield, VA

Daytime Phone: (757) 357-0909

Lisa Ann Young
Annandale, VA

Daytime Phone: (703) 503-5346
FAX: (703) 503-5347

This list appears in order by AIC member type. Inclusion on this list is not an endorsement of members listed. It is a list supplied by the FAIC Conservation Services Referral System.

Code of Ethics for Conservators

CODE OF ETHICS AND GUIDELINES FOR PRACTICE

of the American Institute for Conservation of Historic and Artistic Works

HISTORY

The first formulation of standards of practice and professional relations by any group of art Conservators was produced by the IIC-American Group (now AIC) Committee on Professional Standards and Procedures. Formed at the second regular meeting of the IIC-AG, in Detroit, May 23, 1961, the committee worked under the direction of Murray Pease, conservator, Metropolitan Museum of Art; other members of the committee were Henri H. Courtais, Dudley T. Easby, Rutherford J. Gettens, and Sheldon Keck. The Report of the Murray Pease Committee: IIC American Group Standards of Practice and Professional Relations for Conservators was adopted by the IIC-AG at the fourth annual meeting in New York on June 8, 1963. It was published in *Studies in Conservation* in August 1964, 9(3):116-21. The primary purpose of this document was: "to provide accepted criteria against which a specific procedure or operation can be measured when a question as to its adequacy has been raised."

The first formulation of a code of ethics for art conservators was adopted by the members of IIC-American Group at the annual meeting in Ottawa, Ontario, Canada, on May 27, 1967. It was produced by the Committee on Professional Relations: Sheldon Keck, chair; Richard D. Buck; Dudley T. Easby; Rutherford J. Gettens; Caroline Keck; Peter Michaels, and Louis Pomerantz. The primary purpose of this document was: "to express those principles and practices which will guide the art conservator in the ethical practice of his profession." These two documents, The Murray Pease Report: Standards of Practice and Professional Relationships for Conservators and the Code of Ethics for Art Conservators were published in booklet form by the IIC-AG in May 1968 together with the Articles of Association of IIC and Bylaws of the American Group.

In 1977, the Ethics and Standards Committee (Elisabeth C. G. Packard, chair; Barbara H. Beardsley; Perry C. Huston; Kate C. Lefferts; Robert M. Organ; and Clements L. Robertson) was charged with updating the two documents to reflect changes in the profession. The 1968 format was retained, except that the more general Code of Ethics was placed first as Part One, followed by the Standards of Practice as Part Two. These revised versions of the code and standards were approved by the Fellows of AIC on May 31, 1979, at the annual meeting in Washington, D.C., to reflect the addition to the AIC Bylaws of procedures for the reporting, investigation, and review of alleged violations of the code and standards and of mechanisms for appealing such allegations.

Between 1984 and 1990 the Ethics and Standards Committee, responding to further growth and change in the profession, and following on several years of AIC discussion on the issue of certification, was charged by the AIC Board to work on more substantial revisions of the document. This was done by soliciting commentary from the specialty groups and also from the membership via issues sessions at the annual meetings in Chicago (1986) and Cincinnati (1989).

Following this, a document consisting of a new simplified Code, prepared by the committee, and revised Standards, prepared primarily by the board was presented to the membership for discussion at the 1990 annual meeting in Richmond. The consensus of the membership at the meeting was to continue the revision process. During these important years, the members of the committee were Elisabeth Batchelor, chair; Robert Futernick; Meg Loew Craft (until 1989); Elizabeth Lunning (from 1987); Carol C. Mancusi-Ungaro; and Philip Vance (until 1986). In 1989, the committee added corresponding members Barbara Appelbaum, Paul N. Banks, Steven Prins, and Elisabeth West FitzHugh.

In 1990, the AIC Board charged a newly appointed committee to assess the role and use of the code and standards and as well to analyze specific difficulties within the documents themselves. The committee first undertook an in-depth comparative analysis of the documents organizing them topically and relating them to other codes of ethics both in conservation and in other professions. Between September 1991 and May 1992, the committee produced five lengthy discussion papers on basic issues as supplements to the AIC News (prior to November 1991, the AIC Newsletter). From these papers, the committee compiled an extensive body of membership and specialty group commentary, supplementing that obtained previously. It then began the creation of a new revision, the first draft of which was published in the September 1993 AIC News following a discussion session at the 1993 annual meeting in Denver. A revised draft was published in the May 1994 AIC News and discussed at the 1994 annual meeting in Nashville. A final version of the revised document was prepared and was approved by AIC Fellows and Professional Associates through a mail vote in August 1994.

Besides a new simplified Code of Ethics and the creation of Guidelines for Practice to replace the Standards of Practice, the new document will be supplemented by commentaries, a detailed description of which was published in the November 1993 AIC News. The goals and purposes of the committee and the problematic issues it sought to address in creating the revision are described in the committee's columns in the September 1991 AIC Newsletter and September 1993 AIC News.

Ethics and Standards Committee members during these years and involved in the creation of the revised code and guidelines were: Debbie Hess Norris (chair, resigned 1993); Donna K. Strahan (co-chair 1993-94, chair 1994); Carol Aiken (co-chair from 1993, resigned 1994); Nancy Ash; Dan Kushel; and Robert Espinosa (from 1993).

