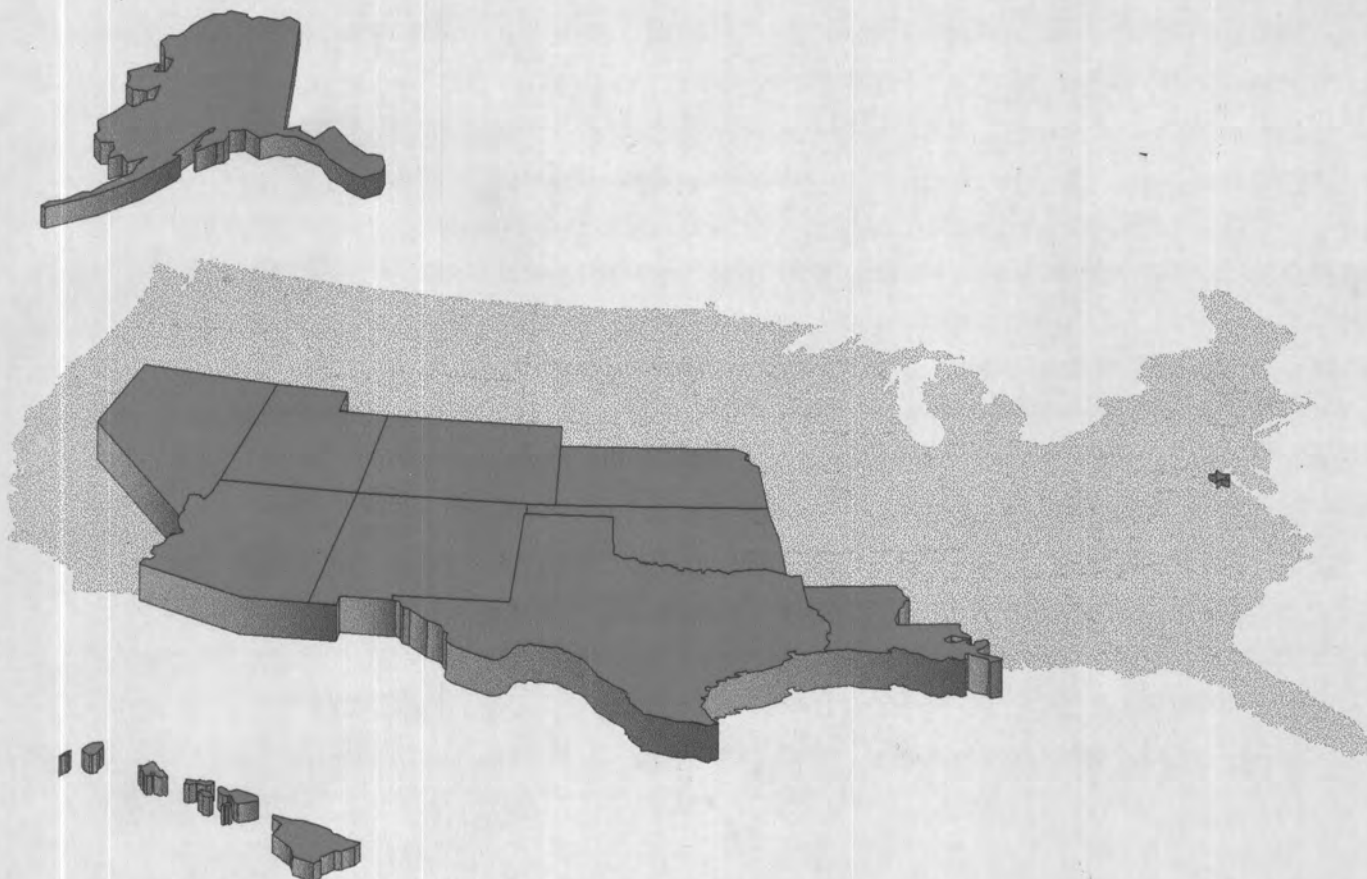




Archaeological Curation-Needs Assessment

Technical Report No. 20



Volume II Non-Military Repositories



**US Army Corps
of Engineers**
St. Louis District

**Mandatory Center of Expertise
for the Curation and Management
of Archaeological Collections**

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By

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D. Lynn Murdoch, Julia A. Samerdyke, Kenneth L. Shingleton, and Sylvia Yu

Michael K. Trimble
and Christopher B. Pulliam
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List of Acroymns

AAF	Army Airfield
AAP	Army Ammunition Plant
AEC	Army Environmental Center
AFB	Air Force Base
AFR	Air Force Range
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure Act
DoD	Department of Defense
DoE	Department of Energy
DoT	Department of Transportation
EFA	Engineering Field Activies
EPA	Environmental Protection Agency
HVAC	Heating, Ventilation, Air Conditioning
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	Naval Air Station
NAVMAG	Naval Magazine
NPS	National Park Service
USAED	U.S. Army Engineer District
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
U.S.G.S.	U.S. Geological Survey
UV	Ultraviolet
WWI	World War One
WWII	World War Two



Agency For Conservation Archaeology Eastern New Mexico University

Portales, New Mexico

Collection Summary

Collections Total: 1.3 ft³ of archaeological materials. 1.2 linear feet of associated records.

Volume of Archaeological Materials Collections: 1.3 ft³
Compliance Status: Archaeological materials curated by Eastern New Mexico University currently comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.2 linear feet (14.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal standards and guidelines for modern archival preservation.

Status of Curation Funding: Curation of collections is funded through a one-time, per-box fee charged to the agencies submitting archaeological materials for storage at the Agency for Conservation Archaeology. Storage of the collections in proper environmental conditions is covered by an annual maintenance fee. Additional funds for curation are minimal.

Repository Summary

DATE OF VISIT: September 16, 1996

PERSON CONTACTED: John Montgomery

The Agency for Conservation Archaeology (ACA) is a contracting firm that operates out of Eastern New Mexico University (ENMU) in Portales, New

Mexico. Current Department of Defense holdings at ACA include 1.3 ft³ of archaeological artifacts recovered from White Sands Missile Range and approximately 14.25 linear inches of associated documentation.

ENMU was previously visited by St. Louis District staff on March 28, 1994, as part of the U.S. Air Force Air Combat Command Project (Drew et al, 1996).

The office of the ACA is located in Quay Hall on the campus of ENMU (hereafter referred to as Repository 1). Room 220 in Quay Hall is reserved specifically for ACA project files and maps storage.

Artifacts are stored in a single-story warehouse facility (also known as the Anthropology Curation Facility), which is located on another part of the University campus (hereafter designated Repository 2).

Structural Adequacy

Repository 1–Quay Hall

Quay Hall was originally built as a college dormitory in the late 1930s, but was converted to house University offices (in pre-1983) (Figure 34). The entire building encompasses approximately 13,064 ft² of floor space on two levels above grade, of which the ACA project files office occupies an estimated



Figure 34. The office of the Agency for Conservation Archaeology is located in Quay Hall on the campus of Eastern New Mexico University, Portales.

165 ft² on the second floor. The foundation is concrete and the exterior walls are concrete block with brick facing. The flat areas of the roof are composed of tar and gravel while the pitched areas are covered with composite shingles. Roof leaks have occurred, but have not affected the records room to date. There are two windows in the ACA project files office. Both have aluminum frames and are fitted with Venetian blinds. The interior door (Room 220) is wood panel.

Repository 2–Anthropology Curation Facility

The Anthropology Curation Facility is constructed of wood frame and corrugated metal set on a concrete foundation (Figure 35). The warehouse was built approximately 15 years ago by the University and was used for storage of grounds-keeping equipment. In 1993, the University allocated the warehouse for the sole use of ACA. The roof is original to the building and is also constructed of wood frame and corrugated metal. ACA has conducted some internal renovations such as removing partitions and installing insulation and sheetrock. The warehouse floor has also been treated and sealed to prevent any leaks in the foundation. Plastic-backed insulation has been placed in the ceiling and on the walls. Two small rooms have been created for the storage of records and osteological collections. No windows exist in the building. Electrical and plumbing systems are present, and the lavatory has been renovated. The warehouse is considered structurally sound and provides 5000 ft² of storage space. There are two kinds of exterior doors present (single panel and garage-type).

Environment

Repository 1–Quay Hall

Each room in Quay Hall has its own thermostat for temperature control; humidity is neither regulated nor



Figure 35. A corrugated metal and wood warehouse is used for collections storage of anthropological collections at the Agency for Conservation Archaeology, Eastern New Mexico University, Portales.

monitored. The building is heated and cooled by individual fan coil units through which either hot water (in the winter) or cool water (in the summer) flows. Each unit has its own filter system that is changed quarterly. The University also provides regular maintenance for the building, such as daily cleaning.

Repository 2—Anthropology Curation Facility

At the time of the original evaluation in 1994, and the second assessment in 1996, no environmental controls were present in the warehouse facility. A gas-forced air unit provides heat for the building, but there is no mechanism in place for cooling. The dry climate in this part of the state provides generally favorable conditions for the preservation of the collections, so humidity control is not considered a priority. Dust filters and ultraviolet (UV) sleeves were not in place, but these measures are planned for installation. Dust, blown into the warehouse facility by the frequent high winds, presents the greatest challenge. The warehouse facility is currently only cleaned on an as-needed basis by the curatorial staff.

Pest Management

ENMU is responsible for the pest management system in place at both Quay Hall and the warehouse facility. Measures include both monitoring and control activities. The university employs a professional pest management company that sprays the warehouse quarterly with a pesticide. If curatorial staff discover pest infestation, the pest management company will spray on an as-needed basis. The assessment team noted no signs of pest infestation at the time of the original assessment.

Security

Repository 1—Quay Hall

Quay Hall is locked by key at night and patrolled by campus police, who are located across the street. No episodes of unauthorized entry have ever occurred.

Repository 2—Anthropology Curation Facility

Security is provided by key locks on the entrance doors to the warehouse and on the loading dock

doors. No additional security was present at the time of the assessment. The lack of windows in the facility provides additional safeguard measures. There have been no past episodes of unauthorized entry into the warehouse.

Fire Detection and Suppression Systems

Repository 1—Quay Hall

Quay Hall has an internal fire alarm system that notifies occupants of the building only. There are no smoke detectors. Fire extinguishers (tri-chemical type) are present throughout the building, including one in the second floor hallway. The building is considered fireproof and the University has a fire safety office that regularly checks all campus buildings and inspects extinguishers on a monthly basis.

Repository 2—Anthropology Curation Facility

The only fire suppression devices in the warehouse are two fire extinguishers. No detection measures are in place.

Archaeological Storage Materials

Storage Units

No artifacts are stored in repository 1. In repository 2, storage units consist of 18-gauge, baked-enamel, metal shelving units measuring 12 x 8 x 3 feet (l x w x h). There are eight shelves per unit and the lowest one sits seven inches off the floor. Staff report a total of 1928 boxes currently stored on these units.

Primary Containers

One white, acid-free cardboard box (1.3 ft³) with telescoping lid contains artifacts recovered from White Sands Missile Range. It is directly labeled in marker with the box number only.

Secondary Containers

Secondary containers consist of 4-mil archival plastic zip-lock bags (nested in multiple layers) that are labeled in permanent marker and also contain

acid-free paper labels inside. The artifact material classes are evenly divided between lithics (49%) and ceramics (49%), with a small soil sample (2%) comprising the rest of the collection. Inert cotton batting is wrapped around the ceramic artifacts for added protection.

Laboratory Processing and Labeling

All artifacts have been cleaned and are labeled using acid-free paper tags that are stored loose in the zip-lock bags. The artifacts are sorted by material class at the (nested) tertiary bag level.

Human Skeletal Remains

There are no human skeletal remains in the DoD collections stored at ACA.

Records Storage

ACA currently houses approximately 1.2 linear feet of documentation associated with archaeological work conducted on White Sands Missile Range. Records are stored in one metal lateral filing cabinet in Room 220 in Quay Hall. The cabinet measures 52 x 30 x 18 inches (h x w x l), and has a computer-printed paper label taped directly onto the front of the drawer. All the White Sands Missile Range records are contained in the top drawer (of four) and comprise half of the drawer (14 linear inches total).

Dr. Montgomery noted that the project files date back to 1976 but have received very little usage by researchers over the years. Consequently, the University has not demonstrated an interest in upgrading archival conditions.

Paper Records

There are approximately nine linear inches of paper records related to White Sands Missile Range. Paper documentation includes administrative, survey and excavation records, field notes, site forms, and artifact inventories.

Secondary containers consist of acidic manila folders, accordion folders containing additional manila folders, two plastic three-ring binders, and one hanging file folder. In addition, one legal-sized manila envelope containing both paper

and Mylar figures for a report was found tucked behind the regular files. Organization of the documentation is by project.

Report Records

Report records total approximately three linear inches and are stored with the paper records. Reports are unbound in manila folders.

Maps and/or Oversized Documents

Maps are stored folded in manila folders and total approximately one linear inch.

Audiovisual Records

Seven audio cassettes total 1.25 linear inches and are stored loose in one hanging file folder. They are labeled.

Collections Management Standards

ACA maintains very few registration procedures because it is considered a storage facility and not a bonafide museum. ACA accepts collections, processes the materials according to federal regulations and guidelines, and stores the collections in a stable environment for however long the owner wishes. They currently do not deaccession or loan material, but they are making the collections more accessible for research. The collections have been rehabilitated and stored on metal shelving in numbered acid-free boxes. The only records ACA maintains are for their own use, such as a database that lists the physical location and contents of the collections they store. No written, standardized policies addressing curation procedures were established at the time of the St. Louis District staff's original assessment in 1994 and collections management standards were not evaluated during the subsequent visit.

Curation Personnel

ACA employs no full-time curation personnel. Rehabilitation activities are conducted by students under the supervision of the director, Dr. John Montgomery, and the curation assistant, Erica Bauroth.

Curation Financing

Financing for collection rehabilitation and for maintenance of the facility comes directly from box fees charged for these activities. Additional funding is minimal and is acquired through the Anthropology Department of ENMU.

Access to Collections

Access to the collections is acquired through Dr. Montgomery.

Future Plans

No archaeological curation facility existed at ENMU when Dr. Montgomery first arrived in 1984. However, Dr. Montgomery and Erica Bauroth, the curation assistant, have accomplished a significant amount (e.g., putting together the metal shelving units and arranging all the boxes on them) since the St. Louis District staff's previous visit almost two years ago. ACA has hopes to establish both humidity and temperature monitoring and control measures in the future.

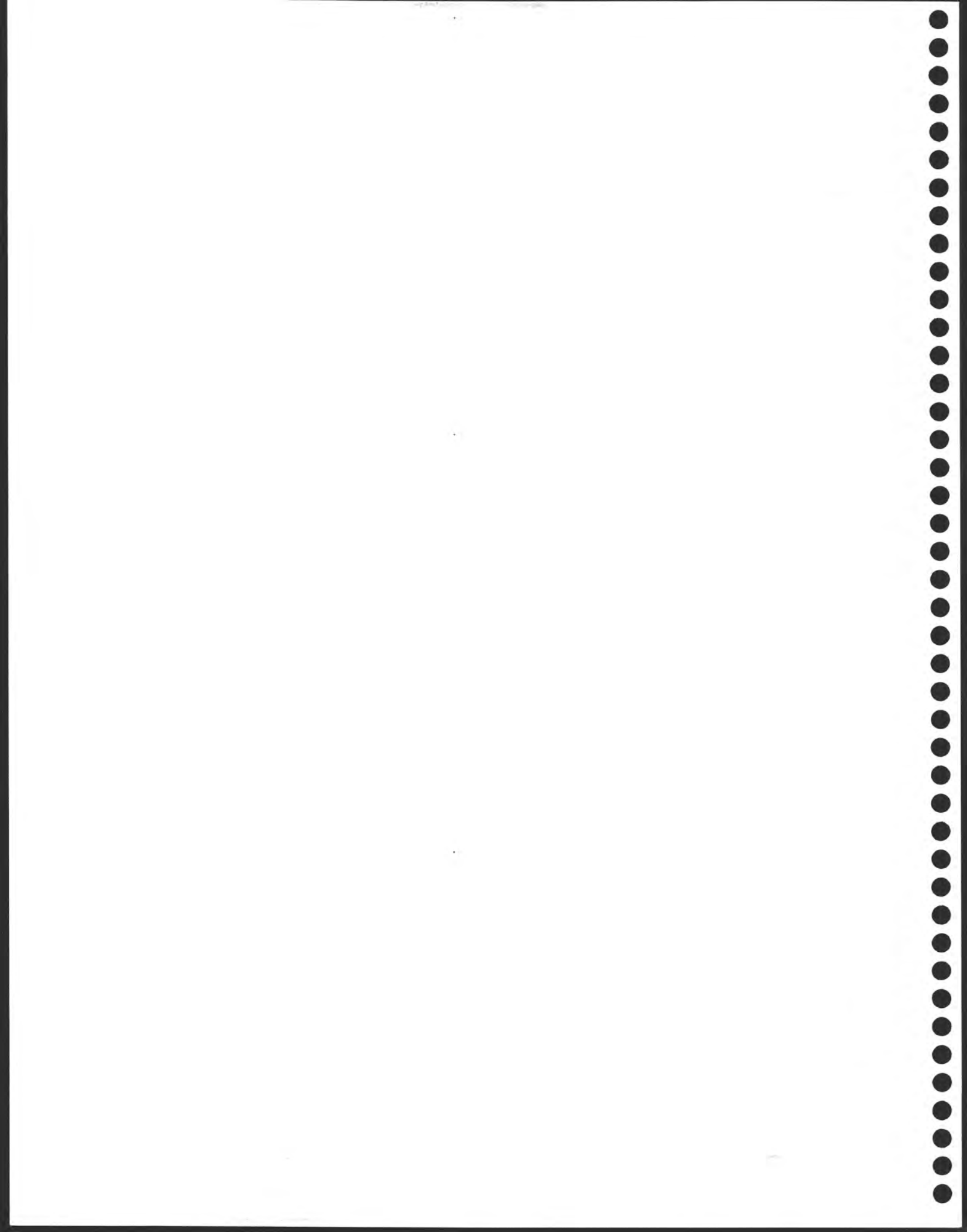
Comments

1. Neither Quay Hall nor the Anthropology Curation Facility is equipped with adequate temperature and humidity monitor or control measures.
2. While ENMU's pest management might not be an official IPM, they do monitor and control pests.
3. Security is minimal, consisting mainly of key locks on exterior doors.
4. Both fire detection and suppression measures are inadequate at this time. No smoke detectors and fire alarms are wired to the outside. Suppression measures in both buildings consist only of fire extinguishers.
5. Artifacts have been repackaged into acid-free cardboard boxes containing archival plastic bags with acid-free paper labels. However, "unboxable" objects (i.e., large ground stone artifacts) currently sit loose on smaller metal shelves on the other side of the warehouse facility.

6. Records pertaining to White Sands Missile Range are currently housed in acidic manila folders and other nonarchival secondary containers.

Recommendations

1. Establish basic temperature and humidity monitoring and control measures in the Anthropology Curation Facility as soon as possible.
2. Install a basic security system, if possible, for the Anthropology Curation Facility.
3. Install smoke detectors in both Quay Hall and the Anthropology Curation Facility.
4. Archival box the large ground stone objects, currently sitting loose on open shelving, and integrate them into the main collections storage area of the Anthropology Curation Facility.
5. Records should be removed from current acidic manila and accordion folders and placed in archival quality containers. Duplicate copies of the records should be made and stored at a separate and secure location. All contaminants, such as metal staples and paper clips, should be removed from the records.



Archaeological Consultants of the Pacific

Haleiwa, Hawaii

Collection Summary

Collections Total: No artifacts or human skeletal remains in collections. 0.25 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.25 linear feet (3 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded from budget overhead from archaeological projects.

Repository Summary

DATE OF VISIT: March 19, 1997

PERSON CONTACTED: Joseph Kennedy

Archaeological Consultants of the Pacific, located in Haleiwa, Hawaii, conducts archaeological investigations throughout the state of Hawaii and the surrounding Pacific islands. They use two residential buildings for their office and equipment storage areas and two metal containers for all records and artifacts. They currently hold records from

archaeological projects conducted on Hickam Air Force Base (AFB) and Pacific Missile Range Facility (PMRF), Barking Sands.

Structural Adequacy

The main repository/office structure is approximately 10 years old. The foundation is concrete and the building frame type is wood. External walls of the repository are wood siding and the roof is original. No structural problems have been noted in the foundation or the roof. Interior walls are wood and floors are concrete with a tile covering. Ceilings in the repository are wood.

Windows in the repository have aluminum frames, blinds, and are sealed. The 1500 ft² repository has space for artifact and record study, with the majority of space being used for report preparation.

The collections area is a prefabricated metal outbuilding, separate from the main repository, that has been converted into a records archive (Figure 36).



Figure 36. Collections are housed in a metal outbuilding at Archaeological Consultants of the Pacific.

It has metal interior and exterior walls and floors and a concrete foundation. The roof and frame are steel and aluminum. No structural problems have been noted in the archives by any staff members. There are two windows in the building that slide open and have screens and blinds. The building measures 300 ft².

Environment

The repository has floor fans for ventilation. Temperature and humidity levels are monitored by the staff, but the only control employed is insulation in the walls. It receives regular janitorial service by the staff members. All artificial lighting in the repository is generated either by incandescent and unfiltered fluorescent desk lamps. Repository utilities are original and have received no major repairs.

The collections area itself has space for study, but is almost completely dominated by storage space. Fans or windows are the ventilation sources. Temperature and humidity levels are not monitored or controlled. The staff members perform janitorial duties in the collections area and all artificial lighting is non-filtered fluorescent. The only utility

in the building is electricity and it has not been modified to date.

Pest Management

The repository receives regular pest monitoring by the staff on an as-needed basis. No infestations were noticed either by staff or by the assessment team. The collections area is likewise serviced by staff and has had no infestations.

Security

The repository has an intrusion alarm wired throughout the building and has key locks on the exterior doors. All buildings used by the firm are protected by a wall with a locked gate and the owner's dogs serve as guard animals. The collections area has a padlock on its exterior door. The steel exterior door is the only way to enter the building and has proved to be resistant to unauthorized entry.

Fire Detection and Suppression Systems

The only fire suppression in the repository are two fire extinguishers. Both were inspected in November of 1996 and are located in the main building. The collections building has no fire detection or suppression system in place; however, it is considered to be somewhat fireproof by virtue of being metal in construction.

Archaeological Storage Materials

Records Storage

Records are stored in the metal outbuilding on non-movable, wooden shelving units in acidic cardboard boxes (Figure 37). Each box holds approximately 2.8 linear inches of records and is secured with a telescoping lid. Records associated with Department of Defense (DoD) administered land are stored in two such boxes that are labeled directly in marker. Label information includes installation, report numbers, and dates. Records within each box are



Figure 37. Wooden storage units hold boxed collections and supplies in the collections storage building.

stored in manila folders that use adhesive labels written in ink with project numbers.

Paper Records

DoD records encompass approximately one linear inch dating from 1991–1992 (Table 23). The material consists of project files and internal correspondence. The materials are in good condition, but do have some contaminants throughout, such as paper clips and staples. All records appear somewhat damp from excessive humidity.

Table 23.
Major Classes of Documentation by Installation
Housed at the Archaeological Consultants of the
Pacific (in linear inches)

Installation	Types of Documentation			Total
	Paper	Reports	Maps	
Hickam AFB	0.75	0.5	0.5	1.75
PMRF Barking Sands	0.25	1.0	—	1.25
Total	1.0	1.5	0.5	3.0

Report Records

Report materials comprise approximately 1.5 linear inches of the total record amount. They are in good condition, but appear somewhat damp from excessive humidity. They are stored with other project files in acidic cardboard boxes.

Maps Records

Approximately 0.5 linear inches of maps are among the total record collection. These are folded and stored either in manila folders or inside reports. They are then kept in the same acidic boxes as all other records.

Computer Disks

All project files that have been generated by the contractor are stored on two 3.5" computer disks that are kept in the main repository. These copies are duplicated for security purposes on a regular basis as work progresses.

Collections Management Standards

Archaeological Consultants of the Pacific is not a permanent curation facility; therefore collections management standards are not evaluated for this report.

Curation Personnel

James Moore, staff archaeologist, maintains collections held by the firm.

Curation Financing

Curation activities receives no funding. Costs associated with curation are taken from the firm's overhead budget.

Access to Collections

Access to collections is controlled. Staff require a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

Archaeological Consultants of the Pacific has no future plans regarding curation or collections storage.

Comments

1. There is no integrated pest management system.
2. Security is fair, with several deterrents to prevent unauthorized entry in place.
3. Fire detection and suppression measures are absent, with the exception of two manual fire extinguishers in the main repository only.
4. Primary containers consist of acidic cardboard boxes with telescoping lids.
5. Primary containers for records are generally adequate, but the secondary containers consist mainly of acidic, manila folders. Most of the records are damp from humidity.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
 2. All primary containers should be labeled using archival paper inserts and inert plastic sleeves.
 3. Remove all contaminants (e.g., staples, paper clips) from the documents.
 4. Duplicate all paper records onto acid-free paper or archival microformat and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Store these materials in a separate, fire-safe, secure location.
 5. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.
-

Archaeological Research Services

Tempe, Arizona

Collection Summary

Collections Total: No artifacts or human skeletal remains in collections. 2.5 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 2.5 linear feet (29.5 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: There are no specific funds allocated for the curation of records. The management and storage of the collections are taken from the general overhead budget.

Repository Summary

DATE OF VISIT: April 23, 1997

PERSON CONTACTED: Lyle M. Stone and Serelle Laine

Archaeological Research Services (ARS) currently curates approximately 29.5 linear inches of associated documentation from projects conducted on Yuma Proving Ground (PG) and Barry M. Goldwater Range (BMGR), which contains land-administered by both the Yuma Marine Corps Air Station (MCAS) and Luke Air Force Base (AFB).

Structural Adequacy

The ARS office is located in a residential neighborhood in Tempe. The office is in a duplex house that was built in 1956 and totals approximately 2100 ft² (Figure 38). The building has a concrete slab foundation and is one floor above grade. The exterior walls are cinder block bricks and the flat roof is composed of tar and paper. At the beginning of 1997, a layer of urethane foam insulation was added to the roof. The building is structurally solid, but does have cracks in both the foundation and the exterior walls. Repairs have been made to leaks that have occurred in the building. The numerous exterior windows have multiple panes of glass in metal frames. At least one of the windows



Figure 38. A building constructed of cinder block with a flat roof houses the offices of Archaeological Research Services.

has a cracked pane that allows for air and water leaks. There are two entrances to the building, one leading into each side of the duplex. Each entrance has a metal screen door, as well as a wooden door. Floors are painted concrete and interior walls are painted wallboard. The ceiling is of varnished wood planks. The office areas and storage areas are not separated and are in close quarters. These areas are cluttered with office equipment and the various paper records and resources.

Environment

A three-ton air conditioning unit with a heat element is located on the roof of one side of the duplex. The other side of the duplex is equipped with a heat pump, but not air conditioning. There are no dust filters on the environmental controls. Often doors are opened to provide air circulation. Humidity is not monitored or controlled. The building is maintained and cleaned by ARS staff on an as-needed basis. Fluorescent lighting, without ultraviolet (UV) filters, is used throughout the duplex, as well as unfiltered natural light. No asbestos is present within the duplex.

Pest Management

ARS did not appear to have any type of pest management system in place. There were no signs of either monitoring or control methods in use. During the visit there was evidence of insect infestation (e.g., spiders and moths).

Security

Security measures for the building include key locks on exterior metal screen doors and wood doors. There are security lights outside the building. The windows roll out with a handle and have a latch lock.

Fire Detection and Suppression Systems

There are no forms of fire detection systems in use, such as smoke detectors or heat sensors. The fire suppression system consists of one charged chemical fire extinguisher.

Archaeological Storage Materials

ARS does not curate any archaeological artifacts from military installations.

Human Skeletal Remains

ARS is not curating human skeletal remains recovered from any archaeological projects conducted on any military installations.

Records Storage

ARS currently curates approximately 29.5 linear inches of documentation (Figure 39) associated with archaeological work performed on Yuma PG and BMGR, which has property managed by both Luke AFB and Yuma MCAS. Records are stored in various offices throughout the building. Table 24 outlines the major classes of documentation by installation.

Paper Records

ARS curates 11.5 linear inches of paper records from Luke AFB, Yuma MCAS, and Yuma PG that are housed throughout various filing cabinets on both sides of the duplex. Administrative records, background records, survey records, and analysis records from these installations are stored in letter sized metal filing cabinets. The filing cabinets have four drawers and measure approximately 4.3 x 2.2 x 1.2 feet (h x d x w). The metal drawers are labeled with acidic paper tags that are inserted into metal



Figure 39. Archaeological Research Services housed associated documentation from projects constructed on several military installations in Arizona.

holders. The tags are labeled in pen with the file name, year, and project number. Secondary containers consist of manila folders and large manila envelopes. They are labeled directly in marker, pen, or pencil with some combination of the following information: project file, project name, project number, and/or contents. Not all of the containers are labeled. Some of the manila folders and the records within are fastened together with rubber bands. The

secondary containers and the records are in fair to poor condition. The containers are overpacked and deteriorating, both the containers and the records are torn and discolored, and the records are fastened together with a variety of contaminants, such as metal binder clips, paper clips, and staples.

Report Records

Luke AFB, Yuma MCAS, and Yuma PG have approximately 8.25 linear inches of report records curated at ARS. These records are stored in the same manner as the paper records located in the four drawer metal filing cabinets.

Photographic Records

Photographic records at ARS total approximately five linear inches, and include black and white prints, negatives, slides, contact sheets, and large aerial photographs. The records are stored in the same manner as the paper records located in the four drawer metal filing cabinets.

However, the negatives, slides, and contact sheets for Yuma MCAS are not labeled and are still in the original photo processing envelope. The large aerial photographs from Luke AFB are stored loose, but are fastened together with a rubber band. They are labeled with adhesive pink sticky notes written in marker with the project name and number.

Map Records

ARS curates approximately 4.75 linear inches of map and drawing records from Luke AFB and Yuma MCAS. These records are stored in the same manner as the paper records located in the four drawer metal filing cabinets.

Table 24.
Major Classes of Documentation by Installation Housed at Archaeological Research Services
(in linear inches)

Installation	Paper	Types of Documentation			Total
		Reports	Photos	Maps	
Luke AFB/BMGR	5.5	4.25	4.75	3.25	17.75
Yuma MCAS/BMGR	3.5	2.00	0.25	1.50	7.25
Yuma PG	2.5	2.00	—	—	4.50
Total	11.5	8.25	5.00	4.75	29.50

Collections Management Standards

ARS is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

The curation of the record collection is managed by the staff at ARS. The two principal managers are Dr. Lyle Stone, President, and Serelle Laine, Projects Manager.

Curation Financing

There are no specific funds allocated for the curation of records. Funding for the management and storage of these collections is taken from general overhead budget.

Access to Collections

Access to the collections is controlled by the ARS staff.

Future Plans

There are no major plans for upgrading curation management at ARS.

Comments

1. An air conditioning unit with a heat element is located on one half of the duplex and a heat pump with no air conditioning unit is on the other half of the duplex. There are no dust filters on the environmental controls. Humidity is not controlled or monitored in the building.
2. There is not an integrated pest management system that includes both monitoring and control. Signs of insect infestation are present in the building.
3. The offices of ARS have key locks on all exterior doors and all of the windows have latch locks. There are also security lights outside the building.
4. There is at least one charged chemical fire extinguisher for fire suppression; however, there are no systems installed for fire detection.

5. Documentation is stored in metal filing cabinets. The records are in fair to poor condition. The records and their containers are torn, deteriorating, and discolored. Metal and rubber contaminants are present on the paper records. The records are not uniformly labeled.

6. A permanent repository for long-term curation of these record was not negotiated in their contracts.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

Arizona State Museum

University of Arizona

Tucson, Arizona

Collection Summary

Collections Total: 104 ft³ of archaeological materials. 6.7 linear feet of associated records.

Volume of Archaeological Materials: 104 ft³
 Compliance Status: Archaeological materials will require partial rehabilitation to comply with existing Federal guidelines and standards for collections.

Human Skeletal Remains: None

Linear Feet of Records: 6.7 linear feet (80.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with modern archival practices for preservation of documentation.

Status of Curation Funding: Curation financing is acquired through fees from individual projects. Curation costs are based on the number of person-days spent in the field, thus providing contractors with curation costs before a project begins.

Repository Summary

DATE OF VISIT: February 4-7, 1997

PERSON CONTACTED: Arthur Vokes

Approximately 104 ft³ of archaeological materials and 6.7 linear feet of associated documentation from archaeological investigations on Fort Huachuca, Luke Air Force Base (AFB) and their portion of Barry M. Goldwater Range, Navajo Army Depot, Williams Air Force Base (AFB), Yuma Proving

Ground, and Yuma Marine Corps Air Station (MCAS) and their portion of the Barry M. Goldwater Range are stored at the Arizona State Museum (ASM). For volume of archaeological materials by installation refer to Table 25. Associated documentation consists of paper records, reports, photographic records, and maps.

ASM occupies two buildings on the University of Arizona (UA) campus and has largely remained unchanged since the St. Louis District's previous visit in 1994. The majority of the information reported here regarding the facilities and collections policies is taken from St. Louis District

Table 25.
Volume of Archaeological Materials from Department of Defense Installations Housed at ASM

Subject Installation	Volume (ft ³)
Fort Huachuca	5.6 ft ³
Luke AFB/Goldwater Range	54.3 ft ³
Williams AFB	13.6 ft ³
Yuma MCAS/Goldwater Range	18.8 ft ³
Yuma Proving Ground	11.7 ft ³
Total	104.0 ft ³

report Drew et al, 1996. Any changes that have occurred since then are incorporated in this assessment. Archaeological collections and associated documents are curated in ASM's North Building, Repository 1. Repository 2, the South Building (located directly across the quadrangle), holds all photographic materials associated with archaeological projects and individually catalogued archaeological materials that have been removed for report illustration and photographic purposes. Both buildings are similarly maintained in terms of janitorial and pest-management services and they are of similar overall construction.

Repository 1, the North Building, is divided into several levels, each devoted to different activities. Boxed research collections are stored in the center of the building on three-story tall permanent shelving units that are anchored from floor to ceiling. These units were designed for use as library stacks. The second and third story floors surrounding the stacks are constructed of concrete covered with large marble tiles. Collection storage rooms are located throughout the building. Ceramic vessels are housed in a storeroom dedicated solely to ceramic collections. This windowless, interior storeroom is located on the ground floor and is accessible through the exhibit area. Most of the associated documents are housed in the archives on the second floor. Documentation is also located in the "Additional Site Files Information" folders on the first floor in the site files management offices. Other activity areas present in the North Building include an artifact processing and study laboratories, storage for supplies, an exhibit area, a walk-in refrigeration unit, library, classrooms, and offices.

Repository 2, the South Building, houses the photograph collections and individually catalogued collections, all of which are located on the below-

grade level of the building. Other activity areas present in the building include an exhibit space, a conservation laboratory, and offices.

Structural Adequacy

Repository 1–North Building

The North Building was constructed in the early 1920s and housed the library. The Department of Anthropology expanded into this facility in 1974. The foundation is concrete, the exterior walls are three-foot-thick brick, and the roof is a built-up asphalt and clay tile conglomerate. The roof has been repaired many times and has had five major renovations. At the time of the evaluation, neither the roof nor the foundation leaked. There are three floors above grade, and one floor below grade. Windows in the facility are of varying shapes and sizes, all of which are in locking steel frames that are original to the building. All windows have blinds and in some cases have been covered in a semitransparent shade to reduce light and ultraviolet (UV) rays entering the storage areas. The assessment team noted air passing through the closed windows in the collections storage area. There is no asbestos in the building and dust has been kept to a minimum. All of the utilities present in the facility are original to the construction of the building.

Repository 2–South Building

The South Building was constructed with the same materials and at the same time as the North Building. DoD collections are located in rooms partially below grade that have several small windows with no shades in steel frames. Floors and ceilings are concrete with concrete block interior walls. The photographic storage and study rooms were in the midst of being repainted at the time of the visit. All of the utilities present in the South Building are original to the building's construction in the 1920s, with no major failure of any of the systems to date.

Environment

Repository 1–North Building

Twelve air-handling systems in this building monitor and control the air conditioning and heating temperatures, which are targeted for the comfort

level of employees at 75° F. Dust filters are present on these systems. Humidity levels, which are maintained at 40%, are monitored in the collections storage areas through the use of a portable dehumidifier. Fluorescent lights used in the artifacts areas do not have UV filters; however, bulbs in the library and archives areas are filtered for UV rays. The building is maintained daily by UA building services. Janitorial staff are restricted from collections storage areas; therefore, curatorial staff are responsible for the maintenance of these areas.

Repository 2—South Building

The South Building also has heating and air conditioning, with similar targeted temperature and humidity levels, and dust filters installed in their systems. Light bulbs are not UV filtered. The building is maintained daily by UA building services. Janitorial staff are restricted from collections storage areas; therefore, curatorial staff are responsible for the maintenance of these areas.

Pest Management

The UA Facilities Division maintains the building's exterior and entryway thresholds periodically. Building interiors are monitored through an integrated pest management (IPM) program. The IPM program includes both monitoring and control measures by the museum conservator. Mouse and rat traps are replaced as needed. To date, only one problem of infestation has occurred in the North Building, consisting of moths in the textiles. The problem was resolved and no further incidents have been reported.

Security

Security measures for both repositories include intrusion alarms throughout the buildings that are wired directly to the police department. Key locks are used on all office doors, and dead bolt locks are on the front, exterior doors of both buildings. Key locks also secure the doors to the research collection storage area and the ceramics storeroom. Motion detectors are located throughout the facility, and some storage units (e.g., those housing individually catalogued collections) are padlocked. All windows have basic slip locks, and windows in the collections

area are wired into the alarm security system. In addition, ASM's grounds are routinely patrolled by campus police.

No evidence of forced entry through any of the windows or doors was noted by the assessment team, and the staff indicated that none had occurred. In years past, there were some problems with missing collections; some were incidents of actual theft, but more recent episodes were cases of misplaced artifacts.

Fire Detection and Suppression Systems

Both the North and South Buildings have manual fire alarm systems that are wired into the local fire department. In addition, the North Building has a sprinkler system, smoke detectors, heat sensors, and fire extinguishers located throughout the facility. Fire doors are located at entryways to the collections areas. Fireproof cabinets are used for some of the artifacts and paper documents. The sprinkler system in the North Building is not currently installed in the library and archives areas; however, the installation of a system is scheduled for the summer of 1997.

Archaeological Storage Materials

Storage Units

Repository 1—North Building

Collections Storage Area 1—Research Collections Storeroom

The research collections, which constitute the majority (85%) of the collections assessed, are housed on open metal shelving units measuring 86 x 21.75 x 37 inches (l x w x h). These units have an enameled finish with eight shelves per unit. The area these collections occupy was originally constructed as library stacks and encompass several rooms on three levels of the building.

Collections Storage Area 2— Ceramics Storeroom

Collections in the ceramic storeroom are housed on unsealed pressed wood shelving units that measure 97 x 24 x 49 inches (l x w x h). There are seven shelves per unit with the top of the shelving unit also used for the storage of collections. The open shelves are lined in ethafoam to cushion the artifacts.

Collections Storage Area 3— Processing Area

One collection from Yuma Proving Ground is located in a metal drawer in acidic boxes (Figure 40). The drawer measures 25 x 19 x 2 inches (l x w x h) and is located in the processing area. At the time the collection was examined, the drawer was on a table, not in a unit. The drawer is labeled with a card stock label thumb tacked to a side of the drawer. The artifacts are loose within the drawer, but rest on the brown paper bags in which they were once contained. A hand written note accompanies the collection in the drawer. Several other collections

were located on tables in the processing room. They are temporarily housed in acidic cardboard boxes and await integration into the cataloged collections.

Repository 2—South Building

The cataloged collections are housed in the lower level of the South Building. They are housed in locked metal cabinets that line the hallway of the lower level. The cabinets measure 42 x 28 x 46.5 inches (l x w x d) and are stacked two high. The cabinets have removable drawers measuring 25 x 19.5 x 1 inches (l x w x d). Each drawer is designed with a holder at the front for a paper label insert. Artifacts are stored within the drawers in open acidic cardboard boxes which range in size (Figure 40). These collections are arranged by site number and region. Percentages of material classes are outlined in Table 26.

Table 26.
Percentages of Material Classes Present in the DoD Collections Housed
at the Arizona State Museum by Installation

Material Classes	Fort Huachuca	Luke AFB Goldwater Range	Williams AFB	Yuma MCAS/ Goldwater Range	Yuma Proving Ground	Total
<i>Prehistoric</i>						
Ceramics	76	45	53	17	15	39
Chipped Stone	21	46	40	6	84	41
Faunal Remains	—	1	1	—	—	1
Shell	—	1	<1	<1	<1	<1
Botanical Samples	1	1	—	—	—	<1
Soil Samples	—	4	<1	—	—	3
¹⁴ C	—	<1	2	—	—	1
Worked Shell	<1	<1	0	—	—	<1
Worked Bone	<1	<1	0	—	—	<1
Other	1	<1	2	—	—	<1
<i>Historic</i>						
Ceramic	—	<1	—	7	—	1
Glass	—	<1	<1	5	—	1
Metal	—	<1	—	63	—	11
Faunal Remains	—	—	—	1	—	<1
Textiles	—	—	—	<1	—	<1
Other	—	—	—	<1	—	<1
Total	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.
Other prehistoric materials include adobe and mineral samples.
Other historic materials include rubber and burned wood.



Figure 40. Catalogued collections are housed in the North Building (repository 1). They are marked in ink and stored in acidic cardboard boxes in metal drawers in a metal cabinet. An inventory of each drawer is enclosed.

Primary Containers

Most of the artifacts in the research collections storeroom are housed in acidic cardboard boxes (Figure 41). A small collection of ground stone is stored directly on a shelf. Box size ranges from 0.04 to 1.3 ft³. A collection from a particular project may be housed in one box size, but there is not a standard



Figure 41. An acidic cardboard box labeled directly in marker and with a printed paper label glued to the box holds collections from Luke Air Force Base. Paper bags serve as secondary containers, many are secured with rubber bands. A box inventory is enclosed.

box size used overall. Many of the boxes have an inventory enclosed. Boxes are labeled with acid-free paper labels glued to the side of each box. Typed label information includes site number, ASM accession number, and material classes enclosed.

Additional information, such as project name, military installation name, and box number, is also included on some box labels. In addition to the paper label some of the boxes have information handwritten directly on the box in pen or marker.

Secondary Containers

The majority of secondary containers for DoD collections housed at ASM consist of paper bags (Table 27). The paper bags are closed by folding. Some of the bags were once taped or wrapped with rubber bands, but the tape adhesive and the rubber has since deteriorated. The bags are labeled directly in marker and/or pen with site number, date, provenience, and material class. Some of the bags have stamped labels as well as being labeled directly in marker or pen.

Table 27.
Percentages of Secondary Containers in DoD Collections Housed at ASM

Secondary Container Type	Percentage
Paper Bags	62
Plastic Bags	19
Loose Archaeological Materials	9
Acidic Cardboard Boxes	8
Other	2
Total	100

Note: Percentages of secondary containers are calculated by volume.

Other secondary containers include paper envelopes, plastic boxes, and cardboard trays lined in ethafoam.

The 2- and 4-mil plastic bags used as secondary containers have several types of closures including zip-lock, twist ties, and string. Likewise there is a range of methods used to label the bags. Some bags may only have a paper insert with the site number written in pen. Other plastic bags have computer generated acid-free paper labels enclosed, the brown paper label from the original field bag enclosed, and a computer generated card stock label attached to the exterior of the bag with a twist tie through a punched hole. These labels include such data as site number, site name, date, project, investigator, material class, and artifact count. One recently processed collection has card stock inserts with extensive information enclosed in the bags. Sets of these bags are grouped together physically with a

Table 28.
Major Classes of Documentation by Installation Housed at ASM (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photographs	Maps	
Ft. Huachuca	0.1	2.0	0.1	0.3	3.3
Luke AFB/Goldwater Range	14.2	9.9	7.9	0.3	32.3
Navajo Army Depot	0.6	1.3	0.1	0.1	2.1
Williams AFB	6.0	3.4	2.3	0.5	12.2
Yuma MCAS/Goldwater Range	3.6	9.0	1.6	—	14.2
Yuma Proving Ground	5.5	8.1	—	0.3	13.9
Total	30.0	33.7	12.0	1.5	77.2

plastic cord that is strung through holes punched in the corner of each bag.

Other secondary containers include acidic cardboard boxes, plastic boxes, paper envelopes, and cardboard trays lined with ethafoam. Nine percent of artifacts are stored loose in their primary containers.

Laboratory Processing and Labeling

Almost all of the collections housed at ASM have been cleaned (99%). All the collections have been sorted. Only 31% of the collections have been labeled. Artifacts are labeled with various combinations of site number, project number, accession number, and provenience. Those collections are labeled using ink applied directly to the surface of the artifact.

Human Skeletal Remains

There are no human skeletal remains associated with DoD installations located at ASM.

Records Storage

ASM curates approximately 6.5 linear feet of documentation associated with work from Fort Huachuca, Luke Air Force Base and their portion of Barry M. Goldwater Range, Navajo Army Depot, Williams Air Force Base, Yuma Proving Ground, and Yuma Marine Corps Air Station and their portion of Barry M. Goldwater Range (Table 28).

There are separate archive areas for written documentation and photographs. The paper archives is located in the anthropology library on the second



Figure 42. Boxes of negatives are stored on metal shelves in the photograph collection storeroom.

floor of the North Building. The archive area is separated from the library by a swinging gate that is padlocked when there is no staff member present. The photograph archive is located in the lower level of the South Building, an area accessible to staff only (Figure 42). Additionally, accession files and maps are located in the processing area of the North Building and Additional Site File Information is located in the site file office on the first floor of the North Building.

Paper Records

Paper documentation equals 30.0 linear inches of the associated documentation. Written documentation associated with accessioned collections—field notes, final reports, artifact lists, analysis records, National Register applications, and correspondences are processed and stored in ASM's archives in manila folders or loose in archival document boxes.

Materials are arranged by project and are kept in the order in which they are received. Archival materials are arranged by ASM accession numbers for easy recovery and cross-referencing. No duplicate/ security copies or microfiche copies have been made for the written materials.

Report Records

Report records constitute 33.7 linear inches of the associated documentation of the DoD collections housed at ASM. Draft reports and final copies are located with the boxed collections in the archives, as well as in the metal file cabinets that house Associated Site File Information in the site file office.

Photographic Records

Photographic records account for 12 linear inches of the associated documentation. After being separated from other documentation, photographs are stored in archival-quality sleeves and folders and are placed on metal shelves in acid-free boxes. Some prints and contact sheets are labeled directly in pencil. Other color prints, housed in acidic paper envelopes, are labeled with computer generated adhesive labels. Corresponding negatives are stored in an unlabeled archival plastic sleeve with a photolog stapled or paper clipped to it. All photographs are indexed using their original ASM accession number. The photographic archives is temperature and humidity controlled (a portable dehumidifier is present in the archives area). Photographs are easily accessible; however, present storage space is near capacity.

All artifacts in the cataloged collections are photographed using slide film. The slides are labeled with the object's catalog number and is stored in sequential order by year and catalog number. The slides are housed in archival quality sleeves in three-ring binders on closed shelves in Mike Jacob's office.

Maps and/or Oversized Documents

Only 1.5 linear inches of the associated documentation consists of large folded maps, small report-ready maps, USGS topographic maps, drawings of sites, and blueprints. These documents are included in files with other documentation and in a metal file cabinet designed to hold hanging topographic maps.

Collections Management Standards

Registration Procedures

Accession Files

All materials received by ASM are recorded in accession files and a unique accession number is assigned to each collection. At least three accession numbering systems have been employed by ASM in the past. In addition, all accession information is entered into a computer database that is updated on a regular basis.

Location Identification

Locations of all accessioned materials are recorded on computer and the information is part of the current database system.

Cross-Indexed Files

Materials are cross-referenced by ASM accession number, project, and site number. The accession number is the most important identifier because it is used as the primary reference tool by all sections of the museum. For example, the ASM archives and the photographic materials use the same accession number to describe their portions of the collection.

Published Guide to Collections

No guide to the collections has been published, but a listing of all holdings can be obtained. In addition, published user guides for the site files and museum are available to contractors.

Site-Record Administration

ASM uses its own unique site numbering system for numbering archaeological sites in the state. The

number (e.g., AZ:BB:5:929) consists of the state abbreviation, followed by letters to specify (within 1 degree) an area within the state, an integer (1 through 16) depicting which 15-minute topographic map is within this 1 degree area, and finally the sequential site number on the 15-minute map. This system is used on sites throughout the state and is accepted by the State Historic Preservation Office.

Computerized Database Management

ASM's computer database (REGIS) ensures the accurate cataloging of all collections and site information. Tape backups for all records are stored in a separate facility and are updated weekly. Because the computer system is on a network, access is restricted to those individuals directly responsible for the curation of the collections. Within the curatorial staff, access is controlled using a password system; only certain individuals (curator and curatorial assistant) have access to all information. Each department also maintains a specific database for their portion of the collection (e.g., "foto.proj" for the photographic collections), which includes collection data in greater depth. All museum databases are linked by the collections accession number.

Written Policies and Procedures

Minimum Standards for Acceptance

ASM asks that collections accepted for curation are complete in their information content so that they may easily be used for public interpretation and independent research. Complete collections are those that include all written documentation regarding the archaeological project that produced the collection. In addition, any materials collected, but later destroyed for analysis purposes are fully documented.

Curation Policy

Because of its role as the primary institution for the curation of archaeological collections in Arizona, ASM acknowledges a responsibility for the preservation of artifacts recovered from archaeological projects conducted in Arizona. ASM acts as a repository for those collections that have been prepared for curation according to the museum's standards and must be fully compensated

for its services at a predetermined rate (see curation financing). ASM reserves the right to refuse collection that does not meet its guidelines.

ASM accessions all materials it accepts and curates them in perpetuity according to museum standards. After being accessioned, the museum reserves the right to loan and authorize access to the collections under its care.