Elisabeth C. G. Packard, Chair Ethics and Standards Committee 1977-79

Amended May 24, 1985

Revised August 1994, Dan Kushel, Member, Ethics and Standards Committee

CODE OF ETHICS

of the American Institute for Conservation of Historic and Artistic Works

PREAMBLE

The primary goal of conservation professionals, individuals with extensive training and special expertise, is the preservation of cultural property. Cultural property consists of individual objects, structures, or aggregate collections. It is material which has significance that may be artistic, historical, scientific, religious, or social, and it is an invaluable and irreplaceable legacy that must be preserved for future generations.

In striving to achieve this goal, conservation professionals assume certain obligations to the cultural property, to its owners and custodians, to the conservation profession, and to society as a whole. This document, the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC), sets forth the principles that guide conservation professionals and others who are involved in the care of cultural property.

- I. The conservation professional shall strive to attain the highest possible standards in all aspects of conservation, including, but not limited to, preventive conservation, examination, documentation, treatment, research, and education.
- II. All actions of the conservation professional must be governed by an informed respect for the cultural property, its unique character and significance, and the people or person who created it.
- III. While recognizing the right of society to make appropriate and respectful use of cultural property, the conservation professional shall serve as an advocate for the preservation of cultural property.
- IV. The conservation professional shall practice within the limits of personal competence and education as well as within the limits of the available facilities.
- V. While circumstances may limit the resources allocated to a particular situation, the quality of work that the conservation professional performs shall not be compromised.
- VI. The conservation professional shall document examination, scientific investigation, and treatment by creating permanent records and reports.
- VIII. The conservation professional shall recognize a responsibility for preventive conservation by endeavoring to limit damage or deterioration to cultural property, providing guidelines for continuing use and care, recommending appropriate environmental conditions for storage and exhibition, and encouraging proper procedures for handling, packing, and transport.
- IX. The conservation professional shall act with honesty and respect in all professional relationships, seek to ensure the rights and opportunities of all individuals in the profession, and recognize the specialized knowledge of others.
- X. The conservation professional shall contribute to the evolution and growth of the profession, a field of study that encompasses the liberal arts and the natural sciences. This contribution may be made by such means as continuing development of personal skills and knowledge, sharing of information and experience with colleagues, adding to the profession's written body of knowledge, and providing and promoting educational opportunities in the field.
- XI. The conservation professional shall promote an awareness and understanding of conservation through open communication with allied professionals and the public.
- XII. The conservation professional shall practice in a manner that minimizes personal risks and hazards to co-workers, the public, and the environment.
- XIII. Each conservation professional has an obligation to promote understanding of and adherence to this Code of Ethics.

GUIDELINES FOR PRACTICE

of the American Institute for Conservation of Historic and Artistic Works

The conservation professional should use the following guidelines and supplemental commentaries together with the AIC Code of Ethics in the pursuit of ethical practice. The commentaries are separate documents, created by the AIC membership, that are intended to amplify this document and to accommodate growth and change in the field.

PROFESSIONAL CONDUCT

1. **Conduct:** Adherence to the Code of Ethics and Guidelines for Practice is a matter of personal responsibility. The conservation professional should always be guided by the intent of this document, recognizing that specific circumstances may legitimately affect professional decisions.
2. **Disclosure:** in professional relationships, the conservation professional should share complete and accurate information relating to the efficacy and value of materials and procedures. In seeking and disclosing such information, and that relating to analysis and research, the conservation professional should recognize the importance of published information that has undergone formal peer review.
3. **Laws and Regulations:** The conservation professional should be cognizant of laws and regulations that may have a bearing on professional activity. Among these laws and regulations are those concerning the rights of artists and their estates, occupational health and safety, sacred and religious material, excavated objects, endangered species, human remains, and stolen property.
4. **Practice:** Regardless of the nature of employment, the conservation professional should follow appropriate standards for safety, security, contracts, fees, and advertising.
 - 4a. **Health and Safety:** The conservation professional should be aware of issues concerning the safety of materials and procedures and should make this information available to others, as appropriate.
 - 4b. **Security:** The conservation professional should provide working and storage conditions designed to protect cultural property.
 - 4c. **Contracts:** The conservation professional may enter into contractual agreements with individuals, institutions, businesses, or government agencies provided that such agreements do not conflict with principles of the Code of Ethics and Guidelines for Practice.
 - 4d. **Fees:** Fees charged by the conservation professional should be commensurate with services rendered. The division of a fee is acceptable only when based on the division of service or responsibility.
 - 4e. **Advertising:** Advertising and other representations by the conservation professional should present an accurate description of credentials and services. Limitations concerning the use of the AIC name or membership status should be followed as stated in the AIC Bylaws, section II, 13.
5. **Communication:** Communication between the conservation professional and the owner, custodian, or authorized agent of the cultural property is essential to ensure an agreement that reflects shared decisions and realistic expectations.
6. **Consent:** The conservation professional should act only with the consent of the owner, custodian, or authorized agent. The owner, custodian, or agent should be informed of any circumstances that necessitate significant deviations from the agreement. When possible, notification should be made before such changes are made.
7. **Confidentiality:** Except as provided in the Code of Ethics and Guidelines for Practice, the conservation professional should consider relationships with an owner, custodian, or authorized agent as confidential. Information derived from examination, scientific investigation, or treatment of the cultural property should not be published or otherwise made public without written permission.
8. **Supervision:** The conservation professional is responsible for work delegated to other professionals, students, interns, volunteers, subordinates, or agents and assignees. Work should not be delegated or subcontracted unless the conservation professional can supervise the work directly, can ensure proper supervision, or has sufficient knowledge of the practitioner to be confident of the quality of the work. When appropriate, the owner, custodian, or agent should be informed if such delegation is to occur.
9. **Education:** Within the limits of knowledge, ability, time, and facilities, the conservation professional is encouraged to become involved in the education of conservation personnel. The objectives and obligations of the parties shall be agreed upon mutually.
10. **Consultation:** Since no individual can be expert in every aspect of conservation, it may be appropriate to consult with colleagues or, in some instances, to refer the owner, custodian, or authorized agent to a professional who is more experienced or better equipped to accomplish the required work if the owner requests a second opinion, this request must be respected.
11. **Recommendations and References:** The conservation professional should not provide recommendations without direct knowledge of a colleague's competence and experience. Any reference to the work of others must be based on facts and personal knowledge rather than on hearsay.
12. **Adverse Commentary:** A conservation professional may be required to testify in legal, regulatory, or administrative proceedings concerning allegations of unethical conduct. Testimony concerning such matters should be given at these proceedings or in connection with paragraph 13 of these Guidelines.