Records Management Policy

Associated documentation is the responsibility of several different sections within the museum. The accession records are maintained by the registrar; the photographic records are maintained by the photographic media curator; project records, maps, and files are housed in the archives which is the responsibility of the archivist; and additional site file information and reports are maintained in the site files offices. The records are arranged by accession number and their location can be accessed through the collection's database system.

Field-Curation Guidelines

ASM provides contractors depositing collections with guidelines outlining the conditions of acceptance that the museum requires.

Loan Procedures

All accessioned materials are covered by a written agreement that is incorporated into the records of the museum and is held by the registrar. Further, any loan transactions that are agreed to following the initial accession must be finalized with the registrar, who will then receive the original and all copies of the final loan transaction form. If accepted, collections restrictions are documented in writing and periodically reviewed and revised with the depositor. Usually only those collections classified as sensitive because of their religious significance are use restricted. In addition, materials requested for use in destructive analyses must be approved by the director's administrative staff. In the case of human remains, access to and consent for analysis (destructive or otherwise) must be obtained from the appropriate tribal organization.

Deaccessioning Policy

ASM recognizes the need to deaccession some of its holding in order to benefit the collections as a whole. The decision to deaccession is made only by the director's administrative staff (1) to permit destructive analysis, provided the information received outweighs the loss of the item; (2) remove materials hazardous to other holdings; (3) negotiate insurance compensation for lost or stolen materials; (4) provide appropriate care of material that has ritual and/or sacred significance; (5) transfer materials to other educational or scientific institutions where they might be more effectively put to use; (6) relieve the museum of its responsibility to those materials that have deteriorated beyond use; (7) carry out beneficial exchanges of materials with other institutions; and/or (8) relieve the museum of its responsibility toward those materials that are not deemed appropriate to its mission or scope of collections.

All collections to be deaccessioned, and any associated documentation, is assembled by the museum registrar prior to deaccessioning. Materials are examined by the director's administrative staff and museum personnel. After materials are examined by all concerned parties and any comments assessed, the director's staff makes its final decision.

Accurate and complete records are kept regarding all deaccessioned materials. Current records are changed to reflect the deaccessioned status of the artifact or collection. Any and all monies received from the sale of the deaccessioned materials are used for collections acquisition.

Inventory Policy

Collections are processed upon receipt and inventoried following the standard regional approach used by Arizona repositories. Inventories of all display items exist and are kept separate from other collection inventories.

Latest Collection Inventory

Inventories for management purposes have been conducted by ASM personnel; however, the date of the last inventory is unknown. The latest partial inventory fulfilled initial NAGPRA requirements.

Curation Personnel

ASM currently has 10 full-time and four part-time staff members, including a curator and an assistant curator for the archaeological collections. Primary responsibilities for the curatorial personnel include receiving collections, distributing collections that have been loaned out by the museum, and maintaining the collections currently housed at ASM. All full-time staff have training in archaeology/anthropology and in museum methods.

Curation Financing

Curation financing is acquired through fees from individual projects. Curation costs are assessed based on the number of person-days spent in the field, thus providing contractors with curation costs before a project begins.

Access to Collections

The policy of ASM is to offer wide access to its holdings. The museum does not usually accept collections that have restrictions placed on them regarding access privileges. Restrictions on materials are reviewed when the collections are being considered for curation.

Future Plans

Plans exist for an addition to the museum, which will provide 65,000 square feet of space at a cost of approximately 50 million dollars. Exactly when this will occur is still unknown. Current storage space and shelving units are being upgraded and replaced. In addition, a sprinkler system is scheduled to be installed in the library and archives sections of the North Building this summer.

Comments

1. Both buildings are structurally sound.
2. Not all light fixtures have UV filters installed.
3. Humidity levels are monitored but can only be controlled by portable units.
4. Dust filters are present.

5. An integrated pest management program is in place for both buildings.
6. The building has excellent security, fire-detection, and fire suppression systems.
7. The storage facilities are nearing capacity.
8. Boxes are not acid-free.
9. Four-mil plastic bags are needed for some of the collections.
10. Not all artifacts are labeled directly.
11. Most of the records are processed, arranged, and stored in a professional archival manner.
12. All collections-management standards are in place.
13. ASM is a professionally managed institution that meets most federal requirements for the long-term curation of archaeological collections.

Recommendations

1. Install UV filters to all lighting fixtures.
2. Update and expand humidity controls to include more collections storage areas.
3. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.
4. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags and label with indelible ink. Label inserts for secondary containers should be made from spun-bonded, polyethylene paper labeled in indelible ink.
5. Brown paper bags that are in archival plastic bags with acid-free labels should be removed. If the

original information from these labels are to be saved, they should be photocopied onto acid-free paper and stored in the files for that collection.

6. Create duplicate/security copies of all written documents and store in a separate, fire-safe, secure location.

Arizona State University

Tempe, Arizona

Collection Summary

Collections Total: 6.4 ft³ of archaeological materials. 1.4 linear feet of associated records.

Volume of Archaeological Materials: 6.4 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.4 linear feet (16.4 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: State funding provides the university with a budget, which in turn provides the anthropology department with a specific budget. Curation is funded through collection fees.

Repository Summary

DATE OF VISIT: April 24, 1997

PERSON CONTACTED: Michael Barton

Arizona State University (ASU) currently curates approximately 6.4 ft³ of archaeological materials and 16.4 linear inches of associated documentation recovered from work conducted on Williams Air Force Base (AFB). ASU maintains an artifact repository, as well as a separate records repository.

Structural Adequacy

Repository 1—Matthews Center

Matthews Center (Figure 43) was constructed in 1930 as the original site of the university library. The U-shaped building has a concrete foundation and yellow brick exterior walls with two floors above grade and one below grade. The building was expanded in 1949 by adding a large section in the center of the original U-shaped building. The entire addition is constructed of concrete including the foundation, exterior walls, and roof. The addition measures approximately 17,000 ft² and is six floors above grade and one floor partially below grade.



Figure 43. The Matthews Center on the campus of Arizona State University houses artifact collections from Williams Air Force Base.

Presently, Matthews Center is used by both the anthropology and art departments. The oldest sections of the building are currently used by the art department. A large portion of the 1949 addition is maintained by the anthropology department and is the focus of this report.

The 1949 addition is specifically for long-term storage space, but also has a receiving/loading dock and an artifact study room. The collections storage area that houses the Williams AFB collection measures approximately 2423 ft². Renovations were made to the interior of the addition to create the storage area. This section has steel framed windows on the west side that are shaded by concrete overhangs and the neighboring building. There are eight windows in this area that measure 2.7 x 5 feet (w x h). There is no running water in the collections building; however, other utilities in this section include heat, air conditioning, and electricity. This area has a sealed concrete floor with new steel studded, concrete interior walls covered with wallboard/sheetrock. The ceiling is composed of concrete that has been painted. Both the interior and exterior doors are steel. Dust is present throughout the collections storage area.

Repository 2—Anthropology Building

The Anthropology Building (Figure 44) was built in 1914 and is listed on the National Register of Historic Places. The repository was originally occupied by the music and fine arts department until the 1970s. The repository includes a collections facility, classrooms, artifact holding, washing, and processing areas, exhibit area, laboratories, and offices. The Anthropology Building is the repository for archaeological records. The repository has a concrete foundation with brick exterior walls. The flat roof is composed of tar. There are two floors above grade and one floor partially below grade. The facility is structurally sound but is suspected to have cracks underneath the tiled floors. There have been leaks, but those have been repaired. Internal renovations in 1974 nearly gutted the entire building to create new wall configurations. The repository has multiple aluminum framed windows that measure 4 x 5 feet (h x w). The windows are equipped with shades and show no evidence of water or air leaks. Some of the windows have been replaced. The repository has running water, heat, restrooms, telephone lines, computer lines, air conditioning, and electricity. The plumbing, electricity, and heat were renovated in 1974 and the air conditioning was upgraded in the last 10 years. There are always active renovations in the repository.

The collections storage area, measuring approximately 698 ft², includes the ceramic comparative collections and an artifact and record



Figure 44. The Anthropology Building on the campus of Arizona State University houses associated documentation for archaeological work conducted on Williams Air Force Base.

study room. The collections storage area has a concrete floor with wallboard/sheetrock and brick interior walls. The ceiling is composed of asbestos over concrete. There are no windows in this area. One metal panel door leads into the collections storage area. The utilities in the collections storage facility include heat, air conditioning, and electricity. There is no plumbing system in the collections storage area.

Environment

Repository 1—Matthews Center

The building has a thermostat central air conditioner controlled by the curatorial staff and a heating system that is maintained at approximately 68-70° Fahrenheit. Only the air conditioning unit has dust filters. Humidity is not regulated or monitored because of the excessively dry climate. The facility is regularly maintained by Campus Facilities Management and the anthropology department on an as-needed basis. Fluorescent, incandescent, and natural lighting are used throughout the building. None of the lighting systems have ultraviolet (UV) filters. The collections storage area has identical temperature controls. Curatorial staff maintain the collections storage area on an as-needed basis.

Repository 2—Anthropology Building

The Anthropology Building has thermostats in each room that control the air conditioning and heat. The heating system is a cold water, compressor unit. There are dust filters for both environmental controls. Humidity is not regulated or monitored because of the excessively dry climate. The building is regularly maintained by campus facilities. The laboratory, located within the Anthropology Building, is not in the collections storage area. Numerous chemicals are used in the laboratory for pollen processing and photodeveloping, as well as chemicals used by the physical anthropology staff. Ventilation is controlled with a fume hood vent that is directed to the exterior of the building. All procedures in the laboratory are monitored by the Risk Management Department of the Facilities Maintenance.

The collections storage area has a central air conditioning system that does not operate properly.

The targeted temperature for this area is 68-70° Fahrenheit. There are dust filters over the air conditioning ducts. Humidity is not regulated or monitored. The collections storage area has fluorescent lighting that is not equipped with UV filters. The area is regularly maintained by the curatorial staff on an as-needed basis.

Pest Management

Repository 1—Matthews Center

Precautions against pest infestation are taken in the Matthews Center. Sticky traps are used to monitor for insects and the building is regularly sprayed outside to prevent rodent infestation. There are no signs of pest infestation. Pest-management is the same for the collections storage area.

Repository 2—Anthropology Building

Pest-management procedures include regular spraying and sticky traps to monitor and control pest infestation. There have been no signs of pest infestation in the building.

The collections storage area has a program for pest-management that includes both monitoring and control. Precautions taken against insects and rodents include spray bombs and no-pest strips. These precautions are done on a yearly basis or when needed.

Security

Repository 1—Matthews Center

Security measures for the building consist of 24-hour patrolling by the state police on campus, controlled access, slip locks on windows, and key locks on all exterior doors. Presently, the exterior doors are locked after 5:00 p.m. Key locks will be replaced by a higher security lock called "medico." There was one episode of unauthorized entry during construction, which involved the theft of a computer. No windows are accessible from the outside because the windows below grade have suspended grates for security. There are artifacts in the collections storage area that have a high market value, but not in the Williams AFB collection. Security in the collections storage area is identical to the repository.

Repository 2—Anthropology Building

The Anthropology Building is equipped with an intrusion alarm in the exhibit gallery and key locks on all of the doors. There is also 24-hour patrolling by the state police on campus. There has not been any past episodes of unauthorized entry. There is a key lock on the metal door leading into the collections storage area.

Fire Detection and Suppression Systems

Repository 1—Matthews Center

The repository is equipped with manual fire alarms that are wired into the fire department, as well as smoke detectors. Fire suppression consists of fire extinguishers and wet pipe sprinkler system. The building is also equipped with fire doors. The fire department is within a mile of the facility. The collections storage area has the same fire safety mechanisms as the repository.

Repository 2—Anthropology Building

Fire detection in the Anthropology Building consists of manual fire alarms and fire suppression is controlled by fire extinguishers. The building is considered fireproof, due to the steel stud and brick exterior wall configuration. There are no fire safety measures in the collections storage area.

Archaeological Storage Materials

Storage Units

Artifacts for Williams AFB are stored in the 1949 addition of the Matthews Center on the ASU campus. The archaeological materials for Williams AFB are stored in a variety of locations in the collections storage area (Figure 45). Two boxes are stored on a non-movable shelving unit. The unit is composed of metal uprights and shelves that are bolted to the floor and ceiling. There are a total of 133 shelving units with seven shelves per unit. The aisles between the shelving units are approximately 40 inches. The shelving unit was measured from the floor to the ceiling and measures approximately



Figure 45. Artifact collections from Williams Air Force Base are stored in cardboard boxes on the floor and on a steel shelving unit in the Matthews Center.

7.25 x 1.4 x 3 feet (h x d x w). The unit is approximately 3.5 inches off the floor. Each row is labeled with an acidic paper insert tag in a metal holder with a letter distinction (e.g., C). The shelves are individually labeled with adhesive or magnetic plastic tags that are embossed with the shelf designation (e.g., C.7.1; which indicates that the artifacts are in row C, shelving unit 7, and shelf 1).

Six boxes of material are located on a non-movable metal shelving unit that measures approximately 7 x 1.5 x 0.27 feet (h x d x w). There is a total of 10 shelving units with six shelves per unit. The distance between the shelves is 40 inches. Each shelving unit is labeled with an acidic index card in marker with the ASU storage number (e.g., A.11). The individual shelves are labeled with adhesive or magnetic plastic tags that are embossed with a more specific ASU storage number (e.g., A.11.5). Seven boxes of materials from Williams AFB are on the floor between these shelving units. Percentages of material classes are outlined in Table 29.

Table 29.
Percentages of Material Classes Present in the Williams AFB Archaeological Collections Housed at Arizona State University

Material Class	Percentages
Prehistoric Artifacts	
Chipped Stone	11
Ceramic	30
Flotation Samples	3
Soil Samples	7
Fragmented Shell	2
Pollen Samples	46
Historic Metal Artifact	1
Total	100

Note: Percentages of material classes are based on volume.

Primary Containers

Primary containers consist of both acidic and archival boxes in various sizes. The two boxes on the first shelving unit measure 0.3 ft³. The boxes are folded with telescoping lids. One of the boxes is dusty and both are overpacked. The two boxes are labeled directly in marker with the site and box number. The six boxes located on the second shelving unit are all archival quality. Four of the boxes measure 1.4 ft³ and the other two boxes measure 0.3 ft³. The boxes are folded with telescoping lids. The boxes are labeled directly in marker with the site number and box number, and one has the installation name. Primary containers for the collections on the floor consists of two acidic cardboard boxes that measure 2.2 ft³ and five archival boxes that measure 2.0 ft³. The acidic boxes are folded and taped with folded flaps. These boxes show evidence of compression. The archival boxes are folded with telescoping lids.

Secondary Containers

Secondary containers for the military archaeological collections consist of two-, four-, and six-mil plastic zip-lock bags without any type of security (Table 30). These containers show evidence of punctures and tears which have been taped. The plastic bags, if labeled, are labeled directly in marker, pen, or pencil with the accession and site number. Secondary containers also include small manila envelopes with folded flaps that have been taped shut. Some of these envelopes show evidence of damage, such as tears and punctures. The manila envelopes are labeled

Table 30.
Types and Percentages of Secondary Containers Present in the Williams AFB Archaeological Materials Housed at Arizona State University

Secondary Container	Percentages
Plastic zip-lock bags	54
Small manila envelopes	43
Acidic cardboard box	3
Total	100

Note: Percentages of secondary containers are based on volume.

directly or have a stamped fill-in-the-blank tag completed in marker, pen, or pencil. The tags request some combination of the following information: investigating organization, activity, site, feature, locus, material, remarks, name, date, and specimen. The third type of secondary container present in the collection is an acidic box with glued construction and taped folded flaps for security. The box is labeled directly in marker with the material and analysis numbers. The secondary containers are nested with acidic brown paper bags and plastic vials. Most of the paper bags have been labeled in marker, pen, pencil, or a stamped tag and request the same information as that on the manila envelopes. The brown bags are fastened with staples and/or string.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted. Approximately 14% of the artifacts have been labeled directly in india ink with the accession and site numbers.

Human Skeletal Remains

ASU is not curating human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

The Anthropology Building on the ASU campus currently curates approximately 16.4 linear inches of documentation associated with archaeological work performed on Williams AFB.

Paper Records

ASU curates 13.0 linear inches of paper records from Williams AFB in the Anthropology Building. The administrative, survey, excavation, and analysis records are stored in letter-sized metal filing cabinets that measure 4.4 x 2.4 x 1.3 feet (h x d x w). There are eleven filing cabinets with four drawers per unit that contain site files. Project files are in three filing cabinets with four drawers per unit. The site file drawer for Williams AFB is labeled with a magnetic strip that is embossed with the site number. There are finding aids available for the files through a computer system. The files are arranged by site number.

Secondary containers include manila envelopes and one paper folder. The containers are labeled directly with a stamp that indicates the site number, type of work, and content. The records are in good condition with the exception of metal contaminants, such as paper clips, staples, and fasteners. The project files are labeled with acidic paper insert tags in metal holders with a plastic covering. The tags are stamped with the project number. The files are arranged by project number. Secondary containers for the project records are manila folders that are labeled with adhesive backed tags, taped labels, or are labeled directly. Some of the folders are also stamped with content information. The adhesive labels are typed or computer generated with project files, title, project number, installation, account number, and dates of account. The direct labels have the project file number, title, and contents.

Report Records

Williams AFB has approximately 2.13 linear inches of report records curated in the Anthropology Building on the ASU campus. These records are stored in the same manner as the paper records that are located in the four drawer metal filing cabinets.

Photographic Records

Photographic records at the ASU Anthropology Building total approximately 0.13 linear inches, and include black and white prints and negatives. These records are stored in the same manner as the paper records that are located in the four drawer metal filing cabinets.

Map Records

ASU curates approximately 1.13 linear inches of maps and blueprint records from Williams AFB. These records are stored in the same manner as the paper records that are located in the four drawer metal filing cabinets.

Collections Management Standards

Registration Procedures

Accession Files

Currently, all materials are accessioned upon receipt. In the past, materials were not accessioned; therefore, today the backlog is being accessioned.

Location Identification

The location of the collection within the repository is identified in the accession file, as well as a computerized file. The next step is to develop a Geographic Information System.

Cross-Indexed Files

Files are cross-indexed in the collections database by all of the fields that are entered.

Published Guide to Collections

A published guide to the collections has not been written.

Site-Record Administration

Originally, an ASU numbering system was in place, but now a state wide number is used.

Computerized Database Management

The repository uses an automated data processing technique to manage the collections. Backups of these records are made weekly on 4mm tapes. The computers used for the collection records are attached to the department and university wide network. The password into the network has not changed. At least one backup copy is stored in a different part of the building. Computer security and access are controlled by 'read only' files that are accessible to the staff and researchers; 'change only'

files are accessible to only a few members of the collections staff, who have a security password.

Written Policies and Procedures

The Division of Anthropological Collections has been formerly organized to establish the "Anthropological Collections Policies and Procedures." This division is staffed by members of the department of anthropology at ASU. The following policies and procedures are outlined within this document and should be referenced to find the specific guidelines.

Minimum Standards for Acceptance

ASU has written minimum standards for the acceptance of archaeological collections. Only those archaeological materials that assist faculty and research interests are accepted. A "Transfer of Property Custodial Agreement" is used for collections that are accepted. Any artifacts that have been taken illegally will be excluded from the collection. Only the archaeological records for research and collections are maintained. ASU does not keep non-relevant records.

Curation Policy

The repository has a comprehensive plan for curation that addresses the receipt of materials, processing of materials, use of materials, and future preservation. There are also written guidelines and standards for the curation of artifacts.

Records-Management Policy

There are written guidelines and standards for the curation of artifacts and associated documentation.

Field-Curation Guidelines

The repository does not have its own written field curation guidelines for researchers, but uses the written procedures established in the Arizona State Museum guidelines or the Arizona Research Institute (Bureau of Reclamation) guidelines.

Loan Procedures

ASU has a written loan procedure.

Deaccessioning Policy

There is a deaccessioning policy.

Inventory Policy

There is not a written inventory policy at ASU. However, there have been ongoing inventories since 1991.

Latest Collection Inventory

The latest inventory started in 1991 and is ongoing with over 200,000 specimens to inventory.

Curation Personnel

Curation personnel at ASU consists of Dr. Michael Barton whose work is split between curation and teaching. A graduate assistant, Lisa Beyer, spends 50% of her time on curation. ASU also hires other student employees to manage the collections.

Curation Financing

State funding provides the university with a budget, that in turn allocates money to the anthropology department. Curation is funded through collection fees. So far, the funding is adequate, but funding should be provided for big projects such as Native American Graves Protection and Repatriation Act (NAGPRA) compliance and renovation money for compliance with 36 CFR Part 79.

Access to Collections

Access to collections is controlled by curation personnel who require visitors to fill out a request form. Other staff members must check out keys controlled by Dr. Barton and the physical anthropologist curator, or the department head to gain access to the collections. Collections are accessible only to legitimate researchers and all unknown researchers must fill out forms. Records are accessible, through Dr. Barton, to qualified archaeological researchers and faculty and staff in the department. Records can not be checked out of the repository.

Future Plans

ASU has intentions to upgrade the security systems in place throughout the buildings, as well as the fire

safety procedures, which will include fire alarms and extinguishers. The repository would also like to hire a conservator. Another plan for the collections is to establish a state wide database consortium of site and project records.

The Archaeological Research Institute (ARI) will moving into the second floor of the Matthews Center, as of 1 July 1997, on the main campus of ASU. ARI is a unit of the Department of Anthropology, designated to curate archaeological collections under federal contract. ARI currently has a contract with the Bureau of Reclamation to curate their collections in Matthews Center. Part of these funds will be used to upgrade the storage facilities, which will also improve the storage conditions for the other collections.

Comments

1. Both repositories have an air conditioning and heat system. Humidity levels are not monitored or controlled in either repository because of excessively dry weather. Dust filters are on all environmental controls, except for the heat system in Repository 1. Neither facility has UV filters on their light sources. Both collections storage areas are maintained by the curatorial staff on an as-needed basis.

2. Both repositories have an integrated pest-management system that both monitors and controls for pest infestation.

3. Repository 1 has a security system that includes a 24-hour patrol by campus state police, key locks on all exterior doors, controlled access, and slip locks on windows. Repository 2 has an intrusion alarm in the exhibit area, 24-hour patrols by the campus state police, and key locks on both exterior and interior doors.

4. Fire protection in Repository 1 includes a manual fire alarm wired into the fire department, smoke detectors, sprinkler system, fire doors, and extinguishers. Repository 2 has manual fire alarms and extinguishers, as well as a steel stud and brick exterior wall configuration. The collections storage area in Repository 2 does not have any fire safety

mechanisms. Both facilities are within one mile of the local fire department.

5. Primary containers for the collections are a combination of acidic and archival cardboard boxes. Secondary containers for the artifacts are nonarchival and archival two-, four-, and six-mil zip-lock bags and small manila envelopes. Both the primary and secondary containers show some evidence of damage.

6. Documentation is stored in four drawer letter-sized metal filing cabinets. Secondary containers are manila envelopes and folders. Metal contaminants such as paper clips, fasteners, and staples are present on the records.

Recommendations

1. Plans to upgrade both the security and fire detection/suppression systems in both facilities will be beneficial. It is important to include the collections storage areas in these upgrades.

2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.

3. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Records should be free of metal staples and paper clips, or other contaminants.

Bernice P. Bishop Museum

Honolulu, Hawaii

Collection Summary

Collections Total: 805.9ft³ of archaeological materials and human skeletal remains. 5.9 linear feet of records.

Volume of Archaeological Materials: 138.9 ft³
 Compliance Status: Archaeological materials will require partial rehabilitation to comply with existing federal guidelines and standards for collections.

Human Skeletal Remains: 667 ft³
 Compliance Status: Human skeletal remains are housed at the Bishop Museum from an undetermined number of individuals recovered from Barbers Point Naval Air Station, Bellows Air Force

Base, Fort Shafter, Fort Kamehameha, Hickam Air Force Base, Lualualei Naval Magazine, Marine Corps Base Hawaii - Kaneohe Bay, Pacific Missile Range Facility Barking Sands, Hawaii, and Waianae Army Recreation Center.

Linear Amount of Records: 5.9 linear feet (70.26 inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are funded through each project.

Repository Summary

DATE OF VISIT: July 23-25, 1996 and March 25 and 27, 1997

PERSON CONTACTED: Elizabeth Bauwens and George MacDonell

The Bernice P. Bishop Museum has a long history of archaeological work in Hawaii; much of the islands'

earlier work has been performed by museum staff. The Bishop is a nonprofit institution dedicated to gathering, preserving, studying, and sharing knowledge of the cultural and natural history of Hawaii and the Pacific. The museum was founded in 1889 by Charles Reed Bishop as a memorial to his wife, Bernice Pauahi Bishop, the last descendent of the royal Kamehameha line of Hawaiian chiefs. Collections from several Department of Defense (DoD) military installations are located in three different buildings in the Bishop Museum complex.

For a list of the approximate cubic footage of artifacts and linear footage of associated documentation, refer to Table 31.

Repository 1 (Figure 46) is a warehouse used for oversized collections storage. Archaeological collections are located on the second floor/loft of the building. Repository 2 (Figure 47) is Konia Hall, which includes space for offices, laboratories, and collections storage rooms. DoD artifact and records are located in three collections

storage areas in this repository. Museum quality and special type collections are housed on the second floor, which was undergoing construction at the time of the assessment. Human skeletal remains are stored in a room located on the first floor; associated documentation is stored in another room on this same floor. Repository 3 (Figure 48) is the original Bishop Museum building. Space in this building has been allocated for offices, laboratories, classrooms, and collections storage rooms.



Figure 46. Halekini Hall (repository 1) is a warehouse style building which houses oversized objects as well as archaeological collections.



Figure 47. Konia Hall (repository 2) houses offices, laboratories, and collection storage rooms. Department of Defense collections, including documentation and human skeletal remains, are housed in several rooms throughout this building.

Table 31.
Volume of Artifact and Record Collections Housed at the Bishop Museum by Installation

Installation	Cubic Feet of Artifacts	Linear Inches of Records
Air Force		
Bellows Air Force Base	7.1*	8.00
Hickam Air Force Base	1.3*	—
Kaena Point Military Reservation	0.7	—
Army		
All installations	—	26.00
Fort Kamehameha	1.3*	0.13
Fort Shafter	1.3*	0.13
Helemano Radar Station	2.6	2.00
Waianae Army Recreation Center	62.4*	2.00
Marines		
Marine Corps Base Hawaii, Kaneohe Bay	650.0*	10.50
Navy		
Barbers Point Naval Air Station	56.3	11.00
Lualualei Naval Magazine	19.0*	10.50
Pacific Missile Range Facility, Barking Sands	3.9*	—
Total	805.9* ft ³	70.26 inches 5.90 linear feet

*Human skeletal remains are included



Figure 48. Bishop Hall (repository 3).

Structural Adequacy

Repository 1–Halekini Hall

Halekini Hall was built in 1975 as an overflow and general storage building to hold collections. It is a corrugated metal facility on a concrete pad that has space evenly divided between office space and collections storage areas. The corrugated metal roof is original to the construction of the facility. The two-story building is solid with no signs of cracks or leaks in the foundation or structure. There are no windows in the collections storage half of the building. The utilities, which consist of electricity, running water in the restrooms, and telephone lines, were all installed during the construction of the building.

DoD collections are located on the mezzanine level of the building and occupy approximately 200 ft². The metal floor is covered with wood boards. The interior walls are wood framed with metal grating and the ceiling has metal beams and layers of exposed insulation. There is no asbestos in this facility.

Repository 2–Konia Hall

Built in 1925, this facility was constructed for use as office and collection storage space. Konia Hall encompasses approximately 14,100 ft² with a concrete foundation and exterior walls that have a stucco surface. The roof has had many repairs over the years and any cracks that have occurred in the foundation and walls have also been repaired. This is a three-story building, all floors above grade, that has had a new wing for exhibit space and

ethnographic collections storage area added. There are many wood-framed windows without shades; however, the glass panes are opaque and have a dimpled effect. There is no evidence that the windows or frames leak water or are drafty, and have never been replaced.

Repository 3–Bishop Hall

Bishop Hall was built in 1891 to be used for a school (the Kamehameha School for Boys was exclusively for Hawaiian boys) and encompasses approximately 11,510 ft². The foundation and exterior walls are lava stone blocks and mortar, with wood floors inside. The metal roof has had numerous leaks, and parts of the building still exhibit water damage on the lanai (porch) area of the facility. There are two floors, both above grade, and a turret. There have been no significant renovations made to the building, with the exception of moving around office and collections storage space inside the facility. The numerous painted, wood-framed windows have no shades and are a variety of sizes. Some of the window seams leak water and are drafty.

Environment

Repository 1–Halekini Hall

No environmental controls are present on the collections storage side of the building. Temperature and humidity levels fluctuate regularly, and with no dust filtration system in place, collections storage areas have become quite dirty. The Buildings and Grounds department of the museum is responsible for the maintenance of the facility. Curatorial staff maintains the collections storage area as needed. Fluorescent lights suspended from the ceiling do not have ultraviolet (UV) filters.

Repository 2–Konia Hall

Window air conditioning units are installed in some of the rooms. No windows are located in two of the collections storage areas; however, windows are present in the document storage room. Humidity levels are somewhat regulated with the use of window air conditioning units, but there are no dust filters installed. Maintenance and cleaning of the building is the same as Repository 1. Fluorescent lights suspended from the ceiling do not have UV filters.

Repository 3–Bishop Hall

Window air conditioning units are installed in some of the rooms, which helps to regulate the fluctuating humidity levels. There are no dust filters present on the units. Windows line one wall of the collections storage room. Maintenance and cleaning of the building is the same as Repository 1. Fluorescent lights suspended from the ceiling do not have UV filters.

Pest Management

An integrated program for pest-management is established for all repositories housing collections including both regular monitoring and control measures. Sticky traps are placed throughout all facilities and checked weekly. Spraying of all entrances, cracks, and crevices in the buildings with a commercial fumigant is also conducted as needed.

Security

Public access is restricted to the buildings that house offices and collections storage areas. All visitors must sign in at a security desk and have an appointment with a staff member who escorts and supervises the work in all collections storage areas. Visitor's badges must be worn at all times.

Repository 1–Halekini Hall

This building is kept locked and has no windows on the collections storage half of the building. The entrance to the second floor/loft is kept locked and the door to the collections storage room, where the archaeological collections are housed, is also kept locked. Access is controlled to all collections storage areas and only collections personnel have access to the keys that unlock the doors. The museum employs security personnel who routinely patrol the entire museum complex.

Repository 2–Konia Hall

Konia Hall has two exterior doors that are both kept locked. Upstairs, where the museum quality collections are housed in a room built inside a larger room, the collections storage room has plywood walls and a narrow door that is locked with a padlock. The human skeletal remains are kept in a

locked room on the ground floor. The documents storage room remains locked when not in use. The museum employs security personnel who routinely patrol the entire museum complex.

Repository 3–Bishop Hall

The front door is kept locked and visitors are asked to sign in at the front desk. The collections storage room is located at the back of one of the laboratories on the ground level floor of the building. This storage and office space is kept locked when unoccupied. The museum employs security personnel who routinely patrol the entire museum complex.

Fire Detection and Suppression Systems

Repository 1–Halekini Hall

There are no fire detection measures present in the collections storage half of this facility. The only means of fire suppression are fire extinguishers in the building that are checked annually.

Repository 2–Konia Hall

A wet pipe sprinkler system and fire extinguishers constitute the fire detection and suppression measures present in Konia Hall.

Repository 3–Bishop Hall

There are no fire detection measures present in this facility. The only means of fire suppression are fire extinguishers in the building that are checked annually.

Archaeological Storage Materials

Storage Units

Repository 1–Halekini Hall

Storage units in Repository 1 consist of adjustable, metal shelving units that have an enamel finish and measure 7 x 3.5 x 2.5 feet (h x w x d). There are approximately four shelves per unit and twelve boxes per shelf (Figure 49).



Figure 49. Collection storage room, units, and primary containers in Repository 1, where federal collections are housed.

Repository 2—Konia Hall

In Repository 2, collections are located in two of these collections storage rooms. Upstairs, in collections storage area 1, museum quality collections and special type-collections are stored in large metal cabinets with removable drawers, a baked enamel finish, and lockable doors. In addition, boxed collections are stacked on top of these cabinets due to lack of storage space.

On the ground level floor, an unsealed wood shelving unit measuring 9.5 x 25 x 2.5 feet (h x w x d) covers an entire wall of collections storage area 2. A second row of wood shelves, approximately 18 feet wide, is also used to store the boxed human skeletal remains recovered from DoD owned lands.

Repository 3—Bishop Hall

Storage units in Repository 3 consist of adjustable, metal shelving units that have an enamel finish and measure approximately 10 x 3 x 2.5 feet (h x w x d). There are six shelves per unit and each unit has an additional nine inches of space between the floor and the bottom shelf.

Primary Containers

Repository 1—Halekini Hall

Two sizes of acidic cardboard boxes are used to house the collections, both of which have telescoping lids. The larger, standard-size box measures 1.3 ft³, and the smaller half-size box measures 0.5 ft³. Approximately 67.5 ft³ of archaeological collections currently are

stored in Repository 1. For a breakdown of the percentages of material classes associated with these collections, refer to Table 32.

The primary containers are labeled with acidic, adhesive paper labels, or pieces of paper taped to each box. Some of the paper labels are computer generated and others are handwritten in black and red marker. One of the boxes did not have a paper label, only a temporary storage number written directly on the box in pen. Most of the boxes are dusty, aging, and are showing signs of compression and tearing.

Repository 2—Konia Hall

In the first collections storage area, 3.4 ft³ of artifacts are either stored in metal drawers, each measuring approximately 0.7 ft³, or in the same type of acidic cardboard boxes that were assessed in Repository 1. DoD collections are located in three drawers that are labeled with pieces of paper inserted into metal label holders. Label information is typed and includes the cabinet number, drawer number, and the contents of each drawer. DoD collections are also housed in one standard-size box and one half-size box that are labeled with pieces of paper taped to each box. Data on the box labels is handwritten in marker. For a breakdown of the percentages of material classes associated with these collections, refer to Table 32.

In the second collections storage area, approximately 667.4 ft³ of human skeletal remains from several military installations are stored in acidic cardboard boxes that measure 1.3 ft³ each. Each box has a number stamped directly on the box or on a piece of paper stapled to the box. A marker is used to write label information directly on a number of the boxes.

Repository 3—Bishop Hall

Approximately 67.6 ft³ of archaeological collections are stored in the same type of standard-size and half-size acidic cardboard boxes that were assessed in Repository 1. Several of the heavier boxes have been reinforced by taping the bottom of the box. Acid-free paper labels are taped to each box with the project number, project name, box number, contents, processing status, and condition of the collections in each box. Most of the labels are computer generated with additional information handwritten in black marker.

Table 32.
Percentages of Material Classes Present in the DoD Collections Housed at the Bishop Museum by Installation

Material Classes	1	2	3	4	5	6	7	8	9	10	11	Total
<i>Prehistoric Artifacts</i>												
Chipped Stone	12	1	—	19	—	2	—	—	—	—	—	<1
Faunal Remains	3	3	—	12	—	10	—	—	—	—	—	<1
Shell	<1	—	—	3	—	—	—	—	—	—	—	<1
Soil Samples	21	25	—	—	50	—	—	—	—	—	—	3
¹⁴ C	20	—	—	—	—	—	—	—	—	—	—	<1
Botanical Samples	—	—	—	—	—	4	—	—	—	—	—	<1
Human Skeletal Remains	41	0.013	—	19	—	<1	100	100	100	100	100	86
Modified Faunal Remains	—	—	80	2	—	—	—	—	—	—	—	<1
Modified Shell	—	—	20	2	—	—	—	—	—	—	—	<1
Mixed/Indeterminate	1	—	—	—	—	—	—	—	—	—	—	<1
Midden Samples	1	68	—	18	50	2	—	—	—	—	—	6
Column Samples	—	2	—	—	—	—	—	—	—	—	—	<1
Other	—	<1	—	—	—	<1	—	—	—	—	—	<1
<i>Historic Artifacts</i>												
Ceramics	—	—	—	13	—	28	—	—	—	—	—	1
Glass	—	—	—	10	—	39	—	—	—	—	—	1
Metal	<1	—	—	1	—	12	—	—	—	—	—	<1
Modified Bone	—	—	—	—	—	1	—	—	—	—	—	<1
Rubber	—	—	—	1	—	1	—	—	—	—	—	<1
Other	—	—	—	—	—	<1	—	—	—	—	—	<1
Total	100	100	100	100	100	100	100	100	100	100	100	100

Note: Percentages based on volume of material.

(1) Barbers Point Naval Air Station; (2) Bellows Air Force Base; (3) Fort Kamehameha; (4) Fort Shafter; (5) Helemano Military Reservation; (6) Hickam Air Force Base; (7) Kaena Point Military Reservation; (8) Lualualei Naval Magazine; (9) Marine Corps Base Hawaii, Kaneohe Bay; (10) Pacific Missile Range Facility, Barking Sands; (11) Waianae Army Recreation Center.

Other prehistoric materials present in the Barber's Point and Waianae Army Recreation Center collections include shell, mixed/indeterminate samples, botanical samples, modified fauna, volcanic glass, human skeletal remains, soil samples.

Other historic materials present in the Waianae Army Recreation Center collection include a stone bead and textile fibers.

Secondary Containers

Most of the secondary containers used (80.4%) are plastic bags, primarily with zip-lock closures. Paper bags constitute approximately 13.4% of the containers present, and 1.6% of the artifacts are

loose. Various secondary containers are used for the remainder of the collection (4.6%), including foil, newspaper, taped ethafoam, and plastic film canisters. Most of the secondary containers had additional zip-lock bags, plastic bags with twist ties,

Table 33.
Percentages of Secondary Containers Used to Store Department of Defense Collections by Volume in Each Repository

Container Type	Warehouse	Konia Hall	Bishop Hall	Total
Plastic Bags	83	99	59	80
Paper Bags	16	<1	23	13
Loose	—	<1	5	2
Other*	1	<1	13	5
Total	100	100	100	100

*Other secondary containers used include foil, newspaper, taped ethafoam, and plastic film canisters.

foil, or film canisters nested within. For a breakdown of secondary containers used in all of the repositories, refer to Table 33.

Laboratory Processing and Labeling

The majority of the 805.9 ft³ of archaeological materials has been cleaned (98.1%), labeled (87.6%), and sorted by material class (98.2%). The level of processing and labeling is detailed below for the collections located in each of the three different repositories.

Repository 1—Halekini Hall

Most of the collections in Repository 1 (67.5 ft³) consist of midden and soil samples. Of the remaining 6 ft³ of artifacts, only 38% have been cleaned. Approximately 16.3% of the artifacts are labeled using paper tag inserts enclosed in the bags, or are labeled directly on the surface of the artifact with white paint. Most of the collections (94.2%) have been sorted by material class.

Repository 2—Konia Hall

Almost all of the 670.8 ft³ of artifacts and human skeletal remains in both collections storage areas have been cleaned (99.8%), labeled (97.9%), and sorted by material class (99.6%). The collections are

directly labeled on the surface of the artifact in ink, or with ink on black or white paint. Paper labels are also inserted into some the bags or placed near the artifacts in the primary container.

Repository 3—Bishop Hall

Approximately 70% of the 67.6 ft³ in Repository 3 were cleaned. A little more than half (54%) of the collections are labeled directly on the surface of the artifacts with ink or have acid-free paper tags inserts in the secondary container. The majority (76.9%) of the collections are sorted by material class.

Human Skeletal Remains

All 667 ft³ of the human skeletal remains are separated from the rest of the collections and stored in Repository 2, collections storage room 2.

Unknown skeletal material was located in a box of collections associated with Project Number 334, the Barbers Point/Lualualei NAVMAG collection in Repository 1. This box is labeled with a temporary storage number and contains a large variety of material classes stored in paper bags. The bone material was in one of the unlabeled paper bags and was in good condition. The minimum number of individuals represented is undetermined. For the volume of skeletal material at the Bishop Museum for the Department of Defense by installation, refer to Table 34.

Table 34.
Human Skeletal Remains at the Bishop Museum Associated with DoD Installations

Installation	Volume in Cubic Feet	Minimum Number of Individuals Represented
Air Force		
Bellows Air Force Base	1.3	Undetermined
Hickam Air Force Base	1.3	Undetermined
Army		
Fort Kamehameha	1.3	1
Fort Shafter	1.3	5
Waianae Army Rec. Center	0.1	1
Marines		
Marine Corps Base Hawaii, Kaneohe Bay	650.0	1534 +
Navy		
Barbers Point Naval Air Station	2.6	Undetermined
Lualualei Naval Magazine, West Loch Branch	5.2	Undetermined
Pacific Missile Range, Barking Sands	3.9	Undetermined
Total	667.0 ft ³	1541 + undetermined

Records Storage

All of the associated archaeological records are stored in Repository 2, collections storage area 3. Records are organized by a project number assigned by the Bishop Museum. The records occupy approximately 5.9 linear feet of shelf space and are filed in several types of storage units and primary containers, including acid-free record boxes, standard-size acidic cardboard boxes (Figure 50). Acidic and acid-free files have a project number written on them in pencil, or an adhesive typed label.



Figure 50. Waianae Army Recreation Center collections are temporarily located in the archaeology laboratory in repository 3.

Paper Records

Paper records present in the installation specific project files consist of administrative documents, background information, survey/field work, site forms, excavation forms, field notes, analysis records, and field notebooks. These documents total approximately 4.7 linear feet and make up the majority of the associated records.

The overall condition of the records is very good; however, a few of the project files are overcrowded, resulting in wrinkled and torn documents. Contaminants are also present and include metal staples and paper clips, several of which have rusted and stained the paper records.

Report Records

Less than two inches of bound report records are present in the project files. These reports have no

other label except for the report title and are stored in the files with the rest of the associated project records.

Photographic Records

Photographic records are generally stored in a primary container away from the paper documents; however, approximately two inches of black and white prints and negatives were found in several of the installation project files. Most of the latter photographic records have no labels and are at risk of becoming damaged or lost.

Audio-Visual Records

Six audio cassette tapes of oral histories are in the project files for a large Army-wide project performed in the 1970s. The tapes are labeled with the individual names of the interviewees and the project name. The cassettes are housed in plastic cases and stored in a file cabinet labeled with the project name.

Maps and/or Oversized Documents

Approximately six inches of cartographic records, including large topographic maps, small hand-drawn site maps, and blueprints are present in the files. Rubbings of Japanese gravestones on rice paper are also folded and filed with the project records.

Collections Management Standards

Registration Procedures

Accession Files

All materials are accessioned upon receipt, except for those items on loan to the museum. Accession files are maintained by the registrar.

Location Identification

Collection location information is cross-referenced by accession number, project number, site number, and site name.

Cross-Indexed Files

Files are searchable by project number, site number, site name, and accession number.

Published Guide to Collections

A published guide to the Bishop's holdings has not been produced.

Site-Record Administration

The Bishop Museum assigns and maintains site numbers and files in the Anthropology Documents Room. Numbers are assigned by a complex system based on the state number (50), which island the site is on (Oa for Oahu), and the sequential number of the site within the ahupua'a (the chiefdom land division of each island which generally extends from the top of a volcano to the sea).

Computerized Database Management

Collection information is entered onto databases and updated weekly. Tape backups are made weekly and stored separately.

Written Policies and Procedures

Minimum Standards for Acceptance

The Archaeology Lab Procedures Manual details the standards for acceptance of an archaeological collection.

Curation Policy

Collections are curated using methods outlined in the Archaeology Lab Procedures Manual.

Records Management Policy

All original documents are turned over to the Archives Department within the museum. Personnel in this department follow written guidelines developed for the curation of documentation.

Field-Curation Guidelines

The Archaeology Lab Procedures Manual provides guidelines for infield curation measures.

Loan Procedures

The Bishop Museum has a written loan policy and standard form that is used for the procedure.

Deaccessioning Policy

Deaccessioning policies are addressed in the Registration Procedures guidelines.

Inventory Policy

The Archaeology collections department does not have a written inventory policy.

Latest Collection Inventory

Museum staff have never performed a complete collections inventory. Many of the collections were recently checked during NAGPRA summary and inventory compliance work.

Curation Personnel

George MacDonell, who replaced Liz Bauwens, is the full-time Archaeology Collections Manager and has one research assistant. They are responsible for the cleaning, processing, and curating materials from ongoing projects. They also assist researchers in accessing the museum's archaeological collections.

Curation Financing

Curation activities for archaeological collections are financed through the budgets of each project. Current levels of funding are inadequate. Curation personnel feel that more money is needed for general operating expenses and upkeep of the collections and facilities.

Access to Collections

The two collections personnel control all access to the archaeology collections. Other museum personnel and outside researchers are allowed access only in the company of these individuals. The museum currently charges \$50.00 an hour for access fees and the staff time.

Future Plans

Collections staff would like to ensure that the collections are self-sustaining by charging a built-in fee for curation costs by project.

Comments

1. Adequate environmental controls are absent in all three repositories. Water damage to Repository 3 has occurred and temperature and humidity levels fluctuate in the collections storage areas.
2. An integrated pest management system is in place for all facilities. The assessment team did not notice an infestation of any kind.
3. All rooms remain locked at all times when not in use and security personnel patrol the grounds routinely. Intrusion alarms or motion detectors are absent from all archaeological collections storage facilities.
4. Fire safety precautions are not adequate in any of the buildings or collections storage areas.
5. A large majority of the collections are housed in acidic cardboard boxes and a variety of nonarchival quality secondary containers are in use.
6. The majority of the collections have been adequately processed and organized.
7. A small amount of unknown skeletal material was found in a box in Repository 1.
8. The minimum number of individuals represented is undetermined for the U.S. Air Force and U.S. Navy collections housed at the Bishop Museum.
9. Photographic materials are not labeled and are sometimes filed with acidic paper records. Audio cassette tapes are stored with acidic paper records and files.
10. Associated documentation is housed in a variety of storage units; contaminants are present on the paper documents.

Recommendations

1. Funding is needed to purchase the equipment necessary to provide an environmentally stable curation facility for archaeological collections. Temperature and humidity levels should be monitored and regulated constantly and a dust filtration system needs to be used in all areas.
2. Smoke detectors, heat sensors, and manual fire alarms should be installed in all collections storage areas and wired directly to a local fire department. Easy access to a fire extinguisher in all collections storage areas is needed. Optimally a dry-pipe, zoned sprinkler system should be installed.
3. Archaeological materials should be repackaged into 4-mil polyethylene zip-lock bags with acid-free paper labels inserted into the bags. The bags should then be placed into acid-free cardboard boxes that are themselves labeled with acid-free labels that can be inserted into self-adhesive plastic label holders. All label information should be written in indelible ink.
4. The unknown skeletal material in the Barber's Point/Lualualei collection should be examined and a determination should be made as to whether it's faunal or human. All NAGPRA compliance measures need to be followed.
5. The photographic materials need to be removed from the paper documents, labeled, and stored in environmentally stable conditions within archival primary and secondary containers.
6. Remove audiocassettes from files and store according to archival guidelines established for the curation of electronic media.
7. All paper contaminants should be removed with care taken to ensure that the original order of the records is maintained. All associated documents should be stored in archival quality containers.

Bureau of Land Management

Northern District Office

Fairbanks, Alaska

Collection Summary

Collections Total: 0.2 ft³ of archaeological materials. 0.8 linear feet of associated records.

Volume of Archaeological Materials: 0.2 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.8 linear feet (9.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation financing is not funded separately, it is part of the overall job of the archaeological staff. All archaeological collections are sent to the University of Alaska Museum in Fairbanks. Presently, the Bureau of Land Management does not provide financial support for the long term curation of archaeological collections at the museum.

Repository Summary

DATE OF VISIT: May 22, 1997

PERSON CONTACTED: John Cook

The Bureau of Land Management (BLM) Northern District Office currently curates approximately 0.2 ft³ of artifacts recovered from Fort Wainwright. The repository also has 9.25 linear inches of associated documentation from Fort Wainwright and Fort Greely.

Structural Adequacy

The BLM Northern District Office building was completed in 1988 and dedicated in 1989 (Figure 51). The building, totaling approximately 52,000 ft², is primarily office space, but does have a receiving and loading garage, a multipurpose laboratory for artifact holding, washing, and processing, and a mechanical/utility room.

The building has a concrete foundation with concrete block exterior walls. The flat roof is original to the building and is composed of an insulated roof membrane that was adhesively



Figure 51. Exterior view of the entrance to the Bureau of Land Management, Northern District Office.

applied. The building has two floors above grade and is structurally solid; however, the facility does have some cracks and leaks. There have been minor internal renovations in the building. Multiple exterior aluminum framed windows, which are equipped with shades, are located on all sides of the building. The windows show no evidence of water or air leaks. The building has glass exterior doors with metal frames and wood paneled interior doors.

Collections are located in two general areas. Most of the records are located in and around the office of John Cook, staff archaeologist. His office is an open cubicle space that is identical to the building in all respects to structure, environment, security, and fire suppression and detection. The other location is the archaeology laboratory, which consists of an artifact holding, washing, and processing area and an artifact and records study room.

The archaeology laboratory totals 424 ft² and is the location of the archaeological materials for Fort Wainwright, as well as some additional records. The interior walls of the archaeology laboratory consist of wallboard/sheet rock and the floors are concrete covered with linoleum. The ceiling is made of suspended acoustical tiles. There are two aluminum framed windows, measuring 6 x 6 feet (h x w), that face west. The windows are equipped with shades and do not show evidence of water or air leaks. There is one wood door with a glass window leading into the archaeology laboratory. The laboratory does not use any hazardous materials but it does have a fume hood that vents directly to the exterior. Functional overhead pipes are present in the archaeology laboratory above the archaeological

materials. The overhead pipes are for fire and water purposes. There has never been a failure of these systems.

Environment

The temperature controls in the BLM Northern District Office include air conditioning and fuel oil-base board heat, as well as controlled humidity levels. There are dust filters on the environmental controls. The building is cleaned daily by a contracted janitorial staff. Maintenance problems are directed to the building supervisor. There is fluorescent lighting without ultraviolet (UV) filters throughout the building. There is no asbestos present in the building. Utilities within the repository include running water, heat, restrooms, telephone lines, air conditioning, humidity control, and electricity. The plumbing, electricity, and heating systems are all original to the building.