13. **Misconduct:** Allegations of unethical conduct should be reported in writing to the AIC president as described in the AIC Bylaws, section II, 12. As stated in the bylaws, all correspondence regarding alleged unethical conduct shall be held in the strictest confidence. Violations of the Code and Guidelines that constitute unethical conduct may result in disciplinary action.

14. **Conflict of Interest:** The conservation professional should avoid situations in which there is a potential for a conflict of interest that may affect the quality of work, lead to the dissemination of false information, or give the appearance of impropriety.

15. **Related Professional Activities:** The conservation professional should be especially mindful of the considerable potential for conflict of interest in activities such as authentication, appraisal, or art dealing.

EXAMINATION AND SCIENTIFIC INVESTIGATION

16. **Justification:** Careful examination of cultural property forms the basis for all future action by the conservation professional. Before undertaking any examination or tests that may cause change to cultural property, the conservation professional should establish the necessity for such procedures.

17. **Sampling and Testing:** Prior consent must be obtained from the owner, custodian, or agent before any material is removed from a cultural property. Only the minimum required should be removed, and a record of removal must be made. When appropriate, the material removed should be retained.

18. **Interpretation:** Declarations of age, origin, or authenticity should be made only when based on sound evidence.

19. **Scientific Investigation:** The conservation professional should follow accepted scientific standards and research protocols.

PREVENTIVE CONSERVATION

20. **Preventive Conservation:** The conservation professional should recognize the critical importance of preventive conservation as the most effective means of promoting the long-term preservation of cultural property. The conservation professional should provide guidelines for continuing use and care, recommend appropriate environmental conditions for storage and exhibition, and encourage proper procedures for handling, packing, and transport.

TREATMENT

21. **Suitability:** The conservation professional performs within a continuum of care and will rarely be the last entrusted with the conservation of a cultural property. The conservation professional should only recommend or undertake treatment that is judged suitable to the preservation of the aesthetic, conceptual, and physical characteristics of the cultural property. When nonintervention best serves to promote the preservation of the cultural property, it may be appropriate to recommend that no treatment be performed.

22. **Materials and Methods:** The conservation professional is responsible for choosing materials and methods appropriate to the objectives of each specific treatment and consistent with currently accepted practice. The advantages of the materials and methods chosen must be balanced against their potential adverse effects on future examination, scientific investigation, treatment, and function.

23. **Compensation for Loss:** Any intervention to compensate for loss should be documented in treatment records and reports and should be detectable by common examination methods. Such compensation should be reversible and should not falsely modify the known aesthetic, conceptual, and physical characteristics of the cultural property, especially by removing or obscuring original material.

DOCUMENTATION

24. **Documentation:** The conservation professional has an obligation to produce and maintain accurate, complete, and permanent records of examination, sampling, scientific investigation, and treatment. When appropriate, the records should be both written and pictorial. The kind and extent of documentation may vary according to the circumstances, the nature of the object, or whether an individual object or a collection is to be documented. The purposes of such documentation are:

- to establish the condition of cultural property;
- to aid in the care of cultural property by providing information helpful to future treatment and by adding to the

profession's body of knowledge;

- to aid the owner, custodian, or authorized agent and society as a whole in the appreciation and use of cultural property by increasing understanding of an object's aesthetic, conceptual, and physical characteristics; and
- to aid the conservation professional by providing a reference that can assist in the continued development of knowledge and by supplying records that can help avoid misunderstanding and unnecessary litigation.

25. Documentation of Examination: Before any intervention, the conservation professional should make a thorough examination of the cultural property and create appropriate records. These records and the reports derived from them must identify the cultural property and include the date of examination and the name of the examiner. They also should include, as appropriate, a description of structure, materials, condition, and pertinent history.

26. Treatment Plan: Following examination and before treatment, the conservation professional should prepare a plan describing the course of treatment. This plan should also include the justification for and the objectives of treatment, alternative approaches, if feasible, and the potential risks. When appropriate, this plan should be submitted as a proposal to the owner, custodian, or authorized agent.