John Cook's office has the same environmental controls as the repository. However, the archaeology laboratory has constant air volume with central air conditioning and radiator heat. The targeted temperature and humidity ranges in the collections storage area is 74° Fahrenheit and 40% humidity. Dust filters on the environmental controls are pleated. The laboratory is cleaned on an as-needed basis by the archaeological staff at BLM. Dust is present in the collections storage area.

Pest Management

The BLM Northern District Office has a pest-management program established to control and monitor for insects and rodents in the facility. The BLM staff have not seen signs of pest infestation in the offices. No precautions are taken against insects or rodents in the archaeology laboratory.

Security

One of the security measures for the building, including the collections storage areas, consists of a private security company that monitors the building on weekends and after hours of operation. The repository also has key locks on all interior and exterior doors, as well as controlled access into the building. The front door is monitored by a reception

desk, which requires a check-in. The BLM office has law enforcement personnel on staff that monitor the building, even though their job is as BLM rangers. There are plans to upgrade the security cameras for the building because of some break-ins that occurred in 1993–1994 in the parking lot. The upgrade was approved, but was not completed at the time of the curation assessment. The repository is equipped with an intrusion alarm that is connected to a private security company, Guardian Security; however, the intrusion alarm is not operated because of the flexible and wide ranging BLM staff hours.

The archaeology laboratory has a door with a key lock. There are only seven people who have a key to this door. Those people include four archaeology staff members, two law enforcement personnel, and the building maintenance supervisor.

Fire Detection and Suppression Systems

The BLM Northern District Office is equipped with a wet-pipe sprinkler system, fire extinguishers, fire doors, and fire walls. Fire detection mechanisms include manual fire alarms wired into the fire department, smoke detectors, and heat sensors. The collections storage areas have the same fire safety mechanisms, except that neither is equipped with fire extinguishers.

Archaeological Storage Materials

Storage Units

The archaeological materials located at the BLM Northern District Office will not be permanently curated at this facility. The collection is presently being analyzed and will be sent to the University of Alaska Museum in Fairbanks for curation upon completion of the project. Currently, the archaeological materials for Fort Wainwright are stored in the archaeology laboratory. The storage unit has three metal drawers across and 11 metal drawers down to total 33 drawers. There are six of these metal drawer units, but only one has military collections (Figure 52). The unit measures approximately 3.1 x 1.1 x 2.5 feet (h x d x w). The metal drawer units can be secured with a metal



Figure 52. The metal drawer is the primary container for artifacts and associated documentation from Fort Wainwright. Secondary containers for the artifacts consist of manila envelopes and plastic bags.

security plate cover that has a key lock. These plates were not in use at the time of the visit. Percentages of material classes are outlined in Table 35.

Table 35.
Percentages of Prehistoric Material Classes Present in the Fort Wainwright Archaeological Collections Housed at the Bureau of Land Management, Northern District Office

Material Class	Percentage
Chipped Stone	81
Faunal Remains	10
Soil Samples Sample	4
Wood	5
Total	100

Note: Percentages of material classes are based on volume.

Primary Containers

Primary containers consist of two metal drawers that total approximately 0.2 ft³. One of the drawers contains an obsidian sample from the collection, which will undergo a special obsidian analysis process. The other drawer contains the remainder of the collection. At the time of the assessment, the drawer was not in the unit, but was placed on a shelf because it was overpacked and could not fit into the unit. The drawer with obsidian samples is labeled

with a sticky note in marker with quad abbreviations. The other drawer is not labeled.

Secondary Containers

Secondary containers for the military archaeological collections consist primarily of small manila envelopes (95%) that have a folded flap for security. These envelopes are grouped together with rubber bands and metal binder clips. Plastic twist-tie bags (4-mil) make up the other 5% of the secondary containers. The secondary containers are labeled directly in marker, pencil, or a stamped fill-in plate. The plastic bags and some of the manila envelopes are labeled with the Alaska Heritage Resources Survey (AHRS) number (site number), site name, field number, and analysis information. The remainder of the manila envelopes are labeled with the AHRS number, locus, coordinates, field number, artifact, depth/level, position, investigator, date, and accession number. The plastic bags are nested with tertiary containers of manila envelopes.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted by material class. None of the artifacts have been labeled.

Human Skeletal Remains

The BLM Northern District Office is not curating human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

The BLM Northern District Office currently curates approximately 9.25 linear inches of documentation associated with archaeological work performed on Fort Wainwright and Fort Greely. Records are stored in both John Cook's office area and the archaeology laboratory.

Paper Records

The BLM Northern District Office curates 6.0 linear inches of paper records from Fort Wainwright and Fort Greely. There are 2.75 linear inches of Fort

Wainwright survey records stored with the artifacts in the archaeology laboratory. These records are in the metal drawer with the artifact collection. The survey records consist of all-weather field notebooks that are labeled directly in pencil with some combination of field number, AHRS number, investigator, date, or location. The records are in good condition. There are 0.25 linear inches of Fort Wainwright administrative records and survey records stored in a metal cabinet that is attached to John Cook's desk. The storage unit measures 1.6 x 1.6 x 1.2 feet (h x d x w) and has two drawers; one for supply storage and the other is a letter-sized filing drawer. The storage unit has a key lock. The letter-sized drawer measures 1.6 x 1.2 x 1 feet (d x w x h) and is not labeled. Secondary containers consist of acidic hanging files that are in good condition. The hanging files are labeled with acidic paper insert tags in plastic holders on the file. The tags are labeled in marker with the project name and installation. Fort Greely has approximately 3.0 linear inches of administrative records, background records, and military reference records that are stored in John Cook's office in a shelving unit. The metal shelving unit measures 3.6 x 1.1 x 2.8 feet (h x d x w) and has three shelves. There are two of these shelving units in his office. The secondary container for the administrative records is a cardboard binder that is labeled with an adhesive backed plastic tag in typed print with the installation name. The military reference material is in a paper folder.

Report Records

Fort Wainwright has approximately 1.25 linear inches of report records curated in John Cook's desk filing drawer. These records are stored identical to the paper records and are located in the same storage unit. There are 1.5 linear inches of report records for Fort Greely located on the shelving units in John Cook's office. The report records are stored identical to the Fort Greely survey records and administrative records located on the shelving unit.

Map Records

The BLM Northern District Office curates approximately 0.5 linear inches of map records for Fort Wainwright and Fort Greely. Field maps are stored throughout the office work space because of

current usage. Topographic and computerized maps are located in a map storage cabinet. The map cabinet measures 1.4 x 3.8 x 4.6 feet (h x d x w) and has five drawers per unit. There are two map cabinets. The metal drawers are labeled with adhesive backed tags in marker with contents and BLM division user (e.g., Archaeology or Biology). Inside the drawers, the maps are protected by metal and vinyl cover flaps. The maps are in good condition.

Collections Management Standards

The BLM Northern District Office is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

No personnel are dedicated to the curation of collections because long term curation is not in their scope of work. The BLM Northern District Office has an archaeological staff of four, which include three archaeologists: John Cook, Howard Smith, Mike Kunz, and one assistant seasonal technician, Chuck Atkins.

Curation Financing

Curation is financed as part of the archaeological scope of work. All archaeological collections recovered by BLM archaeological staff are ultimately sent to the University of Alaska Museum in Fairbanks. BLM does not pay the museum for long term curation. Recently, the museum requested support money for the collections but the BLM did not respond. The BLM Northern District Office did finance an inventory catalog of the BLM collections at the museum for Native American Graves Protection and Repatriation Act (NAGPRA) compliance purposes. John Cook believes that the BLM should be supporting the museum.

Access to Collections

Access to the collections is controlled by the archaeological staff.

Future Plans

The BLM Northern District Office archaeological staff is in need of more personnel, but funding is not

available. There are a number of new archaeological projects outlined in the budget but there are no plans for upgrading the curation needs.

Comments

1. BLM has temperature controls that consist of air conditioning, fuel oil-base board heat, and humidity controls. There are dust filters on all environmental controls.
2. There is an integrated pest management system that includes both monitoring and control measures; however, no precautions against insects and rodents are performed in the archaeology laboratory.
3. BLM has a security system that includes a private security company that monitors the building after hours and on weekends. The building also has key locks on all doors, controlled access through both exterior doors, and law enforcement personnel on staff. The building is equipped with an intrusion alarm connected to the private security company, but the system is not used because of flexible work hours of BLM staff. There are also plans to upgrade security cameras.
4. The repository is equipped with fire suppression mechanisms, such as a wet pipe sprinkler system, fire walls, fire doors, and fire extinguishers. Manual fire alarms connected to the fire department, smoke detectors, and heat sensors are in the facility for fire detection.
5. There are functional overhead pipes in the archaeology laboratory above the collections.
6. The artifacts are located in a metal drawer storage unit. Secondary containers for the artifacts are manila envelopes and twist-tie plastic bags.
7. Documentation is stored in a metal drawer storage unit, a metal filing cabinet, metal shelving units, and a map cabinet. Metal contaminants are present on the paper records. No copy of the associated documentation has been produced.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. If possible, remove the archaeological materials away from overhead pipes.
3. Rebag all archaeological materials into 4- or 6-mil archival quality polyethylene zip-lock bags.
4. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Bureau of Land Management

Phoenix Field Office

Phoenix, Arizona

Collection Summary

Collections Total: 1.3 ft³ of archaeological materials. 3.2 linear feet of associated records.

Volume of Archaeological Materials: 1.3 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 3.2 linear feet (38.75 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Presently, there is no curation financing system in place at the BLM Phoenix Field Office. Specific project budgets may include repository fees for a curation facility, such as Arizona State Museum, but there is currently no system that allows for curation activities to be funded specifically.

Repository Summary

DATE OF VISIT: April 29, 1997

PERSON CONTACTED: Cheryl Blanchard

The Bureau of Land Management (BLM) Phoenix Field Office currently curates approximately 1.3 ft³ of archaeological materials recovered from the Barry

M. Goldwater Range that has property utilized managed by both Luke Air Force Base (AFB) and Yuma Marine Corps Air Station (MCAS). The repository also has 38.75 linear inches of associated documentation from these two installations.

Structural Adequacy

The BLM Phoenix Field Office (Figure 53) includes offices, a warehouse, a receiving/loading dock, an



Figure 53. The Bureau of Land Management, Phoenix Field Office holds several artifacts and associated documentation from Barry M. Goldwater Range.

artifact holding area, a records storage area, and a security monitoring space that totals approximately 33,710 ft². BLM leased the building in 1983 as the original occupants; however, the lease agreement expires in 1998, potentially resulting in a need to relocate.

The building has a concrete foundation with a concrete block, paint, and stucco exterior wall configuration. The flat roof is composed of tar and asphalt. The building has a single floor above grade and is structurally solid, with no major cracks. The roof was resealed in 1997 to alleviate past leakage. There have been internal renovations including the re-configuration of some of the doorways and walls for space utilization purposes. Multiple exterior aluminum framed windows located on three of the four sides of the building measure 13.25 x 58.50 inches (w x h). Windows are shaded and show no evidence of water and/or air leaks. There are interior wood panel doors throughout the building that do not lock. The exterior doors, which have key locks, are constructed from metal panels.

The collections storage areas are located in the office of Cheryl Blanchard, as well as a general office area. Interior walls are constructed of painted wallboard/sheetrock and the ceiling consists of suspended acoustical tile ceiling. The floors are concrete covered with carpet. There are no windows located within the collections storage areas. One wood panel door leads into both collections storage areas. Functional overhead pipes are located above the collections; however, there has never been a system failure.

Environment

The BLM Phoenix Field Office has a computerized central zoned air conditioning and electric heat system that does not have dust filters. The computerized system automatically turns off the air conditioning after 6:00 p.m., which according to the BLM staff causes a rapid temperature fluctuation. During the evenings and on weekends the building reportedly becomes excessively hot. Humidity is neither regulated nor monitored; however, the environment is typically very dry. The building is maintained daily by a janitorial staff contracted by the building owner. There is fluorescent lighting without ultraviolet filters throughout the building. No asbestos is present in the building. The environment in the collection storage area is identical to the repository.

Pest Management

Precautions are taken against insects and rodents in the BLM offices on an as-needed basis. In the mid-1980s, a rodent infestation was reported in metal storage bins containing grass seed in the warehouse. Also at that time, crickets and silverfish were seen in the offices. These problems have since been rectified.

Security

Security measures for the building, including the collections storage areas, consist of a 24-hour in-house dispatcher, key locks, sealed windows, and security cameras. The camera monitors the entrance, parking lot, and a fenced-in security lot. The security lot has an electric gate and a security fence. Access to the lot is obtained through a gate with a code punched into a keypad. The in-house dispatcher is primarily for seasonal fires. There have been past episodes of unauthorized entry. Some thefts have occurred in the back of the building, including the theft of tires. All of the windows are accessible from the outside. There is a considerable market value associated with the artifacts.

Fire Detection and Suppression Systems

The BLM Phoenix Field Office is equipped with manual fire alarms that are located on the outside of

the building. Heat sensors are connected to a wet pipe sprinkler system that is tested every six months. Fire extinguishers are present and were last inspected in March 1997. Fire doors and a fire wall are located between the warehouse and the offices. The collections storage areas are identical to the repository.

Archaeological Storage Materials

Storage Units

Artifacts from Luke AFB and Yuma MCAS managed land on Barry M. Goldwater Range are stored in the BLM Phoenix Field Office in a museum quality storage unit located in the general office area (Figure 54). The storage unit is a nonmovable, baked enamel, air tight shelving unit. There are glass windows on the doors of the unit.



Figure 54. A projectile point and ceramic vessel collected from Barry M. Goldwater Range are housed in this museum quality cabinet in the office of the Bureau of Land Management, Phoenix Field Office.

Table 36.
Percentages of Material Classes Present in the Military Archaeological Collections Housed at the Bureau of Land Management-Phoenix Field Office

Material Class	Barry M. Goldwater Range		Total
	Luke AFB	Yuma MCAS	
Prehistoric Artifacts			
Chipped Stone	—	100	1
Ceramic	100	—	99
Total	100	100	100

Note: Percentages of material classes are based on volume.

The shelving unit measures 7.0 x 1.75 x 4.3 feet (h x d x w) and has seven shelves. The shelving unit is locked at all times and access to the keys is controlled. Percentages of material classes are outlined in Table 36.

Primary Containers

Primary containers consist of two acidic cardboard boxes of varying sizes. The smaller folded and taped box contains a projectile point and measures approximately 0.01 ft³. The box has a telescoping lid secured with a rubber band. It is labeled with an acidic paper tag taped to the box, as well as one located inside the box. Label information is in pen consisting of the date, investigating organization, specific area, general location, project name, coordinates, type of find, environment, material, topographic map location, and investigator. The larger box, containing a whole ceramic vessel, measures 1.3 ft³. It is folded and glued and has folded flaps for security. An acidic paper label is stapled to the box and one is also included in the box. The labels are handwritten in pen with the date, project general location, project specific location, coordinates, type of collection, time period, material, and investigators. A copy of the field notes is also enclosed in the box with the vessel.

Secondary Containers

Secondary containers for the military archaeological collections consist of a small plastic zip-lock bag (2-mil) for the projectile point and styrofoam peanuts to cushion the vessel in the larger box. The small plastic zip-lock bag has an acidic paper index card tag handwritten in pen with the same information as the primary container labels.

Table 37.
Major Classes of Documentation by Installation Housed at the
Bureau of Land Management Phoenix Field Office (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Luke AFB	17.75	5.75	1.00	2.50	27.00
Yuma MCAS	5.00	4.75	0.75	1.25	11.75
Total	22.75	10.5	1.75	3.75	38.75

The projectile point is also wrapped in tissue paper within the bag.

Laboratory Processing and Labeling

Both of the artifacts have been cleaned and sorted by material class. Neither of the artifacts have been labeled.

Human Skeletal Remains

The BLM Phoenix Field Office is not curating human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

The BLM Phoenix Field Office currently curates approximately 38.75 linear inches of documentation associated with archaeological work performed on Luke AFB and Yuma MCAS managed property located on Barry M. Goldwater Range (Table 37).

Paper Records

The BLM Phoenix Field Office curates 22.75 linear inches of paper records from Luke AFB and Yuma MCAS. These records are housed in Cheryl Blanchard's office. Administrative and survey records from these installations are stored in two letter sized metal filing cabinets. One filing cabinet with a key lock has five drawers and measures approximately 5.0 x 2.2 x 1.2 feet (h x d x w). Paper records are located in two of the metal drawers that measure approximately 26.5 x 14.5 x 11.0 inches (d x w x h) each. Drawers are labeled with an acid-free paper tag inserted into metal holders. The tags are handwritten in pen with the project and contents.

Records are arranged by project and planning units. Secondary containers consist of hanging files and manila folders. Each hanging file is labeled with an acidic paper tag inserted into a plastic holder. Labeling is in pen or type print with the contents. Manila folders have adhesive backed labels written in marker with the contents. The paper collection is in good condition, except for the use of metal, rubber, and plastic contaminants (e.g., staples, rubber bands, and plastic paper clips).

The second filing cabinet has four drawers and measures approximately 4.4 x 2.1 x 1.5 feet (h x d x w). The individual metal filing drawer measures approximately 25.0 x 17.75 x 11.5 inches (d x w x h). The drawer is labeled with adhesive tags taped to the outside. The tags are labeled in pen and/or pencil with the quadrangle designations. Secondary containers consist of hanging files and manila folders. The hanging files have acidic paper tags inserted into a plastic holder. The files are labeled in pen with quadrangle designations and location (e.g., Y:4 BGR). The records are in good condition, with the exception of the use of metal contaminants such as paper clips.

Report Records

Luke AFB and Yuma MCAS have approximately 10.5 linear inches of report records curated at the BLM Phoenix Field Office. These records are stored in the same manner as the paper records that are located in the five drawer metal filing cabinet.

Photographic Records

Photographic records at the BLM Phoenix Field Office total approximately 1.75 linear inches, and include color prints, negatives, slides, and one aerial photograph. They are presently stored throughout the office. Most are still maintained in their original film

processing containers; however, some of the photographs and slides have been placed into archival sleeves and labeled directly in marker with the roll number, exposure, and location. Future plans to curate the photographic collection include acquiring a fireproof metal filing cabinet and organizing the photographs. The aerial photograph is stored identical to the paper records that are in the five drawer metal filing cabinet.

Map Records

The BLM Phoenix Field Office curates approximately 3.75 linear inches of map records from Luke AFB and Yuma MCAS. Approximately 3.5 linear inches of these maps are located with the paper records stored in the five drawer metal filing cabinet. There is also 0.25 linear inches of map records from Luke AFB managed lands stored in a quadrangle map shelving unit. The storage unit contains twelve shelves that are constructed of metal with plastic rollers for easy access and maneuverability. The shelving unit measures approximately 3.7 x 2.4 x 2.0 feet (h x d x w). Primary containers consist of metal and wood map books that measure 26.5 x 21.0 x 0.5 inches (d x w x h) and are labeled directly in marker with the location and a number, as well as a pre-stamped label indicating 'United States Department of the Interior, Bureau of Land Management.' A topographic map symbol guide, a list of the topographic maps in the book, and a copy of an overview map with all the enclosed topographic maps are taped to the front cover of the book and labeled in pen. The books are in good condition, but are dusty.

Collections Management Standards

The BLM is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

There is no personnel dedicated to the curation of collections; however, Cheryl Blanchard, staff archaeologist, maintains the archaeological collections. Presently there is one other archaeologist

on staff and they are awaiting the arrival of a third archaeologist.

Curation Financing

There is no curation financing system in place presently at the BLM Phoenix Field Office. Specific project budgets may include repository fees for a curation facility, such as Arizona State Museum, but there is currently no overall system that allows for funding curation activities.

Access to Collections

Access to the collections is controlled by Cheryl Blanchard.

Future Plans

The office has been acquiring archival quality storage units and plan to reorganize their collections, including the DoD collections.

Comments

1. BLM have centrally zoned air conditioning and electric heat that is set up to a computer system that allows for system control causing temperature fluctuations after 6:00 p.m. and weekends. Humidity is not controlled due to dry temperatures and there are no dust filters located on the environmental controls.
2. There is not an integrated pest-management system that includes both monitoring and control. Insect and rodent precautionary measures are performed on an as-needed basis.
3. BLM has a security system that includes a 24-hour in-house dispatcher, key locks, sealed windows, controlled access, a security camera, and a fenced in security parking lot with security code access. There are key locks on the artifacts unit and on some of the filing cabinets.
4. The repository has a fire detection system that consists of manual fire alarms located on the outside of the building and heat sensors that are connected to the sprinkler system. The fire suppression system in

the repository consists of a wet-pipe sprinkler system, multiple fire extinguishers, fire doors, and a fire wall between the warehouse and offices.

5. There are functional overhead pipes located in the collections storage areas.

6. The artifacts are located in a museum quality storage unit, but the primary containers for the collections are acidic cardboard boxes. Secondary containers for the artifacts are a nonarchival 2-mil zip-lock bag and Styrofoam peanuts.

7. Documentation is stored in metal filing cabinets. Metal, plastic, and rubber contaminants are present on the paper records. The photographic collection is located throughout the office area and is in various forms of containers, primarily in the original film processing containers.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Move collections away from the overhead pipes.

3. Rebox and rebag all archaeological materials into archival quality materials.

4. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

Bureau of Land Management

Salt Lake City Field Office

Salt Lake City, Utah

Collection Summary

Collections Total: No artifacts or human skeletal remains in collection. 0.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.25 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are usually funded through the Bureau of Land Management. However, curation is not currently a financial priority.

Repository Summary

DATE OF VISIT: October 10, 1996

PERSON CONTACTED: Doug Melton

Approximately 1.25 linear inches of associated documentation from archaeological investigations on Dugway Proving Ground are housed at the Bureau of Land Management (BLM) Salt Lake City Field Office. This documentation includes paper, report, and photographic records.

Structural Adequacy

The BLM Salt Lake City Field Office building was originally constructed over 35 years ago as the BLM's District Office (Figure 55). Some additions were made to the building in the early 1980s.

The office building has one floor above grade and is seated on a concrete foundation with brick exterior walls. The roof is made of built-up asphalt and has been redone several times. There have been problems in the past with the roof leaking. The building has plasterboard interior walls with concrete floors. The interior of the office building has been renovated. There are multiple exterior windows with aluminum frames; all windows are

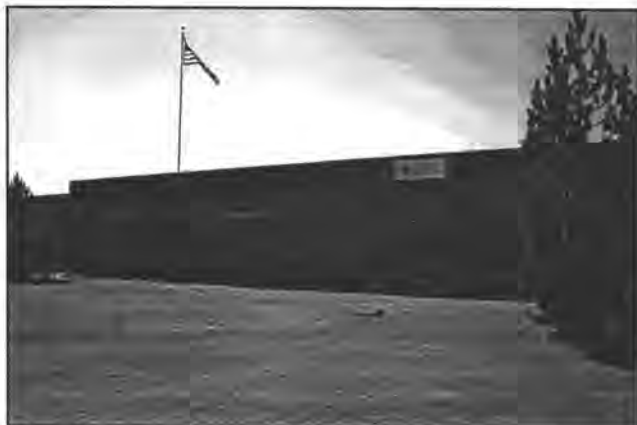


Figure 55. View of the exterior of the Bureau of Land Management, Salt Lake City Field Office building.

fitted with shades. There is no evidence of any window frames leaking water and/or air.

The records associated with archaeological investigations on Dugway Proving Ground are stored in Doug Melton's office, which measures approximately 225 ft². Offices in the building consist of standard systems furniture. The ceiling is suspended acoustical tile. In Mr. Melton's office is one shaded, aluminum framed window that faces west. There are no interior or exterior doors located in this office space.

Environment

The building has temperature controls that regulate the central air conditioning and heat. These systems are fitted with dust filters. Humidity is not regulated or monitored in the building. Fluorescent lighting without ultraviolet filters is present in the office building. The entire building is cleaned regularly by a contract firm.

Pest Management

There is no integrated pest management system that includes regular monitoring or control of pest infestation. Traps have been used as a precaution against rodents. The office building does not have a known problem with insects. At present, there were no signs of pest infestation.

Security

Security measures for the building consist of an intrusion alarm that is wired into the police station

and a BLM ranger on the premises. There are also key locks on all exterior doors. There have been past episodes of unauthorized entry, but cultural resources were not taken during any of these episodes.

Fire Detection and Suppression Systems

Fire-detection and -suppression systems consist of manual fire alarms and fire extinguishers.

Archaeological Storage Materials

There are no artifacts for military installations curated at the BLM. The repository does not have a formal curation agreement with the Utah Museum of Natural History, but archaeological materials are sent to their facility (as mandated by state law). The BLM formerly had an agreement to curate archaeological materials at Southern Utah University, Cedar City.

Human Skeletal Remains

The BLM is not curating any human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

The BLM currently curates approximately 1.25 linear inches of documentation associated with archaeological work performed on Dugway Proving Ground. The office is the location of paper, report, and photographic records.

Paper Records

There are approximately 0.75 linear inches of paper records in the Dugway Proving Ground collections. Paper records consist of administrative records and original Inter-Mountain Antiquities Computer System site forms. These records are stored on open metal shelves that measure 2.3 x 1.0 x 2.5 feet (l x w x h). The shelves are labeled with "Reports\Site Forms" in press-on letters, covered with tape. Primary containers consist of plastic vinyl binders that have a paper tag placed in a metal holder. The tags are labeled in pen with "Survey

Notes" and the year. There is no processing or retrieval information for any of the records. The documentation is in fair condition, although some records have tears and abrasions and evidence of surface dirt and dust. Contaminants such as paper clips and staples are also present on the records.

Report Records

There is approximately 0.25 linear inches of report records in the Dugway Proving Ground collections. The report records are stored in the same manner as the paper records. Some of the material is stored loose within the filing cabinet and is not labeled. There is no processing or retrieval information for any of the records. The report records are in fair condition, although some records have tears and abrasions and evidence of surface dirt and dust. Contaminants such as paper clips and staples are also present on the reports.

Photographic Records

Photographic records at the BLM total 0.25 linear inches, and include color photographs and negatives. The photographic records are stored on open metal shelves that are labeled "Photo" in press-on letters. The storage unit measures 2.3 x 1.0 x 2.5 feet (l x w x h). Primary containers are plastic vinyl binders that are identified with a paper tag labeled in marker. The binders are labeled with "Photos 1979-80 Cultural." Secondary containers for the negatives are archival sleeves that are labeled in ink with the roll number and year. Photographs are stored in nonarchival 2-mil zip-lock bags labeled in ink with the roll number and year. Overall appearance of the photographs is fair to good, although there are some tears and abrasions, surface dirt and dust, discoloration, and use of contaminants (e.g., paper clips). There is no processing or retrieval information for the photographic records.

Collections Management Standards

The BLM is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

There is no full-time curator for the archaeological collections. Doug Melton, the one archaeologist on staff, deals with Section 106 compliance and curation.

Curation Financing

Curation is financed through funding requests to the BLM Utah State Office. Curation financing is not currently a priority.

Access to Collections

Access to the archaeological collections is controlled by the District Office manager and by the District Office archaeologist.

Future Plans

The Utah State Office is pursuing a curation agreement with the Utah Museum of Natural History. Artifacts from the Salt Lake Field Office would be sent to the Museum under the provisions of this agreement.

Comments

1. The office building has central air conditioning, heat, and dust filters. Humidity levels are not monitored. The building has fluorescent lighting without ultraviolet filters.
2. There is no integrated pest management system for the BLM office building.
3. The BLM office building is equipped with an alarm system wired to the police station, as well as key locks on all exterior doors and a BLM ranger on the premises.
4. There are manual fire alarms and fire extinguishers in the office building.
5. The repository does not have a formal curation agreement with the Utah Museum of Natural History, but archaeological materials are sent to their facility (as mandated by state law).
6. Documentation is not being properly curated. Original documentation is not duplicated or stored in an acid-free environment. The records show evidence of

damage such as tears and abrasions, discoloration, and surface dust and dirt. Metal contaminants are used to fasten the records.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with the applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Copy original documentation, retain copies, and send the originals to the state mandated facility for curation of cultural resources. If originals are to be retained, address the following: produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Bureau of Land Management

Yuma Field Office

Yuma, Arizona

Collection Summary

Collections Total: No artifacts or human skeletal remains in collection. 1.5 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 1.5 linear feet (18 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for the curation of archaeological documentation.

Status of Curation Funding: The curation of associated documentation is not specifically funded. Documents are filed and maintained with working files in their offices.

Repository Summary

DATE OF VISIT: December 11, 1996

PERSONS CONTACTED: Boma Johnson and Lori Cook

Approximately 18 linear inches of documentation from archaeological projects at Yuma Proving Ground (YPG) are housed in the Bureau of Land Management (BLM) Yuma Field Office. This documentation includes background records, survey

and analysis records, reports, site maps, photographs, slides, and negatives. No artifact materials are curated at the BLM Yuma Field Office.

Structural Adequacy

The BLM Yuma Field Office building (Figure 56) was constructed in 1996 specifically for rental to the BLM. The building was approximately nine months old at the time of assessment. The single story structure occupies a total area of approximately 30,300 ft² divided approximately equally between an office area and warehouse space. The building is



Figure 56. The offices of the Bureau of Land Management, Yuma Field Office.

constructed with concrete brick walls on a concrete foundation and has a shingle roof. Both the foundation and the roof are considered to be structurally sound. Building facilities include a loading dock, a hazardous materials storage area, a materials and supply storage area, a library, records storage room, a mechanical/utility room, and a law enforcement evidence room. The facility is not considered to be a permanent repository for archaeological artifacts and storage space is limited to a metal cabinet in the staff archaeologist's office.

Environment

The building is equipped with an electric heat pump and air conditioning system that has thermostat temperature controls. There are dust filters on the environmental controls. The humidity within the building is neither monitored nor regulated due to the dry climate characterizing Yuma. There is no asbestos present within the building structure and no overhead pipes within the collections storage area. Windows throughout the building are shaded. The facility is regularly maintained by a maintenance staff that is provided by the building owner.

Pest Management

A pest-management and control service is provided by the building owner and includes periodic building inspection. There were no reported or observed signs of insect or rodent infestation within the building.

Security

Building security measures include motion detectors linked to all doors and windows, key locks, dead bolt locks, and controlled access. The intrusion alarm system is wired directly to a private security agency. No episodes of unauthorized entry into the building were reported, although it was reported that the fence surrounding the warehouse portion of the building had previously been found cut but without evidence of theft. All windows in the facility are accessible from the outside ground level but are considered secure due to their sealed construction.

Fire Detection and Suppression Systems

Fire protection measures within the building include manual fire alarms, a sprinkler/suppression system, fire doors, a fire wall between the warehouse and office sections, a fire alarm wired directly into the fire department, and fire extinguishers that are inspected on a regular basis by the fire department.

Archaeological Storage Materials

The facility is not viewed as a permanent collection repository by BLM staff and no special area has been designated for the curation of archaeological materials. A ceramic sherd type collection, recovered during a 1980 project by BLM personnel, was reported to be located in the BLM Yuma offices. In 1996, St. Louis District staff reported in their *Collections Summary for Yuma Proving Ground, Native American Graves Protection and Repatriation Act Compliance Project, Technical Report No. 57* (U.S. Army Corps of Engineers, 1996), that 3-4 boxes containing prehistoric lithic artifacts, ceramics, groundstone, flaked stone, shell, historic metal, glass, and crockery were located in the BLM Yuma Field Office; however, upon inspection, none of these materials were recovered from YPG. No artifacts from YPG or other Department of Defense installations were identified among the small number of artifacts stored at the BLM Yuma Field Office.

Human Skeletal Remains

No human skeletal remains from YPG or any other Department of Defense installation are currently being housed at the BLM Yuma Field Office.

Records Storage

The archaeological documentation records for YPG consist of site file records, field notes, analysis records, photographs, slides, negatives, and site maps (Figure 57). These records are stored in a fireproof, locking filing cabinet. Documentation records consist of approximately 1.5 linear feet of mixed material that is arranged in acidic manila



Figure 57. Records from an archaeological project conducted on Yuma Proving Ground.

folders by Arizona state site numbers. Preservation/security copies of the documentation are held at YPG.

Paper Records

Paper records from YPG total approximately 13 linear inches and includes site file records, field notes, analysis records, and site maps. These records were observed to date from 1982 until 1992 inclusively. All records are stored in acidic manila folders that are tab labeled by site number in ink on adhesive paper labels.

Photographic Records

Photographic records consist of approximately five linear inches of color prints, black-and-white prints, negatives, slides, and contact sheets. The 3-x-

5-inch photographic prints, slides, and negatives are stored in archival sleeves and are labeled directly with marker ink. The 8-x-10-inch prints and contact prints are not stored in protective sleeves and are only partially labeled. Photographic materials are stored together with other site documentation in the labeled acidic manila folders.

Collections Management Standards

The BLM Yuma Field Office is not a permanent curation facility; therefore, collections management standards were not addressed during the assessment.

Curation Personnel

There are no personnel specifically assigned to the curation of archaeological materials.

Access To Collections

The documentation files are stored in Mr. Boma Johnson's office and are accessible by all BLM staff.

Future Plans

No future plans related to building renovation or document storage were reported.

Comments

1. A sherd type collection was thought to have been collected from YPG and housed in the BLM Yuma Field Office; however, this material can no longer be located. Upon inspection, it was determined that the boxes of artifacts recovered from YPG and reported in the Native American Graves Protection and Repatriation Act collections summary (U.S. Army Corps of Engineers, 1996) were not actually recovered from DoD lands.

2. Associated documents are housed in a locked, fireproof file cabinet.

3. Environmental conditions, security measures, fire safety measures, and pest-management procedures are adequate for the temporary storage of associated documentation.

4. Portions of the photographic records are stored in archival-quality plastic sleeves, but are filed with acidic paper records.

Recommendations

1. Locate the missing ceramic collection recovered from YPG.
2. Place all photographic records, fully labeled, into archival-quality plastic sleeves to ensure the longevity of the record. Store photographic records in a stable environment, away from acidic paper documents.
3. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.

Centennial Museum

University of Texas

El Paso, Texas

Collections Summary

Collections Total: 28.4 ft³ of archaeological materials and human skeletal remains. 6.7 linear feet of associated records.

Volume of Archaeological Materials: 28.1 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 0.3 ft³
 Compliance Status: The Centennial Museum is currently holding one 6 x 6 inch plastic bag containing human long bone fragments from a single burial that was removed from Fort Bliss.

Linear Feet of Records: 6.7 linear feet (80.4 linear inches)

Compliance Status: Records require nearly complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded by the state of Texas and through Memoranda of Agreement with other agencies that house collections at the museum.

Repository Summary

DATE OF VISIT: November 18-21, 1996

PERSON CONTACTED: Scott Cutler

The Centennial Museum (Figure 58) was constructed specifically for use as a museum in 1936, and is a state owned facility that is located on—and operating under the umbrella of—the University of Texas at El Paso (UTEP). The primary missions of the Centennial Museum are public education, research (coordinated through UTEP's anthropology



Figure 58. The Centennial Museum is located on the campus of the University of Texas, El Paso.

department), and the care of state owned collections. The museum also functions as a repository under Memoranda of Agreement with several federal agencies including Fort Bliss, Texas, White Sands Missile Range (WSMR), New Mexico, and the Bureau of Land Management, New Mexico. The Centennial Museum currently houses 28.4 ft³ of archaeological materials from military installations (Table 38).

Table 38.
Volume of Archaeological Materials from DoD Installations Housed at the Centennial Museum

Installation	Volume (ft ³)
Fort Bliss, TX	27.4
White Sands Missile Range, NM	1.0
Total	28.4

Structural Adequacy

The repository is housed in a two-story stone and concrete building with ceramic tile facade detailing and a sloped, clay-tile roof. The original museum building was constructed on a concrete foundation. A new addition with a flat tar roof in 1978 expanded the floor plan to include a partial basement—also concrete—and several offices. Scott Cutler believes that the building's utilities were also upgraded during the addition. The museum has 21,077 ft² of useable space. There are natural history, Native American prehistory, American history, and geology exhibits located on the second floor of the building along with offices, record storage areas, and research/study rooms. A reception desk, gift shop, art gallery, botanical exhibit, and additional offices are located on the main level.

The interior walls and ceilings in the original areas of the building are concrete with a plaster overlay (in some rooms the ceilings have been dropped, and are of lathe and plaster construction). The addition has wallboard walls and suspended acoustical tile ceilings. All floors are concrete; the original floor areas are set with ceramic tile, and floors in the addition have industrial grade carpeting and linoleum tiles. The building is very solid, with no structural cracks or leaks, and all original windows have been bricked over due to security and conservation concerns. There are two main-level

entry doors, one of solid wood and the other of glass and metal. In addition, there are two basement level entry doors (one of which is a receiving dock), both constructed of metal. Artificial lighting throughout the building consists of overhead, unfiltered fluorescent lights.

The collection areas, which are predominately located in the basement, occupy about 2182 ft². The collections areas are identical to the rest of the repository regarding environment, pest management, security, and fire detection systems. DoD archaeological materials are stored in the basement. The floors, exterior walls, and ceilings in this area are concrete. Ultraviolet filters are present on all collection area lights. Non weight-bearing walls are constructed of wallboard; weight-bearing walls are brick and concrete. There are four main collection storage rooms—the entrance to one of which is located through another storage room—and a processing area that also houses collections (this processing area is additionally accessible via the receiving bay). Floor coverings inside two of the rooms and the connecting corridor are linoleum. The floors in the remaining storage rooms are bare concrete. There is one entry door each to three of these rooms, and two entry doors each for the other two. In addition, there is a single interior access door to the stairwell and corridor leading to the collection storage area. All doors in the collection storage rooms are metal, and the interior access door is solid-core paneled wood. There are no windows in the storage areas. The collection area is currently filled to approximately 80% of available capacity.

Environment

The Centennial Museum is heated with a hot-water air exchanger. Temperature is monitored daily for a targeted 70 degrees; humidity is not controlled. General environmental considerations for the region consist of generally dry conditions and extreme changes in temperature within a 24-hour period. The lack of operational windows in the museum assists in controlling these factors. The building is professionally cleaned on a daily basis by university janitorial staff, and the collection area is cleaned by the museum staff on an as-needed basis. There is a kitchen area, but it is located away from collections and exhibits. No pest-attracting factors were noted

during the assessment, and museum staff could not recall any past infestation problems. Artificial lighting is as previously noted, and occasionally by incandescent or fluorescent desk lamps.

Pest Management

Due to concerns about the chemicals used by the university over the years to kill pests, spraying has been temporarily suspended at the museum to allow the present chemical buildup to dissipate. No-pest strips are being used in the interim to control insects, and rodents have never been a problem due to the physical construction of the building. Pest monitoring is conducted by museum staff on a daily basis. No insects were seen during the assessment, and no insects, dead or living, were seen in or around any of the collection storage areas.

Security

Security measures for the repository consist of controlled access (a single key to the collections access door is kept in a lock box), bricked over windows, key locks throughout the building, a motion detector at the main entrance, and an alarm system that is tied to the police station. The university also provides general security patrols around the building.

Fire Detection and Suppression Systems

The Centennial Museum has an alarm wired to the fire department, and manual alarms are located at all the exit doors. The collection areas have fire-rated metal doors, and at least six manual fire extinguishers were noted throughout the building by the assessment team. The structure's concrete and stone construction is somewhat fire-resistant. However, there is no sprinkler system in place anywhere in the facility, and not all parts of the museum are constructed of stone and concrete.



Figure 59. Acidic cardboard boxes serve as primary containers for Fort Bliss collections at the Centennial Museum.

Archaeological Storage Materials

Storage Units

DoD collections (Figure 59) total 28.4 ft³ of artifacts (27.4 ft³ from Fort Bliss and 1.0 ft³ from WSMR). DoD archaeological materials are stored on multiple sets of open, adjoining, non-movable, enameled metal and bare wood shelving units, as well as one enameled metal locking cabinet. Units vary in size within the collection rooms. Fort Bliss collections are housed on five wooden shelving units measuring 6.0 x 1.0 x 4.0 feet (l x w x h) in Room #100, and three metal shelving units measuring 7.0 x 0.7 x 3.0 feet (l x w x h) in Room #106. WSMR collections are housed on two metal shelving units—measuring 84.0 x 1.0 x 3.0 inches (l x w x h) in Room #102, and 6.0 x 4.0 x 6.0 feet (l x w x h) in Room #103—and one metal locking cabinet (with wooden drawers) measuring 3.0 x 3.0 x 2.0 feet (l x w x h) in Room #106. Table 39 outlines the material class types present among DoD collections at the Centennial Museum. Mr. Cutler indicated that artifacts from Fort Bliss had previously been incorporated into some of the exhibits on the second floor, but he was fairly confident that they have all been removed from display, and should now be housed in the aforementioned collection areas.

Table 39.
Percentages of Material Classes in the Department of
Defense Archaeological Collections Housed at the
Centennial Museum

Material Classes	Fort Bliss	WSMR	Total
<i>Prehistoric Artifacts</i>			
Ceramics	40	66	41
Chipped Stone	19	—	18
Human Skeletal Remains	1	—	1
Flotation Samples	5	—	5
Soil Samples	11	—	11
¹⁴ C	1	—	1
Pollen Samples	10	—	10
<i>Historic Artifacts</i>			
Ceramics	5	—	5
Glass	4	—	4
Metal	3	1	3
Other	1	33	1
Total	100	100	100

Note: Percentages of material classes is based on volume. Other historic material includes caliche, leather, composite (metal, ceramic, rubber), brick, wood, fauna, and shell.

Primary Containers

Archaeological materials are stored in 60 acidic and 11 non-acidic cardboard boxes. All primary containers have telescoping lids. Labels for the primary containers are a mixture of hand lettered adhesive paper or tape, stamped ink, and directly applied hand lettered pen and/or marker. Data most often consist of a site or site-location number and sometimes the installation and/or project name. Only two of the containers appear to be overpacked. Some compression damage and dirt were noted. The acidic boxes are very dirty and often contain empty paper bags with provenience data on them; the artifacts housed in these acidic primary containers are loose. There are no primary or secondary containers for the larger ground stone and historic objects, which encompass approximately 1 ft³ and are stored on open shelves or in metal cabinets with wooden drawers.

Secondary Containers

Secondary containers for the archaeological materials consist mainly of archival and nonarchival quality plastic zip-lock bags. Miscellaneous containers such as paper bags, cloth bags, small acidic boxes, paper envelopes, and plastic vials are

Table 40.
Percentages of Secondary Containers Types for
Department of Defense Collections Housed at the
Centennial Museum

Secondary Container	Fort Bliss	WSMR	Total
Plastic zip-lock bags	95	100	95
Paper bags	1	—	1
Paper envelopes	1	—	1
Small acidic boxes	1	—	1
Cloth bags	1	—	1
Plastic vials	1	—	1
Total	100	100	100

also present. Table 40 gives the percentage of secondary containers types present by installation. Labels are either directly applied to secondary containers in marker, pencil, or pen, or have paper inserts labeled in pen or pencil placed in the secondary containers. Information on the containers and inserts variably includes data such as project name, site number, material class, artifact provenience, installation name, collector/investigator name, and the date.

Laboratory Processing and Labeling

The artifacts in the acid-free boxes (43%) have been cleaned, labeled, and sorted by site number and/or provenience, although some mixing of material classes was observed. Labels on objects are directly applied in india ink with no base or protective top coat. Lot bags, as well as objects too small to label, have paper inserts labeled in pen or pencil with the site number, catalog number, and sometimes provenience, placed with the object into a secondary container. Collections housed in the acidic boxes (53%) lack secondary containers, but have been cleaned and labeled as noted for the collections in acid-free boxes. Larger artifacts that are stored loose on shelves or in drawers (4%) have also been processed as noted above.

Human Skeletal Remains

The Centennial Museum is currently holding one 6 x 6 inch plastic bag (0.3 ft³) containing human long bone fragments from a single burial located on Fort Bliss. This burial was recorded by the El Paso

Archaeological Society as EPAS 60, a.k.a. the Sgt. Doyle Site. All other human skeletal remains previously housed by the Centennial Museum that are the responsibility of Fort Bliss have been returned to the custody of Fort Bliss. A copy of the letter accompanying this transfer of remains on 23 February 1996 was provided to St. Louis District staff. The Centennial Museum is not curating any other human skeletal remains known to have been recovered on DoD lands, and the EPAS 60 remains, which were overlooked in the initial transfer, are being returned to Fort Bliss.

Records Storage

Documentation for Fort Bliss is stored in filing cabinets in the curator's office on the second floor of the museum (no associated documentation was found for WSMR during the assessment). This office has glass and wood French-style doors and is located along the periphery of the exhibit areas. Ceilings are dropped lathe and plaster, and lighting is mixed incandescent and fluorescent. There is a total of 6.7 linear feet of paper records housed at the museum for Fort Bliss.

Paper Records

Paper records housed at the Centennial Museum for Fort Bliss (6.1 linear feet) are stored in metal letter-size filing cabinets. Labels on the filing cabinets are typed paper inserts labeled "Contract File, Fort Bliss." The arrangement of records within each file drawer is generally by project, document type, and by recording media. About 17% of the records are loose in the file drawers, and the remaining records are stored in acidic cardboard boxes (3%) and manila folders (80%). The folders are direct labeled in pen and pencil with the installation name and the folder's contents. Approximately two inches of computer punch cards mixed in with the photographic media are stored in a box on top of one of the filing cabinets.

Photographic Records

Photographic records (0.6 linear feet) for Fort Bliss are currently stored in an acidic cardboard box on top of one of the filing cabinets in Mr. Cutler's office. These proofs, photographs, and negatives

have not been processed into archival sleeves and are either loose (60%) in the primary container or stored in the original film processing packages (40%). The box contains the aforementioned two inches of loose computer punch cards. The photographs appear very jumbled within the primary container, and the processing envelopes are dirty and faded. Labels on the envelopes are hand applied in marker, pen, and pencil. Data for most labels includes roll and exposure numbers. Additional information was highly variable from envelope to envelope and generally consisted of data such as site numbers, provenience, project name, date, and/or a photograph description.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are accessioned upon receipt and it is the goal of the Centennial Museum to accession all incumbent holdings when their current inventory is complete.

Location Identification

The location of archaeological materials within the repository is identified in the accession file and on a computer database.

Cross-Indexed Files

Files are cross-indexed by accession number, site number, catalog number, and project number in the database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

The Centennial Museum does not keep site file records.

Computerized Database Management

A Lotus approach database is used for database management. Backups are stored on disk, and the

system is monitored by a university professor. There is no access to this database by the public.

Written Policies and Procedures

Minimum Standards for Acceptance

There is an in-process draft of written standards required for submitted collections that addresses packaging, processing, and labeling practices.

Curation Policy

There is an in-process draft of standards for curation.

Records-Management Policy

There is no separate written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

There are written guidelines for field-curation that address field conservation and recommendations for manuals to be used. These guidelines are in draft form only.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

There is a written deaccessioning policy and a standard form for the procedure.

Inventory Policy

Collections are inventoried upon receipt.

Latest Collection Inventory

Collections are in the process of a complete inventory as of the date of the assessment.

Curation Personnel

Mr. Scott Cutler is the full-time curator. His funded staff consist of a full-time technical assistant and a part-time student assistant.

Curation Financing

Curation is financed as overhead in the state budget and through Memoranda of Agreement with other agencies.

Access to Collections

Access to the collections is limited to Centennial Museum staff and researchers by permission. A written letter of intent is necessary and access to the collections is supervised.

Future Plans

The Centennial Museum is currently undergoing a complete inventory of its holdings and is in the process of setting up written policies and procedures for the acceptance, care, storage, and use of collections. When the inventory is finished, the museum plans to use the new policies to renovate existing collections. New collections will automatically be subject to the new policies.

Comments

1. Security measures are adequate, and staff appear dedicated, organized, and well informed.
2. Fire extinguishers are the only fire suppression mechanisms at the facility and there are no fire detection devices.
3. Most of the archaeological collections are easily located, and generally in good condition. However, the DoD collections currently housed in the basement processing area (room #100) are in need of total rehabilitation and different storage units.
4. Record collections are not specifically addressed in the current draft of the new guidelines and procedures policies, and there are no copies of the records stored at a separate and secure location.
5. The museum is currently holding a single bag of human bone that was found on Fort Bliss, an installation that St. Louis District personnel has documented as trying to maintain custody of all collections found on Fort Bliss lands, including any Section 5 materials not yet repatriated.

Recommendations

1. Add smoke detectors to each room in the repository and additional fire extinguishers to areas not constructed of concrete and stone. If funds allow, a dry-pipe fire detection/suppression system should be installed throughout the entire building.

2. Complete collection inventories and written policies as soon as possible, so that consistent methods of accessioning, processing, storage, and use can be implemented.

3. Upgrade all existing DoD collections to meet the requirements stated in 36 CFR Part 79. These measures should minimally include cleaning and labeling of all artifacts, re-bagging in polyethylene 6-mil bags, and repacking into acid-free boxes.

4. The museum considers records to be part of the archaeological collections they document for accession purposes, but should also address the specific needs of records separately in the museum's new guidelines and procedures documents. In addition, a copy should be produced of any pertinent archaeological records and the copy sent to a separate and secure facility.

5. Arrange the return of human remains to Fort Bliss as soon as possible so that the installation can complete its NAGPRA Section 5 inventory obligations.



Center for Archaeological Research University of Texas

San Antonio, Texas

Collection Summary

Collections Total: 287 ft³ of archaeological materials. 30 linear feet of associated records.

Volume of Archaeological Materials: 287 ft³

Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 30 linear feet (360 linear inches)

Compliance Status: Records require nearly complete rehabilitation to comply with existing federal guidelines and standards for curation of archaeological documentation.

Status of Curation Funding: Curation of archaeological collections is currently funded with grants; a planned curation policy will include fee structuring specifically for curation of collections.

Repository Summary

DATE OF VISIT: November 28-30, 1996

PERSON CONTACTED: Maureen Brown

The Center for Archaeological Research (CAR) (Figure 60) is a university affiliated archaeological research center that is operated in conjunction with the Anthropology Program in the Division of Behavioral and Cultural Sciences, University of Texas at San Antonio (UTSA), Texas. Their primary mission is cultural resources research, and they have conducted a number of archaeological investigations for military installations. CAR's offices, processing



Figure 60. Loading dock and entrance of the Center for Archaeological Research, University of Texas, San Antonio.

laboratory, and collections storage area are all located in a large warehouse on the UTSA campus. This warehouse is partially occupied by an administrative records storage area administered directly by the university. This storage area of the warehouse is in a locked cage that is not accessible to CAR staff. Administrative files related to archeological contract work are frequently archived in this area by the university.

In addition to cultural resources research, CAR designs and develops exhibits for public education and career outreach programs. Tours for local schools and other interested parties are conducted twice or more weekly, and a classroom has been set aside for lectures and study. These types of programs at CAR are funded through donations, grants, and university funds. Ms. Brown indicated that additional storage and exhibit space would be beneficial to their long term goals, and stated that CAR is negotiating to obtain that portion of the building presently used by the university for records storage. At the time of the St. Louis District visit CAR was engaged in processing collections from projects they conducted on Laughlin and Lackland Air Force Bases (AFB), as well as analyzing fire-cracked rock materials from Fort Bliss. A total of 287 ft³ of artifacts (Table 41) and 30 linear feet of records generated during archaeological projects conducted on DoD lands is currently housed at CAR.

Table 41.

Volume of Archaeological Materials from Department of Defense Installations Housed at the Center for Archaeological Research

Subject Installation	Volume (ft ³)
Fort Bliss	31
Fort Polk	52
Fort Sam Houston	41
Kelly AFB	2
Lackland AFB	160
Laughlin AFB	1
Total	287

CAR occupies approximately 14,791 ft³ of space in a single-story, 22 year-old university-owned warehouse (about 80% of the total available space). The front 20 feet of the building have been converted into several small offices and a classroom. This administrative area also serves as a security buffer to the collections area, which is located

predominately in the interior center and back of the building. Several exhibits have been erected between this buffer area and the actual collections storage area. Multiple activity areas exist around the perimeter of the collections storage. These areas include artifact holding, washing, processing, temporary storage, supplies storage, records study, records storage, offices, exhibits, a classroom, and a break room that is sometimes used as an overflow artifact processing area. The far west end of the building is enclosed with a wire cage and contains administrative records and publications. Access to this enclosed area is controlled by university staff, not personnel employed by CAR.

Structural Adequacy

The repository has a concrete foundation, and exterior walls are composed of steel framing covered with convoluted metal sheeting. The roof, which is original to the building, is gable constructed and covered with corrugated metal. The building is solid, with no cracks or leaks, although several repairs to the roof have been undertaken in the past. There have been upgrades to the building's plumbing and electrical systems within the last two years, some as recently as one month prior to the St. Louis District assessment. The front of the building, which consists of two loading docks, several offices and a classroom, has 17 windows, all of which appear to have ultraviolet (UV) filtering glass panes. There are three exit/entry doors, and two loading docks (one of the docks opens into the interior cage area that is not administered by CAR personnel).

The collections storage area floors are concrete. The interior building walls are metal and abut the metal frame. The underside of the metal ceiling has packed insulation that is held in place with wire mesh. The office and classroom walls are constructed of painted wallboard, and have suspended acoustical tile ceilings. Floor coverings in this area are industrial grade carpeting. There are two entry/exit doors in the office and classroom areas, and one in the collections area on the far wall (opposite the administrative areas) that functions as an emergency exit. Windows—located in offices only—are sealed and have steel frames. They showed no evidence of air leakage. The exterior doors are metal, and there are multiple interior wood

panel doors leading to the collections area, offices, and classroom. Interior floor space measures approximately 14,791 ft² in the area of the building occupied and utilized by CAR. The collections area is occupying about 65% of currently available storage space.

Except for the lack of windows and floor coverings, the collections area is identical to the rest of the repository in terms of environment, pest management, security, and fire detection systems.

Environment

The warehouse CAR occupies has forced-air (electric pump) heat and central air conditioning, but these systems are not equipped with dust filters. Temperature is monitored and controlled, but humidity is not. General environmental considerations for the region include extreme changes in temperature within a 24-hour period, and relatively high humidity on a seasonal basis. The entire building is professionally cleaned daily by university staff. There are water bearing pipes located overhead in the collections processing area. There are no windows in the collections storage or processing areas, and office windows are both UV filtered and fitted with blinds. Artificial lighting consists of nonUV filtered fluorescent tube fixtures located throughout the building, and occasionally by incandescent bulb or fluorescent desk lamps.

Pest Management

The entire building is professionally sprayed biannually for pests. Pest traps are also used, and several such traps were observed by the assessment team near the entry/exit doors and several plumbing outlets. These traps contained crickets, beetles, and a few spiders and roaches. No live insects were seen during the three days the team worked at the repository, and no insects, dead or living, were seen in any of the primary containers. CAR staff monitors for infestations on a weekly basis.

Security

Security measures for the repository consist of dead bolt locks on the exterior doors and loading docks, key locks on the interior doors, and controlled access

by staff. The university also provides security patrols around the building when CAR staff are absent from the repository. There is a grant pending that, if approved, would provide funding for a locking cage to be constructed around the archaeological collections.

Fire Detection and Suppression Systems

There are no fire-detection or -suppression systems in place at this time, but there are six manual fire extinguishers located throughout the building. A grant has been written, but is not yet approved, which would result in the installation of a complete fire suppression and monitoring system.

Archaeological Storage Materials

Storage Units

Archaeological materials are stored on multiple sets of adjoining, non-movable, enameled metal shelving units. Units vary in size within the collections area. There are approximately 36 units that measure 8.0 x 0.6 x 3.0 feet (l x w x h); nine units that measure 8.0 x 1.5 x 3.5 feet (l x w x h); two units that measure 7.5 x 1.5 x 4.5 feet (l x w x h); and six units that measure 7.2 x 1.5 x 3.0 feet (l x w x h). DoD collections total 287 ft³. Table 42 outlines the types of material classes present among DoD collections at CAR.

Primary Containers

Archaeological materials are stored in both acidic (98%) and archival cardboard boxes (2%). A small number of collections that are being processed are stored in cardboard "flats." Labels for most of the primary containers consist of adhesive-backed typed paper labels with hand written data added in black marker. Data include the installation name, year of project, site number, project name, material classes and occasionally the object catalog numbers. The remaining labels are directly applied in black marker with the same information as noted for the adhesive labels. Over 50% of the containers are overpacked, and most of the soil samples from Lackland AFB are placed directly on shelves in heavy gauge plastic bags.

Table 42.
Percentages of Material Classes in the Department of Defense Archaeological Collections
Housed at the Center for Archaeological Research, UTSA

Material Class	Percentage Present						Total
	Fort Bliss	Fort Polk	Fort Sam Houston	Kelly AFB	Lackland AFB	Laughlin AFB	
<i>Prehistoric Artifacts</i>							
Ceramics	100	96	2	—	1	16	1
Chipped Stone	—	—	48	100	64	52	54
Faunal Remains	—	—	2	—	1	—	1
Shell	—	—	25	—	30	—	38
Flotation Samples	—	—	12	—	—	—	2
Soil Samples	—	—	4	—	—	—	<1
Botanical Remains	—	—	—	—	—	—	<1
<i>Historic Artifacts</i>							
Ceramics	—	—	—	—	1	—	<1
Glass	—	—	3	—	1	15	1
Metal	—	—	4	—	1	16	1
Brick	—	—	—	—	1	1	<1
Total	100	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.

Secondary Containers

Secondary containers for the archaeological materials consist mainly of archival and nonarchival quality plastic zip-lock bags (39%) and paper bags (61%). Labels are either directly applied to secondary containers in marker, or paper inserts written in pen or pencil are placed in the containers. Information variably includes data such as project names, site numbers, material classes, artifact provenience, names of installations, collector/investigator name(s), and the date.

Laboratory Processing and Labeling

All of the artifacts are generally noted as having been cleaned, labeled, and sorted by site number and/or provenience, although some mixing of material classes was observed. Labels on objects are directly applied in india ink. Paper inserts are used in some bags, particularly those containing objects too small to label. Inserts are labeled in pen or pencil with site number, catalog number, and sometimes provenience, then placed with the object into a secondary container. Not all of the diagnostic objects in the DoD collections have individual secondary containers. Some of the older collections—prior to

about 1985—have objects wrapped in toilet tissue or padded with cotton.

Much of the Lackland AFB collections undergoing processing are loose in the previously mentioned “flats” with paper tags, and have yet to be labeled or archivally packaged. However, CAR staff indicated that a substantial volume of these Lackland materials were collected specifically for lithic analysis, as was most of the fire-cracked rock from the Fort Bliss sites, and that most of these sample materials will be discarded when studies on them are complete. Because analysis for these predominately expendable samples is expected to take less than a year, extensive labeling and archival containers are not a priority for them.

Human Skeletal Remains

CAR has not encountered any human skeletal remains during their projects on DoD lands, and no remains are being curated by them for other contractors who conducted projects on DoD lands.

Records Storage

Documentation associated with archaeological projects are stored in several areas of the repository: administrative offices, administrative office

hallways, cardboard boxes in the collections area, and in the main records storage area, which is along the perimeter of the archaeological materials storage area. There are 30 linear feet of paper records housed at CAR, including two linear feet of photographic documentation. Table 43 outlines the types and quantities of associated documentation.

Paper Records

Sixty-seven percent of records housed at CAR are stored in cardboard boxes on the same shelving units as the artifacts. The remainder of records are stored in enameled metal letter-sized filing cabinets. Labels on the filing cabinets are typed paper inserts. Primary containers consist of acidic cardboard boxes with flap closures (frequently noted as being taped shut) or nonarchival plastic-coated binders. Boxes have typed labels with hand written data added that are taped to the containers. Binder labels consist of paper inserts. The arrangement of records within each primary container is generally by project, document type, and recording media.

Secondary containers consist of acidic manila folders, bound notebooks, letter-sized acidic envelopes, archival and nonarchival plastic sleeves, and nonarchival three-ring binders. All types, except for the three-ring binders, are labeled with adhesive labels that are alternately typed or hand written in pen or pencil with the contents, year, and site number or project name. The records are generally clean and in good condition, with the exception of the original field notes, which show some evidence of dirt and wear.

Photographic Records

Photographic records at CAR are stored on metal shelves or cabinets in nonarchival plastic-coated binders or small metal 35 mm slide cabinets. Secondary containers consist of acidic and non-acidic envelopes, and archival and nonarchival plastic sleeves. Most of the envelopes and sleeves are hand labeled in black ink with the project name and roll/exposure numbers. Most individual photographs, slides, and negatives are unlabeled, and about seven rolls of photographs from the Lackland AFB project are still in the processing envelopes, which are sitting on a table in the project director's office.

Reports

Bound reports are stored loose in acid-free and acidic boxes of various sizes (mostly Fort Polk reports), on shelving units in the records storage area, and on shelving units in the Lackland AFB project director's office.

Maps/Oversized Documents

The majority of oversized records for Lackland and Laughlin AFBs have been stored flat in enameled metal map cabinets. Some of the larger maps and drawings from other projects have been folded and are in acidic manila folders stored with related paper records.

Table 43.
Major Classes of Documentation by Installation Housed at the
Center for Archaeological Research (in linear feet)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Fort Bliss	0.5	—	—	—	0.5
Fort Polk	15.9	2.2	0.2	0.1	18.4
Fort Sam Houston	0.5	—	1.5	0.1	2.1
Kelly AFB	—	—	—	0.6	0.6
Lackland AFB	6.2	0.3	0.3	0.6	7.4
Laughlin AFB	0.7	0.1	—	0.2	1.0
Total	23.8	2.6	2.0	1.6	30.0

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are accessioned upon acceptance by CAR.

Location Identification

The location of archaeological materials within the repository is identified in the inventory log book and on a computer database.

Cross-Indexed Files

Files are cross-indexed by accession number, site number, catalog number, and project number in the new computerized database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

CAR does curate site file records.

Computerized Database Management

A dBase® database is set up for computerized record management. New collections are being entered first, and older ones as time and funds allow. Backups of the database are stored on disk.

Written Policies and Procedures

Minimum Standards for Acceptance

There are written standards required for submitted collections that addresses packaging, processing, and labeling practices.

Curation Policy

CAR accepts collections from in-house projects and from other institutions on a more limited basis depending upon the research potential of a given collection. CAR has written guidelines and procedures for curation that include labeling, cataloging, and packaging of collections.

Records-Management Policy

There is no separate written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

There are written guidelines for field-curation that address field conservation. These guidelines are specific to work conducted by CAR.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

There is a written deaccessioning policy and a standard form for the procedure.

Inventory Policy

Collections are inventoried upon receipt.

Latest Collection Inventory

Collections are in the process of a complete inventory as of the date of the assessment.

Curation Personnel

Anne Fox and Maureen Brown are the lab personnel responsible for all archaeological collections held by CAR.

Curation Financing

Curation funding is obtained from grants, university funds, or are included in a given project's written contract with the sponsoring agency. CAR has implemented a new policy for curation funding that includes built-in fee structuring; curation fees are assessed by volume for artifacts and records, and service fees are assessed on an hourly rate.

Access to Collections

Access to the collections is limited to CAR cultural resource staff, and researchers by permission. A written letter of intent is necessary, and access to the collections is supervised.

Future Plans

CAR is currently attempting to expand available space in the repository to include the caged area now administered by the university. In addition, they have submitted a grant, which if approved, will provide funds for the installation of a fire-suppression system with an alarm tied to the fire-station, the installation of an intruder alarm system tied to the police station, the upgrade of primary and secondary containers for existing collections as well as the purchase of additional materials necessary to implement new archival storage policies, completion of CAR's central computer database inventory, the addition of a wire enclosure around the collections, and the purchase of additional equipment needed to upgrade environmental and pest controls.

Comments

1. The building that CAR occupies has central heat and air conditioning controls that are monitored by university staff on a regular schedule, but the repository currently has no humidity controls or dust filters.
2. There is a pest management system that includes monitoring of sticky traps and regular spraying.
3. Security is fair, consisting of key locks, staff monitoring, and security patrols, but is not ideal. Custodial staff has access to collections storage areas, and interior door construction and locks are not adequate in the event that an entry door or window is breached or left unsecured.
4. Fire detection and sprinkler systems for fire suppression are absent with the exception of six manual fire extinguishers.
5. Primary containers consist of acidic cardboard boxes with folded flaps and taped security. Secondary containers for artifacts consist mainly of plastic zip-lock bags and acidic paper bags. Primary container labels are generally typed paper labels taped to the containers.

6. Labeling practices for the archaeological materials as well as the plastic bag secondary containers appears acceptable in instances where CAR's current written procedures have been implemented; however, at this time, many of the objects remain unlabeled, and some of the collections have not yet been sorted by material class.

7. Primary containers for records and photographs are generally adequate, but the secondary containers consist mainly of acidic envelopes, manila folders, and a few archival and nonarchival plastic sleeves. Some of the records are stored in the same boxes as the associated artifacts, and there are no duplicate copies of the records stored at a separate, secure location.

Recommendations

1. Environmental controls should be set and maintained at a constant temperature in all collections and records areas. Humidity should be monitored, and if determined to fluctuate more than 5% on a daily basis, or to be consistently above a 55% reading for relative humidity, consider installing dehumidifiers in the collections areas.
2. Upgrade existing security and fire detection/suppression systems. Current interim measures for fire detection/suppression could be improved with the installation of several additional smoke detectors and manual fire extinguishers.
3. All archaeological materials should be placed in acid-free primary containers labeled by attaching stainless steel or polyethylene label holders with acid-free paper inserts—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the containers.
4. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents, and produce a duplicate copy of all the associated documentation, either on acid-free paper or archival microformat, and store these materials in a separate, fire-safe, secure location.

5. All paper records should be placed in acid-free folders and hanging files labeled in indelible ink. Place all folders in fireproof enameled metal filing cabinets or acid-free cardboard boxes. If boxes are used, they should be labeled by attaching stainless steel or polyethylene label holders with acid-free paper inserts—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the front of the boxes.

6. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

Colorado Department of Transportation

Denver, Colorado

Collection Summary

Collections Total: No artifacts or human skeletal remains in collection. 0.2 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.2 linear feet (2.75 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Costs for curation are usually included in specific project funding. The Colorado Department of Transportation also allocates funding for curation in the internal operating budget for the Environmental Services Branch.

Repository Summary

DATE OF VISIT: November 13, 1996

PERSON CONTACTED: Dan Jepson

The Colorado Department of Transportation (CDOT) office is located in Denver, Colorado. The repository is a very large building with space allocated to offices, as well as some laboratory and storage areas (Figure 61). The Environmental Services Office curates approximately 2.75 linear inches of associated documentation from archaeological



Figure 61. Exterior view of Colorado Department of Transportation.

investigations conducted on the U.S. Air Force (USAF) Academy and Falcon Air Force Base (AFB). There are no major structural distinctions between the repository and the Environmental Services Office.

Structural Adequacy

Although originally constructed for, but never used as, a high school, the building became the Colorado Department of Transportation Headquarters Complex in 1954.

The office building has four floors above grade and is on a concrete foundation with brick exterior walls. The roof is made of built-up asphalt. The building is solid, with no major cracks or leaks. There have been no interior renovations. There are multiple exterior windows, all of which are equipped with shades.

Collections Storage Area 1

Dan Jepson's office space contains the storage area for the records associated with archaeological investigations conducted on the U.S. Air Force Academy and Falcon Air Force Base. The office encompasses approximately 150 ft². The area has concrete walls with a concrete floor covered in carpeting. The ceiling is also poured concrete, and there are no windows. There are two interior metal doors; one leads into other interior rooms and the second leads to the hallway. The collections storage area is filled to approximately 50% of capacity with archaeological records.

Collections Storage Area 2

This multipurpose room serves as a laboratory, processing, and storage area for both the Environmental Services archaeologists and paleontologist. This area houses the photographic records for the U.S. Air Force Academy investigations. The room encompasses approximately 100 ft². The structure is nearly identical to that of Collections Storage Area 1; however, the concrete floor is not covered in carpeting and the two interior metal doors lead to other rooms within that office.

Environment

The building, as well as both collections storage areas, have temperature controls, which include central air

conditioning and gas forced-air heat. There are dust filters for the environmental controls in all areas of the repository. Humidity is not regulated or monitored in the building. Fluorescent lighting without ultraviolet filters is present in the office building. The entire building is cleaned daily by an internal janitorial staff.

Pest Management

There is no integrated system that includes regular monitoring or control of pest infestation. Precautions, such as traps, sprays, and chemical bombs are taken against insects and rodents on an as-needed basis. The office building does not have a serious problem with infestation.

Security

Security measures for the building consist of a 24-hour in-house guard that restricts access to the building. There are also key locks and card key accesses on all exterior doors. There have been no past episodes of unauthorized entry, but there has been vandalism in the parking lot and some episodes of internal stealing. The collections storage areas are secured by a key lock on the exit door, which leads into the hallway.

Fire Detection and Suppression Systems

Fire-detection and -suppression measures within the repository consist of manual fire alarms, smoke detectors, and fire extinguishers. However, the collections storage areas are not equipped with any of these fire deterrent devices. The public announcement system is used to alert personnel of fire danger.

Archaeological Storage Materials

There are no artifacts for military installations curated at the CDOT. The repository has a formal curation agreement with the University of Colorado Museum at Boulder, where archaeological materials are currently housed.

Human Skeletal Remains

The CDOT is not curating any human skeletal remains recovered from archaeological projects conducted on the U.S. Air Force Academy and Falcon Air Force Base.

Records Storage

The CDOT currently curates approximately 2.75 linear inches of documentation associated with archaeological work performed on the U.S. Air Force Academy and Falcon Air Force Base (Table 44). These documents are stored in two separate rooms at the CDOT Environmental Services Office and include paper, report, and photographic records.

Table 44.
Major Classes of Documentation by Installation Housed at the Colorado Department of Transportation (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Falcon AFB	0.25	0.25	—	—	0.50
USAF Academy	1.50	0.25	0.25	0.25	2.25
Total	1.75	0.50	0.25	0.25	2.75

Paper Records

There are approximately 1.5 linear inches of paper records from the U.S. Air Force Academy and 0.25 linear inches from Falcon Air Force Base. The paper records consist of administrative and survey records. These records are stored in standard legal sized metal filing cabinets. The filing cabinets measure 1.5 x 2.3 x 4.3 feet (l x w x h). The filing cabinets are labeled with a paper tag, in a metal holder, type printed with the region numbers. Primary containers consist of manila folders and expanding manila folders that are labeled in pen with the region, project number, and project description. These records are arranged by project. The documentation is in good condition except for the use of contaminants such as paper clips and staples.

Report Records

There is a total of approximately 0.5 linear inches of report records from the U.S. Air Force Academy and

Falcon Air Force Base collections. The report records are stored in a manner identical to that of the paper records.

Photographic Records

Photographic records at the CDOT Environmental Services Office total 0.25 linear inches, and include negatives, slides, and contact sheets. The photographic records are stored on open wooden shelves that measure approximately 5.5 x 1.1 x 6.7 feet (l x w x h). The primary containers consist of one cardboard covered binder and one plastic vinyl binder. These binders are labeled with paper tags in pen with the project year and the contents. Secondary containers for the negatives are nonarchival plastic sleeves labeled in marker with the date, number, and subject. The slides are also stored in archival sleeves and individually labeled in marker with the project number. Contact sheets are directly bound, and labeled in marker with the project number. The photographic records are arranged by project. The photographs are in fair condition; the negatives, however, are discolored. It is important to note that hazardous chemicals, such as hydrogen chloride and muriatic acid, are stored on a shelf directly below the photographic records.

Map Records

There is one large folded map totaling 0.25 linear inches from the U.S. Air Force Academy collections. The map is stored in the same manner as the paper and report records.

Collections Management Standards

The CDOT is not a permanent curation facility; therefore, collections management standards were not evaluated.

Curation Personnel

There is no full-time curator, but there are three full-time staff members in the Environmental Services Office. The staff includes two archaeologists and one paleontologist. Dan Jepson is one of the staff archaeologists and dedicates less than 1% of his time to curation.

Curation Financing

Curation is financed primarily through the internal operating budget of the CDOT. Curation expenses are included in the budget for the Environmental Services Branch. Some curation finances are funded by specific projects. The CDOT Environmental Services has established a formal agreement with the University of Colorado Museum at Boulder to curate all archaeological artifacts. They pay a one-time fee on a per-box basis. This contract is renewed annually.

Access to Collections

Access to the records is controlled by the staff. There is one consultant who has access to the collections, as well as some of the temporary employees. Researchers have access to the collections on a fairly regular basis.

Future Plans

Dan Jepson feels that the funding for curation is adequate. However, the University of Colorado Museum is running out of storage space, leaving institutions such as the CDOT looking for other curation facilities. In this case, Dan Jepson believes that they would probably send their collections to Colorado State University in Fort Collins.

Comments

1. Humidity levels are not monitored or controlled in the repository or the collections storage area. The building has fluorescent lighting not equipped with ultraviolet filters.
2. There is no integrated pest-management system for the CDOT office building. However, precautions against pests are taken if needed.
3. Hazardous chemicals, such as hydrogen chloride and muriatic acid are used by the paleontologist in Collections Storage Area 2. There is no ventilation systems for this area. These hazardous chemicals are located on the same storage unit as some of the records, and more importantly, they are located on the shelf below the photographic records.
4. The repository does not have an intrusion alarm wired to a police station, but does have numerous other

measures such as a 24-hour in-house guard, key locks, and card key access. Collections storage areas, however, are only secured by a key lock on a metal door that exits into the repository hallway.

5. There are manual fire alarms, smoke detectors, and fire extinguishers in the office building, but there are no fire measures in the collections storage areas. It is important to note that the fire alarms in the building are not wired to the fire department.
6. A formal agreement for the curation of archaeological materials has been established with the University of Colorado Museum at Boulder.
7. Documentation is not properly curated. Original documentation is not duplicated or stored in an acid-free container. The records show some evidence of damage such as discoloration and the use of metal contaminants.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Move photographic records out of Collections Storage Area 2, away from the hazardous chemicals. These chemicals should not be in the same locality as the records. Some type of ventilation system, such as a fume hood, should be installed.
3. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a guide to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Cultural Surveys Hawaii

Kailua, Hawaii

Collection Summary

Collections Total: 7.0 ft³ of archaeological materials and human skeletal remains. 1.5 linear feet of associated records.

Volume of Archaeological Materials: 6.9 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 0.1 ft³
 Compliance Status: Cultural Surveys Hawaii currently holds approximately 50 fragments of human bone from Waianae Army Recreation Center. These are scheduled for repatriation.

Linear Feet of Records: 1.5 linear feet (18.2 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded from overhead generated from archaeological projects.

Repository Summary

DATE OF VISIT: March 18, 1997

PERSON CONTACTED: John Winieski

Cultural Surveys Hawaii, located in Kailua, Hawaii, conducts archaeological investigations throughout the state of Hawaii and the surrounding Pacific islands. They use one large house structure for their office and equipment storage areas (Figure 62). Collections are stored in utility closets set into the garage portion of the house. Archaeological materials from military installations total 7 ft³ (Table 45).



Figure 62. Exterior of the Cultural Surveys Hawaii repository.

Table 45.
Volume of Archaeological Materials from DoD
Installations Housed at Cultural Surveys Hawaii

Installation	Volume (ft ³)
Fort Kamehameha	0.9
Kaena Point Tracking Station	0.5
Kipapa Military Reservation	0.3
Marine Corps Base Hawaii, Kaneohe Bay	0.8
Waianae Army Recreation Center	4.5
Total	7.0

Structural Adequacy

The 1600 ft² structure is approximately 20 years old. The foundation is concrete and the building frame type is wood. The building is privately owned. The external walls of the repository are constructed of wood siding and the shingled roof is original to the structure. No structural problems have been noted in the foundation or the roof. Interior walls are plywood and floors are concrete. Ceilings in the repository are wood with sheetrock. Windows in the repository have aluminum frames, are open, and have no blinds.

The collections areas are part of the repository, but are set off by virtue of being in to the garage. They consist of six large closets measuring 6.5 x 4.5 x 4.5 feet (h x w x d). These contain all boxes holding artifacts from fieldwork. Records for the projects are stored inside the repository proper. No structural problems have been noted in the archives by any staff members. There are no windows in the collections area.

Environment

The repository has space for analysis of artifacts and examination of documents. The majority of the space is used for report preparation. Floor fans are used for ventilation. Temperature and humidity levels are not monitored. The repository is regularly cleaned by the staff. All artificial lighting in the repository is generated either by incandescent and nonfiltered fluorescent desk lamps, incandescent bulbs or natural light. Repository utilities are original and have received no major repairs.

The collections area in the garage is completely dominated by storage space. There are no windows and no temperature or humidity controls. The staff members perform janitorial duties in the collections area. Utilities in the collections area are original to the structure and have not been modified to date.

Pest Management

The repository receives regular pest monitoring and control by the staff on an as-needed basis. No infestations were noticed either by staff or by the assessment team. The collections area is likewise serviced by staff and has had no infestations.

Security

The repository uses key locks on exterior and interior doors. The collections areas have padlocks on the doors. The repository is protected by a half wall that blocks direct access from the street or sides.

Fire Detection and Suppression Systems

There are no fire detection/suppression systems in place in the repository or in the collections area.

Archaeological Storage Materials

Storage Units

DoD collections (Figure 63) total 7.0 ft³ of archaeological materials from five installations (Table 46) that are currently housed at Cultural Surveys Hawaii. The materials are stored on wooden shelves in large utility closets. The materials are stored by project.



Figure 63. All the collections from Fort Kamehameha and Waianae Army Recreation Center that are housed at Cultural Surveys Hawaii are shown on the table.

Table 46.
Percentages of Material Classes in the Department of Defense
Archaeological Collections Housed at Cultural Surveys Hawaii

Material Class	Percentages Present					Total
	1	2	3	4	5	
<i>Prehistoric Artifacts</i>						
Chipped Stone	30	13	—	20	100	20
Faunal Remains	—	6	—	—	—	4
Shell	40	23	—	—	—	19
Human Skeletal Remains	—	10	—	—	—	6
Soil Samples	30	19	—	—	—	16
¹⁴ C	—	—	—	10	—	1
Worked Shell/Bone	—	2	5	—	—	2
<i>Historic Artifacts</i>						
Ceramics	—	5	40	—	—	8
Glass	—	15	10	30	—	12
Metal	—	5	40	20	—	9
Brick/Cement	—	—	5	—	—	1
Textiles	—	2	—	—	—	1
Obsidian	—	—	—	20	—	1
Total	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.

(1) Marine Corps Base Hawaii, Kaneohe Bay; (2) Waianae Army Recreation Center; (3) Fort Kamehameha; (4) Kipapa Military Reservation; (5) Kaena Point Tracking Station.

Primary Containers

All materials are stored in acidic cardboard boxes ranging in size from 0.8 ft³ to 2.0 ft³. The boxes are directly labeled in marker with information regarding provenience, project, date, investigator, and material type. The boxes use a combination of telescoping lids and folded flaps for security. They are somewhat over-packed and show some evidence of compression damage and tearing.

Secondary Containers

All secondary containers are plastic, zip-lock bags. Most are directly labeled with provenience information. They show some signs of punctures and are nested within one another.

Laboratory Processing and Labeling

Approximately 33% of the DoD materials examined have been cleaned or processed, but not labeled. All materials have been sorted by provenience for storage.

Human Skeletal Remains

Cultural Surveys Hawaii currently holds approximately 50 fragments (0.1 ft³) of human bone from Waianae Army Recreation Center. The remains are from older projects conducted by this firm. The remains have been inventoried by St. Louis District personnel and have been reported to DoD and the contractor for repatriation.

Records Storage

All DoD records were pulled by the contractor for the evaluation team; however, when not in use they reside in standard filing cabinets. Individual records are stored in manila folders that use adhesive labels with type written information.

Report Records

Report materials comprise approximately 1.4 linear feet of the total record amount (Table 47). They are in good condition, but are somewhat damp from excessive humidity.

Table 47.
Major Classes of Documentation by Installation
Housed at the Cultural Surveys Hawaii (in linear feet).

Installation	Types of Documentation		
	Reports	Photos	Total
Kaena Point Tracking Station	0.4	0.12	0.5
Waianae Army Recreation Center	1.0	—	1.0
Total	1.4	0.12	1.5

Photographic Records

Photographic materials comprise approximately 0.12 linear feet of the total record amount. They are in good condition and are stored with project reports in acidic manila folders or loose inside the reports.

Collections Management Standards

Cultural Survey Hawaii is not a permanent curation facility; therefore, collections management standards were not evaluated.

Curation Personnel

Mr. John Winieski, staff archaeologist, maintains collections held by the firm.

Curation Financing

Curation activities receive no funding. Costs associated with curation are taken from the firm's overhead budget.

Access to Collections

Access to the records and archaeological materials is controlled. Staff require a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

Cultural Surveys Hawaii has no future plans regarding curation or collections storage.

Comments

1. No temperature or humidity monitoring.

2. There is no integrated pest-management system.
3. There is no intrusion alarm installed on the facility or collections storage areas.
4. Fire detection and sprinkler systems for fire suppression are absent.
5. Primary containers consist of acidic cardboard boxes with telescoping lids and folded flaps that show signs of damage and are over-packed.
6. Primary containers for records are generally adequate, but the secondary containers consist mainly of acidic manila folders. Most of the records are damp from humidity.
7. Human remains from Waianae Army Recreation Center are present.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with the applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.
2. All artifacts should be placed in archival quality primary containers and inert plastic secondary containers. Primary containers should be labeled using archival paper inserts and inert plastic sleeves.
3. All records should be placed in a humidity controlled room and stored in archival quality primary containers and inert plastic secondary containers.
4. Duplicate all paper records onto acid-free paper and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents. Store these materials in a separate, fire-safe, secure location.
5. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

Dames & Moore

Salt Lake City, Utah

Collection Summary

Collections Total: 2.3 ft³ of archaeological materials. 1.0 linear feet of associated records.

Volume of Archaeological Materials: 2.3 ft³
 Compliance Status: Collections require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.0 linear feet (12.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Funding for curation activities is accomplished through the individual budgets written into all archaeological research contracts. These funds cover the cost of immediate processing, but not long-term curation.

Repository Summary

DATE OF VISIT: January 17, 1997

PERSON CONTACTED: Lori Hunsacker

Dames & Moore is a large consulting firm with over 130 offices worldwide. Projects for clients are largely environmental, science, or engineering related, although a small amount of cultural resources work is performed. Seven Dames & Moore offices, including Salt Lake City, offer cultural resources capabilities. The firm currently curates approximately 2.3 ft³ of artifacts recovered from

Dugway Proving Ground and approximately one linear foot of associated documentation. The artifacts from Dugway Proving Ground are unprocessed. It should be noted that as of April 1997, Dames and Moore had transferred the artifact collections described in this report to Dugway Proving Ground.

Structural Adequacy

Dames & Moore is located in downtown Salt Lake City, in the Boyer Company office building (Figure 64). The building is very large, and Dames & Moore is one of many tenants. Constructed in the 1980s, the building foundation is concrete, and exterior walls are composed almost exclusively of glass. The roof



Figure 64. View of the exterior of the office building where Dames and Moore is located.

is built-up asphalt and steel, and is original. The structure is solid, with no significant cracks or leaks. A parking garage is located below grade, and six floors are located above grade. Exterior windows are generally equipped with shades.

Ms. Hunsacker's office serves as the collections storage area for the archaeological collections. The office has a concrete floor covered with carpet. Walls are composed of wallboard/sheetrock, and the ceiling is suspended acoustical tile. There are two exterior aluminum frame windows, each equipped with blinds. One wood panel door leads into the hallway within the Dames & Moore suites. The collections storage area encompasses approximately 100 ft², and is filled with file cabinets, a desk, and a set of shelves for reports.

Environment

The office building is equipped with heat and air conditioning, and dust filters for the forced-air systems. Humidity is neither monitored nor controlled. The building is regularly cleaned and maintained daily by a contracted firm. Lighting is accomplished by non-ultraviolet filtered fluorescent tubes.

Pest Management

There is no integrated pest management system. The building staff may spray for insects regularly or as-needed, but this is not definite knowledge. The assessment team did not observe any signs of insects or rodents.

Security

The office building is equipped with an intrusion alarm system that is wired to the local police department. Exterior doors are equipped with key locks. During non-business hours, elevators are locked and accessible only with keys. Individual suite doors are secured with combination locks. Ms. Hunsacker's office is not equipped with a lock.

Fire Detection and Suppression Systems

Fire detection consists of smoke detectors. Fire suppression consists of a fire hose located in the floor hallway, and fire extinguishers. The main floor of the building is equipped with a sprinkler system; this system is not present on the third floor (the location of Dames & Moore), nor in the offices and suites. The collections storage area is equipped with a fire extinguisher, which is located in a box with supplies reserved for operations in the field.

Archaeological Storage Materials

Storage Units

The primary container for artifacts is stored on the floor in the collections storage area, next to the door. Percentages of material classes are outlined in Table 48.

Table 48.
Percentages of Material Classes in the Dugway Proving Ground Archaeological Collections Housed at Dames & Moore

Material Class	Percentage Present
Prehistoric Chipped Stone Artifacts	1
<i>Historic Artifacts</i>	
Ceramic	28
Glass	30
Metal	40
Worked Shell	1
Total	100

Note: Percentages of material classes are based on volume.

Primary Containers

Archaeological materials are stored in a large plastic box. The unlabeled box encompasses approximately 2.3 ft³.

Secondary Containers

Secondary containers for artifacts consist primarily of 4-mil nonarchival quality plastic zip-lock bags. Several of the bags have punctures and are torn, and dirt is present on and in them. Most of the zip-lock bags are the field bags, which will be supplanted by archival-quality plastic bags when the collections are completely processed. Approximately four bags of artifacts have been processed by Dugway Proving Ground cultural resources staff. These secondary containers are 6-mil archival-quality plastic zip-lock bags, with acid-free paper insert labels.

Laboratory Processing and Labeling

Approximately 5% of the artifacts have been cleaned (those processed by Dugway staff). None of the artifacts have been labeled or sorted by material class.

Human Skeletal Remains

Dames & Moore is not curating any human skeletal remains recovered from archaeological projects on military installations.

Records Storage

Records are stored in two file drawers in the collections storage area. One of the file drawers is a metal desk drawer attached to Ms. Hunsacker's desk, and the other file drawer is part of a standard letter-size metal file cabinet. There are approximately 12.5 linear inches of records associated with archaeological work conducted at Dugway Proving Ground.

Paper Records

Paper records measure approximately 6.75 linear inches, and consist of administrative, background, and survey documents. They are stored in manila folders, placed within hanging files in the cabinets.

Manila folders have adhesive labels, with either hand applied labels or information written directly in pen. Label information consists of the folder contents. Although records have some surface dirt and dust, they are generally in good condition. Staples and paper clips are present in the files, however.

Report Records

Three linear inches of report records are located in the manila folders with the paper records.

Photographic Records

Photographic records encompass 1.25 linear inches, and consist of color and black and white prints, and negatives. None of the individual photographs are labeled, and they are stored in the original processing envelopes.

Maps and/or Oversized Documents

Large and small maps measure 1.5 linear inches, and are stored in the manila folders with the paper records. Large maps were stored folded.

Collections Management Standards

Dames & Moore is not a permanent curation facility, and transfers collections to the state repository or the hiring agency after they have been processed and analyzed. Therefore, collections management standards were not evaluated.

Curation Personnel

Lori Hunsacker is a prehistoric archaeologist for the Dames & Moore, Salt Lake City office. An additional historic archaeologist is employed in the same office. Ms. Hunsacker has collection processing responsibilities.

Curation Financing

Curation costs are covered in the contracts with the agency requesting the archaeological research. These costs cover the immediate processing activities, but not long-term curation.

Access to Collections

Access to collections is through Ms. Hunsacker.

Future Plans

There are no plans for upgrading the curation program. In fact, Dames & Moore is considering a move out of the cultural resources field.

Comments

1. Heating and air conditioning systems are present for the office building, but there are no humidity controls or monitoring devices.
2. Dames & Moore has no integrated pest management system. Pest control is probably performed as-needed, and there were no signs of a current problem.
3. The building is equipped with a security system wired to the local police, and each suite is secured with a combination lock. However, the collections storage area is not secured.
4. Fire detection consists of smoke detectors, and fire suppression consists of a sprinkler system on selected floors, fire hoses, and fire extinguishers.
5. The primary container for archaeological materials is a large plastic box. Secondary containers for artifacts consist predominantly of nonarchival-quality plastic zip-locks. Artifacts are currently being processed.
6. Records are stored in acidic manila folders, and placed in standard size metal file cabinets.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with the applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Box and bag all archaeological materials into folded acid-free cardboard boxes with telescoping lids, and 4- or 6-mil archival-quality polyethylene zip-lock bags. Insert acid-free paper labels into each bag. The volume of artifacts in each box and bag should be low so that containers are not overpacked.

3. Produce multiple copies of all documentation on acid-free paper, and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant metal file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Delta Chamber of Commerce Sullivan Roadhouse

Delta Junction, Alaska

Collection Summary

Collections Total: 25.6 ft³ plus oversized archaeological materials. No associated records.

Volume of Archaeological Materials: 25.6 ft³ plus oversized items.

Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation. Large artifacts include a wooden chair, a large wood-stove, a long wooden bench, a wood sink, wall cloth, metal bed frame,

large metal buckets, metal plow fragment, original wooden door, metal advertisement, two metal roof fragments, wooden boxes used as shelves, and a flour sack.

Human Skeletal Remains: None

Linear Feet of Records: None

Status of Curation Funding: Unknown

Repository Summary

DATE OF VISIT: May 29, 1997

PERSON CONTACTED: Sheryl Mills

Sullivan Roadhouse, is a National Historic Site is located within the interior of Alaska, just inside the city of Delta Junction. The Roadhouse, a spruce log building, had formerly been on the Fort Greely bombing range, but had been dismantled, moved and finally rebuilt on a lot across from the Delta Chamber of Commerce Visitor Center. The building was constructed in 1906 along the trail between



Figure 65. Exterior view of the temporary storage facility for the artifact collections from Fort Greely's Sullivan Roadhouse.

Valdez and Fairbanks. The Roadhouse operated until 1923 when the railroad made the trail obsolete. After it was abandoned, only campers and hunters continued to use the log structure. It was deeded to the Chamber of Commerce for use as an interpretive center employing replicas of some of the artifacts found within the cabin.

John Cook, Bureau of Land Management (BLM) archaeologist in Fairbanks, conducted an archaeological survey at the site, gathering all of the collections currently under the care of the Delta Chamber of Commerce. These collections were originally stored at the BLM, but were transferred to the Delta Chamber of Commerce in order for the exhibit creators to choose particular artifacts to recreate the atmosphere of the roadhouse during the time it sheltered people on the trail. Items to be displayed are currently in the roadhouse. Some of the artifacts are being replicated for display. A few artifacts including various bottles, a snuff jar, and horseshoes are presently with the exhibit designer. Most of the collections are going to be returned to the BLM. These collections are currently in a separate storage building behind the Visitor Center.

Structural Adequacy

Repository 1—The Sullivan Roadhouse

The historic structure is a single story, four room log cabin constructed with indigenous spruce trees. The roadhouse was rebuilt using all of the original wood logs except for the bottom three which had become rotten. Unfortunately, the replacement logs have been infested with insects that bore holes in fresh spruce. A new wooden floor has also been added. The roof is new, and consists of corrugated metal. A plastic sheet between the overhead logs and the metal corrugated roof provides insulation and additional protection from leaks. New features include electricity, a closet to hide the electrical box, and a crawl space under the cabin.

Repository 2—The Storage Building

This long, narrow building is divided into small sections that each have an opening in the front. A hinged piece of plywood hangs down from the top. When this is propped open, each section has a "concession stand-like" appearance.

Environment

Since electricity has been added, the roadhouse does not have to be heated in the original manner with a wood-burning stove. Artificial track lighting is currently being added. The seven windows have been replaced and are sealed within the wood frames. Temperature and relative humidity levels are not monitored or controlled. The plywood storage building has no environmental controls. Building maintenance and cleaning are performed by staff on an as-needed basis.

Pest Management

No pest-management system has been employed in either building. However, an infestation of wood-boring insects is already present in some of the new replacement logs in the roadhouse. Spiders were found in some of the collection containers in the storage shed.

Security

All doors in the roadhouse are solid wood with key locks. Three doors open to the exterior of the building. These have dead bolt locks. All windows are sealed. Access to both repositories is controlled by Ms. Mills. The storage building door has a key padlock. The top-hinged door at the front of the shed which swings up to reveal an opening in the upper half of the stand is kept shut with a wedged log leaning from the ground into the door.

Fire Detection and Suppression Systems

No fire detection system is in place. Fire extinguishers supply the only method of fire suppression in the roadhouse. The storage building has no fire-detection or -suppression system.

Archaeological Storage Materials

Storage Units

There are no storage units in the roadhouse. The boxes and large historic items are placed on the floor



Figure 66. Selected historic artifacts from Fort Greely's Sullivan Roadhouse collection that will be placed on display in the roadhouse.

(Figure 66). Storage units in the storage building are built-in wooden shelves. Three shelves on the wall opposite the door measure 4.0 x 1.4 x 1.5 feet (l x d x h). Another shelf at the side opening measures 12 x 2 feet (l x d) and is three feet off the floor. Oversized items are stored either on the floor or hung on a wall in the roadhouse. Percentages of material classes are outlined in Table 49.

Primary Containers

There are 20 acidic cardboard boxes for the collections ranging in size from 0.9 ft³ to 2.8 ft³. The

Table 49.
Percentages of Historic Material Classes in the Fort Greely Sullivan Roadhouse Archaeological Collection Housed at the Delta Chamber of Commerce, Delta Junction, Alaska

Material Class	Percentage
Ceramic Fragments	4
Faunal Remains	25
Modified Shell	<1
Botanical Remains	<1
Soil Samples	<1
Metal	45
Glass	15
Wood	10
Other	<1
Total	100

Note: Percentages of material classes are based on volume.

Other materials include plastic buttons, asbestos, leather, shoes, corks, textiles.

Totals do not include historic furniture, farm equipment, and other oversized items also considered to be part of the roadhouse and its artifact collections.

majority of the boxes are without lids; however, some have folding flaps that are not closed properly. Most of the primary containers have a label directly written on the container in marker. The information, often inconsistent, includes the contents, project name, site name, site number, and name of the investigator. Many of the containers are damaged and often overpacked. Boxes are compressed, torn, and water damaged. Live insects were also noted in at least two containers.

Secondary Containers

Secondary containers are labeled directly with marker and contain information such as the site number, date, provenience, investigator, and contents. The secondary containers include paper bags (20%), thin, non-archival plastic bags and plastic garbage bags with a plastic draw string (60%), and small acidic cardboard boxes (10%). Security for the plastic bags include zip-locks and twist-ties. The brown paper bags and the larger plastic bags are not secured. Many of the secondary containers are torn, punctured and dirty. Some archaeological materials (10%) were loose in the primary containers. This does not include the oversized archaeological materials that are too large for containers.

Laboratory Processing and Labeling

Approximately 10% of the artifacts, located for the most part in the roadhouse, are labeled. These labeled artifacts have data written on them in india ink or with an acidic paper tag tied to the artifact with cotton string. Some of the tags have metal edges, and are torn, dirty, or not well secured to the object. Only a few of the artifacts in the storage shed have been labeled with paper tags and string. The Chamber of Commerce labels are marked with the site number, XBD-061-94-025. Most of the collection is sorted by material type. None of the items in the storage building have been cleaned.

Human Skeletal Remains

No human skeletal remains from the roadhouse or Fort Greely are housed at the Sullivan Roadhouse.

Records Storage

The Delta Chamber of Commerce holds no associated documentation from an archaeological project at the Sullivan Roadhouse. However, a record collection containing approximately one linear foot of documentation including administrative records, field notes, and photographs was donated by a private historian who collected information about the roadhouse on his own time, without collecting any artifacts or obtaining specific archaeological information. Therefore, these records were not assessed.

Collections Management Standards

The Delta Chamber of Commerce is not a curation facility and is limited to the Sullivan Roadhouse; therefore, collections management standards were not evaluated.

Curation Personnel

Personnel includes only the manager, Sheryl Mills.

Curation Financing

The status of curation financing is unknown.

Access to Collections

Collections can be accessed through Sheryl Mills.

Future Plans

Future plans include getting a telephone line connected, developing exhibits that employ original artifacts and replicas for the creation of an interpretive center, adding track lights, and returning most of the artifacts to the BLM for curation.

Comments

1. No standard pest-management system has been implemented in the repositories.
2. Fire safety measures are inadequate, consisting of only fire extinguishers.

3. Temperature is only partially controlled but not monitored. Humidity is not monitored or controlled.

4. Archaeological materials are stored in acidic cardboard boxes and a variety of nonarchival secondary containers.

5. Plastic bags containing asbestos were stored in boxes with other archaeological materials in the storage building.

Recommendations

1. Employ an integrated pest management system that uses methods of monitoring and control. The infested logs should be removed or treated and replaced with pest free timber.

2. Fire detection devices should be liberally placed throughout the wood cabin. Do not use the wood-burning stove.

3. Temperature and relative humidity should be monitored and controlled if necessary with commercial humidifiers or dehumidifiers.

4. Rehabilitate collections by using acid-free primary containers. Clean and label all of the artifacts with india ink. Place artifacts in 6-mil archival plastic bags secured with a zip-lock. Place label information directly on the secondary container with an indelible marker.

5. Contact an asbestos abatement and removal specialist to determine the best way to properly handle the asbestos safely.

Garcia and Associates

Honolulu, Hawaii

Collections Summary

Collections Total: 33.2 ft³ of archaeological materials. 0.9 linear feet of associated records.

Volume of Archaeological Materials: 33.2 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.9 linear feet (11.25 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing Federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded with overhead generated from archaeological projects.

Repository Summary

DATE OF VISIT: March 20, 1997

PERSON CONTACTED: Jeff Pantaleo

Garcia and Associates, located in Honolulu, Hawaii, conducts archaeological investigations throughout the state of Hawaii and the surrounding Pacific islands. They are located in downtown Honolulu. Approximately 33 ft³ of artifacts from multiple installations are housed at the firm (Table 50).

Structural Adequacy

The privately owned structure is approximately 21 years old and encompasses 1393 ft² (Figure 67). The foundation is concrete and the building frame is steel and concrete. The external walls of the repository are



Figure 67. Exterior of the building where Garcia and Associates is located.

Table 50.
Volume of Archaeological Materials from DoD
Installations Housed at Garcia and Associates

Installation	Volume (ft ³)
Fort DeRussy	23.8
Fort Shafter	1.3
Hickam Air Force Base	2.6
Makua Military Reservation	0.3
Marine Corps Base Hawaii, Kaneohe Bay	2.6
Pohakuloa Training Area	2.6
Total	33.2

constructed of concrete and the built-up asphalt roof is original. No structural problems have been noted in the foundation or the roof. Interior walls are wallboard and floors are concrete covered with carpet. Ceilings in the repository are suspended acoustical tile. Windows in the repository have aluminum frames and are sealed. The repository has space for analysis of artifacts and examination of documents. The majority of the space is used for report preparation and for offices.

The 150 ft² collections storage area is along a wall of the office, and is partially partitioned from the rest of the repository. This area contains all boxes holding artifacts from fieldwork. Records for the projects are also stored in this area, but some are kept by individual project managers in their offices. No structural problems have been noted in the collections storage area by any staff members. There are no windows in the collections storage area.

Environment

Central air conditioning provides for temperature stabilization; however, none of the air conditioning vents have dust filters. Temperature and humidity levels are not monitored. The repository is cleaned weekly by the staff. All artificial lighting in the repository is generated either by incandescent or fluorescent light. Repository utilities are original and have received no major repairs. The collections storage area is dominated largely by storage space for artifacts, and records, and circulated reports. There are no windows in this area. Staff also provide janitorial services in the collections area.

Pest Management

The repository receives professional pest management services on an as-needed basis. Staff monitor for pests and, to date, the facility has required no pest management services.

Security

The repository has an intrusion alarm that is wired to the police department and has areas of controlled access that are monitored by staff members. All exterior doors are metal and glass in construction and possess dead bolt locks. There are very few interior doors, which are wood and have key locks. One interior door is shared with the office next door and remains locked.

Fire Detection and Suppression Systems

The repository uses a fire alarm that is wired to the fire department as well as a sprinkler/suppression system. There is also one fire extinguisher present in the repository that was last inspected in 1993.