27. Documentation of Treatment: During treatment, the conservation professional should maintain dated documentation that includes a record or description of techniques or procedures involved, materials used and their composition, the nature and extent of all alterations, and any additional information revealed or otherwise ascertained. A report prepared from these records should summarize this information and provide, as necessary, recommendations for subsequent care.

28. Preservation of Documentation: Documentation is an invaluable part of the history of cultural property and should be produced and maintained in as permanent a manner as practicable. Copies of reports of examination and treatment must be given to the owner, custodian, or authorized agent, who should be advised of the importance of maintaining these materials with the cultural property. Documentation is also an important part of the profession's body of knowledge. The conservation professional should strive to preserve these records and give other professionals appropriate access to them, when access does not contravene agreements regarding confidentiality.

EMERGENCY SITUATIONS

29. Emergency Situations: Emergency situations can pose serious risks of damage to or loss of cultural property that may warrant immediate intervention on the part of the conservation professional. In an emergency that threatens cultural property, the conservation professional should take all reasonable action to preserve the cultural property, recognizing that strict adherence to the Guidelines for Practice may not be possible.

AMENDMENTS

Amendments: Proposed amendments to the Code of Ethics and Guidelines for Practice must be initiated by petition to the AIC Board of Directors from at least five members who are Fellows or Professional Associates of AIC. The board will direct the appropriate committee to prepare the amendments for vote in accordance with procedures described in Section VII of the Bylaws. Acceptance of amendments or changes must be affirmed by at least two-thirds of all AIC Fellows and Professional Associates voting.

COMMENTARIES

Commentaries: Commentaries are prepared or amended by specialty groups, task forces, and appropriate committees of AIC. A review process shall be undergone before final approval by the AIC Board of Directors.

*Revised August 1994

Appendix 4

SUPPLIES FOR COLLECTIONS MANAGEMENT AND CONSERVATION*

This is a comprehensive list to serve as a resource and to provide a starting point when planning a project. A supplier's list is available on request.

* Compilation of collections curation material lists from several sources including: Society for the Preservation of Natural History Collections (SPNHC) Conservation Committee resources display and supplier lists (www.spnhc.org); CfMA – Council for Maryland Archeology - Collections Curation Committee List of Suppliers; Jefferson Patterson Park and Museum Conservation and Collections Supplier List; Maryland Archaeological Conservation Laboratory Supplies List.

SUPPLIES AND MATERIALS

Acid-free Mylar Box Lids	<p><u>Descr:</u> Box lids constructed from Mylar D. Replaces window lids.</p> <p><u>Uses:</u> Cover artifact trays for temporary displays and for visible storage of study collections.</p> <p><u>Source:</u> University Products</p>
Acid-free Boxes	<p><u>Descr:</u> pH-neutral, lignin-free, unbuffered, tan or corrugated blue board. Many sizes available</p> <p><u>Uses:</u> Artifact storage.</p> <p><u>Source:</u> University Products; Gaylord; Light Impressions; Hollinger.</p>
Acid-Free Tissue	<p><u>Descr:</u> pH-neutral, lignin-free, unbuffered, light weight tissue. Available in sheets or rolls.</p> <p><u>Uses:</u> For storage packing and interleaving sheets for photographs and documents. Makes good padding for textiles and fragile artifacts.</p> <p><u>Source:</u> Hollinger Corp.; Light Impressions; Talas, University Products.</p>
Acryloid B-44	<p><u>Descr:</u> A Rohm & Haas resin based on a methyl methacrylate copolymer. It is harder than any of the other Acryloid resins yet has good flexibility and adhesion to various substrates, specifically primed metals. It is possibly a component of the proprietary coating Incralac. It is usually sold as solid granules. It is soluble in acetone.</p> <p><u>Uses:</u> Coatings on treated metal.</p> <p><u>Source:</u> Talas; Conservation Support Systems; Cons. Emporium</p>
Acryloid B-48 N	<p><u>Descr:</u> A Rohm & Haas methyl methacrylate copolymer with great adhesion to raw and primed metals. Favored for its toughness and flexibility, often blended with other acrylic resins to create coatings with specific qualities. Possibly part of the proprietary copper-alloy coating Incralac. Sold by conservation suppliers either in solid granules, or in solution. Soluble in toluene and xylene.</p> <p><u>Uses:</u> Coating treated metal.</p> <p><u>Source:</u> Talas; Conservation Support Systems; Cons. Emporium</p>
Acryloid B-67	<p><u>Descr:</u> A Rohm & Haas Isobutyl Methacrylate polymer. This alkyd compatible acrylic ester resin is particularly designed to have good compatibility with paints and varnishes. Acryloid B-67 is a component of many coatings used in conservation, as for example picture varnishes. It is resistant to discoloration and aging and exposure. It is possibly a</p>

component of the proprietary copper alloy coating Inralac. Usually sold by conservation suppliers as solid granules. It is soluble in acetone, methyl ethyl ketone, isopropanol, VM & P Naphtha and Stoddard Solvent (mineral spirits).

Uses: Coating treated metal.

Source: Talas; Conservation Support Systems; Cons. Emporium

Acryloid B-72 Adhesive

Descr: B-72 is a copolymer of ethyl methacrylate and methyl acrylate supplied in 100% resin pellets which are soluble in acetone, toluene, and xylene.