Archaeological Storage Materials

Storage Units

DoD collections total 33.2 ft³ (Figure 68) and are stored on non-movable, wooden shelves 6.5 x 22.5 x 32.5 inches (h x w x d). There are 5-6 shelves per unit and a total of five units in the collections area. Percentages of material classes are outlined in Table 51.

Primary Containers

Most primary containers are acidic cardboard boxes that are glued and folded in construction and are secured with a telescoping lid. The boxes are generally in good condition. They are all labeled with adhesive labels with the information written in marker. The information is legible and consistent for all collections and includes installation name, project number, and box contents.

Table 51.
Percentages of Material Classes in the DoD Archaeological Collections Housed at Garcia and Associates

Material Class	Percentages Present						Total
	1	2	3	4	5	6	
<i>Prehistoric Artifacts</i>							
Chipped Stone	3	15	3	—	5	27	5
Faunal Remains	11	—	3	5	—	—	7
Shell	21	—	20	—	40	13	19
Soil Samples	25	80	68	—	50	13	35
¹⁴ C	3	5	—	—	—	17	4
Botanical Remains	2	—	—	—	—	15	2
Other	2	3	3	60	1	15	2
<i>Historic Artifacts</i>							
Crockery/ceramics	7	—	—	—	—	—	5
Glass	21	—	—	5	—	—	16
Metal	5	—	3	30	4	—	5
Total	100	100	100	100	100	100	100

Note: Percentages of material classes based on volume.

(1) Fort DeRussy; (2) Fort Shafter; (3) Hickam Air Force Base; (4) Makua Military Reservation; (5) Marine Corps Base Hawaii, Kaneohe Bay; (6) Pohakuloa Training Area.

Other prehistoric classes include: volcanic glass, worked bone, worked shell, ceramics, and historic brick/masonry.



Figure 68. Collections from Department of Defense installations are housed on wooden shelves.

Secondary Containers

Approximately 90% of all secondary containers are paper bags. The remaining 10% are plastic 2- and 4-mil zip-lock bags. Both types of containers are

directly labeled with provenience and project information. Throughout the collection plastic bags are found to be nested inside the larger paper bags. All bags are in good condition, and there are relatively few tears or punctures.

Laboratory Processing and Labeling

Approximately 50% of the artifacts have been cleaned and none have been labeled in any way. They are sorted by project and provenience.

Human Skeletal Remains

Garcia and Associates holds no human skeletal remains.

Records Storage

DoD records encompass approximately 11.25 linear inches from seven distinct collections (Table 52). All DoD records are stored in standard filing cabinets located in the collections area and within project manager offices. Individual project records are stored in manila folders that use adhesive labels with type written information.

Table 52.
Major Classes of Documentation by Installation
Housed at Garcia and Associates (in linear inches)

Installation	Types of Documentation		
	Paper	Reports	Total
Camp Smith	—	1.0	1.00
Fort DeRussy	4.75	—	4.75
Fort Shafter	0.25	—	0.25
Hickam Air Force Base	1.75	0.5	2.25
Makua Military Reservation	0.50	—	0.50
Marine Corps Base Hawaii, Kaneohe Bay	1.75	—	1.75
Pohakuloa Training Area	0.75	—	0.75
Total	9.75	1.5	11.25

Paper Records

Paper records, totaling 9.75 linear inches, are the majority of the documents. They are in good condition but do have some contaminants, such as paper clips and staples, throughout.

Report Records

Report records encompass approximately 1.5 linear inches and are stored in the same manner as the paper records.

Collections Management Standards

Garcia and Associates is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

Jeff Pantaleo, Principal Archaeologist, maintains collections held by the firm.

Curation Financing

Curation activities receive no funding. Costs associated with curation are taken from the firm's overhead budget.

Access to Collections

Access to the records and artifacts is controlled. The staff requires a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

Garcia and Associates has no future plans regarding curation or collections storage.

Comments

1. The temperature is controlled through central air conditioning that is not equipped with dust filters. Humidity is neither monitored or controlled.

2. Security measures consist of dead bolt locks on the doors, an intrusion alarm that is wired to the police department, and controlled access.

3. There is no integrated pest-management system.

4. Fire detection and sprinkler systems for fire suppression are present.

5. Archaeological materials are stored in nonarchival-quality primary containers.

6. Primary containers for records are generally adequate, but the secondary containers consist mainly of acidic manila folders.

Recommendations

1. All artifacts should be placed in archival-quality primary containers and inert plastic secondary containers. Primary containers should be labeled using archival paper inserts and inert plastic sleeves.

2. All records should be placed in an environmentally controlled room and stored in archival-quality primary containers and inert plastic secondary containers.

3. Duplicate all paper records onto acid-free paper and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents. Store these materials in a separate, fire-safe, and secure location.

4. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

5. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with the applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections. .



Garrow and Associates

Raleigh, North Carolina

Collections Summary

Collections Total: 1.2 ft³ of archaeological materials, 0.7 linear feet of associated records.

Volume of Archaeological Materials: 1.2 ft³
 Compliance Status: Archaeological materials require minor rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.7 linear feet (8.4 linear inches)

Compliance Status: Records require nearly complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Funding for curation of archaeological collections is currently included in the scope of work for any project undertaken by Garrow and Associates.

Repository Summary

DATE OF VISIT: November 12, 1996

PERSON CONTACTED: Daniel Cassedy

Garrow and Associates (Garrow) is an archaeological contracting company with branch offices in several states. Their main office is located in Atlanta, Georgia, and all other branches coordinate their projects through the Atlanta facility. Collections are only housed with the Raleigh office, as is the case with all of Garrow's divisions, as a temporary measure for research purposes prior to submittal to a long-term curation facility. Garrow's

Raleigh office, processing laboratory, and temporary collection storage are all located in a single office building in the downtown area. Approximately 1.2 ft³ of artifacts and 8.4 linear inches of documentation from Corpus Christi Naval Air Station (NAS) are currently housed at Garrow and Associates.

Structural Adequacy

Garrow occupies approximately 2300 ft² of a 9200 ft² single-level brick office building with a partially above ground full basement (Figure 69). The building has a concrete foundation and steel-frame construction. The present roof, which is less than five years old, is constructed of built-up asphalt. There have been no cracks or leaks in the structure



Figure 69. Garrow and Associates has numerous offices including one in Raleigh, North Carolina.

that Garrow staff is aware of, and no upgrades to the building's plumbing or electrical systems.

This office building is privately owned and is about 30 years old. It has a main corridor lined with individual suite entry doors. Garrow's suite has a front office that also serves as a security buffer. Just through this office is another L-shaped corridor, which provides access to Garrow's private offices, processing areas, and temporary storage. There is also a kitchen area just past the front office that has been constructed within the corridor and just outside of the processing room.

There are sealed aluminum frame windows in the offices, but there are no windows present in the processing or storage areas. All rooms in the space occupied by Garrow have concrete floors covered with industrial grade carpeting. Rooms are constructed with wallboard and have suspended acoustical tile ceilings fitted with non-ultraviolet filtered fluorescent lighting. Exterior doors are metal-framed glass and interior doors are solid core wood.

The collection area and overflow storage—the processing room—are identical to the rest of the facility in terms of environment, pest-management, security, and fire detection. The collections area is filled to capacity. The materials evaluated by St. Louis District staff were stacked on other boxes that were on the floor.

Environment

The building Garrow occupies has forced-air heat (electric pump) and central air conditioning, but

Garrow staff was not sure if these systems are equipped with dust filters. Temperature is monitored and controlled, but humidity is not. General environmental considerations for the region include extreme changes in temperature within a 24-hour period and relatively high humidity on a seasonal basis. The entire building is professionally cleaned on a daily basis. There are no windows in the collections storage or processing areas, and office windows are shaded. Artificial lighting consists of non-ultraviolet filtered fluorescent tubes throughout the building.

Pest Management

Pest control is professionally contracted and is done on an as-needed basis. No pest infestations have been noted by Garrow staff since their occupancy in the building, and St. Louis District staff saw no evidence of infestations during their assessment. There is no integrated pest management system in place at this facility.

Security

Security measures for the repository consist of dead bolt locks on the exterior doors, key locks on the interior doors, exterior lighting, and controlled access by staff. There was one break-in last year; no artifacts were stolen.

Fire Detection and Suppression Systems

There are no fire detection or suppression systems in place at this facility, although one manual fire extinguisher was noted in the main building corridor outside of Garrow's suite.

Archaeological Storage Materials

Storage Units

Corpus Christi NAS archaeological materials are stored in a single box that is stacked on top of several other boxes. All boxes are stored on the floor. Table 53 outlines the types of material classes

Table 53.
Percentages of Material Classes in the
Corpus Christi NAS Archaeological Collections
Housed at Garrow and Associates

Material Class	Percentage Present
<i>Prehistoric Artifacts</i>	
Ceramic	5
Chipped Stone	25
Faunal Remains	6
Shell	25
Flotation Samples	2
Soil Samples	25
¹⁴ C	2
Botanical Remains	1
<i>Historic Artifacts</i>	
Ceramic	5
Glass	1
Metal	2
Plastic	1
Total	100

Note: Percentages of material classes are based on volume.

present among Corpus Christi NAS collections at Garrow and Associates.

Primary Containers

Archaeological materials are stored in a single acid-free cardboard box with a telescoping lid. A piece of paper with data hand written in black marker is taped to the box. Data on the label consist of the installation name and the phase of the project.

Secondary Containers

Secondary containers for the archaeological materials consists entirely of 6-mil polyethylene zip-lock bags. Labels are either directly applied to secondary containers in marker or acidic paper inserts written in pen or pencil are placed in the secondary containers. Information includes the project name, site number, material classes, artifact provenience, the date, collector/investigator name(s), special sample numbers, and field specimen numbers.

Laboratory Processing and Labeling

Most artifacts appear to have been cleaned, labeled, and sorted by provenience. Labels on objects are directly applied in black ink with the site number and

catalog or field specimen number. Lot bags have paper inserts labeled in pen or pencil with the same data as noted on the secondary container labels. Bulk samples of shell are not labeled, but labeling is not generally recommended for these types of samples.

Human Skeletal Remains

Garrow does not have any human skeletal remains in their Raleigh office that were removed from DoD lands.

Records Storage

Documentation associated with current archaeological projects is stored in filing cabinets in Dr. Cassidy's office. Once a project is completed the records and a copy of the relevant report are sent to the main office in Atlanta. There are 0.65 linear feet of paper records, including one draft report with photograph mock-ups, and 0.05 linear feet of photographic media housed at Garrow's Raleigh office for DoD.

Paper Records

Records housed at Garrow are stored predominately in legal-size metal filing cabinets. Labels on the filing cabinets are adhesive paper hand labeled in black marker. The primary container for the DoD records is an acid-free hanging file with a typed label inserted into a plastic tab. All secondary containers for the collection are manila folders directly labeled in pen or marker. There is no specific arrangement of records within the primary container, but primary containers are arranged by project at Garrow's Raleigh office. Once the records are sent to Atlanta to be archived, they are also arranged by year into a company wide archival system.

Photographic and Report Records

The draft report housed in the Corpus Christi NAS project file with the paper records contains photographs that have been taped in place, and additional photographs are loose in the folder containing the report.

Collections Management Standards

Garrow is not viewed as a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no curation staff at Garrow because they do not professionally curate collections.

Curation Financing

Funding for curation of archaeological collections is currently included in the scope of work for any project undertaken by Garrow.

Access to Collections

Access to the collections is limited to Garrow cultural resource staff and researchers by permission. A written letter of intent is necessary and access to the collections is supervised.

Future Plans

No changes or upgrades to existing protocols or facilities are planned by Garrow at this time.

Comments

1. Humidity at Garrow is not monitored or controlled.
2. One break-in occurred at this facility last year, and although no artifacts were taken, some additional security measures are in order to prevent any further such incidents. Until collections are transported to full-time curation facility, Garrow is responsible for their security.
3. There are no fire suppression systems in place at this facility. This issue is of concern, not only because of the potential for damage to collections being housed there, but for the safety of Garrow's staff and other individuals working in this facility.
4. Archaeological materials at Garrow's Raleigh office for DoD appear to be generally in very good condition, but are currently being stored on other

boxes that are kept on the floor. Some attention is needed for the historic collections, such as repackaging the artifacts and replacing the label on the primary container.

5. DoD records have not yet been archivally processed, and should be upgraded to reflect existing federal guidelines and standards for modern archival preservation.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with the applicable installation to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Place archaeological materials in acid-free primary containers labeled by attaching a stainless steel or polyethylene label holder with an acid-free paper insert—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the container. All artifacts should be placed in polyethylene zip-lock bags. Acidic paper inserts in the secondary containers should be replaced with acid-free inserts.
3. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents, and produce a duplicate copy of all the associated documentation, either on acid-free paper or archival micro format, and store these materials in a separate, fire-safe, secure location.
4. Place all paper records in acid-free folders and hanging files labeled in indelible ink. Place all folders in a fireproof enameled metal filing cabinet or and acid-free cardboard box. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.
5. Remove from all photographic materials any contaminants, label with an archivally acceptable product, and place in polyethylene archival sleeves.

Geo-Marine

Plano, Texas

Collections Summary

Collections Total: 13.2 ft³ of archaeological materials. 1.3 linear feet of associated records.

Volume of Archaeological Materials: 13.2 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.3 linear feet (15.76 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Geo-Marine has no formal curation agreement with DoD installations and is acting only as an interim repository.

Repository Summary

DATE OF VISIT: October 22, 1996

PERSON(S) CONTACTED: Duane Peter

Geo-Marine is an archaeological contracting firm with several branch offices that is frequently employed by various DoD installations across the country to conduct cultural compliance work. See Table 54 for volume of archaeological materials from DoD installations currently housed at Geo-Marine.

Table 54.
 Volume of Archaeological Materials from DoD
 Installations Housed at Geo-Marine

Subject Installation	Volume (ft ³)
Fort Bliss	5.9
Fort Sill	7.3
Total	13.2

Structural Adequacy

The branch office assessed by the team is located in downtown Plano, Texas, in a building believed by Geo-Marine staff to have been constructed sometime between 1976 and 1985 and previously used as a savings and loan office. The structure has a concrete foundation with stucco exterior walls that have been

recently resided. The roof is metal and is original to the building. No cracks in the foundation or current leaks in the roof were reported by Geo-Marine staff, although the roof has had several repairs due to past leakage. Building utility systems include heat, telephones, air conditioning, and electricity. All utility systems are original. The building functions primarily as office, report preparation, and study space. Space is also allocated for temporary artifact storage and laboratory analysis. The two level structure has undergone numerous renovations including the addition and removal of internal walls (sheetrock) to facilitate current usage, painting, and the installation of new carpet. All windows in the repository have shades or drapes, and steel window frames. According to repository staff, none of these windows have shown any evidence of air or water leakage. All exterior doors for the facility are metal framed glass, and interior doors are predominately solid core paneled wood, with the exception of the records archive door, which is steel (door to what was previously the savings and loan vault). Most windows in the repository are original. The repository comprises about 16,314 ft², approximately 69 ft² of which is dedicated to temporary artifact storage.

The collections areas are structurally identical to the rest of the repository—except for the lack of windows in these areas—and share common environmental, utility, and fire/security systems.

Environment

The building has air conditioning and heat controls. Temperature is set to staff preferences. No humidity control is presently undertaken, although levels are checked on occasion. Dust filters are present on the furnace ducts, and the building is maintained weekly by a professional janitorial service. Artificial lighting is accomplished with fluorescent tube fixtures that are not presently fitted with ultraviolet filters.

Pest Management

There is no integrated pest-management system in place at this facility. Pest maintenance occurs on an as-needed basis, or least semiannually, and no previous infestation problems of any kind have been noticed by Geo-Marine personnel.

Security

In terms of security, the facility possesses key locks for all exterior doors and main interior office doors, a security tumbler lock on the records archive door, a dead bolt lock on the collections area door, and all windows are sealed shut. Current security measures appear to have served as useful deterrents, as no incidents of unauthorized access were reported by Geo-Marine staff.

Fire Detection and Suppression Systems

A fire alarm wired to the local fire department is present at this facility, as are fire extinguishers— noted by the assessment team as having been last inspected in November of 1995—and a wet-pipe sprinkler system. According to repository staff, no parts of the structure are considered fireproof.

Archaeological Storage Materials

Storage Units

Archaeological collections are stored on wood-stud (2 x 2 inch) frame shelving units with plywood shelves and uprights, all of which are painted white. There are about 16 individual units lining the walls of the collections area, each measuring approximately 2 x 4 x 6 feet (l x w x h). There is no over stacking of boxes and clutter is kept to a minimum. Currently, Geo-Marine collections storage is at 70% of capacity. There are 13.2 ft³ of archaeological materials from DoD installations (Table 55) currently stored at Geo-Marine.

Primary Containers

The objects are stored in acidic cardboard boxes (Figure 70) with telescoping lids—approximately 1.15 ft³ each in volume—that are directly labeled in black marker with variable information such as a project number, an installation name, a project phase, a site name, material class, or a series of artifact catalog numbers. A few of the boxes containing sample materials are overpacked, and one ground stone artifact for Fort Bliss is stored loose in an acidic box lid.

Table 55.
Percentages of Material Classes in the DoD
Archaeological Collections Housed at Geo-Marine

Material Class	Percentage Present		
	Fort Bliss	Fort Sill	Total
<i>Prehistoric Artifacts</i>			
Ceramic	11	1	5
Chipped Stone	33	17	24
Faunal Remains	15	1	7
Shell	—	1	1
Flotation Samples	5	—	2
Soil Samples	1	60	34
¹⁴ C	2	—	1
Botanical Remains	11	—	5
Hematite Samples	—	16	9
<i>Historic Artifacts</i>			
Ceramic	—	2	1
Glass	6	1	3
Metal	15	1	7
Shell	1	—	1
Total	100	100	100

Note: Percentages of material classes are based on volume.



Figure 70. Fort Bliss collections housed in acidic cardboard boxes at Geo-Marine.

Secondary Containers

Secondary containers consist entirely of 4-mil polyethylene zip-lock bags that have acidic paper tag inserts labeled directly in black marker with the project number, provenience, date, site number, site name, name of investigator(s), and catalog number. Most secondary containers are nested, organized by site number into larger polyethylene bags.

Laboratory Processing and Labeling

All artifacts have been cleaned, but only the materials from Fort Bliss have been sorted by material class and provenience. None of the artifacts are labeled directly. As previously noted, paper tag inserts are used to identify the contents of each bag. The loose ground stone artifact from Fort Bliss has a piece of flagging tape tied around it that is labeled with a catalog number in black marker.

Human Skeletal Remains

There are no human remains from any DoD installations stored at Geo-Marine.

Records Storage

Associated documentation from DoD installations is stored in legal-size enameled metal filing cabinets in the records vault, which is located roughly in the center of the building, in a letter-size enameled metal filing cabinet located outside of an office cubicle, and in the collections storage area on the same storage units that house the artifacts. All documents are arranged by project number, and are sorted by recording media and record type. Documentation is

Table 56.
Major Classes of Documentation by Installation Housed at Geo-Marine (in linear inches)

Installation	Types of Documentation			Total
	Paper	Reports	Photos	
Fort Bliss	8.00	1.75	5.75	15.50
Fort Sill	0.13	0.13	—	0.26
Total	8.13	1.88	5.75	15.76 (1.3 linear feet)

easily accessible and comprises a total of 1.3 linear feet (Table 56).

Paper Records

In addition to the documents stored in the filing cabinets, a manila folder containing artifact field inventories for Fort Sill, Oklahoma, is housed in one of the acidic boxes containing artifacts from that installation, and the Fort Bliss, Texas, documentation is stored in an acid-free cardboard box (1.15 ft³), also on the shelving units in the collections storage area. The records for Fort Bliss include copies of site file forms that have copies of topographic maps and line drawing attached. All files, except for the Fort Sill field inventories, are stored in manila folders that are then placed inside hanging folders. These folders are labeled directly with a project number in black marker. Other DoD documentation includes photographic records and reports.

Photographic Records

Photographic records (black and white prints, negatives, slides) are stored in the previously mentioned acid-free box with the other documents for Fort Bliss housed in the collections storage area. The secondary containers for the photographic media consist of archival plastic sleeves and acid-free file folders. The sleeves are also placed in acid-free folders, and all folders are labeled directly in pencil or black marker.

Reports

The report copies seen by the assessment team are stored in manila folders labeled directly in pencil or black marker, and are housed with the other documentation for Fort Bliss and Fort Sill in the collections storage area.

Collections Management Standards

Geo-Marine is an archaeological contractor, not a long-term curation facility. Therefore, collections management standards will not be addressed for this facility.

Curation Personnel

Geo-Marine does not curate objects, so there is no one in charge of curation. The laboratory director, Marianne Marek, is responsible for the care of the objects while they are housed at Geo-Marine. However, due to a seasonal slow down in their contracting work, Ms. Marek was on temporary leave during the assessment visit.

Curation Financing

Geo-Marine has no formal curation agreement with DoD installations and is acting only as an interim repository. Long term curation funding is not addressed in their contracts, only the initial processing of the collections as necessary to complete the analysis on them.

Access to Collections

Access to collections by valid researchers is allowed if permission is obtained from the responsible agency and Geo-Marine staff. All access is supervised.

Future Plans

There are no plans to upgrade the Plano branch of Geo-Marine's offices.

Comments

1. Environmental controls for heat and air conditioning are in place throughout the repository, but temperature is set to individual staff preferences, and there are no humidity control measures at the facility.
2. There is no integrated pest-management policy in place for the repository, although some pest control preventative measures are taken on a semiannual basis.
3. Intrusion detection and deterrent measures for Geo-Marine do not meet the guidelines established in 36 CFR Part 79.
4. Fire-detection and -suppression measures are adequate.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. All archaeological materials should be placed in acid-free primary containers labeled by attaching stainless steel or polyethylene label holders with acid-free paper inserts—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the containers.
3. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents, and produce a duplicate copy of all the associated documentation, either on acid-free paper or archival microformat, and store these materials in a separate, fire-safe, secure location.
4. All paper records should be placed in acid-free folders and hanging files labeled in indelible ink. Place all folders in fireproof enameled metal filing cabinets or acid-free cardboard boxes. If boxes are used, they should be labeled by attaching stainless steel or polyethylene label holders with acid-free paper inserts—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the front of the boxes.
5. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.
6. Remove from all photographic materials any contaminants, label with an archivally acceptable product, and place in polyethylene archival sleeves.



Gulf South Research Corporation

Baton Rouge, Louisiana

Collections Summary

Collections Total: 5.0 ft³ of archaeological materials. 0.4 linear feet of associated records.

Volume of Archaeological Materials: 5.0 ft³
 Compliance Status: Collections comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.4 linear feet (4.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are funded through contracts between Gulf South Research Corporation and Fort Polk.

Repository Summary

DATE OF VISIT: December 4, 1996

PERSONS CONTACTED: Dennis Jones and Malcolm Schuman

Approximately 5 ft³ of boxed artifacts and 0.4 linear feet of documentation from Fort Polk were examined at Gulf South Research Corporation (GSRC) in Baton Rouge, Louisiana. GSRC is a private environmental engineering firm that has conducted work for the DoD at Fort Polk. The collections that were examined during this assessment are the remainder of the collections from the most recent work conducted at Fort Polk. Most of the materials

generated from that work have already been transferred to the installation. The collections consist of both historic and prehistoric elements. Associated documentation consists of paper and photographic records from Fort Polk.

Structural Adequacy

The offices of GSRC are located in a building approximately 15 years of age. The two story structure (Figure 71) is constructed with a steel beam frame and a cement slab foundation. The asphalt roof is original to the building, but was re-tarred in 1995. The laboratory and the shared office of the staff archaeologists are located on the second floor of the building in windowless interior rooms. Collections are processed and temporarily stored in the

Table 57.
Percentage of Material Classes Present in the Fort Polk Collections Housed at GSRC

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Ceramics	6
Chipped Stone	72
Soil Samples	4
Other	1
<i>Historic Artifacts</i>	
Ceramic/Crockery	7
Glass	7
Metal	2
Other	1
Total	100

Note: Percentages of material classes are based on volume.

Other prehistoric materials include faunal material and shell.

Other historic materials include a battery and a graphite rod.



Figure 71. The offices of Gulf South Research Corporation, a private engineering firm.

laboratory, Room 252. This is a small room, measuring 10 x 12 feet, but the staff has found this space to be adequate for the work they conduct there. The room has painted sheetrock walls and tile floors. The ceiling consists of suspended acoustical tiles. Overhead fluorescent lights are not filtered for ultraviolet (UV) radiation. There are two doors to the room; both are solid wood in metal frames. Work surfaces in the laboratory include two long folding tables and a counter top. A double sink for washing artifacts is set into the counter and a fume hood is installed above the counter. Hydrochloric acid is the only chemical used for processing the collections and it is stored in the laboratory.

Environment

The heating-ventilating-air conditioning (HVAC) system is electric; the temperature is controlled with a thermostat; humidity levels are not monitored or controlled. Dust filters are present on the vents. The building is cleaned daily by a contracted, professional cleaning company.

Pest Management

GSRC contracts a local pest management firm, which monitors the building regularly for signs of pest infestation. Additionally, the company is on call if any infestation is discovered. The staff of GSRC does not recall any incident of infestation, and the team likewise did not see any sign of pests.

Security

Security measures for the GSRC building meet minimum federal requirements. The security of the building is the responsibility of a private security company. Security measures include intrusion alarms wired to the local police, motion and sound detectors, key locks, and controlled access.

Fire Detection and Suppression Systems

Fire detection is monitored by the same private company that provides security for GSRC. Fire alarms are both manual and electronically censored. A sprinkler system is present in the building, and the building is constructed with both fire walls and fire doors. Fire extinguishers are located on each floor; they are up to date and inspected regularly by the security company. The building must also pass inspection by the local fire marshal.

Archaeological Storage Materials

A collection of 5 ft³ archaeological materials from Fort Polk was being processed at the time of the assessment (Figure 72). When the collection is processed and packed to the standards of Fort Polk, they will be transferred to the installation for



Figure 72. Collections that enter the GSRC building are temporarily stored in the laboratory until they are processed and sent to a designated repository for permanent curation.

permanent curation. For a breakdown of material classes present in the collections, refer to Table 57.

Storage Units

Collections are stored on an open metal shelving unit in the laboratory. The shelving unit is located behind a door to the room. Table surfaces and counter tops also serve as temporary storage space.

Primary Containers

All collections from Fort Polk are being packed into gray, acid-free boxes with telescoping lids. These boxes were purchased from an archival materials supplier and are to the specifications of Fort Polk. Boxes are marked with adhesive labels that are hand printed in marker.

Secondary Containers

All of the artifacts are in 2- or 4-mil archival plastic zip-lock bags. Some of the materials are also packed in plastic zip-lock bags within the secondary container. The bags are labeled directly in marker, and have printed paper labels inserted into each bag with the site number, catalog number, provenience, collecting organization, and collection date hand written in permanent marker.

Laboratory Processing and Labeling

All of the artifacts have been cleaned, sorted by material class, and labeled. In addition to the paper label inserts, most artifacts have been labeled directly in india ink. A clear, protective base coat has been applied to each artifact before being labeled. Darker artifacts are labeled using white ink.

Human Skeletal Remains

No human skeletal remains are associated with the collections housed in the GSRC offices in Baton Rouge, Louisiana.

Records Storage

Approximately 0.4 linear feet (4.5 linear inches) of associated documentation were assessed during this visit. These records were stored with the Fort Polk collections on the counter in the laboratory.

Paper Records

Field notes constitute the majority of the records (4 linear inches). The field notes from Fort Polk are separated by investigator into brown envelopes. Included with the original notes are copies of the notes on acid-free paper, as requested by Fort Polk.

Photographic Records

One manila envelope holds 0.5 linear inches of photographic records from Fort Polk. These are stored with the other documentation from Fort Polk. These materials consist of black and white prints, negatives, and slides. All the photographic materials are stored in archival quality plastic sleeves and are labeled directly, as are the sleeves.

Collections Management Standards

This facility is not viewed as a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

Since GSRC is not a curation facility, they do not employ curators. There are five full-time staff members who work on cultural resource management for the company. Dennis Jones and John Lindemuth are project managers, Malcolm Schuman is a principal investigator, Patrick Watts is the laboratory supervisor, and Rebecca Hill is a laboratory specialist. Mr. Watts and Ms. Hill also serve as field technicians.

Curation Financing

Curation activities are financed through each project's contract; additional financing may come from the company's overhead budget.

Access to Collections

Staff members working with the collections are the only ones with access to the collections.

Future Plans

The collections at GSRC from Fort Polk are scheduled to be transferred to Fort Polk when all analysis and processing is completed. Other collections from the same project at Fort Polk were transferred to the installation's collection facility just prior to this assessment.

Comments

1. The building has proven to be structurally sound.
2. Temperature levels are monitored and controlled through a thermostat; humidity is not monitored or controlled.
3. Security measures, fire-detection, and pest-management meet minimal federal requirements.
4. UV filters are not in place for the light bulbs.
5. The staff of GSRC expressed concern that requirements for processing collections from Fort Polk were changed during the course of the project.

6. Archaeological materials are processed and packaged in a manner that complies with federal standards and regulations for curation of archaeological materials.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Make copies of pertinent information in the field notebooks and include with collections from the project. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documentation. Transfer documentation to archival-quality folders for permanent storage. Place all folders in fireproof enameled metal filing cabinets or acid-free cardboard boxes. Label boxes by attaching stainless steel or polyethylene label holders with acid-free paper inserts—printed or typed in indelible ink and encapsulated in polyethylene plastic sleeves—to the front of the boxes.
3. Remove from all photographic materials any contaminants, label with an archivally acceptable product, and place in polyethylene archival sleeves.

Harry Reid Center For Environmental Studies University of Nevada

Las Vegas, Nevada

Collection Summary

Collections Total: 12.6 ft³ of archaeological materials. 2.8 linear feet of associated records.

Volume of Archaeological Materials: 12.6 ft³
Compliance Status: Collections require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 2.8 linear feet (33.3 linear inches)

Compliance Status: Records require partial to complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is not financed separately at the University of Nevada, Las Vegas; archaeological materials are collected through in-house projects and curated through the same budget.

Repository Summary

DATE OF VISIT: April 25, 1997

PERSON CONTACTED: Lynda Blair

The Harry Reid Center for Environmental Studies (Figure 73), University of Nevada, Las Vegas (UNLV), currently curates approximately 12.6 ft³ of artifacts and 2.8 linear feet (33.3 linear inches) of associated documentation from Hawthorne Army Ammunition Plant (AAP). A repository evaluation was conducted in 1996 for the Air Combat Command Project;



Figure 73. Front view of the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas.

therefore, this task was not duplicated during this visit. The following structural and environmental information was taken from *An Archaeological Curation-Needs Assessment for Headquarters Air Combat Command, Volume 2* (Marino, 1997).

Structural Adequacy

The UNLV repository contains areas for office space, classrooms, laboratories, museum exhibits, library storage, temporary artifact storage, artifact holding areas, artifact washing areas, artifact processing areas, study rooms, records storage, photographic storage, report preparation, security/monitoring space, mechanical/utility room, and materials/supplies storage. The structure was built in the 1950s and originally served as a gymnasium. The repository is four floors above grade comprising approximately 50,000 ft², of which 1200 ft² is dedicated to long-term artifact and records curation. The collections storage area is located on the second floor of the structure. The facility has undergone numerous internal and external renovations to better serve its current functions. Some of the internal renovations include the addition of plasterboard walls used to delineate office boundaries. The structure has a concrete foundation and concrete-block exterior walls. It has a built-up asphalt roof that was added in 1992. The foundation and roof are structurally solid with no major cracks or leaks. All of the windows in the repository have aluminum frames and shades. Most of the windows are original to the structure, but some have been replaced. No leakage of air or water through the windows has been reported by UNLV staff. Utility systems present include heating, running water, rest rooms, telephone lines, air conditioning, and electricity. The age of the equipment is mixed; some systems are newer depending on their location in the building. None of the systems have experienced major malfunctions, and no evidence of water damage has been noted by UNLV personnel.

The archaeological materials storage area and records storage areas are structurally identical to the rest of the repository and shares common environmental controls, utilities, fire detection and suppression, and security systems. Maintenance and pest management schedules are the same as those in place for the rest of the facility. The archaeological

materials storage area has a suspended acoustical tile ceiling, concrete block interior walls, and a concrete floor. One interior wood panel door leads to the archaeological materials storage area. There are no windows in this room. Boxes are not overstacked, and clutter is kept to a minimum. UNLV collections storage is at 50% capacity. There are functional overhead pipes present above the collections. However, there has never been a failure of these systems. The other collections storage areas that contain associated documentation are similar to the archaeological materials storage area, with the exception of these areas having concrete floors that are covered in linoleum or carpeting and they have aluminum framed windows.

Environment

The structure is equipped with an electric heat pump and air conditioning; temperature is set to staff preferences. Humidity is not monitored or controlled; however, with an annual average humidity level of 3%, high humidity is not an issue. Dust filters are present on the furnace/air conditioning ducts. The facility is maintained by a contracted janitorial service on a nightly basis, as well as maintenance services provided by the university.

The archaeological materials storage area has a swamp cooler, but does not have a heating system. The targeted temperatures maintained in the collections storage area is 65° Fahrenheit in the winter and 80° Fahrenheit in the summer. Dust filters are on the environmental controls. The archaeological materials storage area has incandescent bulbs that are not equipped with ultraviolet (UV) filters. This area is maintained by UNLV archival staff on a yearly basis. The other records storage areas are identical to the repository environmental controls.

Pest Management

Pest management procedures are performed by a certified company on a monthly basis. No pest infestations have been recently reported by UNLV staff. Spraying and bombing have been used in the past in the archaeological materials storage area when needed to control pest infestation.

Security

Security measures for the building consist of an intrusion alarm that is wired into the local police department. A guard patrols the campus throughout the day and night. Key and dead-bolt locks are located on interior and exterior doors. The exterior doors also have electronic locks. Windows are not designed to open. There is also controlled access to the collections storage areas. According to staff, there have been no incidents of forced entry through any windows or doors. Access through the windows is possible, but would require breaking a window. Current security precautions have, so far, safeguarded the facility against such an occurrence.

Fire Detection and Suppression Systems

Smoke detectors and fire extinguishers are located throughout the facility. The facility is equipped with manual fire alarms wired to the local fire department and a sprinkler system. The building also has fire doors and walls. None of the facility is fireproof, but the staff use fire-retardant filing cabinets and vaults.

Archaeological Storage Materials

Storage Units

UNLV devotes 1200 ft² to the long-term curation of archaeological collections recovered from throughout Nevada (Figure 74). Approximately 12.6 ft³ of prehistoric and historic archaeological materials from projects conducted at Hawthorne AAP are currently housed at UNLV. Percentages of material classes are outlined in Table 58. All collections are stored on standard, non-movable shelving units that have metal uprights with treated wood shelves. The shelving units measure approximately 7 x 2 x 8 feet (h x d x w) and have six shelves per unit. There are 14 shelving units in all.

Primary Containers

Primary containers consist of nine archival boxes that are all in good condition, except for one box that shows evidence of water damage. The boxes



Figure 74. Overview of the collections storage area at the Harry Reid Center for Environmental Studies. Note the ceiling, lighting, and storage units.

Table 58.
Percentages of Material Classes Present in
the Hawthorne AAP Archaeological Collections
Housed at the Harry Reid Center for
Environmental Studies, UNLV

Material Class	Percentages
<i>Prehistoric Artifacts</i>	
Chipped Stone	85
Soil Samples	5
<i>Historic Artifacts</i>	
Metal	5
Glass	5
Total	100

Note: Percentages of material classes are based on volume.

measure approximately 1.4 ft³ and are folded with telescoping lids. The primary containers are labeled directly in marker with some combination of site number, contents, locus number, item/lot number, and/or bag number.

Secondary Containers

Secondary containers for the military archaeological collections consist entirely of zip-lock plastic bags. A few of the bags are torn and show evidence of punctures, but the majority are in excellent condition. If the bags are labeled, it is direct in marker or with acid-free paper inserts that are computer generated fill-in-the-blank tags; the responses are in marker. The bags that are labeled directly have the site number, date, box/bag number, investigator, content, and item/lot number. The acid-

free tags, fill-in-the-blank categories are: item/lot number, site number, provenience, material class, collection organization, collector, collection date, number of items, and comments. However, not all categories are necessarily filled out in marker. Tertiary containers also consist entirely of plastic zip-lock bags. Some of the bags are grouped together with rubber bands and metal binder clips.

Laboratory Processing and Labeling

All of the artifacts have been cleaned, labeled, and sorted by material class. Artifacts are labeled directly in india ink with the item/lot number.

Human Skeletal Remains

UNLV is not curating human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

UNLV currently curates approximately 2.8 linear feet (33.3 linear inches) of documentation associated with archaeological work performed on Hawthorne AAP. Records are stored in three locations throughout the building; the archaeological materials storage area, Lynda Blair's office, and a general office area. Duplicate copies of the records are produced and stored in a vault within the repository.

Paper Records

UNLV curates 7.5 linear inches of paper records from Hawthorne AAP. The administrative, background, and survey records from these installations are stored in three different locations in the repository. Records that are stored in the archaeological materials storage area are considered backup records. These records are stored in a cardboard filing cabinet that has reinforced metal supports. There are four filing cabinets that measure 4.75 x 2.1 x 1.1 feet (h x d x w) and have five drawers per unit; however, the Hawthorne AAP records are only in one of these cabinets. The filing cabinet drawers are labeled with adhesive tags and/or paper insert labels in plastic holders with the date and project. There is no form of processing

information. The records are in fair condition within manila folders in an accordion folder.

The remaining records appear to be working documents. Some of these records are stored in a filing cabinet in Lynda Blair's office. The records are stored in a metal letter-sized filing cabinet that measures 5.0 x 2.4 x 1.3 feet (h x d x w). The filing cabinet has five drawers and has a key lock. The records are in one drawer that is labeled with a paper tag taped to the drawer handle in marker with "DZB - Hawthorne". The records are in accordion folders, manila folders, and hanging files within the drawer. The secondary containers, if labeled, are labeled with adhesive tags or directly on the containers with marker or pen. The information on these containers is not consistent. The records are in good condition, except for the use of metal contaminants such as binder clips and fasteners.

The third record storage area was in a general office area. The records were located in a metal letter-sized filing cabinet that measures 4.4 x 2.4 x 1.5 feet (h x d x w). The records are in one of five filing cabinets, each with four drawers per unit. The drawers are labeled with the contents on computer generated paper insert tags in metal holder (e.g., Closed Accounts and CCSD-F). The secondary containers are in manila folders that are labeled with adhesive tags or direct with marker or pen. The labels are consistent with the contract name (e.g., Day & Zimmerman). Some have dates or other information. These records are in good condition.

Report Records

Hawthorne AAP has approximately 14.5 linear inches of report records curated at UNLV. These records are stored in the same manner as the paper records that are located in the filing cabinets in the two office spaces.

Photographic Records

Photographic records at UNLV total approximately 7.75 linear inches, and include color prints, black and white prints, and negatives. Photographic records are stored in the same manner as the paper records that are located in the archaeological materials storage area and Lynda Blair's office. The only exception is the secondary containers. Photos in the archaeological materials storage area are in white

mailing envelopes and those in the office are in the paper photographic processing envelopes and plastic photo-processing containers.

Map Records

UNLV curates approximately 3.5 linear inches of map records. Hawthorne AAP has maps, drawings, and blueprints in both the archaeological materials storage area and Lynda Blair's office. These records are stored identical to the paper records stored in the filing cabinets of these two areas.

Collections Management Standards

The Harry Reid Center for Environmental Studies, UNLV, has not accepted collections for curation in several years. They function as a long-term storage facility for collections that are generated from in-house contracts (e.g., the Hawthorne AAP project) and for collections acquired prior to the current policy.

Registration Procedures

Accession Files

UNLV only curates artifacts that are collected by in-house projects. All written material is archived immediately upon receipt.

Location Identification

The location of the collection within the repository is listed on the register and site inventory sheet by box.

Cross-Indexed Files

The files are cross-indexed.

Published Guide to Collections

A published guide to the collections has not been written.

Site-Record Administration

The Smithsonian trinomial site-numbering system is used.

Computerized Database Management

The repository does not use automated data processing techniques to manage the collections.

Written Policies and Procedures

Minimum Standards for Acceptance

The repository does not have a written minimum standards for the acceptance of archaeological collections. UNLV only curates those materials that they can not curate elsewhere.

Curation Policy

UNLV does not have a comprehensive plan for curation.

Records-Management Policy

The repository does not have written guidelines and standards for the curation of associated documentation.

Field-Curation Guidelines

The repository does not have written field guidelines.

Loan Procedures

UNLV has a written loan policy that requires the borrower to fill out a "Loan-Out Agreement" form. The form identifies the borrower, the institution, address, and phone number. The agreement also establishes conditions.

Deaccessioning Policy

The facility does not have a deaccessioning policy.

Inventory Policy

The repository does not have a written inventory policy for the archaeological collections.

Latest Collection Inventory

Prior to the St. Louis District visit, the collections and documentation were last inventoried in 1995.

Curation Personnel

There is not a full-time curator for the archaeological collections at UNLV. Collections are managed by the archival unit, which is managed by Lynda Blair.

Curation Financing

Curation is not financed separately at UNLV; archaeological materials are collected through in-house projects and curated through the same budget. Lynda Blair feels that a plan needs to be established for curation responsibilities and then implemented. At present, they maintain the collections dating from the 1960s and 1970s. The majority of the collections are from Bureau of Land Management land

Access to Collections

The repository does not have a policy regarding access to collections because there has never been a request to see any of the collections. Access to the collections is not controlled. Staff members do have access to the collections. None of the collections have ever been lost or damaged. Records are accessible only to UNLV staff.

Future Plans

There are no future plans at the present time for upgrading the curation of archaeological collections. The repository hopes that Bureau of Land Management will retrieve their collections, which will allow for adequate future storage.

Comments

1. UNLV has an electric heat pump and air conditioning that is regulated by the staff. Dust filters are present on the furnace/air conditioning ducts. Humidity is not monitored or controlled.
2. Pest-management procedures are performed by a certified company on a monthly basis.
3. UNLV has a security system that includes an intrusion alarm that is wired into the local police department, a 24-hour guard that patrols the campus, controlled access, key and dead bolts on all interior and exterior doors, electronic locks on exterior

doors, and sealed windows. There are key locks on the filing cabinets that are located in the office areas.

4. The repository has a fire detection system that consists of manual fire alarms wired to the local fire department and smoke detectors. The fire suppression system in the repository consists of multiple fire extinguishers that are inspected regularly, fire walls, fire doors, and a sprinkler system.

5. Functional overhead pipes are located above the collections in the archaeological materials storage area.

6. The artifacts are located on a museum quality storage unit, and the primary containers for the collections are acid free boxes. Secondary containers for the archaeological materials are zip-lock plastic bags.

7. Documentation is stored in metal and cardboard filing cabinets. Metal and rubber contaminants are present on the paper records. The photographic collection is scattered throughout the records in various forms of containers, such as mailing envelopes and the original film processing containers.

Recommendations

1. Monitor humidity in the collections storage areas and control, if necessary, to maintain constant levels. Humidity levels can be maintained through the use of commercial dehumidifiers or humidifiers.
2. Rebag all archaeological materials into 4- or 6-mil archival quality polyethylene zip-lock bags.
3. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Place documentation in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants. Place photographic material in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

Human Systems Research

Las Cruces, New Mexico

Collection Summary

Collections Total: 106.6 ft³ of archaeological materials. 39.8 linear feet of associated records.

Volume of Archaeological Materials: 106.6 ft³ plus unboxed, oversized archaeological materials.

Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 39.8 linear feet (477.6 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with existing federal guidelines and standards for curation of archaeological documentation.

Status of Curation Funding: Curation activities are funded through the contracts Human Systems Research has with White Sands Missile Range, New Mexico.

Repository Summary

DATE OF VISIT: September 11 and 12, 1996

PERSONS CONTACTED: Meliha Duran and David Kirkpatrick

Approximately 106.6 ft³ of boxed artifacts plus several loose, oversized artifacts and 39.8 linear feet of associated documentation from White Sands Missile Range (WSMR) are housed at the contracting office of Human Systems Research (HSR) in Las Cruces, New Mexico (Figure 75). HSR has done extensive work on WSMR over the past 12 years and has been temporarily storing the collections for the past 10 years. The collections are



Figure 75. Human Systems Research in Las Cruces rents 16 rooms on the second floor of a building in the Santa Teresa Plaza

scheduled to be transferred to a facility on WSMR that is currently undergoing renovation. The moving date is scheduled for November 1996; however, due to continuing renovation activities, the moving of artifacts have been scheduled for November 1999. For percentages of material classes present in the collections, refer to Table 59.

Table 59.
Percentages of Material Classes Present in the White Sands Missile Range Collections Housed at Human Systems Research Offices

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Chipped Stone	29
Ceramics	5
¹⁴ C	4
Flotation Samples	2
Soil Samples	2
Other*	3
<i>Historic Artifacts</i>	
Metal	22
Glass	21
Ceramic/Crockery	3
Brick/Masonry	2
Faunal Remains	1
Other**	6
Total	100

Note: Percentages of material classes are based on volume.

*Other prehistoric materials include burned wood stump, wood fragments, faunal material, shell, and botanical samples.

**Other historic materials includes leather, textiles, modified bone/ivory/shell, rubber, plastic, paper, canvas bag, flash cube, glazed and unglazed marbles, corn cob, cable fiber, electrical tape, fiberglass, asbestos, chalk, cement, radio control panel, concrete, carbon rods, and a battery.

HSR is a nonprofit archaeological contracting firm. They are located on the second floor of a building that is eligible for the National Register of Historic Places in the Santa Teresa Plaza, Las Cruces. The owner of the building operates a used bookstore on the ground floor of the building and rents space to businesses on the second floor. Originally, the second floor was a horseshoe shaped structure with a courtyard in the center. Additional office space was later added and filled in this courtyard.

Structural Adequacy

The building housing the offices of HSR was constructed in 1946. The foundation and exterior walls are constructed of reinforced concrete. This structure has two roofs. The older roof over the original building is constructed of tar paper and rolled roofing, and the newer roof is a wood frame covered with tar and gravel. The entire roof was completely redone in 1989.

The building is a two-story structure and encompasses approximately 9000 ft². HSR rents 4000 ft² on the second floor of the building. The interior space is divided into offices and storage rooms that line two central hallways. The halls have ceramic tiles over the concrete floor.

HSR has control over two-thirds (16 rooms) of the space on the second floor, sharing the remaining space on the second floor with a few other small businesses and the office of the building owner. Artifacts and records associated with projects on WSMR are located throughout many of the 16 rooms, all of which are carpeted. At the end of each hallway is an exit to the back of the building and stairs leading down to a parking area. These two exterior doors are glass panels set in metal frames.

Numerous wood-panel interior doors lead into connecting rooms and to the two hallways. The ceiling is comprised of acoustical tiles over a wood frame and the interior walls are either reinforced concrete block or wood frame covered with wallboard. There are numerous steel-framed windows around the building, none of which have ever been replaced. Most of the windows have no shades and one of the windows has several cracks in the glass where it looks like a rock or bullet punctured a small hole in the glass pane. Covered fluorescent light fixtures, without ultraviolet (UV) filters, and natural light illuminate the offices and hallways. The whole electrical system was overhauled and brought up to code in 1994. The plumbing system in the building has not needed repairs since the owner bought the building in 1990.

Environment

On the second floor, where HSR is located, a combination of evaporative coolers and refrigerated air units are used to cool the building. Heat is

provided by gas-forced air heating units. The temperature of the offices is kept at a level comfortable to the staff. Neither the temperature nor the humidity is monitored or controlled. Dust filters are present on some of the heating and cooling units. The staff is responsible for cleaning the offices and storage spaces on an as-needed basis. The assessment team noted a minor amount of dust during the evaluation. Stained ceiling tiles are the result of past water leaks from the roof, before it was repaired in 1989. The owner of the building is responsible for the general maintenance of the building.

Pest Management

The owner of the building hires a professional pest-management company to spray the facility twice a year. The staff did not know which pesticide was used. No incidents of past pest infestation were mentioned and the assessment team noted no signs of infestation.

Security

HSR staff try to control access to the rooms on the second floor during regular business hours. Staff lock all interior doors after business hours, and the owner of the building secures and locks all exterior doors after the bookstore hours. Key locks are located on all interior and exterior doors, and all windows have hook-and-eye latches to keep them closed. The ground level doors have all been wired with an intrusion alarm. The local police department checks on the downtown mall area, where the building is located, throughout the night. In the past, someone broke into the second floor and robbed merchandise from one of the other businesses across the hall from HSR. An arsonist also set fire to a small storage shed in the back of the building. No damage was done to the HSR offices and collections.

Fire Detection and Suppression Systems

Fire safety measures in the building consist exclusively of fire extinguishers. Upstairs, two fire extinguishers, one located in each hallway, are prominently mounted on the walls and checked annually. Additional fire extinguishers and smoke

detectors are located on the ground floor, in the bookstore, along with evacuation routes for bookstore customers. The owner of the building has avoided installing a fire suppression system because of the potential for water damage to the books on the first floor.

Archaeological Storage Materials

Collections associated with more than 135 projects conducted by HSR staff at WSMR are being temporarily stored in the HSR offices in both Las Cruces and Tularosa, New Mexico. For percentages of material classes present in the collections housed in the Las Cruces offices, refer to Table 59.

Storage Units

Collections are stored on wooden shelving units measuring 8 x 3 x 6 feet (l x w x h) (Figure 76). Two rows of these shelving units in the corner of the processing laboratory are used for the temporary storage of collections. These units provide approximately 80 ft³ of storage space. These collections will be turned over to WSMR as soon as



Figure 76. Boxed collections as well as large loose artifacts from White Sands Missile Range are stored on wooden shelves in the offices of Human Systems Research.

an adequate facility becomes available for collections storage.

Primary Containers

Approximately 106.6 ft³ of boxed collections recovered from the numerous projects conducted on WSMR over the years have all be repackaged in acid-free cardboard boxes that have telescoping lids, encompassing 1.3 ft³ each. The boxes are glued in one corner and folded into shape. Each box has an acidic 'post-it note' label. Label information includes the project name and number, site numbers, and catalog numbers of the artifacts inside. Several oversized artifacts, too big or too heavy to be stored in these boxes, are loose on the shelves, in plastic bags on top of the boxes, or piled in a corner of one of the offices.