Uses: An excellent general purpose resin/adhesive, it can be applied in either clear or pigmented coatings by a variety of application methods and can be air dried or baked. B-72 has a very low reactivity with sensitive pigments, and is durable and non-yellowing. Use in very dilute (5%) concentrations to consolidate flaking glazes or decayed surfaces; use in heavier concentration (20%) to form adhesive. B-72 has also been used as an underlining for numbering, a varnish for paintings, and gap filler.

Source: University Products; Light Impressions; Conservation Resources; Conservator's Emporium

Ageless and Ageless Eye

Descr: Iron-based oxygen scavenger. "Ageless Eye" indicator changes color when oxygen concentration rises over .01%. System does not work well in desiccated storage. RP-System better.

Uses: Ageless is used to remove oxygen from hermetically sealed packages, providing oxygen-free storage conditions. Placed in container with "Ageless Eye" indicates the presence/absence of oxygen by color changes. For long-term, use in air-tight containers to store oxygen sensitive objects.

Source: Mitsubishi Gas Co., Inc.

Aluminum Laminate Barrier

Descr: An aluminized polyethylene and nylon flexible film with low water and vapor transmission. Heat sealable. Marvelseal 460 and 470.

Uses: Seal acidic surfaces against acid migration. Apply to wooden surfaces inside exhibit cases to create a barrier to moisture and acidic vapors. Create sealed pouches for oxygen free storage using in combination with ageless or other oxygen scavengers.

Source: Keepsafe Systems; University Products.

Arkon P-90

Descr: This resin is a colorless, transparent fully saturated alicyclic hydrocarbon and has excellent heat and weather resistance. It is usually sold as solid granules. It is soluble in toluene, xylene, n-hexane, naphtha, mineral spirits, and Stoddard Solvent. It is insoluble in common alcohols, acetone and

methyl ethyl ketone. Useful when you want to apply a coating over a previous coating that is soluble in polar solvents, without dissolving the undercoat.

Uses: Varnish for paintings, protective coat for artifact labels.

Source: Talas; Conservation Support Systems; Cons. Emporium

Art-Sorb

Descr: Silica material with greater moisture buffering capacity than regular silica gel. Available in bead form sold by the pound or prepackaged in cassettes, and in 20x20" sheets which are made of a mixture of polypropylene and polyethylene containing 400 g. of Art-Sorb particles per sq. meter. Should be used in consultation with a qualified conservator as misuse can result in damage to specimens.

Uses: Maintain desired humidity in air-tight containers in collection storage area, exhibits or, while traveling.

Source: Fuji-Davison Chemical Ltd.

Barrier Bags

Descr: Ready-made or made-to-order bags from a variety of transparent, multi-laminated barrier films.

Uses: Provide air-tight containment for use with Ageless, silica gel, or other micro-environment controls. Long-term storage (i.e., permanent storage of oxygen sensitive objects with Ageless oxygen scavenger) will require a different barrier film than short-term use (i.e., sterilization of objects with Ageless through oxygen deprivation).

Source: Keepsafe Systems, Inc.

Blotting Paper

Descr: 100% cotton, no sizing, unbuffered blotting paper. Available in sheets or rolls and in different weights.

Uses: Used for to absorb moisture in flattening of paper documents and to cushion artifacts.

Source: Talas; University Products.

Coroplast Boxes

Descr: Made of lightweight, corrugated polypropylene/polyethylene copolymer sheets.

Uses: Used for storing artifacts.

Source: University Products; Hollinger; or contact Coroplast for distributors.

Corrugated Blue Board

Descr: pH-neutral and lignin-free. Single or double wall construction. Available in ready-made boxes or in sheets of approximately 30x40 in. and 40x60 in. Can get buffered or unbuffered.

Uses: Box making. Side flaps can be adhered with hot melt

		adhesive, tied with cotton twill tape or fastened with polyethylene rivets.
	<u>Source:</u>	University Products; Hollinger.
Corrugated Plastic Boards	<u>Descr:</u>	Corrugated polypropylene/polyethylene copolymer sheet available in several thicknesses (2-6mm). Recommend virgin, translucent, 3mm.
	<u>Uses:</u>	Box and tray making. Side flaps can be fastened with polyethylene rivets, tied with cotton twill tape, or adhered using hot melt adhesive. Use as a flat support with a polyethylene foam for cushioning.
	<u>Source:</u>	Hollinger; Alexandria Packaging; Cadillac Plastics.
Cotton Fabric	<u>Descr:</u>	White or unbleached cotton, or cotton polyester blends. Wash before use to remove finishes and sizing.
	<u>Uses:</u>	Dust sheets or cloth bags for textiles, and use to create mounts by stuffing sewn shapes with polyester batting for exhibit or storage.
	<u>Source:</u>	Fabric stores; Talas; Testfabrics.
Cotton gauze/Cheesecloth	<u>Descr:</u>	Soft loosely woven fabric. Unfortunately, will grow mold and degrade in wet storage. Do not use where will catch and pull off surface detail.
	<u>Uses:</u>	Very soft for wrapping and padding in the field.
	<u>Source:</u>	Fabric stores, grocery stores.
Double Coated Tape	<u>Descr:</u>	Transparent double-sided tape with acrylic based adhesive on a polyester carrier. Inert, non-yellowing, reversible with solvents, pressure-sensitive. Available in 36 yard roll, in 1/4, 1/2 and 1 in. widths.
	<u>Uses:</u>	Adheres papers, boards, sheet plastics, expanded foams.
	<u>Source:</u>	Light Impressions; University Products Inc.; Talas.
Ethafoam	<u>Descr:</u>	Polyethylene foam. Specify virgin PE foam, nitrogen blown, not solvent blown. It is available in a variety of densities and thicknesses from 1/32 in. to 4 in.
	<u>Uses:</u>	Thin sheeting used for lining shelves, drawers, trays and boxes for artifact storage. Thick foam used to make individual artifact supports for storage. Can be easily carved with a knife. Pieces can be glued together with hot melt adhesive or welded with hot air gun. Rough surfaces should be covered with acid-free tissue, Tyvek, or muslin to avoid abrasion of fragile artifacts. Also used as cushioning in packing for boxes.