Secondary Containers

The majority of the artifacts in the boxes are in zip-lock plastic bags (Table 60). The rest of the collections are stored in either small acidic and acid-free cardboard boxes and trays, acid-free paper envelopes, foil, paper bags, or loose within the primary container. Each artifact is in its own individual zip-lock bag and is nested within up to four or five additional zip-lock bags of more artifacts. Every zip-lock bag is labeled directly on the surface of the bag in black marker with the project number, project name, and catalogue number of the artifact. Most of the zip-lock bags also contain

Table 60.

Percentages of Secondary Containers Present in the WSMR Collections Housed at Human Systems Research, Las Cruces

Container Type	Percentage
Plastic zip-lock bags	91
Acid-free cardboard boxes	3
Acid-free envelopes	2
Paper bags	2
Acidic cardboard boxes	1
Other	1
Total	100

Note: Percentages based on volume of materials.

Other secondary containers present include aluminum foil, plastic medicine vials, glass jars with metal lids, paper towels, round cardboard containers, plastic film canisters, or no secondary container at all.

the acidic paper field envelope, which has the original label written on it. Also present in the secondary containers are plastic medicine vials, glass jars with metal lids, paper towels, round cardboard containers, plastic film canisters, foil, and flagging tape.

Laboratory Processing and Labeling

Most of the artifacts have been cleaned (81%) and sorted (85%) by material class in individual zip-lock bags. Only 17% of the artifacts have been individually labeled, either with paper label inserts in the zip-lock bags, or directly on the surface of the artifact with ink. Most of the large, oversized artifacts that do not have primary and/or secondary containers have acid-free paper tags that are tied to the object with string.

Human Skeletal Remains

No human skeletal remains are associated with the collections housed in the HSR offices in Las Cruces.

Records Storage

Approximately 39.8 linear feet of associated documentation was assessed during this visit. There is undoubtedly additional documentation located throughout the various desks and files of staff members who are working on current projects. All of this documentation is going to be given to cultural resource personnel at WSMR with the archaeological materials as soon as an adequate storage facility is available on WSMR. The records are housed in various types of file cabinets, in desk drawers, or in acidic cardboard boxes stacked in a corner in the conference room. Most of the records were in good condition at the time of the assessment, but many of the project files are not organized in any particular order and are in danger of becoming lost or damaged from being filed in overcrowded containers.

Paper Records

The paper records portion of the associated documentation encompasses approximately 11.8 linear feet. Part of the collection (2.0 inches) are

documents that were recovered from a historic ranch house on WSMR. These records have been placed in the bottom of an acid-free box beneath historic glass and metal artifacts. The original papers are placed in an acid-free envelope labeled directly in pencil and on a 'post-it note.' Acidic manila files are used for the copies made of these documents. Most of this collection is personal correspondence, bank records, and newspapers.

The remaining paper records consist of administrative records and correspondence (11.8 inches), background records (8.3 inches), survey records and field notes (24.8 inches), excavation records (7.6 inches), artifact analysis records and artifact summaries (51.5 inches), and site form records and information (35.5 inches). These records are filed in acidic manila folders that are labeled with the project number and sometimes the project name directly on the folder in pen, pencil, and different colors of marker.

Report Records

Approximately 20.5 linear feet of bound and unbound draft reports, preliminary reports, and final reports are located primarily in the file cabinets in the executive director's office. Reports that are currently in production are kept in a separate filing cabinet in the publications director's office. Various copies of draft reports can be found throughout the project files. These records are filed in the same manner as the paper records.

Photographic Records

Photographic records, including color copies of contact sheets, negatives, slides, prints, and oversized 8-x-10-inch prints, amount to 2.5 linear feet of records. These documents are stored in the project files, in three-ring binders, in acidic cardboard boxes, and in plastic sleeves. Some of the prints have been labeled and some of the photographs, slides, and negatives have been placed in archival quality sleeves.

Maps and/or Oversized Documents

Approximately 2.4 linear feet of maps are located in the project files. These maps are rolled and folded in the files. Types of maps present include topographic

maps, site maps, field maps, and Mylar copies of the site maps made for the reports. Most of these maps have not been labeled.

Audio-Visual Records

Audio-visual records comprise approximately 2.6 linear feet. Two videocassette tapes have been placed in plastic cases, within an acidic manila file folder, inside an acid-free box by themselves. This box is stacked with the rest of the archaeological materials in the collections storage area in one of the offices. Duplicate copies of 59 cassette tapes made for the oral history project on WSMR are located in a plastic, fitted tray inside a drawer in a lateral filing cabinet in one of the offices. These tapes have all been labeled with the project name, date, and identity of the individual interviewed on the tapes.

Computerized Records

Three 3.5" computer disks were found among the associated project records. Many more files are located in computer hard-drives used by HSR staff.

Collections Management Standards

This facility is not viewed as a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

Three individuals work part-time on curation activities. The level of curation activities to be performed on a particular collection is generally dictated in each contract, and these three staff members are responsible for ensuring that these tasks are completed.

Curation Financing

Curation activities are financed through each project's contract. WSMR contracts provide money to wash, catalog, label, and bag the collections in zip-lock bags and place them in acid-free boxes.

Access to Collections

Staff members working in these offices have access to the collections. Researchers are granted access upon request, with the permission of WSMR.

Future Plans

HSR is planning to transfer the collections in the near future to the cultural resources staff at WSMR, pending renovation of a facility suitable to house these artifacts and records. No major changes or improvements are being planned at HSR.

Comments

1. The building has proven to be structurally sound.
2. Environmental controls are not consistently monitored or controlled to eliminate fluctuations of temperature and humidity.
3. UV filters are not in place for the light bulbs and windows.
4. Fire detection measures are absent, and fire suppression measures consist of two fire extinguishers upstairs.
5. Building security does not meet the minimum federal standards for safeguarding of archaeological collections.
6. Associated documentation requires partial rehabilitation to meet modern archival standards and federal guidelines.
7. HSR will transfer collections to WSMR pending the renovation of an adequate storage facility on post.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. House all artifact material in acid-neutral primary and secondary containers, and place an artifact label inside every secondary container. Boxes should be labeled with adhesive plastic label holders on the outside of the box, with the acid-free paper label inserted in the holder.

3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records, including photographic materials, should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Human Systems Research

Tularosa, New Mexico

Collection Summary

Collections Total: 54 ft³ of archaeological materials. 20.1 linear feet of associated records.

Volume of Archaeological Materials: 54 ft³ plus unboxed, oversized artifacts.

Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 20.1 linear feet (240.75 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with existing federal guidelines and standards for curation of archaeological documentation.

Status of Curation Funding: Curation activities are funded through the contracts Human Systems Research has with White Sands Missile Range, New Mexico.

Repository Summary

DATE OF VISIT: September 18, 1996

PERSONS CONTACTED: Peter and Sarah Eidenbach

Approximately 54 ft³ of boxed artifacts plus a few shelves of loose, oversized artifacts and 20.1 linear feet of associated documentation from White Sands Missile Range (WSMR) are housed at the contracting office of Human Systems Research (HSR) in Tularosa, New Mexico (Figure 77). This facility was previously evaluated in March 1994 for the U.S. Air Force, Air Combat Command project (Drew 1996). The facility



Figure 77. The Human Systems Research office in Tularosa is located in an adobe and stucco building with a clay tile roof constructed around 1900.

information has not significantly changed in that time and will be repeated for this report.

HSR has done extensive work on WSMR over the past 12 years and has been temporarily storing the collections for the past 10 years. The collections are scheduled to be transferred to a facility on WSMR that is currently undergoing renovation. The moving date for the collections was scheduled for November 1996; however, due to continuing renovating activities, the moving date has been scheduled for November 1997. The collections consist of both historic and prehistoric elements. Associated documentation consists of paper records, reports, photographic records, and maps.

HSR is a nonprofit archaeological contracting firm. Their office building was donated to the group only recently. The historic adobe building was originally constructed as a church at the turn of the century. Staff members could not provide a specific construction date. Evidently, the building served as a church for several years until it was purchased by a group that established the Tularosa Women's Club. Again, the staff of HSR was uncertain how many years the building was used in that capacity. Recently, the Tularosa Women's Club donated the building and much of the furnishings to HSR. Staff members have done some minor maintenance work such as patching cracks in the walls and some minor repair work on the roof, but for the most part the building is much the same as when it was first built.

Structural Adequacy

The building housing the offices of HSR is thought to be approximately 85-90 years old. The exterior walls are constructed of adobe with a stucco finish. The foundation is concrete, and the roof is constructed of clay tiles and shingles. The roof was completely replaced at some point during the 1930s, but only annual maintenance and minor repairs have been performed since that time. The building is a single-story structure and encompasses 2150 ft². The interior space is divided into rooms, but the majority of the work conducted by HSR is performed in two large rooms in the front of the building. A processing and conservation laboratory, a collection storage area, and a few desks are situated in the first room. The second room contains several desks for staff

members, a conference table, and the library is situated along three walls. A kitchen and two bathrooms are located directly behind these two large rooms. The final room, located at the back of the house, is used for equipment and documentation storage. Most of the artifact washing is done in the back yard.

Interior doors are solid wood except for the French doors (constructed of glass) that separate the lab from the offices. The ceiling and interior walls are plaster that was applied directly on the adobe used for the exterior walls. Twelve wood-framed windows are around the building, many of which allow air through the frames. Evidently water leaking in through the frames has not been a problem. Only the smallest of the windows have shades, the rest have curtains. The heating system was replaced in 1992 and the electrical wiring in the house was completely renovated according to building codes in 1993. The plumbing was being renovated at the time of the 1994 assessment. Telephone and computer lines are installed, and all lighting is provided by incandescent bulbs. None of the bulbs or windows are filtered against ultraviolet (UV) light.

Environment

No air conditioning system is in place at HSR and heat is provided by two large gas-forced air heating units. One is in the lab and the other is in the large room used for offices. Each of these units operate independently. Other than these two units and ceiling fans, there is no way to control the temperature of the building, which is kept at a level comfortable to the staff. Neither the temperature nor the humidity is monitored or controlled. The staff is responsible for cleaning the offices and storage spaces on an as-needed basis. The assessment team noted a minor amount of dust during the evaluation.

Pest Management

HSR employs a professional pest-management company to spray the facility once a month. The staff did not know what pesticide was used. No incidents of past pest infestation were mentioned, but the assessment team noted the presence of spiders in some of the windows.

Security

The staff controls access to the building during regular business hours. During off hours, a neighborhood watch program is in effect. Key locks are located on all exterior doors and all windows have hook-and-eye latches to keep them closed. No incidents of past unauthorized entry into this facility have occurred.

Fire Detection and Suppression Systems

Fire safety measures in the building consist exclusively of three fire extinguishers. One is located in the lab, the second is kept in the offices, and the third is secured to the metal shelving units in the collections storage area. No other fire detection or suppression measures are present in the building.

Archaeological Storage Materials

Collections associated with more than 135 projects conducted by HSR staff at WSMR are being temporarily stored in the HSR offices in both Tularosa and Las Cruces, New Mexico. For a breakdown of material classes present in all of the collections currently housed in Tularosa, refer to Table 61.

Storage Units

Collections are stored on metal shelving units measuring 8 x 3 x 6 feet (l x d x h) (Figure 78). Two rows of these shelving units in the corner of the processing laboratory are used for the temporary storage of collections. These units provide approximately 80 ft³ of storage space. These collections will be turned over WSMR as soon as an adequate facility becomes available for collections storage.

Primary Containers

Approximately 54 ft³ of boxed collections recovered from the numerous projects conducted on WSMR over the years have all be rehoused in acid-free cardboard boxes that have telescoping lids and a volume of 1.2 ft³ each. The boxes are glued in one corner and folded into shape. Each box has computer

Table 61.
Percentage of Material Classes Present in the White Sands Missile Range Collections Housed at Human Systems Research, Tularosa

Material Class	Percentage
<i>Prehistoric</i>	
Chipped Stone	42.0
Ceramics	19.1
¹⁴ C	2.0
Flotation Samples	1.6
Soil Samples	1.6
Other	3.3
<i>Historic</i>	
Metal	15.0
Glass	11.5
Ceramic/Crockery	2.9
Other	1.0
Total	100.0

Note: Percentages of material classes are based on volume.

Other prehistoric materials include rat midden, copper ore, hearth samples, a wood pipe bowl, a burnt wood beam, faunal and shell material, botanical samples, modified shell artifacts, and ash samples.

Other historic materials include small amounts of modified bone and a graphite and metal battery.



Figure 78. An interior view of Human Systems Research in Tularosa; the space is used as both an office area and a laboratory area.

generated adhesive paper labels, some of which are acid-free. Label information includes the project name and number, site numbers, and catalog numbers of the artifacts inside. Several oversized artifacts, too big or too heavy to be stored in these boxes, have been stored loose on the shelves, in a display cabinet, or on the hearth by the fireplace.

Secondary Containers

Almost all of the artifacts (99.7%) in the boxes are in zip-lock plastic bags. Less than one percent of the artifacts are loose inside these boxes. Each artifact is in its own individual zip-lock bag and is nested with up to five or six additional zip-lock bags of more artifacts. Every zip-lock bag is labeled directly on the surface of the bag in black marker with the project number, project name, and the catalogue number of the artifact. Most of the zip-lock bags also contain the acidic paper field envelope, which has the original label written on it. Also present in the secondary containers are plastic medicine vials, glass jars with metal lids, glass vials with corks, round cardboard containers, pill-size clear capsules, foil, and flagging tape.

Laboratory Processing and Labeling

Most of the artifacts have been cleaned (93.3%) and more than half (57.4%) have been labeled with paper inserts in each artifact bag or directly on the surface of the artifact in ink. Almost all of the collections have been sorted (98%) by material class in individual zip-lock bags. Individually bagged artifacts of various material classes are often all stored together within larger zip-lock bags.

Human Skeletal Remains

No human skeletal remains associated with the WSMR collections are housed in the HSR offices in Tularosa.

Records Storage

Approximately 20.1 linear feet of associated documentation were assessed during this visit. There is undoubtedly additional documentation located throughout the various desks and files of staff members who are working on current projects. All of this documentation is going to be given to cultural resource personnel at WSMR, with the archaeological materials, as soon as an adequate storage facility is available on WSMR. The records are housed in various types of file cabinets, acidic cardboard boxes on a desk, or on the same shelves that the artifact boxes are stored on in the large

laboratory/processing room. Most of the records are in good condition; however, at least 14 inches of records stored in a cardboard filing cabinet have dirt and rocks throughout the records. These records are in the most danger of becoming seriously damaged.

Paper Records

The paper records portion of the associated documentation constitutes the majority of the records. Part of the collection (1.6 linear feet) consists of documents that were recovered from a historic ranch house on WSMR. These records have been carefully placed in acid-free boxes with acid-free tissue and envelopes holding the more fragile items. Acidic manila files are used for most of this collection of personal correspondence, bank records, and newspapers. Copies were made on acid-free paper, but are kept on file with the originals.

The remaining paper records (11.6 linear feet) consist of administrative records, correspondence, survey records, field notes, excavation records, artifact analysis records, artifact summaries, site form records and information, and background research. These records are filed in acidic manila folders that are labeled with the project number and sometimes the project name directly on the folder in pen, pencil, and different colors of marker.

Report Records

Approximately 3.3 linear feet of bound reports and drafts are located throughout the project files. These records are filed in the same manner as the paper records.

Photographic Records

Photographic records, including color copies of contact sheets, negatives, slides, prints, and oversized 8-x-10-inch prints, amount to two linear feet of records. These documents are stored in the project files, in three-ring binders, in acidic cardboard boxes, and in plastic sleeves. Some of the prints have been labeled, and some of the photographs, slides, and negatives have been placed in archival quality sleeves.

Maps and/or Oversized Documents

Approximately 1.6 linear feet of maps are located in the project files. These maps are rolled and folded in the files. Types of maps present include topographic maps, site maps, and field maps. Most of these maps have not been labeled.

Collections Management Standards

This facility is not viewed as a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

Three individuals work part-time on curation. The level of curation activities to be performed on a particular collection is generally dictated in each contract, and these three staff members are responsible for ensuring that these tasks are completed.

Curation Financing

Curation activities are financed through each project's contract. WSMR contracts provide money to wash, catalog, label, and bag the collections in zip-lock bags and place them in acid-free boxes.

Access to Collections

Staff members working in these offices have access to the collections. Researchers are granted access upon request, with the permission of WSMR.

Future Plans

HSR is planning to transfer the collections in the near future to the cultural resources staff at WSMR, pending renovation of a facility suitable to house these artifacts and records. No major changes or improvements are being planned at HSR.

Comments

1. The building has proven to be structurally sound.
2. Temperature and humidity levels are neither monitored or controlled.

3. UV filters are not in place for the light bulbs or windows.

4. Fire detection measures are absent, and fire suppression measures consist of three fire extinguishers.

5. Building security does not meet the minimum federal standards for safeguarding of archaeological collections.

6. Archaeological materials are housed in acid-free boxes; however, some of the oversized archaeological materials are without a primary container.

7. Associated documentation requires partial rehabilitation to meet modern archival standards and federal guidelines.

8. HSR will transfer collections to WSMR pending the renovation of an adequate storage facility on post.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. House all artifact material in an acid-neutral primary containers and place an artifact label inside every secondary container.

3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. Process all records, including photographic materials, and arrange like the historic records found in this collection. Place documents in acid-free folders, and lightly packed into fire-resistant file cabinets. Free all records of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.



International Archaeological Research Institute, Inc.

Honolulu, Hawaii

Collection Summary

Collections Total: 14.9 ft³ of archaeological materials and human skeletal remains. 7.2 linear feet of associated records.

Volume of Archaeological Materials: 14.6 ft³
Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 0.3 ft³
Compliance Status: Skeletal remains from a minimum number of three individuals were recovered from the Barbers Point Naval Air Station, Family Housing Project.

Linear Feet of Records: 7.2 linear feet (86.25 linear inches)

Compliance Status: Original records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are not adequately funded. Project funds were used to process and package the collections in their current containers.

Repository Summary

DATE OF VISIT: March 26 and 28, 1997

PERSONS CONTACTED: Gail Murakami and Greig Nakamura

International Archaeological Research Institute, Inc. (IARII) is a private cultural resources contracting firm that has performed many surveys and projects on 13 Department of Defense (DoD) military installations on Hawaii, including Barbers Point Naval Air Station (NAS), Bellows Air Force Station (AFS), Ford Island/

Pearl Harbor Naval Complex, Fort DeRussy, Fort Kamehameha, Fort Shafter, Hickam Air Force Base (AFB), Marine Corps Base Hawaii (MCBH)-Kaneohe Bay, Pacific Missile Range Facility (PMRF)-Barking Sands, Pohakuloa Training Area (TA), Schofield Barracks, Waikale Naval Magazine (NAVMAG), and Wheeler Army Airfield (AAF). Records and archaeological materials are located in the Chrono Office Building (Repository 1) (Figure 79) and in an off-site storage facility (Repository 2) (Figure 80). For the volumes of artifact and document collections present, refer to Table 62 and Table 65.



Figure 79. The James M. Chrono Building where the offices of International Archaeological Research Institute, Inc. are located.



Figure 80. Exterior view of the commercial storage building, Building J, where International Archaeological Research Institute, Inc. rents space to house their collections.

Table 62.
Volume of DoD Archaeological Collections
Housed at IARII

Installation	Artifacts (ft ³)	Records (linear inches)
Barbers Point Naval Air Station	5.8	16.00
Bellows Air Force Station	3.0	16.00
Ford Island Naval Air Station/ Pearl Harbor Naval Complex	—	4.00
Fort DeRussy	2.0	6.00
Fort Kamehameha	—	1.00
Fort Shafter	1.1	10.25
Hickam Air Force Base	—	1.50
Marine Corps Base Hawaii, Kaneohe Bay	—	1.75
Pacific Missile Range Facility, Barking Sands	—	15.25
Pohakuloa Training Area	3.0	4.50
Schofield Barracks	—	1.25
Waialeale Naval Magazine	—	3.75
Wheeler Army Airfield	—	5.00
Total	14.9	86.25
		7.2 linear feet

Structural Adequacy

Repository 1—Chrono Building

Construction was completed in 1948 on the James M. Chrono Building, which is a large two-story structure with several tenants, including a restaurant on the ground floor. IARII rents approximately 2500 ft² of office and laboratory space on the second floor. The Chrono Building has a concrete foundation and roof, and has a steel frame and concrete block exterior walls that have been painted gray. The

building is structurally sound with no visible cracks or leaks. Steel-framed windows measure approximately 4 x 4 feet (w x h), and have dimpled, opaque glass panes with wire mesh imbedded in the glass. Windows have never been replaced. The entrance door has glass panes in a metal frame.

Records and archaeological materials were moved to an office in the Chrono Building for the assessment. However, records are usually stored on shelves in the administrative office area, and boxed collections are stored in Repository 2. The second floor has a suspended acoustical tile ceiling with fluorescent lights and a concrete floor covered with carpet. Neither the fluorescent light bulbs or the window glass have ultraviolet (UV) filters or film in place. Interior doors are in a wood frame, with the bottom half being wood and the top half being opaque glass.

Repository 2—Building J

IARII rents one room (number 63) in Building J, of the Hy-Pac Storage complex. These large warehouses are have corrugated metal roofs and walls on concrete foundations. Building J was built within the last ten years. There are no visible cracks or leaks, and the structure appears to be solid. There are no windows. Suspended fluorescent light fixtures are installed in the hallway.

Collections are stored in room 63, which measures approximately 93 ft². This room has a concrete floor, corrugated metal ceiling and walls,

and a single incandescent light bulb that is not filtered against UV rays. Interior and exterior doors are wood.

Environment

Repository 1—Chrono Building

The region typically experiences fluctuations of humidity and temperature levels. Air conditioning is accomplished with window units. Temperature and humidity levels are not monitored or regulated. A dust filtration system is not in place. The building owner is responsible for building maintenance. Collections staff clean the storage areas as needed. At the time of the assessment a storm caused water to leak through the windows into the office where the collections were coalesced. There was no water damage to the records or boxes of artifacts, but the carpet and floor were wet and had to be cleaned.

Repository 2—Building J

There are no environmental controls in this facility.

Pest Management

An integrated pest-management program is not in place at either facility; however, the assessment team noted no signs of infestation. Staff perform periodic inspection of the collections and take appropriate actions if an infestation is suspected.

Security

Repository 1—Chrono Building

The office doors, including the entrance, are locked after business hours with key and dead bolt locks. Windows are reinforced with a wire mesh in the glass and are secured with sliding latch locks.

Repository 2—Building J

A security code is needed to enter the storage complex, which is surrounded with a chain link fence. Entrance is gained with a secured access number entered on an electric key pad that raises the crossing bar. The buildings have key locks on the exterior doors and padlocks on the individually rented storage rooms. The complex is wired with

security lighting and a resident manager is on call 24 hours a day.

Fire Detection and Suppression Systems

Repository 1—Chrono Building

Fire safety measures present in the Chrono Building consist of smoke detectors and fire extinguishers in the hallways.

Repository 2—Building J

Heat sensors are wired to a private contracted firm who then notifies the fire department. A wet-pipe sprinkler system is installed throughout the facility and is checked annually. A fire extinguisher, last inspected in March 1997, is also mounted in the hallway.

Archaeological Storage Materials

Storage Units

Collections are only stored in Repository 2 on enameled metal adjustable shelving units with pressed board shelves (Figure 81). Each of the seven units measure 2 x 6 x 3 feet (w x h x d). There are three or four shelves per unit, with the bottom shelf raised 4.5 inches above the concrete floor. The shelving units are directly labeled in marker, noting rack number and shelf letter. Strips of masking tape have also been applied to the shelving units with collection information hand written in marker. For percentages of material classes present, refer to Table 63.

Primary Containers

Archaeological materials are housed in folded, archival quality cardboard boxes fitted with telescoping lids (Figure 82). The boxes are labeled with adhesive tags that are handwritten in pen and marker. Label information is legible and typically includes the project name and number.



Figure 81. A hallway in Building J, the self storage building in which International Archaeological Research Institute, Inc. rents storage space for artifact collections.



Figure 82. Archival boxes hold collections.

Secondary Containers

Most of the secondary containers are plastic bags. Other secondary containers include paper bags, Tyvek bags, and acidic cardboard boxes. For percentages of secondary containers present refer to Table 64 with marker and typically include the site number, provenience, project name, catalog numbers or bag number, and the material contents of the container.

Table 63.
Percentages of Material Classes Present in the DoD Collections Housed at IARII by Installation

Material Classes	Barbers Point NAS	Bellows AFS	Fort DeRussy	Fort Shafter	Pohakuloa TA	Total
<i>Prehistoric</i>						
Chipped Stone	10	50	5	15	11	18
Ceramics	—	—	30	—	—	4
Faunal Remains	50	7	10	1	—	21
Shell	10	15	20	7	1	10
Botanical Samples	—	10	—	6	28	8
Soil Samples	—	—	—	—	10	2
¹⁴ C	5	10	3	15	25	10
Human Skeletal Remains	10	—	—	—	—	4
Other*	5	1	—	1	25	9
<i>Historic</i>						
Glass	5	1	30	50	—	10
Metal	5	—	2	5	—	3
Other**	—	6	—	—	—	1
Total	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.

*Other prehistoric materials include ash, volcanic glass, worked shell, and worked bone.

**Other historic materials include wood and ceramics/crockery.

Table 64.
Percentages of Secondary Containers in DoD
Collections Housed at IARII

Secondary Container Type	Percentage
Plastic Bags	74
Paper Bags	15
Tyvek Bags	6
Acidic Cardboard Boxes	5
Total	100

Note: Percentages of secondary containers are calculated by volume.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted by material class within their secondary containers. Only 39% of the materials have been labeled. Artifact labels consist of catalog numbers in ink on the surface of the artifact, sometimes on white paint and sealed with a clear top coat. Paper inserts have also been used that have label information written on them in pencil.

Human Skeletal Remains

Approximately 0.3 ft³ of skeletal remains, from a minimum number of three individuals, were recovered from the Barbers Point NAS Family Housing Project. Five plastic bags of remains are packaged and stored in the same box with the rest of the Barbers Point NAS collections in Repository 2.

Records Storage

Approximately 7.2 linear feet of associated documentation (Figure 83) are located in the files stored in Repository 1. Records have not been archivally processed and do not have a finding aid or a security copy. Project files, upon completion of a project, are stored in expandable file folders, which have overlapping flaps that are secured with cotton string or an elastic band. These folders are directly labeled with marker. Label information consists of the project area or name and often the project number. For the volume of document types by branch of service and installation, refer to Table 65.



Figure 83. Associated project records are stored on shelving units in the administrative offices on the James M. Chrono Building.

Paper Records

Paper records comprise a total of 2.8 linear feet including administrative records, receipts, correspondence, background information, survey records and field notebooks, analysis records, artifact catalogs, and photologs. Records, organized by project number and delivery or task number, are stored loose within the expandable folders or in manila folders. Files are either directly labeled or have adhesive tags. Paper contaminants present in the records include paper clips, metal binder clips, staples, and rubber bands.

Report Records

Approximately 2.7 linear feet of report records are present throughout the project files, including draft copies and finals. These records are sorted in the same manner as the paper records described above.

Photographic Records

Almost one linear foot of photographic records (11.5 inches) are present in the project files, including color prints, black and white prints, negatives, slides, and Mylar contact sheets. These are stored in the commercial acidic paper developing

Table 65.
Major Classes Documentation by Branch and Installation Housed at IARII (in linear inches)

Branch/Installation	Types of Documentation					Total
	Paper	Reports	Photos	Maps	Computer Discs	
<i>Army</i>						
Fort DeRussy	3.00	2.00	0.50	0.50	—	6.00
Fort Kamehameha	0.50	0.50	—	—	—	1.00
Fort Shafter	2.25	4.75	2.50	0.50	0.25	10.25
Pohakuloa TA	3.25	—	0.25	1.00	—	4.50
Schofield Barracks	0.75	—	0.25	—	0.25	1.25
Wheeler AAF	0.25	4.00	0.75	—	—	5.00
<i>Navy</i>						
Barber's Point NAS	7.00	6.50	2.25	—	0.25	16.00
Ford Island NAS/ Pearl Harbor Naval Complex	1.75	1.25	—	1.00	—	4.00
PMRF-Barking Sands	6.50	6.75	1.50	0.50	—	15.25
Waikale NAVMAG	1.50	1.00	0.50	0.75	—	3.75
<i>Air Force</i>						
Bellows AFB	5.50	5.25	2.50	2.25	0.50	16.00
Hickam AFB	0.50	0.50	0.50	—	—	1.50
<i>Marines</i>						
MCBH, Kaneohe Bay	1.50	—	—	0.25	—	1.75
Total	34.25	32.50	11.50	6.75	1.25	86.25 7.2 linear feet

envelopes or with acidic paper wrapped around them and secured with rubber bands. A few of the photographic materials are in archival quality plastic sleeves that are directly labeled with the project name. Several large aerial photographs are stamped and labeled in pencil; however, the large majority of these records are unlabeled.

Maps and/or Oversized Documents

Seven inches of large U.S.G.S. topographic maps, hand drawn field maps, and report ready maps are either stored folded in the folders with the rest of the documents, or are rolled and stored in a large circular mailing tube.

Computerized Records

Less than one inch of computer disks is also present in the project files. These discs presumably have the final reports and other project data on them.

Collections Management Standards

IARII is not a permanent curation facility; therefore, collections management standards were not addressed during the assessment.

Curation Personnel

IARII does not employ a full-time curator of archeological collections, so the management of the collections is the responsibility of the Laboratory Director, Gail Murakami, and the Assistant Laboratory Director, Greig Nakamura.

Curation Financing

Curation activities are not adequately funded. Project funds were used to process and package the collections in their current containers.

Access to Collections

The laboratory staff have access to the collections. Outside interests must make an appointment with the Laboratory Director.

Future Plans

There are no future plans for upgrading the condition of the collections or their storage location.

Comments

1. Repository 2 has no environmental controls; collections are in danger of rapid deterioration.
2. An integrated pest management system is not in place in either repository.
3. Repository 1 does not have adequate security measures.
4. Fire-detection and -suppression measures are inadequate in Repository 1.
5. Archaeological materials and records are not housed in appropriate storage containers.
6. A duplicate copy of all records has not been made.
7. No plans have been made for the long-term curation of the collections.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. House artifact material in acid-neutral primary and secondary containers, and place an artifact label inside secondary containers.
3. Make duplicate copies of all associated documentation onto acid-free paper. Store copies in a separate and secure location. Process records and arrange according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. Records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.



Kansas City Museum

Kansas City, Missouri

Collection Summary

Collections Total: 0.1 ft³ of archaeological materials. 0.1 linear feet

Volume of Archaeological Materials: 0.1 ft³
 Compliance Status: Archaeological materials require no rehabilitation to comply with existing federal guidelines and standards for curation of archaeological materials.

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.2 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is financed through a general fund with a line item in the budget.

Repository Summary

DATE OF VISIT: August 12-13, 1996

PERSON CONTACTED: Julie Mattsson

The Kansas City Museum is located in the historic Northeast neighborhood of Kansas City. The museum is in the former Robert A. Long mansion. It contains a variety of exhibits including regional history, natural history, and hands-on science related exhibits teaching weather, space travel, and astronomy. The Museum also has traveling exhibits.

The Kansas City Museum curates approximately 0.1 ft³ of archaeological materials along with approximately 0.1 linear feet of

associated project documentation from Sunflower Army Ammunition Plant (SAAP). The small SAAP artifact collection is housed at the Downtown Underground Docks, the Museum's off-site storage location, and the associated project documentation is housed at the Museum's Annex Administration Building located directly behind the Museum's exhibit hall.

Structural Adequacy

Repository 1—Annex Administration Building

The Kansas City Museum's Administrative Annex Building (Figure 84) was constructed as a private residence in 1910. Currently, the Annex Building



Figure 84. Exterior of the Kansas City Museum's Annex Administration building.

serves as both an office space for the museum, and as a repository for a portion of the museum's collection. The four story building, with three floors above grade and one floor below grade, has a stone foundation, stone and stucco exterior walls, and a rolled-out composition roof. Although both the roof and stone foundation were reported to be structurally solid, it was also reported that water leakage had previously caused some damage to the building structure as well as to some non-federal collection materials. No record of internal or external renovations to the building structure was reported. Annex Building utilities include a telephone, restrooms, air conditioning, electricity, heat, and a dehumidifier.

The record collection materials for SAAP are stored in Ms. Mattsson's office, which serves as both an office and a records storage area. This room, with a total area of approximately 220 ft², has a wood floor under carpeting, plastered walls, and a suspended acoustical ceiling that reduces the original height of the room. Two windows, one located on the north wall and one located on the west wall, have the original wood frames and are covered with venetian blinds. Evidence of water leakage was noted around the window frames. Room lighting is provided by fluorescent tubes without ultraviolet (UV) filters. On the south wall of Ms. Mattsson's office, a wood panel interior door leads into an adjacent collections storage room. This office, cleaned weekly by a janitorial staff, was neat and uncluttered.

Within Ms. Mattsson's office are metal filing cabinets, occupying a total area of approximately 18 ft². These cabinets are devoted

to the storage of accession records and other administrative documents and are filled to approximately 75% of capacity.

Repository 2—Downtown Underground Docks

The Downtown Underground Docks (Figure 85) is a single level man-made cave system located approximately 80 feet below ground. The cave system entrance is located at 1501 West 31st Street. The Downtown Underground Docks location was privately developed in the late 1930s and early 1940s for commercial use. The single level cavern is partitioned into individual tenant usage areas by cinder block walls built among the excavated limestone support pillars.



Figure 85. Interior entrance to the storage space within the Downtown Underground Dock "cave" system.

The cave system is entered by a ramp that descends through a cement block and brick wall fronting on West 31st Street. The entrance ramp and floor of the cave are asphalt over limestone, the walls are natural limestone and cement block, and the ceiling is limestone. The facility was reported to be structurally solid with no cracks or leaks.

The 10,500 ft² section occupied by Kansas City Museum collections is equipped with a loading dock. Activities such as collection rehabilitation, some cataloging, inventorying, and basic cleaning take place here. No hazardous chemicals are used or stored at the caves location.

There is a metal overhead loading dock on the ceiling of the south side of the room and another on the southwest wall, which is not in use. A single

steel door is adjacent to the southern overhead door. A small ladder must be climbed to gain access to any of the doors.

The repository houses approximately 0.1 ft³ of archaeological materials from SAAP.

Environment

Repository 1—Annex Administration Building

Steam radiators supplemented with space heaters provide heating, and window unit air conditioners are used to provide cooling. The targeted temperature range within the repository area is from 68° to 72° F. There are no dust filters on the environmental controls. The humidity target for collections storage areas has been set at 45% to 55%, is monitored seasonally, and controlled as needed with dehumidifiers.

All windows in the collections storage area are equipped with blinds and additional overhead lighting is provided by unfiltered fluorescent tubes. The facility is regularly cleaned by a janitorial staff, and building repairs are undertaken by the city. Utilities within the collection storage area include heat, air conditioning, humidity control, electricity, and a telephone. No asbestos is present within the building structure and there are no overhead pipes within the collections storage area.

Repository 2—Downtown Underground Docks

The facility has a natural temperature control ranging from 70° to 77° F. The relative humidity is not controlled; however, it is monitored. The air intake system has dust filters. The building is regularly cleaned by the registrar two to three times a week. Vehicle traffic is the primary source of dust. Support utilities include electricity and a telephone. Water is only accessible for the sprinkler system. There is no evidence of water damage to the collections or to the facility. The lighting is fluorescent with UV filters.

Pest Management

Repository 1—Annex Administration Building

Pest precautions include monthly spraying in the kitchen and around any openings. Pests are monitored with sticky traps and rodent traps. Evidence of a mouse and dermestids has been noted and controlled. In addition, the records storage room has a no drinking or eating policy.

Repository 2—Downtown Underground Docks

Precautions taken against insects and rodents include a "no food" policy and monthly spraying around door openings with a low level insecticide. Rodent traps are checked monthly. No signs of insect or rodent infestation were reported or observed.

Security

Repository 1—Annex Administration Building

The building has an intrusion alarm wired to a contracted security service, a key lock, controlled access, and window locks. No evidence of previous unauthorized access was reported or observed. Specific security measures for the record collection storage area include controlled access and key lock. None of the windows in the storage area are accessible from the outside and there are no exterior doors.

Repository 2—Downtown Underground Docks

Security measures for the repository include a key lock, an intrusion alarm wired to a central location, motion detectors spaced throughout the room, and controlled access. A special code for the alarm system is only known by a select group of people including the museum's president and the collections management staff. No evidence of unauthorized entry was reported or observed.

Fire Detection and Suppression Systems

Repository 1—Annex Administration Building

A smoke detector is the sole fire detection system. Fire extinguishers serve as the only fire suppression tools. A fire extinguisher is located just outside the door to Ms. Mattsson's office, which also serves as the record collection storage room.

Repository 2—Downtown Underground Docks

The facility is fireproof and has a wet-pipe sprinkler fire suppression system located above the collections. Additional devices include fire extinguishers and a smoke detector.

Archaeological Storage Materials

Archaeological materials are stored in Repository 2 where the holdings consist of approximately 1% archaeological collections, 5% are ethnographical, and paleontological and geological combined make up 2% of the collections. Historic collections, fine art, and film collections make up the remaining 92% of the collections. The collection storage area is at 100% capacity with the current storage units. Overstacking of boxes is evident, and the space is cluttered with collections. A summary of the SAAP collection materials is presented in Table 66.

Table 66.
Percentages of Material Classes in the Sunflower Army Ammunition Plant Collections Housed at the Kansas City Museum

Material Class	Percentage Present
Prehistoric Chipped Stone	96
<i>Historic Artifacts</i>	
Ceramic	1
Glass	1
Metal	1
Unmodified Shell	1
Total	100

Note: Percentages of material classes are based on volume.



Figure 86. Collections from Sunflower Army Ammunition Plant are stored in cardboard boxes on wooden shelving units in the Downtown Underground Docks.

Storage Units

Storage units include both wood and metal open shelving units (Figure 86). The federal collection is located on a wooden shelving unit.

Primary Containers

The primary container is an acid-free box with a telescoping lid and metal reinforcements on each corner of the box and lid. There is an attached adhesive label with "CA-I, D-3, Box 10, AR" written in black marker ink.

Secondary Containers

Secondary containers are unlabeled archival quality plastic zip-lock bags. An acidic paper bag that was used previously to package the artifacts is stored inside the box with the collection materials. This bag is labeled with a catalog number, the archaeological site number, provenience information, and artifact collection date.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and directly labeled legibly. The labeling is in india ink. Dark

colored artifacts have a white base coat. All labels are given a clear top coat.

Human Skeletal Remains

There are no human skeletal remains at the museum.

Records Storage

The records, comprising 1.2 linear inches, are stored in a four drawer, legal-sized metal file cabinet in Repository 1. All records are labeled and are in good condition, with accession data and finding aids available. There are no security copies of the documentation.

Paper Records

The record collection for SAAP has been assigned accession number 1983.37 and is stored in an acid-free folder. Paper records include a site form and a catalog sheet. The catalog sheet is completed in pencil.

Report Records

One final report bound with tape is stored within the same file as the paper records.

Collections Management Standards

Registration Procedures

Accession Files

According to policy, none of the archaeological collections are accessioned into the collections.

Location Identification

There is no location information for the archaeological collections.

Cross-Indexed Files

The files are cross indexed.

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian River Basin Survey trinomial site-numbering system is used.

Computerized Database Management

The archaeological collections are not managed using a computerized database system.

Written Policies and Procedures

Minimum Standards for Acceptance

There are no written minimum standards for acceptance.

Curation Policy

There is no written curation policy.

Records-Management Policy

There is no written records-management policy.

Field-Curation Guidelines

There are no field-curation guidelines.

Loan Procedures

There is no written loan procedure. Policy is that only educational institutions, not individuals, may obtain an object's loan. This loan must be approved by the president of the museum.

Deaccessioning Policy

The collection staff and a deaccessioning committee must present a case for deaccessioning an object to the president, and sometimes board members, for approval.

Inventory Policy

There is no inventory policy.

Latest Collection Inventory

The last collection inventory was from 1984 to 1988.

Curation Personnel

There is no one with a curator title. However, Ms. Mattsson acts as registrar and collections manager. She has one full-time assistant.

Curation Financing

Curation is financed through the general fund with a line item in the budget.

Access to Collections

Any collection may be accessed by a researcher unless the original receipt stipulates otherwise.

Future Plans

The collections will be moved to an environmentally controlled facility in three years. During the spring and winter of 1997, Ms. Mattsson intends to get a consultant with expertise in archaeological curation to outline a plan for the care of those collections.

Comments

1. The Annex Administration building is structurally sound.
2. The Downtown Underground Docks storage area has reached 100% of its storage capacity.
3. No standard pest-management system has been implemented in the repositories.
4. Intrusion detection and deterrent measures for the repositories meet the guidelines established in 36 CFR Part 79.
5. Fire detection and suppression devices are appropriate and adequate within the collections storage areas.
6. The archaeological materials are not accessioned into the museum collections.
7. Fluorescent lighting in the Downtown Underground Docks storage area is equipped with ultraviolet sleeves.
8. Storage units are constructed of uncoated wood, which poses the potential of outgassing and damaging the collections.

9. All records are labeled and in good condition with finding aids available. There are no security copies of the documentation.

Recommendations

1. Implement a professional pest management plan for the collection storage areas.
2. Place ultraviolet filters on fluorescent lights in the documents storage area in the Annex Administration building.
3. Place primary containers on an enameled-metal shelving unit.
4. Make duplicate copies of all associated documentation onto acid-free paper. Store copies in a separate and secure location. Process records and arrange according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. Records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Kansas Historical Museum Center for Archaeological Research

Topeka, Kansas

Collection Summary

Collections Total: 2.8 ft³ of archaeological materials and human skeletal remains. No associated records.

Volume of Archaeological Materials: 1.8 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with federal guidelines and standards for the archaeological curation.

Human Skeletal Remains: 1 ft³
Compliance Status: The repository houses human skeletal remains from Fort Leavenworth, site number 14LV328. The minimum number of

individuals (MNI) is one. The remains and the accompanying funerary objects have been designated accession number 1991-21 and are located in the Unmarked Burial Site (UBS) storage room (Room 171). Three accompanying funerary objects—a piece of worked sandstone, a scraper, and a core—are reported by the museum as missing.

Linear Feet of Records: None

Status of Curation Funding: Curation is financed by the State of Kansas, the Kansas State Historical Society, and through contracts with the Department of Transportation.

Repository Summary

DATE OF VISIT: August 22-23, 1996

PERSON CONTACTED: Martin Stein, Verna Dietrich, and John Reynolds

The Kansas Historical Museum Center for Historical Research (Figure 87) curates approximately 2.8 ft³ of archaeological material from Fort Leavenworth. These materials are housed in two separate rooms on the first floor of the Center's repository. The bulk of the collection is housed in the general collections storage room that adjoins the archaeology laboratory,



Figure 87. The Kansas Historical Museum Center for Archaeological Research building is cement with a standing seam roof.

and the remainder—a small collection of human skeletal material and associated funerary objects—is housed in the Unmarked Burial Sites (UBS) storage room, which has been designated specifically to house human remains and funerary objects.

Constructed in 1995, the building design includes administrative offices, a research library, an archaeology laboratory, which includes areas for artifact holding, washing, processing, and artifact conservation, archival and archaeological collections storage areas, a receiving/loading dock, a materials/supplies storage area, a hazardous materials storage area, a records storage room, a photographic storage room, a records study room, an exhibit area, a security monitoring space, and a mechanical/utility room.

Structural Adequacy

The building has a concrete foundation extending down on piers to bedrock. The exterior walls are a combination of stone, brick, and concrete block construction and the roof is constructed of “standing seam” metal. Both the foundation and roof are structurally sound and there is no evidence of either cracks or leaks. The building has two floors above ground and none below ground. Window frames are wooden and windows are equipped with shades. There is no evidence of air or water leakage around the windows or frames. There have been no internal or external renovations to the building since its construction in 1995.

The collections storage areas for archaeological materials are located on the first floor. The 1050 ft² primary collections storage area is adjacent to and connected by a doorway to the archaeology lab. All human skeletal remains are placed in a small room referred to as the UBS room, which measures 108 ft². Both rooms have concrete floors and concrete block walls. There are no windows in either room and each has a metal panel door. The main storage area is filled to approximately 90% capacity and the secondary storage (UBS) room is filled to approximately 50% capacity.

Environment

Although there is a heating, ventilating, and air conditioning (HVAC) system present in the office and library sections of the facility, there is none in the collections storage areas. In these areas, a central forced air system provides heating and cooling. There is no system for monitoring or controlling humidity levels and no dust filters are present on the ventilation system. There are overhead air ducts and overhead conduits for electrical wiring. There is no report of a previous failure of any of the utility systems. Unfiltered fluorescent lights provide lighting in both storage areas. Maintenance and cleaning in the primary collections storage room is performed weekly by the archaeological collections staff, and also by the staff on an as-needed basis in the UBS storage room.

The archaeological laboratory is separate from, but adjacent to, the collections storage room. Chemicals used in the lab include glycolic acid (Be square 195 White Wax), acrylic resin (acrysol US-24), and polyvinyl acetate varnish. Ventilation is provided by a fume hood, which is vented directly to the exterior of the building.

Pest Management

As precautions against insect and rodent infestation, eating/drinking is allowed only in designated “lounge” areas, and new collections are fumigated. Although there is no established program for pest control, mouse traps distributed within the collections areas are monitored for signs of rodent infestation. There was no indication of pest damage to collection materials. However, several dead insects were observed in first floor hallways by the assessment team.

Security

Security measures at the facility include a 24-hour in-house guard, key locks on doors, code-punch dead bolt locks, motion detectors, padlocks on some doors, controlled access, and video monitoring cameras mounted at both interior and exterior locations. Only the small “slit” window on the first floor is considered to be accessible from the outside; all windows in the facility are sealed. There was no

evidence of unauthorized entry through windows or doors, and no reports of past episodes of unauthorized entry by museum staff.

Fire Detection and Suppression System

Fire detection/suppression for the facility is provided by manual fire alarms, heat sensors, smoke detectors, fire extinguishers, and a sprinkler/suppression system. The building is considered to be constructed of "fireproof" materials.

Archaeological Storage Materials

The composition of the Fort Leavenworth collection is characterized by material class by volume in Table 67.

Table 67.
Percentages of Material Classes in the
Archaeological Collections from Fort Leavenworth
that are Housed at the Kansas Historical Museum

Material Class	Percentage Present
<i>Prehistoric Artifacts</i>	
Ceramics	14
Chipped Stone	46
Faunal Remains	4
Shell	7
Human Remains	7
<i>Historic Artifacts</i>	
Ceramic	1
Glass	4
Metal	17
Total	100

Note: Percentages of material classes are based on volume.

Storage Units

Within the main collections storage room, artifacts are stored on open, enameled metal shelves placed on movable "space saver" shelving units (Figure 88). There is a total of 10 movable units measuring approximately 2 x 8 x 27 feet (d x w x h). There are approximately 1050 ft² of compressed storage in the units, which is equivalent to approximately 2624 ft² of standard shelving. The rest of the space is cluttered with curation supplies and full artifact boxes. In the UBS storage rooms wood boxes are



Figure 88. Shelved boxes of archaeological collections.

stacked directly on the floor without shelving or other storage units.

Primary Containers

Primary containers, for general collection items, consist of acidic cardboard boxes which measure approximately 0.25 ft³ each in volume. Typed adhesive box labels list the site numbers of artifacts contained in the boxes. Human skeletal remains and associated funerary objects are stored in wooden primary containers.

Secondary Containers

Secondary containers consist of 95% plastic zip-lock bags. These are directly labeled with marker with the site number. The rest of the 5% secondary containers consist of plastic vials, tissue paper, and foam wrap.

Laboratory Processing and Labeling

All of the archaeological materials have been cleaned, sorted by material class, and directly labeled. The label medium is india ink. Archaeological materials with a dark coloration have labels applied on a white base coat. All labels have a clear top coat.

Human Skeletal Remains

The Kansas State Historical Museum collections from Fort Leavenworth include fragmentary human skeletal remains and associated funerary objects excavated from site number 14LV328. These items are currently housed in the UBS storage room. Included in the collection are two fragments of a human innominate along with one piece of deer antler and one indeterminant burned bone fragment. A paper note inside the wooden storage container states that associated lithic materials were removed from the collection, "Thesis for Reynolds." After further investigation by the staff, Randall Thies, Case Investigator for the Kansas Unmarked Burial Sites Preservation Board, indicated by letter that some of the associated items had been located among other collection materials, but that three items, a piece of worked sandstone, a scraper, and a core, could not be located and are probably lost. The remains and the associated objects total approximately 1 ft³.

Records Storage

The museum does not have organized files for original documentation associated with archaeological projects conducted on military installations. The museum, as the state repository for site files, requires only the site files and the report. Any additional documentation is volunteered by the contractor.

Collections Management Standards

Registration Procedures

Accession Files

According to policy, only donated artifacts are accessioned into the collections.

Location Identification

There is no location information for the archaeological collections.

Cross-Indexed Files

The files are cross-indexed by site number

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian River Basin Survey trinomial site numbering system of site numbering is used.

Computerized Database Management

There is no computerized database system.

Written Policies and Procedures

Minimum Standards for Acceptance

The repository has a written minimum standard for acceptance of archaeological collections.

Curation Policy

A written, comprehensive plan for curation is currently in progress. This plan will include receipt of materials, processing of materials, use of materials, and future preservation.

Records-Management Policy

There is no written records-management policy.

Field-Curation Guidelines

The repository has written field-curation guidelines for researchers depositing collections.

Loan Procedures

The repository does not have a written loan policy.

Deaccessioning Policy

The repository has a written deaccessioning policy.

Inventory Policy

Archaeological materials are inventoried upon receipt by the repository, but there is no written inventory policy.

Latest Collection Inventory

Collections were inventoried during 1995 before the move to the current location.

Curation Personnel

Presently, there is no full-time curator or collections manager.