	<u>Source:</u>	Dow Chemical Manuf., Distr. by Alexandria Pkg, Jarrett; Univ. Products; Light Impressions
Fasteners	<u>Descr:</u>	Loops and fasteners
	<u>Uses:</u>	Use to attach labels to objects or supports.
	<u>Source:</u>	Hardware Stores; Chiswick; Consolidated Plastics.
Glass Jars	<u>Descr:</u>	Glass jars with chemical resistant lids. Available in many sizes from 2 oz. to 5 gallon.
	<u>Uses:</u>	Storage of solutions and small artifacts or flotation samples.
	<u>Source:</u>	Consolidated Plastics; Fisher; Cole-Parmer.
Gloves, Latex	<u>Descr:</u>	Latex gloves in sizes small, medium and large.
	<u>Uses:</u>	Handling artifacts and chemical solutions.
	<u>Source:</u>	Fisher; Lab Safety
Gloves, Cotton	<u>Descr:</u>	White, 100% cotton gloves. Available in small, medium, large, and extra large.
	<u>Uses:</u>	To handle artifacts.
	<u>Source:</u>	Manhow; University Products.
Gummed Linen Tape	<u>Descr:</u>	Neutral pH adhesive is reversible with water. Good tack. Available in different widths from 1/8" to 3".
	<u>Uses:</u>	Box and tray construction.
	<u>Source:</u>	Light Impressions; University Products
Heat Set Tissue	<u>Descr:</u>	Translucent tissue with acrylic heat set adhesive. Apply with a tacking iron.
	<u>Uses:</u>	Hinging papers or boards; mounting herbarium specimens onto acid-free paper.
	<u>Source:</u>	Graphics supply stores; University Products.
Hot Melt Adhesive	<u>Descr:</u>	Solvent free adhesive. The ethylene/vinyl acetate copolymer is most suitable for use in constructing supports for artifacts, making boxes and trays. A heat gun is used to apply the adhesive.
	<u>Uses:</u>	Hot melt adhesives are suitable for making support, boxes and trays.
	<u>Source:</u>	3M Company; Hardware stores; University Products.

Incralac - Solvent Based

Descr: Developed by INCRA (International Cooper Research Org.) as a corrosion resistant, fast curing copper and copper-alloy coating. It is sold as a solution of 15% solids presumably mostly Rohm & Haas acrylic resins with the addition of benzotriazole as a corrosion inhibitor and UV light absorber), and can be thinned or removed with xylene or toluene.

Uses: Coating cleaned copper alloys.

Source: Talas; Conservation Support Systems; Cons. Emporium.

Incralac - Water Based

Descr: Developed by INCRA (International Cooper Research Org.) as a corrosion resistant, fast curing copper and copper-alloy coating. Available in a water-based system that produces a harder finish than the solvent based, and is reversible with n.methyl.pyrrolidine (aka vinyl pyrrolidine) lacquer stripper. This product is not suitable for surfaces with patina. Does not release solvent vapors while drying.

Uses: Coating unpatinated cleaned copper alloy.

Source: Talas; Conservation Support Systems; Cons. Emporium

Magnetic Label Holders

Descr: Magnetic back, clear face.

Uses: Label cabinets and drawers.

Source: Magnet Sales & Mfg. Co.

Monel Staples

Descr: Rustproof and chemically resistant staples made primarily of nickel, cobalt and copper. Monel is trademark of Inco Corp.

Uses: To attach labels to mounts and staple containers for wet artifacts.

Source: Talas; Hardware stores

Mylar D

Descr: Pure polyester, transparent film. Manufactured by DuPont.

Uses: Enclose documents and photographs, make windows in containers, and cover exhibits.

Source: Light Impressions; Gaylord; Hollinger; Conservator's Emporium

Polyester Batting

Descr: 100% polyester batting with no coatings or stabilizers.

Uses: Provides cushioning and stuffing for mounts.

Source: Fabric stores.

Negative Storage Sleeves

Descr: Sleeves are polypropylene.

Uses: Storage of photo negatives.