Curation Financing

Curation is financed by the State of Kansas, the Kansas State Historical Society, and through contracts with the Department of Transportation.

Access to Collections

Access to the collections is controlled by the laboratory personnel. Other archaeologists and archaeology clerical staff also have access to the collections. Non-museum personnel wishing to examine collection materials are required to make an appointment and work with minimal supervision. They may work either in the laboratory or within the collections storage area.

Future Plans

Personnel intend to approve a comprehensive curation document, hire a collections manager, computerize the collections, and develop a better use of the storage space.

Comments

1. The facility is structurally sound.
2. Relative humidity levels are not monitored or consistently controlled, and therefore no dust filters.
3. The repository and collection storage areas employ stricter security measures.
4. The repository and collections storage areas meet the required standards for fire safety.
5. There is no full-time curator of archaeology collections.
6. A database for collections management is not employed.

Recommendations

1. Employ a full-time curator with adequate experience in caring for archaeological collections.
2. Rehabilitate the collections using acid-neutral primary and secondary containers, and place an artifact label inside secondary containers.
3. Extend the HVAC system into the collection storage areas.
4. Employ a computerized database for better control and organization of the collections.
5. Cover fluorescent lights with sleeves that filter damaging ultraviolet rays.
6. Implement a professional pest management plan for the collection storage areas.



KEA Environmental

San Diego, California

Collection Summary

Collections Total: 2.5 ft³ of archaeological materials. 0.1 linear feet of associated records.

Volume of Archaeological Materials: 2.5 ft³
Compliance Status: At present, the archaeological materials are still undergoing analysis and have not yet been fully prepared to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.15 linear feet (1.75 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for the curation of archaeological documentation.

Status of Curation Funding: Funds for the initial processing and packaging the archaeological materials and associated documentation are provided within each project contract. Long-term curation is the responsibility of the hiring agency.

Repository Summary

DATE OF VISIT: February 20, 1997

PERSONS CONTACTED: James Cleland, Rebecca Apple, Andrew York, Christy Doland, Cheryl Bowen-Renna, and Rick Graham

The offices of KEA Environmental (KEA), are located on the sixth floor of the San Diego National Bank building. The building is also known as the "whale building" because of the large sea-life mural painted onto the north-side exterior. The building, encompassing a total area of 121,500 ft², was

constructed in 1986 to house the bank and to provide rental space for private firm offices. The facility has seven floors above grade and one floor below grade.

The archaeological collections are stored on a temporary basis in the KEA laboratory facility, which is located adjacent to the firm offices. Except where otherwise noted, the environmental control measures, security measures, and other results of this evaluation, are the same for the laboratory/storage area as for the facility in general. It is planned that the 2.5 ft³ collection materials and the 0.15 linear feet of documentation from the Marine Corps Air Station (MCAS) Yuma, Arizona, will be forwarded to a designated permanent repository upon completion of analysis and archival processing.

Structural Adequacy

The building foundation is constructed of concrete. Exterior walls are marble and glass. The roof is described as a "rolled out" composition that has been torch melted. The roof is original to the building and has been spot repaired since its original construction. The foundation, exterior walls, and roof are each considered to be structurally sound and without cracks or leaks. All windows are steel framed and have built in sun shields. Windows and frames are original. There was no reported or observed evidence of water or air leakage around the window frames. Internal renovations have occurred, but have been specifically related to the needs of rental clients rather than for the purpose of structural repair or improvement.

Within the archaeological laboratory/ collection storage area, the floor is tile over concrete, the walls are painted wallboard, and the ceiling is constructed with suspended acoustical tiles. There are no windows in the storage area.

Environment

Environmental controls within the facility include a heating, ventilation, and air conditioning (HVAC) system that is outfitted with temperature controls and dust filters. The humidity within the facility is neither monitored nor controlled. Lighting within the collections storage area is provided by fluorescent tube fixtures without ultraviolet (UV) filters. The artifact storage area is cleaned on a monthly basis by a contracted service and general maintenance is performed on an as-needed basis by the KEA "lab crew."

Pest Management

The integrated pest-management program within the facility includes monthly inspections and spraying by a professional pest management company. No signs of pest infestation were reported or observed during the evaluation.

Security

Security for the facility in general is provided by an intrusion alarm on the first floor where the bank is located. A security guard is also present in the bank.

Additional building security is provided by key locks, dead bolt locks, controlled access after hours, and windows that are permanently sealed.

Specific security measures for the KEA laboratory/storage area include dead bolt and key locks on the two interior doors. There has been no incident of unauthorized access into KEA office space or storage areas.

Fire Detection and Suppression System

Fire safety measures within the facility as a whole include manual fire alarms, a wet sprinkler/ suppression system, fire doors, smoke detectors, fire walls, fire alarms wired into a security company, and up-to-date fire extinguishers. The facility is not considered to be fire proof.

Specific fire safety measures within the KEA laboratory/storage area include a wet sprinkler/ suppression system and a fire extinguisher.

Archaeological Storage Materials

Approximately 2.5 ft³ of artifact materials from MCAS, Yuma are stored at KEA. Overall, the collections storage area is filled to approximately 80% capacity. Table 68 indicates the percentages of various materials classes present in the collection.

Table 68.
Percentages of Material Classes in the
Marine Air Corps Station, Yuma Collections
Housed at KEA Environmental

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Chipped Stone	75
Ceramic	20
Faunal Remains	1
<i>Historic Artifacts</i>	
Metal	4
Total	100

Note: The percentages of material classes are based on total volume.

Storage Units

The two boxes of MCAS artifacts are stored on fixed metal shelving in the archaeological laboratory. The shelving units measure approximately 72 x 66 x 24 inches (w x h x d) each with three shelves per unit.

Primary Containers

The MCAS collection materials are housed in two non-acidic, folding construction cardboard boxes that measure approximately 16 x 12.75 x 10.50 inches (d x w x h) each. Each box has a telescoping lid for security closure. The boxes are labeled with acidic paper computer generated labels that are attached with clear tape. It is planned that the taped acidic labels will be replaced with acid-free adhesive labels once the analysis is completed. Presently, label information includes project name and box content.

Secondary Containers

Approximately 95% of the artifacts, by volume, are packaged in secondary and tertiary zip-lock plastic bags. One metate fragment had no secondary container. The secondary containers are directly labeled with black marker. Label information includes site number, box contents, provenience, and artifact catalog numbers. The secondary container for an unidentified bone chip is labeled — “Yuma - TACTS AZY 5:28 cut 2 GCU 1 80-90 cm 7 1/8 screen Bone .0g”.

Laboratory Processing and Labeling

All artifacts in the collections have been cleaned and sorted by material type before packaging. Only the metate fragments had been labeled directly with black ink on a white background. KEA staff indicated that once their research is completed all materials will be processed in accordance with 36 CFR Part 79.

Human Skeletal Remains

There are no human skeletal remains identified among the collection materials from MCAS, Yuma.

Records Storage

Approximately 1.75 linear inches of associated documentation are housed with the collection materials at KEA. Most of the documentation is stored in a three-ring binder on a shelf in the archaeology laboratory. Overall, the documentation has a neat, organized appearance and is in very good condition. Paper clips among the artifact inventory sheets were the only potential contaminants observed within the document collection.

Paper Records

Paper records include original field notes, survey records, and artifact inventories. All but the field notebook are contained in the three-ring binder.

Report Records

A bound report was present.

Photographic Records

Photographic records include both photographs and photolog sheets. Photographic records are labeled and are in appropriate archival sleeves.

Collections Management Standards

KEA Environmental is not a permanent curation facility; therefore, collections management standards are evaluated in this report.

Curation Personnel

KEA Environmental does not employ a full-time curator for archaeological collections. Christy Doland, the laboratory manager, is responsible for the collections while they are temporarily housed in these offices.

Curation Financing

Funds for the initial processing and packaging of the archaeological materials and associated documentation are provided within each project contract. Long-term curation is the responsibility of the hiring agency.

Access to Collections

Researchers must have a legitimate reason to see collection materials. An appointment must be made with the laboratory manager for access.

Future Plans

There are no current plans for upgrading the curation activities at KEA Environmental.

4. Make duplicate copies of all associated documentation onto acid-free paper. Store copies in a separate and secure location. Process records and arrange according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. Records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Comments

1. The building is structurally sound.
2. An HVAC system is in place; however, there are no relative humidity monitor or control measures.
3. Lighting in the collection storage area is not fitted with ultraviolet sleeve filters.
4. A standard pest management system that includes monitoring and scheduled spraying is in place.
5. Security and fire measures are adequate for temporary storage of federal collections.
6. Storage of all associated records from MCAS does not meet modern archival standards.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Label archaeological materials with indelible ink to prevent information loss if archaeological materials are separated from provenience data.
3. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.

Maxwell Museum of Anthropology

University of New Mexico

Albuquerque, New Mexico

Collection Summary

Collections Total: 48.0 ft³ of archaeological materials and human skeletal remains. 0.1 linear feet of associated records.

Volume of Archaeological Materials: 42.8 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 5.2 ft³
Compliance Status: Human skeletal remains recovered from Fort Wingate are located at this

facility. The minimum number of individuals accounted for in these collections is seven.

Linear Feet of Records: 0.1 linear feet (1.5 linear inches)
Compliance Status: Record require partial rehabilitation to comply with existing federal guidelines and standards for curation for archaeological documentation.

Status of Curation Funding: Curation activities are funded through a curation fee the Maxwell Museum charges to all clients.

Repository Summary

DATE OF VISIT: October 28-29, 1996

PERSON CONTACTED: Brenda Dorr and Joseph Powell

Approximately 48 ft³ of artifacts and human skeletal remains and less than one linear foot of associated documentation from Fort Wingate and White Sands Missile Range (WSMR) are housed at the Maxwell

Museum of Anthropology, University of New Mexico (UNM) in Albuquerque. The collections consists of both historic and prehistoric elements (see Table 69). Associated documentation consists of artifact count sheets from the field and a bound report. This facility was previously evaluated in March 1994 for the U.S. Air Combat Command project (Drew 1996). Most of the facility information has not changed in that time and will be repeated for this report, noting the areas of change.

The Maxwell Museum of Anthropology is located on the campus of the UNM (Figure 89). The

Table 69.
Percentages of Material Classes Present in the
White Sands Missile Range Collections
Housed at the Maxwell Museum

Material Class	WSMR	Fort Wingate	Total
<i>Prehistoric</i>			
Chipped Stone	70	0	62
Human Skeletal Remains	3	100	13
Ceramics	12	0	10
Soil Samples	8	0	7
Flotation	1	0	1
Faunal Remains	3	0	3
Modified Shell	<1	0	<1
Botanical Remains Samples	<1	0	<1
¹⁴ C	<1	0	<1
<i>Historic</i>			
Ceramic/Crockery	1	0	1
Glass	<1	0	1
Metal	<1	0	1
Total	100	100	100

Note: Percentages of material classes are based on volume.

museum occupies at least 25 percent of the building that also houses the UNM Anthropology Department. In addition to this space, the Maxwell Museum stores collections in a warehouse located elsewhere on the campus.

Structural Adequacy

Repository 1—Maxwell Museum

The building that houses the Department of Anthropology at UNM was constructed during the 1930s and 1940s. It originally functioned as office space and classrooms. In 1972, the Maxwell Museum of Anthropology was established. The museum was designed as an addition to the Anthropology building and was constructed specifically for museum exhibits. The addition provided much-needed space for the museum, but eventually many rooms of the Anthropology building were also converted to serve museum space requirements. In 1990, a permanent gallery was constructed, and in 1992, the gift shop was expanded. Activity areas located in the museum include a receiving dock, an artifact holding area, an artifact washing area, an artifact-processing and conservation laboratory, a temporary artifact storage area, collection store rooms, a supply storage area,



Figure 89. Exterior of the Maxwell Museum of Anthropology (repository 1) on the campus of the University of New Mexico. The building houses the museum as well as the anthropology department.

a hazardous materials storage area, exhibit space, an artifact study room, a record study room, a record storage room, a photograph storage room, a refrigerator unit, offices, osteology laboratories, an osteology storeroom, a library, and a utility room.

The Anthropology building has two floors above grade and one floor below, occupying approximately 7290 ft³. Exterior walls are constructed of concrete blocks, some of which have adobe or stucco facing. The foundation is poured concrete and is considered structurally sound. The roof is made of tar and gravel and was completely replaced in 1994. Other than the construction of the museum, there have been no exterior renovations. All windows have the original aluminum frames and are shaded. Utilities and facilities include running water, restrooms, heat, air conditioning, telephones, and electricity. The plumbing, electrical, and heating systems all date from the 1970s when the museum was completed. To the staff's knowledge, there have been no major failures of any of these systems.

Repository 2—Warehouse

The warehouse used by the Maxwell Museum for the storage of archaeological collections occupies 2070 ft³ and was originally constructed as a warehouse in the 1960s (Figure 90). It is a single-story, windowless structure constructed almost exclusively of concrete. The foundation and exterior walls are constructed of concrete, and exterior walls have a stucco finish. The roof is made of corrugated metal and concrete blocks and is original to the building. The warehouse has a



Figure 90. A warehouse (repository 2) that holds collections of the Maxwell Museum of Anthropology has a key locked door and a large metal overhead door, both wired to the campus security.

receiving/loading dock, and the entire space is used to store bulk archaeological materials. Electricity and telephone service are the only functioning utilities in the building. The building does not have heat, air conditioning, plumbing, or humidity controls. No interior or exterior renovations have been made to the building.

Environment

Repository 1—Maxwell Museum

The building is equipped with an electric air conditioning system and a gas forced-air heating systems, both of which are zoned. Temperature and humidity are monitored in all the collections storage areas. The temperature is controlled in these areas through the zoned heating system, and the humidity is controlled through the use of portable humidifiers and dehumidifiers. Dust filters are present on the heating system and are changed regularly by the university personnel. There is no asbestos present in the building. Janitorial services are provided daily by university personnel in all areas but the collections storage areas. Curatorial personnel clean the collections storage areas on an as-needed basis. Ultraviolet (UV) radiation filtering sleeves are in place on all overhead fluorescent lights.

Repository 2—Warehouse

There are no environmental controls present in the warehouse. It is equipped with neither heat nor air conditioning. Dust filters are not present, but the

curatorial staff sweep the warehouse regularly. Since the building was reviewed in 1994, overhead fluorescent lighting has been installed in the building. Lights are not filtered for UV radiation. The assessment team noted a substantial amount of dust and dirt in the room.

Pest Management

Repository 1—Maxwell Museum

An integrated pest-management system is maintained by UNM. This system includes both monitoring and control activities. Curatorial staff monitor the facility and report any signs of pest infestation to the university. In addition, the facility is sprayed every three months by a professional pest-management company. The assessment team noted no signs of pest infestation during the evaluation.

Repository 2—Warehouse

A pest management system is also in force at the storage warehouse. The curatorial staff are responsible for monitoring the area for pest infestation and for placing rat and mouse traps in the warehouse. Additionally, a professional pest management company sprays the warehouse with pesticide twice a year. The assessment team noted the presence of spider webs in the corners of the room near the door and loading dock.

Security

Repository 1—Maxwell Museum

The Maxwell Museum meets the minimum federal requirements for safeguarding archaeological collections and associated documentation. The building is protected with intrusion alarms, controlled access, motion detectors, and locks (either key locks or dead bolt locks) all on interior and exterior doors. Each of the storage areas in the building is opened by a different key, and all keys are located in a separate locked room. Keys must be checked out and returned promptly after use. Two locked safes are used to store special collections. The primary storage area and processing laboratory are located in a secured area, and access is controlled by a keypad security system. There is no current

evidence of unauthorized entry; the staff knew of only one case of theft in 1975.

Repository 2–Warehouse

Since the 1994 evaluation, security precautions have been increased. The warehouse has a key lock door and the loading dock door can only be opened from the interior. Additionally, an electronic keypad alarm system has been installed.

Fire Detection and Suppression Systems

Repository 1–Maxwell Museum

Fire safety measures include fire extinguishers, a sprinkler system, smoke detectors, and alarms wired directly into the local fire department. A fire extinguisher is located in each room used by the Maxwell Museum, and in most rooms there are two. In addition, flood detectors are located in the main collections storage area. At one time, a water pipe broke, and there was a minor flood in this area.

Although damage to the collection was minimal, flood detectors were installed to prevent similar incidents.

Repository 2–Warehouse

The only fire suppression devices in the warehouse are two fire extinguishers, one by the entrance and one on the opposite wall. No fire detection devices are installed in the warehouse.

Archaeological Storage Materials

A total of 48 ft³ of artifacts was examined for this project. All of the artifacts were recovered from WSMR (41.5 ft³) and are stored in the warehouse, with the exception of one ceramic pot that is housed in the Maxwell Museum proper. Human skeletal remains recovered from Fort Wingate (5.2 ft³) are housed at the osteology laboratory at the Maxwell Museum. For a breakdown of material classes present in all of the collections, refer to Table 69.

Storage Units

Repository 1–Maxwell Museum

A partially reconstructed ceramic pot from White Sands Missile Range is housed in the ceramics storeroom (B03) in the lower level of the museum. The pot is stored loose on an open shelf. Shelves are constructed of unsealed wood and lined with acid-free tissue. Each shelf in the unit has a slightly different measurement, but the unit housing the vessel from WSMR measures 2.5 x 4.1 x 8.4 feet (w x h x d). Cotton twill tape has been secured across the front of most of the shelves to protect the artifacts from slipping off the unit.

Osteology collections are housed in their own storeroom above the laboratory. Access to the storeroom is gained by climbing a steep metal staircase secured to the wall. Collections are transferred to the storeroom with the use of a dumb waiter. The shelving units in the storeroom are metal frames with wood shelves. Units measure 5.6 x 3.0 x 6.0 feet (w x d x h).

Repository 2–Warehouse

Most artifacts in the warehouse are stored on shelving units constructed of metal beams with plywood shelves (Figure 91). Each shelving unit measures 5 x 4 x 13 feet (w x d x h). Some of the older collections are housed in wood drawers in a wood unit. Each drawer is nailed and screwed together with interior wood separators that form small compartments. A projectile point from WSMR is housed in this unit. The only provenience of this artifact is a piece of paper with 'White Sands, NM' written on it.

Primary Containers

The pot in the ceramics storeroom is stored loose on a shelf with 20% of its unassembled pieces stored in acid free paper and envelopes next to it. Osteology collections are stored in acidic cardboard boxes, with attached telescoping lids, lined with paper towels. Boxes measure 0.6 x 0.7 x 3.0 feet (1.3 ft³). Boxes are labeled directly in pencil with box number, accession number, and site number.

There are several large groundstone artifacts that are stored directly on the shelves in the warehouse. The rest of the collections (94%) are



Figure 91. Acidic cardboard boxes are housed on metal and unsealed wood shelving units in the warehouse (repository 2) of the Maxwell Museum. A lift is used to retrieve boxes from upper shelves.

stored in acidic cardboard boxes with folding tops and bottoms that are secured with tape. Most of the boxes have a written contents inventory enclosed. There are two sizes of boxes, 0.9 x 0.9 x 1.5 feet (1.2 ft³), and 1.0 x 0.4 x 1.5 ft (0.6 ft³). Boxes are labeled directly in marker with the project name, an Office of Contract Archaeology number, site numbers, and a description of the contents.

Secondary Containers

Sixty one percent of human skeletal remains in the osteology collection are loose in the boxes. Cardboard dividers within the boxes separate the craniums. Archival plastic bags contain 36% of the osteological collections within the boxes, and 3% are in plastic vials.

Archival plastic bags constitute 74% of the secondary containers in the artifact boxes. The majority of the bags have zip-lock closures, but some are sealed with staples or twist ties. The plastic bags are labeled directly in marker. Envelopes with information stamped and written in marker are enclosed with the artifacts in the plastic bags. Paper bags comprise 25% of the secondary containers. They have folded closures and are labeled directly in marker and pencil. Brown envelopes and plastic

grocery bags constitute the remaining 1% of the secondary containers (See Table 70).

Table 70.
Percentages of Secondary Containers in Collections Housed at the Maxwell Museum

Secondary Container Type	Percentage
Plastic Zip-lock Bags	68
Paper Bags	21
Loose Artifacts	10
Other	1
Total	100

Note: Percentages of secondary containers are calculated by volume.

Other containers include plastic canisters, plastic grocery bags, and paper envelopes.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted by material class. A majority (72%) of the collections have been labeled directly in ink. The large groundstone artifacts present in the warehouse are labeled with paper tags secured to each piece with string. Skeletal remains in three of the boxes have been dipped in polyvinyl acetate (PVA) as a preservation measure. This is a practice that the museum no longer follows.

Human Skeletal Remains

The osteology laboratory houses a large number of human skeletal remains including prehistoric skeletons, forensic cases from the medical examiner, and donated specimens. A total of four boxes (5.2 ft³) from Fort Wingate is housed at UNM. Two boxes (2.6 ft³) of remains from Kirtland Air Force Base are also housed at UNM. These came from the Two Dead Junipers site, which is on Kirtland AFB land that has been withdrawn from the U.S. Forest Service. The U.S. Forest Service is taking responsibility for this skeletal collection; therefore, it has not been included in the collection totals of this report.

A team from the St. Louis District visited the Maxwell Museum to conduct a NAGPRA Section 5 inventory in February 1997. They examined two boxes of remains recovered from WSMR that were not assessed in October 1996. The contents of one

box is entirely from WSMR (1.3 ft³). A second box has remains from WSMR, but also from non-DoD lands. Upon examination, the remains from WSMR were identified as faunal remains.

Records Storage

A very small amount (1.5 linear inches) of associated documentation was examined at the Maxwell Museum. This is documentation from the Border Star project conducted at WSMR in 1985.

Documents are stored in a small room in the lower level, which has been designated the archive for archaeological documentation. Open metal shelves are used to house the materials.

Paper Records

Paper records consist of 0.5 linear inch of artifact count sheets used in the field. These forms are stored in a manila envelope with a metal fastener. The envelope is labeled *Border Star '85 LA 63880 93.78.4 Original Documentation*.

Report Records

A bound report for the 1985 Boarder Star project is also on file with the documentation.

Collections Management Standards

Registration Procedures

Accession Files

All materials are accessioned upon receipt. A hard copy of the information is kept on file and is also entered into the ARGUS computer system used by the Maxwell Museum.

Location Identification

Information on the physical location of each collection is kept on the ARGUS computer system along with the accession files.

Cross-Indexed Files

All information that is kept on the ARGUS computer system is cross-indexed electronically and can be searched using several different fields.

Published Guide to Collections

A published guide to the entire holding of the Maxwell Museum does not exist; however, this information can be printed out using the ARGUS database system.

Site-Record Administration

The Maxwell Museum of Anthropology follows the site numbers established by the Laboratory of Anthropology.

Computerized Database Management

All information on the holdings of the Maxwell Museum and any associated documentation is entered into the ARGUS database. This database is regularly maintained and augmented by curatorial staff.

Written Policies and Procedures

Minimum Standards for Acceptance

The Maxwell Museum fully describes the minimum standards for acceptance of collections in "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology," written by Kathryn Mauer Trinkaus in 1989. Sections 2 and 3 of this document discuss the preparation necessary for documents, archaeological materials, and human skeletal remains before submission to the museum.

Curation Policy

The curation policy of the Maxwell Museum is also described in "Requirements for Submitting Archaeological Collections to the Museum of Anthropology." Section 7 discusses the museum's curation responsibilities and the proper forms used by the museum. The Maxwell Museum is also governed by Collections and Repatriation Policies.

Records Management Policy

Sections 4-6 of "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology" address the records management policy of the museum.

Field-Curation Guidelines

Preparation in the field is addressed in Section 2 of "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology."

Loan Procedures

Procedures for requesting the loan of museum material, care for the loaned material, and the return of the material are addressed in the "Maxwell Museum of Anthropology Archaeological Collections Loan Policy."

Deaccessioning Policy

The Maxwell Museum is currently revising the deaccessioning policy in order to better address issues raised by NAGPRA.

Inventory Policy

The inventory policy of the Maxwell Museum is described in a standardized repository agreement between the museum and depositors. This document also specifies that collections will be inventoried every five years.

Latest Collection Inventory

The inventory process is ongoing, because the repository agreement states that each collection will be inventoried every five years.

Curation Personnel

The Maxwell Museum employs two curators of archaeology, one part-time and one full-time. These individuals are responsible for the care of the bulk archaeological collections (both archaeological materials and documentation), acceptance of new collections, and other collections management activities, maintenance of both electronic and manual catalogs, supervision of student workers and collaboration with other staff members in developing long-term plans. There is also a director of the museum, a photograph archivist, a curator of osteology, a curator of southwestern ethnology, a collections conservator, and a curator of collections, among other museum support staff.

Curation Financing

The Maxwell Museum is owned by UNM. Funding is provided for incoming federal collections and contract projects through a negotiated repository agreement (box fee) and annual maintenance fees. Additional funding is provided by UNM and grants.

Access to Collections

Legitimate uses of the collections include scholarly and educational use, commercial use, and inspection and inventories. Each individual must submit requests to the curator for approval. Each request is considered on its own merit. The process generally takes one to two months before approval is granted.

Future Plans

The Maxwell Museum warehouse is near capacity. An amount of the collections that are stored in the warehouse are stacked on the floor at the end of isles. Further, the Maxwell Museum has contracts to receive additional materials from Kirtland Air Force Base that are presently at TRC-Mariah Associates offices, and collections from Fort Wingate that are at the Office of Contract Archaeology. There are negotiations for more storage space in a former car wash building owned by the university.

Comments

1. Both the Maxwell Museum and its warehouse are structurally sound.
2. Temperature and humidity levels are monitored and controlled (by portable humidifiers and dehumidifiers) in the museum building, but not in the warehouse.
3. Dust filters are in place in the museum, but not in the warehouse.
4. UV filtering sleeves are in place on the lights in the museum building, but not in the warehouse.
5. An integrated pest management system is maintained at both the museum and the warehouse.

6. Security at the museum and the warehouse meet federal requirements for safeguarding of archaeological collections.
 7. Fire suppression and fire detection systems in the museum meet the minimum federal requirements; the only fire-detection measures in the warehouse are fire extinguishers.
 8. Acidic cardboard boxes are used as primary containers.
 9. Proper registration procedures and policies have been developed and implemented by the Maxwell Museum.
 10. Both funding and storage space are insufficient for the Maxwell Museum's anticipated needs.
 11. The Maxwell Museum is a professionally managed institution that meets most federal requirements for the long-term curation of archaeological collections. Collections stored in this facility should be considered secure.
5. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Apply labels directly to the boxes. When label information or box contents change, replace inserts. This method reduces the chance of conflicting and confusing information.
 6. Remove the faunal remains from WSMR that have been identified in the osteology collection and store with other collections from WSMR.

Recommendations

1. Find a storage area, if possible, with a more stable environment for the collections currently housed in the warehouse.
2. Replace storage units, where necessary, with baked-enamel, metal shelves. In the case of the ceramics storeroom, replace storage units with enclosed shelving. Additionally, the use of mounts or supports for each vessel would further ensure their safety.
3. Update both security and fire-detection systems in the warehouse to meet minimum federal standards.
4. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded polyethylene paper, label in indelible ink, and insert into the secondary containers.

**Museum of New Mexico
Laboratory of Anthropology
Museum of Indian Arts and Culture and
Archaeological Records Management Section**

Santa Fe, New Mexico

Collection Summary

Collections Total: 55 ft³ of archaeological materials. 2.2 linear feet of associated records.

Volume of Archaeological Materials: 55 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological collections.

Human Skeletal Remains: None

Linear Feet of Records: 2.2 linear feet (26.5 linear inches)
Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for curation of archaeological documentation.

Status of Curation Funding: Curation activities are financed in part through federal agencies, state agencies, and grants. A one-time, per-box fee is charged to agencies storing archaeological collections and data at the Laboratory of New Mexico, Museum of Indian Arts and Culture. Additional funds are obtained through contracts with agencies to upgrade storage conditions and perform collection inventories. The Museum of New Mexico Board of Regents adopted a regulation in 1996 that imposed an annual fee of \$100.00 on individual and institutional users of the New Mexico Archaeological Records Management Section. Present funding is insufficient to meet current curation responsibilities.

Repository Summary

DATE OF VISIT: December 3 and 4, 1996;
April 28 and 29, 1997

PERSON CONTACTED: Patricia Nietfeld and
Tim Seaman

The Museum of New Mexico and the Laboratory of Anthropology were established as independent entities in 1909 and 1927, respectively. The Laboratory of Anthropology (LOA) was established as a privately funded center for anthropological research in the Southwest. It became part of the Museum of New Mexico system in 1947. The Museum of Indian Arts and Culture (MIAC) was opened as the public programs and exhibitions facilities for the LOA in 1987. Presently the Museum of New Mexico consists of four exhibiting units (LOA/MIAC, the Palace of the Governors, the Museum of Fine Arts, and the International Museum of Folk Art), five state historical sites, and shared administrative and service units (central registration, conservation, exhibitions, educational outreach, security, maintenance, and finance).

The Museum of New Mexico is the designated state repository for archaeological material. Reports and files pertaining to all excavated and surveyed archaeological sites in New Mexico are curated by the Archaeological Records Management Section of the New Mexico Historic Preservation Division (NMARMS) in coordination with the LOA/MIAC archivist.

Approximately 55 ft³ of artifact material from military installations stored with LOA/MIAC are curated in either the Individually Catalogued Collections (ICC) branch or the Archaeological Research Collections (ARC), which is the bulk collections branch of the museum. Record collections housed at NMARMS amount to approximately 2.2 linear feet from Fort Wingate, Kirtland Air Force Base, and White Sands Missile Range.

This facility was previously visited and evaluated for the U.S. Air Force Air Combat Command project in 1994 (Drew 1996). Only the building evaluation sections that have not changed since the initial visit will be used in this report.

Details of the 7.5 ft³ of Cannon Air Force Base and Melrose Bombing Range archaeological materials and the associated documentation are unchanged from the prior evaluation and will not be included in this assessment.

Archaeological materials located at LOA/MIAC are housed in three buildings: the original Laboratory of Anthropology building (repository 1), the Museum of Indian Arts and Culture facility (repository 2), and the La Villa Rivera off-site storage building (repository 3). Within these three repositories, collections are housed in eight collections storage rooms. For a list of the approximate cubic footage of artifacts recovered from military installations in New Mexico and Texas, refer to Table 71. Percentages of material classes are outlined in Table 72.

Table 71.
Volume of Archaeological Materials by Installation
Located at the Museum of Indian Arts and Culture

Installation	ft ³
Fort Bliss	0.1
Fort Wingate	17.6
Kirtland Air Force Base	0.4
White Sands Missile Range	36.9
Total	55.0

Structural Adequacy

Repository 1—Laboratory of Anthropology Building

The LOA building was originally established as one of the nation's first anthropological research centers and served an important role in the formative years of Southwest anthropology and archaeology. The LOA building, designed by Santa Fe architect John Gaw Meem, officially opened on September 1, 1931, and is now on the National Register of Historic Places. It is a weatherproof, pueblo-revival style structure constructed of reinforced concrete with sublevel basement collections storage areas and ground level offices, archives, and a library. A building addition was constructed in 1952 using state funds in order to house the Mera Collections in the basement and provide more office space upstairs. An unheated garage was added during the 1950s that was subsequently enclosed with another unheated

Table 72.
Percentages of Material Classes Present by Installation at the Museum of New Mexico

Material Classes	Kirtland Air Force Base	Fort Bliss	Fort Wingate	White Sands Missile Range	Total
<i>Prehistoric</i>					
Chipped Stone	51	66	20	57	45
Ceramics	49	34	55	15	28
Faunal Remains	—	—	10	1	4
Botanical Samples	—	—	1	10	7
Flotation Samples	—	—	—	8	5
Charcoal	—	—	9	3	5
¹⁴ C Samples	—	—	2	1	1
Baked Clay	—	—	2	—	<1
Adobe	—	—	—	3	2
Soil Samples	—	—	—	1	1
Other	—	—	—	1	1
Historic Metal	—	—	1	—	<1
Total	100	100	100	100	100

Note: Percentages are based on total volume.

Other prehistoric materials present include a jet pendant, a piece of turquoise, ochre, and ash.

storage building called the Prewitt House in 1965. The latter addition was not done by the original architect. The entire existing building was re-stuccoed by John Gaw Meem during the 1952 addition. Another stucco layer was added to the building in 1975 by the museum staff. The roof was replaced in 1988 with an EPDM membrane. Compact shelving added to the library in the upper level required the addition of a steel beam and column in the basement. Security devices and a halon fire extinguishing system have been added to the building. Additionally, the interior plaster walls have been painted and parts of the facility have been recarpeted in the last five years.

Windows in the ARC areas measure 29.5 x 51.5 inches (w x h). The windows are wood framed, shaded on the inside, and barred on the outside. No evidence of leakage was noted by the evaluation team, but ARC staff noted that one window in Room 201 had allowed water to seep in during heavy rains. Recent repairs seem to have rectified this problem. Additionally, the corner of the ceiling in Room 106, the processing room, was reported to leak, and there was evidence of past water damage. There are three wooden doors in the interior of the ARC area, and one wooden door and three metal doors leading to the exterior of the ARC areas. This facility is structurally sound, but many of the pipes in the building are insulated with asbestos. ARC staff

indicated that the asbestos in the LOA building had been examined by state inspectors and judged to be contained.

In 1993, Room 203, which was one of the later additions to the original LOA building, was given a new roof and exterior weatherproofing. Insect and rodent gaskets and barriers were also installed on high-security, fire-rated doors. Interior surfaces and concrete floors were sealed with an acrylic, and compactor carriage shelving was installed to house archaeological materials.

Repository 2—Museum of Indian Arts and Culture Building

The MIAC building was constructed in 1987 adjacent to the LOA building. It is currently under renovation to add 21,000 ft² of additional exhibit and collection storage space. In addition to exhibition galleries and storage space, the existing 30,000 ft² building contains offices for museum educators, public programming space, an auditorium, a loading dock, security offices, an artifact holding area, an artifact processing and registration area, an artifact study room, a materials and supplies storage area, and a mechanical/utility room. It has concrete block walls with a stucco exterior giving the appearance of an adobe structure, and a concrete foundation. The rubber membrane roof is original to the building.

Over the exhibit area, a wood frame atrium skylight has been known to leak water during heavy rains. Repairs to the skylights have attempted to correct this problem. The water leakage has not damaged any collections, only portions of the carpeting. This facility has one floor on the ground level as well as a basement, and appears to be structurally solid. All of the collections storage areas are located on the lower level and these areas occupy approximately 5700 ft² of space. There are no windows in any of the collections storage areas. All of the utility systems are original to the 1987 construction of the facility. New construction is scheduled to be complete on the addition in 1997.

Repository 3—La Villa Rivera Building

The La Villa Rivera (LVR) Building, is located in downtown Santa Fe several miles away from the LOA/MIAC campus. This 1950s brick building with a poured, reinforced concrete basement formerly served as St. Vincent's Hospital. The LVR building was purchased by the state government to provide space for state offices and to serve as the State Senior Citizens Residence Facility. Because of these other uses, archaeological collections are relegated to a large portion of the basement where the bulk of the ARC collections are housed.

The LVR building was designed with two wings, one of which has four stories, the other of which has five. A built-up roof covers both wings. No problems with water leaking through the roof were reported; however, the ARC collections area in the basement has developed some leaks between the walls and the foundation. When the building was converted to an office building, several interior renovations were necessary, but very few were made to the collection storage area in the basement. ARC occupies 4560 ft² of the basement.

Interior basement walls are constructed of cinder blocks, and the floor in the basement is exposed concrete. The collection storage area occupies two large rooms with a hallway between them. Boiler steam pipes, chilled water supply, return pipes, fresh water supply, and waste-water sewer pipes pass directly over collections. Many of these pipes are insulated with asbestos. The only functioning utility in the basement is electricity. No windows are present in the basement level of the building. There have been past episodes of overhead

pipes leaking, and plastic has been draped over the shelved collections in an attempt to prevent water damage to the boxes of archaeological materials. Several holes are visible in the concrete ceiling in the collections storage rooms. Both storage rooms and the hallway have reached storage capacity. The hallway also serves as a storage area for excess furniture from other departments in the building.

Environment

Repository 1—Laboratory of Anthropology Building

The building has a steam heating system with radiators. The boiler was replaced in 1971 but the original pipes remain. There is no air conditioning, nor are dust filters in place on the environmental controls. Temperature and humidity cannot be controlled in the collections storage area, although staff regularly monitor hygrothermographs placed in the rooms. High humidity is not a problem for the museum, though, as the local climate is dry and naturally maintains a 35-40% relative humidity levels. Lighting consists of fluorescent bulbs, incandescent bulbs, natural light, and desk lamps. Ultraviolet (UV) sleeves are not in place on any of these light sources. New electrical service and transformers were added in the 1970s but the distribution of electrical outlets and lighting is still below current local codes. Telephone systems are distributed through the original conduit, but have been adapted to modern requirements. The plumbing and electrical systems are maintained on an as-needed basis, with regular checks performed on both.

Repository 2—Museum of Indian Arts and Culture Building

MIAC has a computerized heating-ventilation-air conditioning (HVAC) system, which uses forced air distribution for air conditioning and a hot water heating system with three boilers and chillers, fans, and humidifiers. Although this system monitors and controls humidity only in the ground floor galleries, it has resulted in relatively stable temperature and humidity levels for the basement collections areas. MIAC also employs an energy management control system (EMCS). A large south-facing glazed wall in

the galleries presents a problem with controlling the amount of radiant energy that is generated. Both temperature and humidity levels are monitored by hygrothermographs and maintained by a private contract firm. HEPA filters are used on all environmental control units, which are also maintained by the HVAC contractors. The public areas are cleaned by museum security personnel, while the collections storage areas are cleaned by collections staff.

Repository 3—La Villa Rivera Building

Heating is provided from excess heat that emanates from the steam heat pipes that run along the ceiling. No air conditioning is installed in this area, although the facility's underground location helps to keep the area cool. Temperature and humidity levels are measured by a hygrothermograph in each of the storage rooms, but neither level can be controlled. Lighting is provided by fluorescent light tubes, but no UV filters are in place. The offices in the building are regularly maintained by a professional janitorial service; but the collections storage areas are maintained by the curatorial staff on an as-needed basis. The evaluation team noted a significant amount of dust and dirt accumulated on the boxes of DoD collections.

Pest Management

Repository 1—Laboratory of Anthropology Building

Since 1992, the museum has had a contracted entomologist. An insect behaviorist is under contract to write and lead an integrated pest management program, educate staff, and make monthly inspections and reports for all areas holding LOA/MIAC collections.

Repository 2—Museum of Indian Arts and Culture Building

The same measures are taken in this facility as are taken in LOA. In addition, a nitrogen anoxia protocol for treatment of infested collection objects and museum materials was introduced in 1995. This, combined with a freezing protocol introduced in 1985, has been instrumental in controlling and

eradicating insect habitats and population in the buildings.

Repository 3—La Villa Rivera Building

The same pest-management plan is established for the basement collections storage areas as for LOA. Curatorial staff stated that there were occasional problems with silverfish, and the evaluation team noted several indications of spiders.

Security

Repository 1—Laboratory of Anthropology Building

This building is protected with intrusion alarms, motion detectors, controlled access, and locks on all doors and windows. Only four windows in the ARC areas of the building are considered accessible from the exterior, and these have been secured with bars on the exterior and window locks on the interior. Motion detectors are located throughout the building. The front entrance to the building is secured with a double-cylinder, dead bolt lock and an electronic key pad security code. The intrusion alarm and motion detectors are wired directly to a private security company. The evaluation team was required to sign in and out of the facility and wear visitor badges in the building. Curatorial staff was present at all times during the assessment. No evidence was noted of unauthorized entry, and curatorial staff indicated that no past episodes of this nature had occurred.

Repository 2—Museum of Indian Arts and Culture Building

MIAC meets the minimum federal requirements for safeguarding archaeological collections and associated documentation. The evaluation team was escorted and supervised at all times while in the collections storage facilities. The building is protected with intrusion alarms, motion detectors, audio monitoring devices, controlled access to the collections storage rooms, and locks on all doors. There are no windows in any of the collections storage areas. In addition, security guards monitor all public and private areas of the museum. No evidence of unauthorized entry was noted, and

curatorial staff indicated that no past episodes of this nature had occurred.

Repository 3—La Villa Rivera Building

All doors leading to the basement are constructed of metal with double-cylinder, dead bolt locks. There are also dead bolt locks on the four doors that lead directly to the ARC storage areas. Only a limited number of people have access to the basement storage rooms, but it is not limited to curatorial staff. Maintenance people have access, as do other individuals who are responsible for the LVR facility. No intrusion alarms or motion detectors are in place. Groundstone artifacts are stored in the hallway along with excess furniture from other departments. Curatorial staff noted that some of this material had been subject to theft, but that there had been no episodes of unauthorized entry in the collections storage areas since the installation of the dead bolt locks.

Fire Detection and Suppression Systems

Repository 1—Laboratory of Anthropology Building

The entire building is protected by manual fire alarms that are wired directly to the local fire department. Smoke detectors, heat sensors, and fire extinguishers also are installed in the building. Fire extinguishers are checked regularly by qualified personnel. The basement room that houses the individually catalogued collections is equipped with a Halon fire extinguishing system that was installed between 10 to 15 years ago.

Repository 2—Museum of Indian Arts and Culture Building

The entire museum is protected with a dry-pipe suppression system, manual fire alarms, fire doors, smoke detectors, heat sensors, and fire extinguishers. The fire alarms are wired directly to and monitored by a private alarm monitoring company. A few of the fire extinguishers in some of the storage rooms (none that contain DoD collections) are filled with Halon. All of the fire extinguishers are checked on a regular basis.

Repository 3—La Villa Rivera Building

A water sprinkler system runs throughout the collections storage rooms and the hallway. Fire alarms wired to the local fire department are located at either end of the hallway near the exits. Smoke detectors are located throughout the collections storage areas. Three fire extinguishers are located in the hallway in the basement of the building; two are mounted below the fire alarms near each exit, the third is in the hallway just outside of one of the collections storage rooms. Fire extinguishers are checked on an infrequent basis, and the inspection tags were out of date at the time of the assessment.

Archaeological Storage Materials

Storage Units

Repository 1—Laboratory of Anthropology Building

Collections housed in LOA are located in five separate rooms: Rooms 117, 118, 120, 201, and 203. Storage units in these rooms are either locked painted metal cabinets or metal space-saver units. The newer cabinets used for the individually catalogued collections measure 37 x 58 x 32 inches (h x w x d). The cabinets all rest on 3 x 3 inch wood beams, keeping them off the ground. The older metal cabinets, which are also kept locked, house the research collections and measure 4.0 x 6.0 x 2.3 feet (h x w x d). The space-saver units in Room 203 have eight shelves per section and also rest four inches off the ground. Each section measures 8.5 x 2.5 x 18.7 feet (h x w x d).

Repository 2—Museum of Indian Arts and Culture Building

In Room 109 of this building, baked enamel metal shelving units are screwed together to form rows of shelves. The adjustable shelving units measured almost 8.0 x 4.0 x 2.5 feet (h x w x d). Each unit has seven shelves, including the top shelf. The bottom shelves are approximately four inches off the floor. All shelves are lined with sheets of inert polymer foam, and are labeled with thick adhesive tape embossed with the shelf identification number.

One artifact from Fort Wingate is housed in Room 100, a lower level storeroom dedicated to ceramics. This room contains both open metal shelving and enclosed cabinets to house small artifacts. The vessel from Fort Wingate is housed in a storage unit containing six stacked cabinets. The total measurement of the unit is 47.5 x 73.0 x 28.5 inches (h x w x d). The locked metal cabinet has removable wood drawers lined with polymer foam.

Repository 3—La Villa Rivera Building

Storage units used in this repository consist of painted metal framed shelving units with pressed board shelves. Shelving units have been arranged into very long rows within the collections storage area. Each unit measures 6.8 x 4.0 x 2.5 feet (h x w x d). Each shelving unit and shelf are labeled with adhesive embossed tape depicting each unit and shelf number.

Primary Containers

Repository 1—Laboratory of Anthropology Building

Most of the ceramic artifacts stored in Repository 1 do not have primary containers; rather they have been placed on shelves lined with inert polymer foam. The volume of DoD artifacts on these shelves is estimated at 0.8 ft³.

Repository 2—Museum of Indian Arts and Culture Building

Approximately 13 ft³ of collections located in the various storage rooms in Repository 2 are housed in metal sliding drawers, wood drawers, or acid-free cardboard boxes. There are two sizes of drawers in the locked metal cabinets; the volume is either 0.5 ft³ or 1.5 ft³, however, the drawers did not exclusively contain DoD collections. Estimates of the volume encompassed within each of the drawers have been used to determine the total volume of DoD collections. Drawers have been labeled with pieces of paper that are either glued to the front of the drawer or are placed in the metal label holders. Labels written in marker and pen have the general contents of the drawer and the artifact catalog numbers enclosed in each drawer.

The small vessel from Fort Wingate had a wood drawer measuring 6 x 20 x 26 inches (h x w x d) as a primary container. The vessel itself has a volume of approximately four cubic inches. The removable drawer is lined with polymer foam. There are no barriers between the artifacts. The outside of the drawer is labeled with a paper tag that is inserted into a metal slot. The handwritten ink label reads "L205 Prehistoric Miniatures."

In addition, collections in Repository 2 are also contained in acid-free cardboard boxes, which are of a folded and taped construction with taped folded-flap lids. Boxes are labeled with preprinted pieces of paper either glued or taped to the box. Some of the boxes also have information written directly on the box with marker.

Repository 3—La Villa Rivera Building

Approximately 40.4 ft³ of collections in variably sized acidic cardboard boxes house collections in the basement of Repository 3. Some of the boxes have been badly damaged and the collections are in need of repackaging. Boxes are labeled with adhesive paper labels, or with marker either directly on the front box surface or on a side of the box that has been painted with white paint. Label information includes the site number, site name, project number, project name, date, and contents of the box.

Secondary Containers

For a breakdown of secondary containers in use by repository, refer to Table 73.

Table 73.
Percentages of Secondary Containers for
DoD Collections Housed at the Museum of New
Mexico by Repository

Container Type	Repository 1	Repository 2	Repository 3	Total
Plastic Bags	—	69	34	42
Paper Bags	—	5	58	45
Loose	100	8	4	6
Other*	—	18	4	7
Total	100	100	100	100

Note: Percentages of secondary containers are based on volume. Other secondary containers include a cardboard cigar box, cotton draw-string bags, clear plastic boxes, an acid-free cardboard tray, wax paper envelopes, newspaper, inert polymer foam sheets, and styrofoam peanuts.

Laboratory Processing and Labeling

The majority of the 55 ft³ of archaeological materials has been cleaned (88%) and sorted by material class (99%); however, only 33% of the artifacts have been labeled. The level of processing and labeling is detailed below for the collections located in each of the three repositories.

Repository 1—Laboratory of Anthropology Building

The ceramic artifacts have all been properly cleaned, labeled, and sorted by material class. The individual artifacts have each been directly labeled with ink on a white base coat. The label information, an artifact catalog number, was legible and consistent among the artifacts.

Repository 2—Museum of Indian Arts and Culture Buildings

The majority of the artifacts stored in this facility have been cleaned (95%), and all have been sorted. Approximately 70% of the artifacts have been labeled in a variety of ways. Archaeological materials have been directly labeled with either black or white ink with a clear top coat, and occasionally on a base coat of white paint.

Repository 3—La Villa Rivera Building

The majority of the artifacts in this building have been cleaned (85%) and sorted (99%); however, only 19% of the individual artifacts are labeled. In addition to the methods of labeling used in Repositories 1 and 2, some of the sherds have also been stamped with a catalog and site number. A few of the lithic artifacts have a masking tape adhesive

label with the site number written on it, and other artifacts have a labeled paper tag tied to the artifact with cotton string.

Human Skeletal Remains

There were no human skeletal remains associated with DoD collections.

Records Storage

Associated documentation from Fort Wingate, Kirtland Air Force Base, and White Sands Missile Range comprise approximately 2.2 linear feet (Table 74). The collections are stored in the NMARMS offices in the LOA building. Copies of reports that are submitted to the NMARMS are stored on compact shelving units. Associated documentation is presently housed with site forms in legal sized, four-drawer metal filing cabinets. These cabinets line the walls of several connected rooms. The staff of NMARMS is in the process of culling through the numerically arranged site files and separating out all documentation that is not a site form. These associated documents will be filed in "Activity Files" with their own unique number. At the time of the assessment only one activity file had been created for any documentation relating to DoD properties.

Paper Records

Paper records, equaling 18.75 linear inches, consist of correspondence, manuscripts, survey, analysis, excavation records, field notes, and newspaper articles. Paper records are contained in brown paper and archival quality paper envelopes that hold the site files. Contaminants have not been removed and include staples, paper clips, and metal spiral binding

Table 74.
Major Classes of Documentation by Installation
Located at the Archaeological Records Management Section (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photographs	Maps	
Ft. Wingate	0.88	0.12	0.12	0.13	1.25
Kirtland AFB	0.50	—	—	0.50	1.00
White Sands MR	17.37	0.75	1.38	4.75	24.25
Total	18.75	0.87	1.50	5.38	26.50

on field notes. One original manuscript from a project performed on Fort Wingate is in an activity file separate from the site files. Activity files are contained in acid-free folders with contaminants removed.

Photographic Records

Black and white photographs are included in the one established activity file for Fort Wingate. The prints are in an archival quality plastic sleeve and are labeled directly in pencil on the back of each print. Prints are also included in the envelopes containing the site files. These photographs are labeled in a variety of methods; some are labeled directly on the back in ink, while some have typed adhesive labels applied to the back. They are housed in plastic sleeves, as well as manila folders, and acidic envelopes. Slides are also present in these files and are enclosed in an acidic envelope. Photographic records account for 1.5 linear inches of associated documentation.

Maps and Oversized Documents

Some maps and drawings are present in the site file envelopes, equaling 5.38 linear inches. Most are larger than the envelope and are folded to fit.

Reports

Copies of reports that are submitted to NMARMS are stored on metal compact shelving units in cardboard magazine holders labeled directly in pencil. Labels are consistent throughout the collection and are simply the report numbers contained in each individual storage unit. None of the reports have been copied on acid-free paper, nor have the nonarchival bindings been removed. Reports are systematically numbered upon receipt and are added to the NMCRIS database for information retrieval. Draft manuscripts and copies of some reports are stored in the site file envelopes. These reports equal 0.87 linear inch.