Source: Light Impressions; University Products; Gaylord

Nylon-Cotton Gauze	<p><u>Descr:</u> Soft, stretchy bandages, in a variety of widths, stable in a wide range of chemicals.</p> <p><u>Uses:</u> To hold artifact assemblages together.</p> <p><u>Source:</u> Medical Supply Houses; Fisher</p>
Nylon-Fiberglass Screening	<p><u>Descr:</u> Inert, black or gray window screen.</p> <p><u>Uses:</u> Good for packing material for storage in solution where diffusion is important.</p> <p><u>Source:</u> Hardware stores</p>
Open Cell Foam	<p><u>Descr:</u> Generic forms of open-cell foam, usually polyurethane. Sold in sheets and rolls, often for carpet underlay, or padded linings for clothing.</p> <p><u>Uses:</u> Open celled foam can be used to wrap or lay over objects in wet storage for transport padding, and to maintain high RH environment. The open foam cells will hold water, and conform to the surfaces of large objects that you need to keep wet. They will not rot like cotton towels, but they are sensitive to ultraviolet light, so you must keep them out of the sun.</p> <p><u>Source:</u> Hardware stores, carpet stores</p>
Orthoplast	<p><u>Descr:</u> Quick set up casting gauze.</p> <p><u>Uses:</u> Hold assemblages together when lifting.</p> <p><u>Source:</u> Pruett Medical Inc.; Johnson & Johnson - Orthopedics, Inc.</p>
Plaster of Paris	<p><u>Descr:</u> Plaster of Paris is a calcium sulfate hemi-hydrate derived from gypsum.</p> <p><u>Uses:</u> Supports for molds.</p> <p><u>Source:</u> Hardware stores; Construction supply outlets like Lowe's and Home Depot.</p>
Polycarbonate Boxes	<p><u>Descr:</u> Stable, transparent, available in a variety of sizes.</p> <p><u>Uses:</u> For packaging for dry storage.</p> <p><u>Source:</u> Consolidated Plastics</p>
Polyethylene Containers:	<p><u>Descr:</u> Polyethylene containers with tight fitting lids in a variety of sizes.</p> <p><u>Uses:</u> Storing items in airtight containers to be put in freezer for storage or to create microenvironments with silica gel.</p> <p><u>Source:</u> Consolidated Plastics, grocery, and hardware stores.</p>

Polyethylene Foam Rod	<p><u>Descr:</u> Extruded closed-cell polyethylene foam.</p> <p><u>Uses:</u> To create supports for artifacts.</p> <p><u>Source:</u> University Products.</p>
Polyethylene Foam	<p><u>Descr:</u> Ethafoam by Dow Chemical. White, stable foam. Comes in different weights, strengths and thicknesses.</p> <p><u>Uses:</u> Good for cushioning, for creating mounts and supports.</p> <p><u>Source:</u> Alexandria Packaging; Jarrett</p>
Polyethylene Sheeting	<p><u>Descr:</u> Chemically stable and water resistant, transparent. Comes in a variety of thicknesses.</p> <p><u>Uses:</u> Line tanks, seal artifacts, etc.</p> <p><u>Source:</u> Hardware and Building supply stores.</p>
Polyethylene Tubs	<p><u>Descr:</u> Watertight, chemically resistant containers.</p> <p><u>Uses:</u> Storing materials and artifacts</p> <p><u>Source:</u> Global; C & H; Consolidated Plastics.</p>
Polyethylene Vials	<p><u>Descr:</u> Low density Polyethylene vials with friction-fit, snap closures.</p> <p><u>Uses:</u> Short or long-term storage of small artifacts.</p> <p><u>Source:</u> Consolidated Plastics Co., Inc.; Cole-Palmer</p>
Polypropylene Screening	<p><u>Descr:</u> More chemical resistance than fiberglass screening, especially in hot alkalies. Stiffer than fiberglass screening.</p> <p><u>Uses:</u> Support artifacts in treatment.</p>
Polysulphide Rubber	<p><u>Descr:</u> Come in various viscosities (FMC-200). Not stable over long-term.</p> <p><u>Uses:</u> Can be used underwater; good for molding hollow concretions.</p> <p><u>Source:</u> Smooth-on-Products</p>
Polyurethane Foam	<p><u>Descr:</u> Available in spray cans as insulation material.</p> <p><u>Uses:</u> Best for packing very large fragile pieces for shipping. Not for long-term storage.</p> <p><u>Source:</u> Hardware Stores</p>
RP-System Oxygen Scavenger	<p><u>Descr:</u> Proprietary blend of materials and resins that remove oxygen from a sealed container. Sold in packets of fixed weight calibrated to remove the oxygen from a container of appropriate size.</p>

	<p><u>Uses:</u> RP-System comes in two formats: one contains a desiccant similar to silica gel, and one will not desiccate the environment. The packaging to make the sealed environment must be impervious to the passage of oxygen and moisture (normal polyethylene bags are NOT enough). See the distributor for appropriate bagging material or pre-made bags.</p> <p><u>Source:</u> Manufacturer: Mitsubishi Gas Co. Distributor: Keepsafe Systems</p>
Saf-T-Stor Slide Pages	<p><u>Descr:</u> Transparent, nonflexible polypropylene slide storage pages. Rigid construction makes handling and storage easier. Design allows air circulation. Pages hold 20 cardboard, metal or glass mounted slides. Page size is 9 1/2x 11 in.</p> <p><u>Uses:</u> Slide Storage</p> <p><u>Source:</u> Light Impressions; Talas; University Products.</p>
Silica Gel Desiccant	<p><u>Descr:</u> Pure, chemically inert, amorphous silica. Capable of absorbing and desorbing large quantities of moisture to control relative environments. Available in white or with color humidity in closed indicator (which changes from bright blue to faded pink when saturated). Comes in loose crystals sold by the pound, or in prepackaged metal canisters.</p> <p><u>Uses:</u> Maintain desired humidity in air-tight containers in collection storage areas and in exhibit cases.</p> <p><u>Source:</u> University Products Inc.; W. R. Grace Chemical</p>
Slide Storage Pages	<p><u>Descr:</u> Transparent, flexible polypropylene or polyethylene. Available in top loading or side loading formats, 20 slides per page, 50 to 100 pages per package. Similar storage pages are available for photographs.</p> <p><u>Uses:</u> Slide storage.</p> <p><u>Source:</u> Light Impressions; Talas; University Products.</p>
Tank liners	<p><u>Descr:</u> Order custom made from tank liner Manufacturers. Polyethylene and vinyl.</p> <p><u>Uses:</u> For lining large storage tanks.</p> <p><u>Source:</u> Flexiliner.</p>
Teflon Tape	<p><u>Descr:</u> Comes in rolls, .015" thick, fits into Dymo labeler.</p> <p><u>Uses:</u> Gives embossed labels that are impervious to most chemicals.</p> <p><u>Source:</u> Cadillac Plastics</p>

Toweling	<p><u>Descr:</u> Non-dyed terry toweling.</p> <p><u>Uses:</u> For covering large artifacts to keep surfaces wet.</p> <p><u>Source:</u> Available from fabric stores in rolls</p>
Thermo/Hygrometer	<p><u>Descr:</u> Temperature and relative humidity gauges.</p> <p><u>Uses:</u> Monitor relative humidity and temperature in collection storage, collections areas, and exhibit cases.</p> <p><u>Source:</u> Hobo, Dickson.</p>
Twill Tape	<p><u>Descr:</u> Woven cotton tape. Soft, good tensile strength. Available in rolls 1/4 to 1 in. wide.</p> <p><u>Uses:</u> As container and folder ties.</p> <p><u>Source:</u> Benchmark; Talas; University Products.</p>
Tyvek	<p><u>Descr:</u> Non-woven spun bonded polyethylene sheeting. Use tyvek with no coatings.</p> <p><u>Uses:</u> Artifact labels, dust covers in collection storage.</p> <p><u>Source:</u> Reed, Cadillac Plastics.</p>
Tyvek Tape	<p><u>Descr:</u> Non-woven, spun bonded polyethylene with acrylic pressure-sensitive adhesive.</p> <p><u>Uses:</u> Box and tray construction; labels on boxes.</p> <p><u>Source:</u> Light Impressions; University Products</p>
Volara	<p><u>Descr:</u> Polyethylene foam, closed cell.</p> <p><u>Uses:</u> Use to cushion artifact trays and shelves and to create mounts for small artifacts.</p> <p><u>Source:</u> University Products, Light Impressions</p>
Wax	<p><u>Descr:</u> Microcrystalline wax. Composed of highly branched and irregular molecules with a molecular weight of 600. The softening temperature is between 55-85 degree C. It is often blended with Paraffin wax which is harder and has larger molecules.</p> <p><u>Uses:</u> Microcrystalline wax is mixed with solvents in the conservation laboratory for application over coatings on metals to protect the coatings. It is generally used over a coating as it is hard to remove from an object.</p> <p><u>Source:</u> Read Plastics</p>

Appendix 5

Glossary

Acid-free means, in chemistry, materials that have a pH of 7.0 or higher. Acids are chemicals which have a pH lower than 7.0.

Buffer is a material such as an alkaline substance added to paper to absorb acids. Example: Take a paper that is pH neutral to begin with and then add a reserve of an alkaline material such as calcium carbonate to neutralize additional acids as they migrate to the paper.

CD is a compact disk for digital storage of data. CDs are more stable than floppy disks.

Desiccant is a drying agent, a chemical compound which picks up water molecules.

Lignin – free means the absence of lignin, a component of the cell walls of plants that occurs naturally, along with cellulose. Lignin is largely responsible for the strength and rigidity of plants, but its presence in paper and board is believed to contribute to chemical degradation. It can be, to a large extent, removed during manufacture. No standards exist for the term 'lignin-free' and additional research is needed to determine the precise role lignin plays in the durability and permanence of paper.

Micro-environment is an environment created by using sealed containers with an internal environmental control such as moisture absorbing agents, like silica gel, or a moisture buffer, like Art-Sorb. When creating desiccated environments, it is important to keep a humidity monitor (e.g., a color-indicator strip) in the container to indicate when the gel is getting saturated (color-indicating silica gel that turns pink when exhausted does not react until about 40% RH is reached, which is too high a level). Obviously, the tighter the seal on the container, the longer the gel stays desiccated.

Off-gassing is a term used to indicate the emission from an artifact or storage material of a gas which may contain acids, elements such as sulphur, or other harmful substances.

Silica gel is commonly used as a desiccant in storage and display cases, as it readily absorbs atmospheric moisture and can maintain a Relative Humidity of ca. 15%, as long as the gel is used in the proper proportions, monitored, and regenerated periodically.

Appendix 6

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Sources cited in Technical Update No. 1 and other resources for additional information.

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