Collections Management Standards

Registration Procedures

Accession Files

All artifacts and associated documentation are accessioned upon receipt into the LOA/MIAC collections by the registrar. Federally owned collections are accessioned as long-term loans from each agency. Archaeological materials are entered into the ARC database and cross-indexed with the New Mexico Cultural Resource Information System (NMCRIS) database, which is maintained by NMARMS. This database contains site, report, and project information.

Location Identification

Information on the physical location of the artifacts is not kept in the accession files, but is kept in the collections database. The assessment team was provided a detailed copy of LOA/MIAC DoD holdings and their respective locations within each facility.

Cross-Indexed Files

Holdings in ARC are entered into the ARC database, and several fields are cross-indexed with the NMCRIS database to facilitate researcher access.

Published Guide to Collections

No published guide to the collections currently exists outside of published reports.

Site-Record Administration

LOA established a sequential site numbering system for the state of New Mexico that has been in use since the 1930s. These numbers are cross referenced with archaeological materials curated by ARC as well as the report and site files which are maintained by NMARMS.

Computerized Database Management

All information on associated documentation, state site-recording forms, and reports are entered into the NMCRIS database upon receipt. Information on artifacts is entered into the ARC database and cross-referenced to the NMCRIS database.

Written Policies and Procedures

Minimum Standards for Acceptance

Minimum standards for the acceptance of collections and associated documentation are outlined in the "Procedures for Submission of Collections to the State Archaeological Repository."

Curation Policy

LOA/MIAC has a written curation policy that addresses processing, labeling, cataloging, inventorying, and proper documentation of incoming collections.

Records-Management Policy

While all associated documentation is part of LOA/MIAC's collections, it is curated by NMARMS staff.

Field-Curation Guidelines

Field-curation procedures are outlined in the "Procedures for the Submission of Collections to the State Archaeological Repository."

Loan Procedures

The Museum of New Mexico, of which LOA/MIAC is a unit, has very specific guidelines on loaning material, both as a loaner and as a loanee. The state of New Mexico has also passed legislation governing the loan of museum materials (1989, Chapter 211, Senate Bill 332, as amended).

Deaccessioning Policy

State-owned archaeological collections are never deaccessioned. Federally owned collections are maintained by the LOA/MIAC as long-term loans from each agency, and each agency determines the disposition of its collections. Private collections deeded to the museum can be deaccessioned, but all items must first be appraised and then a written request to deaccession an item must be made to the associate director of the museum. If the item in question is appraised at \$500 or more, additional approval from the Museum of New Mexico Board of Regents must be obtained before deaccessioning can be completed.

Inventory Policy

All incoming collections accepted by ARC are inventoried upon receipt. Old ARC collections that have never been properly inventoried are inventoried as funds and staff time become available.

Latest Collection Inventory

The last collection inventory in ARC began in 1989 and was ongoing at the time of the visit.

Curation Personnel

ARC has one full-time curator, two full-time assistant curators, one half-time data-entry clerk, and two quarter-time student workers. The curator is responsible for curating collections, controlling access to the collections, assisting researchers, developing additional control measures as needed, and supervising the rest of the curatorial staff.

Curation Financing

Curation is financed in part through a one-time, per-box fee charged to agencies storing archaeological collections and data at LOA/MIAC. Additional funds are obtained through contracts with agencies to upgrade storage conditions, perform inventories of collections, and from a cooperative agreement with one federal agency for annual maintenance as required under 36 CFR Part 79. Draft cooperative agreements for annual maintenance fees have been sent to five other federal agencies, but, to date, none have budgeted for annual maintenance of their collections. Current funding is insufficient to meet current curation responsibilities. The curator estimated that LOA/MIAC needs \$6 million for an addition to LOA, funding for four full-time curators, and approximately \$205,000 annually to meet curatorial responsibilities.

Access to Collections

Access to the collections is restricted to the staff of the Museum of New Mexico. Any other requests for access to the collections must be made in advance, in writing, to the curator. Legitimate researchers may use the collection, if approved by the curator.

Future Plans

The museum, recognizing the need for a new facility to replace the ARC storage areas in the LVR building basement, has received funds—through the state, under the National Endowment for the Humanities (NEH), and from private contributions—to add the Bloch Wing to the existing MIAC facility. This addition is increasing the museum's on-site storage capabilities by 60%. Construction is scheduled for completion in February 1997, with the grand opening in August 1997. LOA/MIAC has also recently submitted a proposal to NEH requesting additional funds to furnish the newly constructed storage areas and provide them with additional storage and access improvements for the anthropology collections. A master plan has been written for the Santa Fe sites and facilities to study and plan for all the museum's need to the year 2010.

Comments

1. Asbestos is present in both the LOA and LVR buildings. While currently judged as being "contained," additional renovations may require its removal.
2. Temperature and humidity levels cannot be controlled and fluctuate in Repositories 1 and 3; however, staff monitor these levels with hygrometers located in the collections storage rooms.
3. Light sources in the collections storage rooms do not have UV filters installed.
4. An integrated pest-management system is in place at all facilities; however, the assessment team noted evidence of spiders in the collections stored in Repository 3.
5. Repositories 1 and 2 meet all of the federal requirements for the proper safeguarding of archaeological collections; however, Repository 3 does not meet the minimum standards as described in federal regulations.
6. The LVR building is structurally sound, but it is not appropriate as a collections storage facility.
7. Fire-detection and -suppression measures are adequate in all facilities.
8. The foundation in Repository 3 is cracked and allows water seepage. Additionally, some of the pipes above the collections leak.
9. Collections are not uniformly stored in appropriate storage units and containers.
10. All required written policies and procedures are in use at this museum. The Museum of New Mexico is a professionally managed institution that meets most federal requirements for the long-term storage of archaeological collections.
11. The museum recognizes its shortcomings in space and storage requirements for present collections and projected future growth. The staff is very aware that collections housed at the LVR building are threatened, and the removal of collections from the LVR seems to be a priority. They continue to rectify these problems as funding and staff become available.
12. The institution has a history of submitting grant proposals and receiving funding for projects to improve the conditions of collection. A range of funding agencies has accepted these proposals and supplied grant money ranging from \$5,000 to \$146,000 for such projects.
13. A grant application was submitted to the National Endowment for the Humanities (NEH) in 1996 for "Storage and Access Improvements for Anthropology Collections." This application was not funded and the museum is continuing to search for funding sources to purchase storage equipment, supplies to rehouse these collections, as well as pay salaries for personnel to conduct this work.

Recommendations

1. Remove collections from the LVR building.
2. Install the necessary environmental controls in Repositories 1 and 3 to eliminate temperature and humidity level fluctuations.

3. Install UV filters sleeves and film to all light sources in the collections storage rooms.
4. Install additional security measures to the collections storage area used in Repository 3, if the continued use of this area is planned.
5. Install enameled steel shelving units in the collections storage areas currently lacking such units.
6. Fix the overhead pipes and the foundation in Repository 3 so that water leaks will no longer threaten to damage the collections. Again, this measure is only necessary if this area continues to be used as a collections storage area.
7. Label all artifacts with indelible ink to prevent information loss should the artifacts become separated from provenience data.
8. Replace all acidic and chemically unstable primary and secondary containers with acid-free or acid-neutral containers. Primary containers should all be consistently and uniformly labeled on the exterior using adhesive polyethylene plastic label holders, with acid-free paper inserts. Labels should no longer be applied directly to the boxes. When label information changes, label inserts should be replaced. Acid-free paper or spun-bonded, polyethylene paper, labeled with indelible ink should be inserted into every secondary container.
9. Make duplicate copies of all associated documentation onto acid-free paper. Store copies in a separate and secure location. Process records and arrange according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. Records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Museum of Northern Arizona

Flagstaff, Arizona

Collection Summary

Collections Total: 38.8 ft³ of archaeological materials. 1.0 linear feet of associated records.

Volume of Archaeological Materials: 38.8 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: None

Linear Feet of Records: 1 linear foot (11.5 inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: The curation of the Williams Air Force Base archaeological collections is not specifically funded. The cost of storing these archaeological materials comes from the general overhead budget of the Collections Department.

Repository Summary

DATE OF VISIT: April 21, 1997

PERSONS CONTACTED: Tracy Murphy

The Museum of Northern Arizona (MNA) is a nonprofit organization founded in 1928 as the Colorado Plateau Regional Repository (Figure 92). Archaeological materials (38.8 ft³) recovered from the Williams Air Force Base (WAFB) Midvale Site, are currently housed in a room devoted to bulk collections storage. Associated documentation (11.5 linear inches) is housed in file cabinets in the archives room. The collections are located in



Figure 92. The anthropology building and administrative offices are part of the Museum of Northern Arizona complex.

the Anthropology Building #11. Funding has never been provided to MNA for the proper curation of these materials.

Structural Adequacy

Built in the 1960s, this single-story butler building has been converted and adapted for use to house the archaeological collections and the offices of the collections staff. The building, encompassing approximately 12,221 ft², has a concrete foundation and painted concrete block exterior walls. The roof is original to the construction of the building. It is composed of tar and tarpaper, covered with a silver, reflective paint. The roof is repaired and maintained as needed. Structurally sound, the staff and assessment team noted no signs of cracks in the foundation or walls. The roof has had water leaks in the past, but has been repaired. There is no evidence of water damage to the building or collections. Metal framed windows surround the building, with the exception of the addition that is used for bulk collections storage, which has no windows at all. None of the windows have been replaced, and occasionally leak water, or are drafty. These problems are repaired as needed. Utilities in the building are original; electrical lines have been updated recently to accommodate the increased use of computers. There is no asbestos in this facility.

The Anthropology Building #11 is divided among offices, laboratory space, and collections storage rooms. The large butler-building style room that houses the majority of the bulk collections was added to the building in the 1970s and encompasses 3024 ft². Its concrete floor has been sealed. There are no interior walls in this collections storage room. The metal exterior walls are insulated. The ceiling is also metal with insulation.

Environment

Anthropology Building #11 is equipped with gas forced-air heating units, but does not have air conditioning, humidity controls, or dust filters in place. Temperature levels are maintained between 65°-68° F for staff comfort. Collections stored in the bulk collections storage room are considered non-perishable, and are not greatly affected by the lack of environmental controls. Humidity levels are

monitored with hygrothermographs, and normally exhibit an average of 30-35% relative humidity, which is consistent with the typically dry climate of Flagstaff. The building is maintained by the Museum's Buildings and Grounds staff. Curatorial staff clean the building as needed. Fluorescent light fixtures are present in the collections storage room and do not have ultraviolet (UV) filters.

Pest Management

An integrated pest-management program is in place for the entire museum. Periodic visual spot checks of the collections and sticky traps are used to monitor any pest infestations. Collections are frozen at a temperature of -10° F when needed to destroy pests. In addition, new collections are frozen in a receiving laboratory prior to integration into collections storage areas. No pesticides or fungicides are used. In the past, moths had infested the historic textiles collection, but staff have not had any problems recently. The assessment team noted no signs of pest infestation during the visit.

Security

The building is equipped with an intrusion alarm on all exterior doors that is wired directly to a private security service. All the doors are metal panel with key locks. The museum complex also has a 24-hour guard that lives on and patrols the grounds. Motion detectors are installed throughout the building. The windows are secured with latch locks that are checked nightly. The assessment noted no signs of unauthorized access, and museum staff reported no past incidents. Access to the collections is controlled by the curatorial staff.

Fire Detection and Suppression Systems

The only fire safety measures present in the building are smoke detectors and fire extinguishers that are checked annually. Dry chemical fire extinguishers, and special extinguishers for electrical fires, are available. There are no fire extinguishers in the collections storage room; however, there are two extinguishers located outside the entrance to this area.

Archaeological Storage Materials

Storage Units

Collections are stored on open metal adjustable shelving units which measure 8 x 2.5 x 6.5 feet (h x d x w). There are approximately 378 shelving units with seven shelves per unit. Shelves are 1.5 inch thick untreated wood boards. For percentages of material classes present in the collection, refer to Table 75.

Table 75.
Percentages of Material Classes Present in the Williams Air Force Base Collection Housed at the Museum of Northern Arizona

Material Classes	Percentages
<i>Prehistoric Artifacts</i>	
Ceramics	67
Chipped Stone	26
Other*	2
<i>Historic Artifacts</i>	
Ceramic/Crockery	1
Metal	1
Glass	1
Other**	2
Total	100

Note: Percentages of material classes based on volume.

* Other prehistoric materials in the collection include shell and faunal material, ¹⁴C sample and modified shell and faunal artifacts.

** Other historic materials in the collection include concrete, asphalt, burned adobe, plastic, shingle, coal, and rubber.

Primary Containers

Primary containers consist of acidic cardboard boxes (Figure 93) that range in volume from 0.08 ft³ to 1.2 ft³ with the majority being 1.2 ft³. The boxes are of a folded and stapled construction with folding flap lids for security. A few of the box lids are also stapled shut. Acid-free adhesive box labels are typed with the site number, provenience, culture/stage, and contents. Written directly on the box in marker is additional information such as site number, "WAFB," and contents. The boxes are dusty, and a several of the boxes are torn or damaged from compression.



Figure 93. Collections from Williams Air Force Base are stored in plastic bags in a cardboard box.

Secondary Containers

Fifty-five percent of the artifacts are housed in a variety of plastic bags, including thin 1- to 2-mil bags secured with twist-ties or string and 4- to 6-mil archival-quality zip-lock bags. The thin bags are punctured from the sharp edges of artifacts within the bags. Approximately 44% of the collections are housed in acidic paper bags. Many of the bags have been doubled, but are still ripping and spilling the artifact contents into the primary containers. Nested within the secondary containers are tertiary containers, which include smaller plastic bags and paper bags. Labels have been stamped in ink or written directly on the front of the containers in pen, pencil, and marker. Label information is not on every container, nor is it consistent. Information generally includes the site number, provenience, date, investigator, feature, locus, specimen number, and remarks.

Laboratory Processing and Labeling

All of the collections have been processed and cleaned. Most of the collections (80%) have been sorted by either material class or feature and specimen number. Only 32% of the artifacts have been labeled. They are labeled with a combination of the feature and specimen number, site number, or accession number in india ink directly on the artifact.

Human Skeletal Remains

No human skeletal remains recovered from Department of Defense installations are currently being housed at the Museum of Northern Arizona.

Records Storage

Less than one linear foot of associated documentation (11.5 inches) is stored in the archives room of the collections storage facility. Document types present include paper records, photographic records, reports, and maps. Records are filed by site number in a five-drawer metal lateral file cabinet. The slide-out drawers have doors that lift open and slide up and over the file. The drawers are all labeled with a paper insert in a plastic label holder in the handle of the drawer. The label is typed with the range of site numbers in each drawer (e.g., NA16911-NA17270).

Paper Records

Over half of the collection (6.75 linear inches) consists of paper records including a site file card, catalog cards, administrative correspondence, contracts, billing documents, scopes of work, background information, survey field notes, profiles, excavation/auger notes and results, inventory sheets, and analysis records. Documents are housed in manila folders, acidic expandable folders, and a binder. The containers are in fair condition. The files are labeled in a variety of methods, including directly on the binder in pencil and marker, or with adhesive paper labels with information written in pen and pencil, or typed. Paper contaminants (such as staples, rubber bands, and paper clips) are present and the pages are showing signs of deterioration.

Photographic Records

Less than one inch (0.25 inches) of photographic records are present in the project file. The 8 x 10 inch black and white prints are stamped with the photographer's name on the back. The envelope is directly labeled in marker "Photos A81-33."

Report Records

Approximately three inches of report records are present in the project file and include report drafts,

finals, and original report-ready tables. The report records are stored in the same manner as the paper and photographic records.

Maps and/or Oversized Documents

Large U.S.G.S. topographic maps, field maps with sites plotted, and original feature drawings comprise approximately 1.5 inches of the record collection. Maps are filed and stored with the project records in the same manner as the rest of the collection.

Collections Management Standards

Registration Procedures

Accession Files

All materials are accessioned upon receipt at MNA. Accession files are maintained by the Collections Manager and Assistant Collections Manager.

Location Identification

Collection location is identified in a computerized database of MNA's entire holdings.

Cross-Indexed Files

Many of the fields of information kept in the collections database are accessible.

Published Guide to Collections

A published guide has not been produced.

Site-Record Administration

MNA assigns their own site numbers to sites and collections submitted to the museum. The number is sequential within the entire state. The WAFB Midvale site has a designation of MNA 16913. The corresponding site number that the Midvale Site was given by the Arizona State Museum was not noted.

Computerized Database Management

A comprehensive collections database is maintained by staff at MNA. Backups of the data are made nightly on tape. A weekly tape record backup is stored in a fireproof vault in the library. There are

different levels of access to the information stored in the database. Four curatorial staff members have complete access and data-entry level access. Researchers have read-only access. Individuals with access to the computer databases have passwords that are changed every six months.

Written Policies and Procedures

Minimum Standards for Acceptance

Minimum standards for acceptance of collections are outlined in the Curation Guidelines for the Museum of Northern Arizona—March 1997.

Curation Policy

Curation policies for both artifact and records are in the Curation Guidelines for the Museum of Northern Arizona—March 1997.

Records-Management Policy

A records-management policy is included in the Curation Guidelines for the Museum of Northern Arizona—March 1997.

Field-Curation Guidelines

Field-curation guidelines are included in the Curation Guidelines for the Museum of Northern Arizona—March 1997.

Loan Procedures

The museum's loan policy is part of the Curation Guidelines for the Museum of Northern Arizona—March 1997. Standard forms are used.

Deaccessioning Policy

The museum's deaccessioning policy is part of the Curation Guidelines for the Museum of Northern Arizona—March 1997.

Inventory Policy

The museum's inventory policy is part of the Curation Guidelines for the Museum of Northern Arizona - March 1997.

Latest Collection Inventory

A continual inventory is performed on a collection subset basis, and a bulk inventory was conducted in 1993.

Curation Personnel

MNA employs a full-time curator of archaeological collections, a full-time collections manager, and a full-time assistant collections manager.

Curation Financing

The curation of the Williams Air Force Base archaeological collections is not specifically funded. The cost of storing these artifacts comes from the general overhead budget of the Collections Department. MNA is currently trying to recover curation costs from agencies whose collections are stored there, but do not provide funding for the curation of these materials.

Access To Collections

Access to the collections is authorized by curatorial staff and controlled by collections staff. A research request must be submitted to the Curator and approved before an appointment with the assistant collections manager can be made.

Future Plans

Plans for archaeological collections management at MNA include rehabilitating collections as curation funding is obtained from agencies. As a whole, the museum has a five-year plan and a year 2000 plan which address anticipated curation needs and set specific goals.

Comments

1. The building is structurally sound.
2. Environmental controls are minimal in the collections storage room.
3. An integrated pest-management program is in place.

4. Adequate security measures are present for the storage of federal collections.
5. Fire safety measures are inadequate for the collections storage room and archives.
6. Records and archaeological materials are housed in nonarchival quality containers.
7. All of the necessary management protocols and procedures have been established and implemented for the long-term curation of federal collections.

separate and secure location. Process records and arrange according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. Records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Recommendations

1. Install an air conditioning system equipped with a dust filtration system in the collections storage room.
2. Place ultraviolet filters on fluorescent lights in collection storage room and archives room.
3. Install a dry-pipe zoned sprinkler system in the collections storage rooms. Install either smoke detectors or heat sensors that are wired directly to the local fire department for quick response to an emergency situation.
4. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label bags directly with indelible ink. Additionally, labels made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), and printed with indelible ink, should be inserted into the secondary containers.
5. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.
6. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.
7. Make duplicate copies of all associated documentation onto acid-free paper. Store copies in a

Museum Texas Tech University

Lubbock, Texas

Collection Summary

Collections Total: 5.2 ft³ of archaeological materials. 2.4 linear feet of associated records.

Volume of Archaeological Materials: 5.2 ft³
Compliance Status: Archaeological materials comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 2.4 linear feet (28.8 linear inches)

Compliance Status: Records comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded by the state of Texas, as line items in archaeological contracts, and through donations.

Repository Summary

DATE OF VISIT: March 24, 1997

PERSON CONTACTED: Eileen Johnson

The Museum Texas Tech University (MTTU) is located on the university's campus near the outskirts of Lubbock, Texas (Figure 94). MTTU has a broad scope of educational programs and resources, including multiple divisions specializing in different branches of natural science. They also have an anthropology division, the ethnology and archaeology of which is defined in their scope-of-collections to be limited to peoples of the southern



Figure 94. The building that houses the Museum Texas Tech University was originally constructed in 1970 with an addition made in 1990.

plains region. Approximately 5.2 ft³ of artifacts and 2.4 linear feet of documentation from Reese Air Force Base (Reese AFB), Texas, are currently being housed at MTTU.

MTTU was in operation long before construction of the current building, and has housed federal collections since its inception in 1929. The current facility was originally constructed by the State of Texas under the umbrella of the university for use as a museum in 1970. The museum has recently added another new wing to the main building. The museum building is 190,000 ft².

The museum building has two floors above grade and one below, with space dedicated to security and division staff offices, an employee kitchen/break room, hazardous material storage, general supply storage, collections storage, documentation storage, research, study, artifact temporary holding and isolation rooms, an artifact processing workroom, exhibits, classrooms, and a planetarium. Activity areas and staff offices specific to the anthropology, archaeology, and ethnology collections care/storage are all located in the below grade level of the museum. These areas encompass about 11,043 ft² of the total available space at this facility.

Structural Adequacy

The MTTU building has concrete and steel exterior walls with masonry brick aspect, and is seated on a steel reinforced poured concrete foundation. The roof is flat and of wood frame construction with built-up asphalt covering. No cracks or leaks in the foundation have been noticed or reported by museum staff, but the roof has occasionally required repairs. Full utilities are in place throughout the building, and have been upgraded to meet current building codes whenever additions have been made to the building. These upgrades have included asbestos abatement procedures, which continue to be in effect for the original structure.

The uppermost floor in the museum is constructed of wood, but the entry level floor is poured concrete. Floor coverings in the offices and public areas are linoleum tiles. The windows in this structure are original to the building, and are located only in the main lobby area. These windows are sealed and fully filtered for ultraviolet (UV) light.

Artificial lighting throughout the building is accomplished with UV-filtered fluorescent tube fixtures. Ceilings in the above ground levels are of suspended acoustical tiles. The main exterior doors are metal-framed UV-filtered tempered glass, and the remaining exterior doors are steel fire doors. Interior doors consist predominately of paneled solid core wood, except for the interior bank of emergency exit doors, which are also steel fire doors.

Reese AFB collections are stored in the basement of the museum. Floors, exterior walls, and the ceilings in the collections areas are all bare concrete. Nonweight-bearing walls are constructed of wood frames and wallboard. There are separate rooms for the ethnology, physical anthropology, archaeology, and associated documentation collections. Steel girders covered with mesh top the nonweight-bearing walls for several feet between these areas to assist the museum in regulating environmental factors. There are no windows in the basement. The collection area is filled to 75% of currently configured capacity.

Environment

The entire building is equipped with a fully filtered heating-ventilation-air conditioning system (HVAC). This system is cared for by the university, and is zoned and balanced for specific areas of the museum. The above ground levels are set to 72 degrees Fahrenheit, and the lower level to 68 degrees Fahrenheit. Humidity controls are also present throughout the entire structure, and these are set to a targeted 45–50% relative humidity level. According to museum staff, humidity in the Texas panhandle is a fairly constant 20%, and their biggest environmental challenges are keeping the humidity level up and the dust down. Any artifact requiring special environmental consideration is isolated in a microenvironment tailored to the specific needs of that object. Hygrothermographs are used to monitor the environmental levels throughout the building, and these are checked daily by the museum's registrar. Custodial staff are assigned to the museum by the university, and they perform janitorial services on a daily basis. Any cleaning conducted in collections areas is monitored by museum staff.

Pest Management

There is a complete integrated pest-management policy in place at MTTU, including full inspection and temporary isolation of all new collections, as well as weekly monitoring of sticky traps by the registrar. Spraying is conducted as needed by a contracted company that uses pyrethrin-based chemicals. These measures have come about as the result of some pests that were inherited when an ethnographic collection was obtained from Iran in the early 1970s. No current problems with insects or rodents were reported by museum staff, and no signs of infestation were noted by assessment personnel.

Security

Security systems at MTTU consist of motion detectors throughout the building and at all potential external contact points, an intrusion alarm system wired to campus security, video camera monitoring, picture identification badges for all staff, staff controlled access, requiring sign-in at the security desk for a visitor's pass which must be worn at all times while in restricted/collections areas, and accompaniment by authorized personnel, dead bolt locks on all doors leading into the building and main collections areas, and key locks on all interior doors leading to offices and supply rooms. According to museum staff, no break-ins have occurred at this building, although one instance of vandalism to an exhibit was reported to have occurred during regular public visiting hours.

Fire Detection and Suppression Systems

The MTTU fire alarm system is wired to the fire department, and smoke detectors as well as a dry-pipe heat-activated sprinkler system are in place throughout the building. In addition, there are 73 fire extinguishers—a minimum of one per room—and 13 fire hoses, all of which are inspected at least annually by the university. There are double banks of metal fire doors at all emergency exits, the first bank of which is attached to a fire wall, and the second bank that permits exit from the building.

Archaeological Storage Materials

Storage Units

Reese AFB archaeological materials are stored in four enameled metal drawers lined with ethafoam within a non-movable, key-locked, enameled metal storage cabinet measuring 34 x 58 x 76 inches (l x w x h) (Figure 95). This cabinet is in the main archaeological collections room, D-24. Drawers are labeled using an acid-free typed paper tag insert placed into the metal label holder built into each drawer. Information on the labels includes site and accession numbers as well as the drawer and cabinet numbers. Table 76 outlines the material classes present among Reese AFB collections at MTTU. Finding aids are available, and all collections are easily accessible and well organized.



Figure 95. Collections from Reese Air Force Base are stored in three drawers of a metal cabinet, the drawers are lined with ethafoam and collections are housed in plastic zip-lock bags and acid-free cardboard boxes.

Secondary Containers

Secondary containers for the archaeological materials consist of 4-mil polyethylene zip-lock bags and acid-free specimen boxes (half of each). Some of the very small materials such as micro-debitage or

Table 76.
Percentages of Material Classes in the Reese AFB
Archaeological Collections Housed at the
Museum Texas Tech University

Material Class	Percentage
<i>Prehistoric</i>	
Chipped Stone	73*
Botanical Remains Samples	25*
Unmodified Shell	1*
Historic Metal	1
Total	100

Note: Percentages of material classes are based on volume. ¹⁴C samples were also collected during the project, but were consumed for analysis.

* Portions of these percentages include what remains of processed soil samples.

seeds are in gelatin capsules, which are then individually bagged in the aforementioned zip-lock bags. Computer generated paper tag inserts (acid-free paper) are present in all secondary containers and are hand printed in marker with the site number, provenience information, the catalog number, feature numbers, and the date the collection was made.

Laboratory Processing and Labeling

All of the collections for Reese AFB have been cleaned and are sorted by material class. Archaeological materials large enough to label (about 45% of the total collection) are directly labeled with a catalog number in black or white water-based ink sandwiched between coats of polyvinyl acetate. All artifacts have the aforementioned paper tag inserts for identification.

Human Skeletal Remains

MTTU does not curate any human remains from Reese AFB or any other Department of Defense installation.

Records Storage

Documentation for Reese AFB is currently stored in three different rooms in the basement: the regular documentation storage room (D-22), the drafting room (D-6), and the documentation workroom (D-2).

Paper records are on enameled, open metal storage shelves measuring 65 x 14 x 35 inches (h x w x d) in room D-22 and on work tables in rooms D-6 and D-2. Photographic records are stored in a standard domestic refrigerator in room D-22. Shelves are labeled with a location number using typed adhesive tabs. Documentation is somewhat scattered at this time because the project for Reese AFB is ongoing, and many of the drawings and field notes are either being used to prepare the project report or being archivally prepared for long term storage. Finding aids are available, and all documentation is clean and well organized.

Environmental conditions, pest management, security, and fire detection/suppression measures are the same in these rooms as the rest of the collections areas in the basement. There is a total of 2.4 linear feet of documentation housed at MTTU for Reese AFB.

Paper Records

Paper records housed at MTTU for Reese AFB, totaling 1.5 linear feet, are stored in archival binders and loose in acid-free document boxes on the aforementioned shelving units or work tables. These records include field notes, analysis sheets, site sketches, excavation profiles, contracts, correspondence, site form copies, artifact catalogs/inventories, and field "bag tags." Binders and document boxes are labeled using typed acid-free paper tag inserts. Secondary containers consist of acid-free file folders labeled directly in archival pen with the project name, site number, and the contents.

Photographic Records

There are 0.9 linear feet of photographic records including slides, negatives, and contact sheets for Reese AFB housed at MTTU. These records are currently stored in acid-free slide boxes or archival photograph binders labeled with typed paper tag inserts. Secondary containers consist of polyethylene plastic sleeves and acid-free paper envelopes. Sleeves and slide mounts are all labeled directly—using an archival marking pen—with the site number, installation name, roll number, exposure number, and year. A copy of the relevant photograph log is included in each box or binder.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are accessioned upon receipt. There are written protocols for the procedure and a standard form that is used. The accession number is also entered into a ledger book kept specifically for this purpose.

Location Identification

Each shelving unit or cabinet has an assigned number and each shelf or drawer within a unit also has a designated number. These two sets of information plus the room number is the location of the artifact within the repository and this number is identified in both the computer database and the accession files.

Cross-Indexed Files

Files are cross-indexed by site number and accession number.

Published Guide to Collections

There is no published guide to collections, but there are complete written collections management policies in place for each department.

Site-Record Administration

MTTU only retains copies of archaeological site records relevant to their region. These files are organized alphabetically by county and by sequential number within each county as established by the Smithsonian River Basin Survey trinomial site-numbering system.

Computerized Database Management

There is a computerized system for database management in place, but it is currently having problems due to the large volume of data entered into it. This is an internal network only, and backups of the systems data are made daily. Because of the current problems, however, a temporary policy has been issued to stop all data entry.

Written Policies and Procedures

Minimum Standards for Acceptance

There is a written draft of standards that are required for submitted collections that addresses packaging, processing, and labeling practices. It is rare that collections are submitted, generally only those generated by in-house staff are curated at MTTU.

Curation Policy

Written standards for curation activities cover receipt, processing, use, and future preservation of materials.

Records-Management Policy

Written policy addresses the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

Written guidelines for field-curation address field conservation and processing.

Loan Procedures

There are written loan procedures and standard loan forms for the procedure, but loans are only made to institutions, not individuals.

Deaccessioning Policy

A written deaccessioning policy and a standard form for the procedure are in place.

Inventory Policy

Collections are inventoried upon receipt and a complete inventory is conducted every 10 years.

Latest Collection Inventory

It takes five years to conduct an inventory, and MTTU is currently in the second year of the inventory process. Spot inventories are also conducted upon receipt of new materials.

Curation Personnel

There is a Curator of Anthropology (75%), a Collections Manager (100%), a Documentation Specialist (100%), several student assistants (65 hours a week), and research assistants (100

hours a week). Dr. Johnson is the Curator of Anthropology.

Curation Financing

Curation is financed as overhead in the state budget, through private donations.

Access to Collections

Access to the collections is limited to MTTU staff and researchers by permission. A written letter of intent, a research design, and a list of the collections needed must be received and approved a minimum of two weeks in advance of the visit. No direct access to the collections area is allowed. Collections are pulled by staff, and researchers conduct analysis on them under direct supervision in the work room.

Future Plans

MTTU is currently expanding into a new wing to alleviate space stress, and current storage unit arrangements are being evaluated in an attempt to free up additional space. Upgrades to the current database system are also being discussed.

Comments

1. MTTU is accredited by the American Association of Museums. Their standard care of collections meets or exceeds existing federal guidelines and standards for archaeological curation and modern archival preservations.
2. Staff are organized, dedicated, and well informed.
3. The only difficulty MTTU was experiencing at the time of the assessment was the overloaded database. St. Louis District staff are confident that MTTU will resolve this issue in a timely and efficient manner without outside assistance or input.

Natural History Museum of Los Angeles County

Los Angeles, California

Collection Summary

Collections Total: 7.5 ft³ of archaeological materials and human skeletal remains. 0.4 linear feet of associated records.

Volume of Archaeological Materials: 3.5 ft³
Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 4.0 ft³
Compliance Status: The human skeletal remains have not been inventoried for NAGPRA compliance. Fort Bliss is claiming responsibility for the remains.

Linear Feet of Records: 0.4 linear feet (4.4 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is financed through several channels including budgeted funds from the county, fund raising events, an endowment fund managed by a private museum foundation, grants, and photocopying fees.

Repository Summary

DATE OF VISIT: February 11-12, 1997

PERSON CONTACTED: Chris Coleman

The Natural History Museum of Los Angeles County curates more than 35 million artifacts and

specimens, making it the third largest natural science and cultural history museum in the United States. Opening in 1913, the museum was built in Exposition Park. The original portion of the museum is almost overshadowed by the additions made to the structure.

Collections in the Anthropology Section include both archaeological and ethnographic items and related archives. The Archaeology collection

numbers 100,000. The Anthropology Section archives contain 350 linear feet of records plus 10,000 photographs. Collections recovered from Fort Bliss, Texas, include approximately 3.5 ft³ of artifacts, 4.0 ft³ of human skeletal remains, and 4.4 linear inches of associated documentation. Percentages of material classes are outlined in Table 77.

Table 77.
Percentages of Material Classes in the Fort Bliss Archaeological Collections Housed at the Natural History Museum of Los Angeles County

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Chipped Stone	3
Faunal Remains	3
Botanical Remains	15
Soil Samples	1
Human Skeletal Remains	32
Textile	27
¹⁴ C Samples	1
Other	7
<i>Historic Artifacts</i>	
Glass	3
Plastic Containers	8
Total	100

Note: Percentages of material classes are based on volume. Other prehistoric materials include wood artifacts, sinew, and fibers.

Structural Adequacy

Collection Storage Area 1—Anthropology Collections

The majority of the archaeological collections are stored in a 2500 ft² room located on the mezzanine level between the second and third floors of the new building annex. The room has an exposed concrete ceiling and a concrete floor covered with tile. The walls are concrete block covered with sheetrock. Three rows of storage units include metal cabinets and open metal shelves. There are a couple of tables for study, some map cases, filing cabinets, a storage area for special collections, and an office area for the curator of archaeology. No windows are present. Doors are metal panel.

Collection Storage Area 2—Anthropology Collection Manager Office

The Anthropology Collection Manager, Chris Coleman, keeps the majority of the records in his 120 ft² office. The room is on the third floor of the original museum structure in the southwest corner. The floor is concrete, the ceiling has suspended acoustical tiles and the walls are plaster. One exterior wall has two wood framed windows. Numerous filing cabinets are lined against one wall. Two work tables are placed in the center of the room. A desk and shelves take up the rest of the wall space. A single wood panel door has a glass window.

Collection Storage Area 3—Human Skeletal Remains

The 120 ft² room set aside for human skeletal remains is located on the third floor of the museum near staff offices. The human skeletal remains are kept in a former office and conservation laboratory. It has one exterior wall with two wood framed windows. The floors are concrete and covered with tiles, the ceiling is concrete covered with plasterboard. Two large study tables are at the center of the room. The walls are surrounded by open metal shelving units. There is a sink and small counter top in one corner of the room. The glass on the single, hollow wood door is covered for privacy.

Environment

Collection Storage Area 1—Anthropology Collections

No heating or cooling system is employed. Relative humidity is monitored. The temperature fluctuates between 50°–70° Fahrenheit. Pipes are located above some of the collections. A past leak was corrected immediately without damage to any federal collections. Cleaning and maintenance occurs when needed. Fluorescent lights have ultraviolet (UV) filters.

Collection Storage Area 2—Anthropology Collection Manager Office

A forced-air heating system and a window air conditioner provide environmental control. Humidity levels are not monitored. Fluorescent lights have UV

filters. Cleaning and maintenance occur on an as-needed basis.

Collection Storage Area 3—Human Skeletal Remains

The room is cooled with a window air conditioning unit. Lights are fluorescent with UV filter sleeves. A hygrothermograph monitors the relative humidity. Cleaning and maintenance are conducted as-needed.

Pest Management

An integrated pest-management system is employed using no-pest strips to monitor storage areas. Upon identification of a pest problem, the conservator is immediately consulted. Rooms are regularly sprayed under the supervision of a conservator.

Security

Security for the overall museum includes a 24-hour in-house guard. All windows have locks and all exterior doors have dead bolt locks. Access to storage areas is controlled by appropriate staff. No unauthorized access has been reported for any of the collection storage areas.

Collection Storage Area —Anthropology Collections

Two sets of double doors provide access to this storage area. These remain locked. Each set of doors requires a different key. No windows are present.

Collection Storage Area 2—Anthropology Collection Manager Office

This collection area has one door entered from the hallway and another door connecting to the office of the section head. Both have key locks. Windows are secured with a latch lock and can not be accessed from the ground.

Collection Storage Area 3—Human Skeletal Remains

A single, key-locked door provides access from the hallway. Windows have a latch lock and are not accessible from the outside. Access is strictly limited by personnel.

Fire Detection and Suppression Systems

Manual fire alarms directly connected to the local police are located throughout the public areas and all hallways within the museum. Each room contains a fire extinguisher. Collection Storage Area 1 also has a sprinkler suppression system and fire doors. Public areas also contain smoke alarms.

Archaeological Storage Materials

Storage Units

Storage units in Collection Storage Area 1 consist of metal cabinets with wood drawers and an open metal shelving unit each lined with ethafoam (Figure 96). The metal cabinets have permanent, metal label holders on the front of each cabinet. The labels are paper slips that have the accession number, area of origin, and a brief description of the cabinet contents typed or printed in permanent ink. There are open, unlabeled shelving units in both Collection Storage Areas 1 and 3. The shelves in Collection Storage Area 1 have wood boards screwed to the sides of the shelving units for better earthquake security.



Figure 96. Collections from Fort Bliss are housed on open metal shelving in Collections Storage Area 1. Boards are attached across the front of the units as earthquake protection.

Primary Containers

In Collection Storage Area 1 the primary containers are wood drawers lined with a layer of ethafoam with paper labels stapled on the outside (Figure 97). Each label is typed with the accession number, drawer number, a short description, collection name, and area of origin. The oversized artifacts on open metal shelving have no primary or secondary container; however, the shelf is lined with a thick piece of ethafoam.



Figure 97. Wood drawers hold artifact collections from Fort Bliss in Collections Storage Area 1.

The primary containers for the human skeletal remains are acidic boxes of different sizes. A large, self-adhesive label has been placed on each box. Preprinted on the label is the museum name and section, the date the label is printed, and the letters "HSR" for "human skeletal remains." Also preprinted on the labels are the following types of information with space provided for the details: box number, geographic location (area of origin), site name, site number, and accession number.

Secondary Containers

Secondary containers for the collections in the metal cabinets in Collection Storage Area 1 are plastic bags of varying types with varying methods of labeling, including direct with permanent marker (Table 78). The human skeletal remains have varying secondary containers including plastic bags, clear acrylic boxes and cardboard boxes. Many are wrapped in archival tissue paper.

Table 78.
Percentages of Secondary Containers Present in the Fort Bliss Collections Housed at the Natural History Museum of Los Angeles County

Secondary Container	Percentage
Plastic Bags	90
Cardboard Boxes	5
Acrylic Boxes	4
Loose	1
Total	100

Note: Percentages of secondary containers are based on volume.

Laboratory Processing and Labeling

Paper label tags attached with cotton string are common with some of the fragile, organic materials that could not be directly labeled. Some do have direct labels in permanent ink. The accession number is employed since no official site numbers were given to the location. The oversized artifacts have paper labels attached with cotton string. All of the collections were sorted by material class, but none are cleaned due to the fragile nature of the artifacts.

Human Skeletal Remains

Human skeletal remains are stored in a room set aside for this sole purpose and total 4.0 ft³. The minimum number of individuals was not determined.

Records Storage

Approximately 4.4 linear inches of associated documentation are housed at this facility. The records are stored in the Chris Coleman's office in metal filing cabinets. The hanging files contain acid-free folders labeled with ink on paper under clear plastic tabs. The records are generally in very good condition; however, contaminants such as staples and paper clips are present.

Paper Records

There are 2.4 linear inches of administrative records, most of which are correspondence and artifact inventories.

Report Records

There are 1.75 linear inches of report records. These records consist of report drafts, photocopies of reports, and published articles.

Photographic Records

Photographic records total 0.25 linear inches and include 8-x-10-inch black and white prints and negatives. The photographic records are not labeled and are housed in an acidic manila envelope, with the exception of one print that is labeled in pencil and stored in an archival quality paper envelope.

Collections Management Standards

Registration Procedures

Accession Files

Accession files are created and maintained by the registrar. Archaeological materials are accessioned upon receipt. Donor files and artifact lists are also created and maintained in the office of the Registrar.

Location Identification

The physical location of each collection or object is noted in a binder serving as a guide to the collections. A computerized database also includes location information.

Cross-Indexed Files

Files are cross-indexed between the collection donor files and artifact lists. Any artifact or collection can be searched and located through the computer database. These are filed in numerical and alphabetical order. Photographs are organized numerically according to the negative numbers.

Published Guide to the Collections

No published guide to the collection exists.

Site-Record Administration

The Smithsonian Institution's River Basin Survey trinomial site-numbering system is employed; however, not all artifacts have come from sites that

have been given numbers employing the trinomial system.

Computerized Database Management

The archaeological collection information taken from the card catalog is stored in a customized database using FileMaker Pro, a Macintosh database.

Written Policies and Procedures

Minimum Standards for Acceptance

Few archaeological collections are currently accepted due to restricted space. Any accepted collection must have clear, legal provenance and complete archaeological provenience.

Curation Policy

The museum follows a comprehensive, written curation policy.

Records-Management Policy

Museum-wide records are maintained by the registrar according to the registrar's policies and procedures; however, the collection manager of the anthropology section maintains a specific archives of records pertaining to artifact and specimen collections within that section. The collection manager has established a unique system for maintaining the anthropology section archives.

Field-Curation Guidelines

No field-curation guidelines have ever been established.

Loan Procedures

Loans are processed by the registrar using standard loan forms for incoming, outgoing, and long-term loans. The anthropology section has additional restrictions on loaned materials including the banning of photography, providing proof of adequate insurance, and requiring payment of shipping fees by the borrowing institution.

Deaccessioning Policy

The policy allows deaccessioning of objects upon written approval provided by the registrar, the director, and the division head.

Inventory Policy

The inventory policy includes a system of categorization which determines the inventory schedule of each category of objects. Only a few key staff members know the schedule for security purposes; however, it is known that collections with high monetary value are inventoried every five years.

Latest Collection Inventory

This could not be determined due to the secretive nature of the inventory policy.

Curation Personnel

Curation personnel include the section head and curator of ethnology, Dr. Margaret Hardin; the assistant curator of ethnology, Dr. Chris Steiner; emeritus curator of archaeology, Dr. Charles Rozaire; the assistant curator of archaeology, Dr. Karen Wise; and the anthropology collection manager, Chris Coleman.

Curation Financing

Curation is financed through several channels including budgeted funds from the county, fund raising events, an endowment fund managed by a private museum foundation, grants, and photocopying fees.

Access to Collections

Access to collections must be approved by one of the appropriate curation personnel. All persons except for staff members must be supervised while in the collection storage areas.

Comments

1. The museum is structurally sound.
2. Environmental controls are inadequate.
3. Only Collection Storage Area 1 has an appropriate fire suppression system.
4. An integrated pest-management system is employed.
5. Security measures meet the 36 CFR Part 79 standards.

6. Many older collections frequently have confusing or missing information; however, the current archaeology collections manager has been successful in researching and reorganizing these troublesome collections.

Recommendations

1. Install a dry-pipe zoned sprinkler system in the collections storage rooms. Install either smoke detectors or heat sensors that are wired directly to the local fire department for quick response to an emergency situation.
2. Install environmental controls in the collections storage areas that do not have them. Monitor and control relative humidity levels in collection storage areas.
3. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.
4. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label bags directly with indelible ink. Additionally, labels made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), and printed with indelible ink, should be inserted into the secondary containers.
5. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.
6. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Nevada State Museum

Carson City, Nevada

Collection Summary

Collections Total: 2 ft³ of archaeological materials. 0.1 linear feet of associated records.

Volume of Archaeological Materials: 2 ft³
 Compliance Status: Collections require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.25 linear inches)

Compliance Status: All associated records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Financing for curation occurs at several levels. An annual state budget exists for salaries, building maintenance, and supplies. Responsible federal agencies establish agreements with the museum for curation, and a curation fee funds the cultural resource management collection.

Repository Summary

DATE OF VISIT: March 24-25, 1997

PERSON CONTACTED: Amy Dansie and Maggie Brown

Most of the information for this repository summary was collected during a February 1994 visit to the Nevada State Museum for the U.S. Navy EFA West project (Halpin and Holland, 1997). During that visit collections from Naval Air Station (NAS) Fallon

were assessed; the results can be found in the aforementioned report. Hawthorne Army Ammunition Plant (AAP) collections are assessed in this report and consist of lithic and ceramic artifacts. The Hawthorne AAP collection is stored in the museum's off-site storage facility—the Indian Hills Annex, which lies on the outskirts of Carson City. The Annex has offices and is a storage facility for archaeological and paleontological collections. It is also the location of the regional information center that houses most of Nevada's archaeological site files and associated records.

Structural Adequacy

The Indian Hills Annex was built in 1982 and encompasses 15,408 ft² (Figure 98). The single-story building was constructed to house the Anthropology laboratory, the collections storage area, and offices. A wing, identified as the "quarry room," which contains a receiving/loading dock, was added some time after construction of the original building. Multiple activity areas within the annex include a mechanical/utility room, offices, a materials/supplies storage area, an equipment bay, an artifact holding area, an artifact washing area, an artifact processing laboratory, a temporary artifact storage area, an artifact study room, a records study room, a photographic storage room, and a records storage room. The facility's exterior is cinder block and the foundation is concrete. The roof is 15 years old and is without leaks or cracks. Interior walls are cement and concrete block.



Figure 98. The Indian Hills Annex of the Nevada State Museum.

The Hawthorne AAP collections are stored in Room 121 in the Indian Hills Annex. The ceiling, constructed of wood with metal ceiling joists, has exposed insulation. All of the walls are windowless. Two of the walls are made of plasterboard and the other two are concrete block and cement. There are two sets of interior doors, are both made of wood panel. The storage area is filled to 70% capacity.

Environment

The only environmental control for the facility is an electric forced-air heater. Relative humidity is not monitored, nor is it controlled. The temperature is

generally targeted at 55° Fahrenheit, but according to a note on the wall, staff are instructed to lower this on the weekends. The unfiltered fluorescent lamps provide the only light. The storage area is not regularly maintained and the heating source has no filters. Dust was evident on the collections near the exterior door.

Pest Management

A professional pest-management company visits monthly to monitor and control insects and rodents. Traps are used for pest monitoring. Dead insects were noted at the time of the February 1994 visit.

Security

The facility is surrounded by a chain-link fence with a padlocked gate. A garage door provides limited access for receiving and loading. The doors to the artifact storage area are kept locked; however, a key hangs visibly near the door. The artifact storage area has no windows. Access to the building is controlled. No unauthorized entry into the building has been reported.

Fire Detection and Suppression Systems

The facility has several fire alarms including heat sensors, manual fire alarms, and a sprinkler suppression system equipped with an alarm wired to the fire department. The storage room contains a single fire extinguisher near a second room.

Archaeological Storage Materials

Storage Units

The non-movable, open metal shelves measure 98 x 18 x 48 inches (h x d x w). Hawthorne AAP collections, which consist of 99% lithic artifacts and 1% ceramic artifacts, are housed here.

Primary Containers

The primary container is an acidic cardboard box held together with glue and closed with folded flaps.

The torn box measures 23.5 x 12.0 x 12.5 inches (l x w x h). The box is labeled directly in ink with the site number 26MN2002.

Secondary Containers

The secondary containers are an acidic envelope and two open acidic cardboard boxes. Labels on the boxes are written in pencil on an acidic paper label that are paper clipped to the container. The label on the envelope was in black ink and written directly on the envelope. Labeling is inconsistent but information such as the site number, catalog number, project, and provenience were present. Plastic bags were nested within the boxes.

Laboratory Processing and Labeling

All of the artifacts have been cleaned. Approximately 95% of the materials have been labeled with the site number in ink. The small flakes were not labeled. The collection is also sorted by material class and the larger artifacts are individually bagged.

Human Skeletal Remains

Nevada State Museum holds no human skeletal remains for Hawthorne AAP. Human skeletal remains from NAS Fallon were assessed during the 1994 visit and reported in the EFA West report (Halpin and Holland 1997).

Records Storage

The records, which are in fair condition, are stored near the artifacts on the same open metal shelving unit. One primary container is a dusty hinged plastic box that measures 5 x 12 x 10 inches (h x l x w) with the records separated by manila folders. The secondary containers are manila folders with self-adhesive labels marked in ink and pencil. The other primary container is a dusty, plastic folder with an inside spring clip on the right side and a pocket on the left. The folder measures 12.5 x 9.5 x 0.25 inches (l x h x w). The record total is 1.25 linear inches.

Paper Records

Paper records consist of less than 1 inch of excavation records and less than 1 inch of administrative records.

Photographic Records

There is less than 1 linear inch of black and white prints. A black and white aerial photograph is duct taped to the inside of the plastic folder.

Maps and/or Oversized Documents

A hand drawn map is clipped on the top of the black and white aerial photograph. This has water damage and the ink has run. The plastic box contains one or two maps.

Collections Management Standards

Registration Procedures

Accession Files

All materials are accessioned upon receipt.

Location Identification

Physical location of the artifacts within the storage area is identified in the accession files and within the computer database.

Cross-Indexed Files

Files are cross indexed by site and accession numbers.

Published Guide to Collections

No published guide to the collection exists.

Site-Record Administration

The Smithsonian Institution's River Basin trinomial site-numbering system is employed.

Computerized Database Management

Amy Dansie uses a computerized database management system for managing the ethnographic and archaeological collections. Programs too large for disks are backed up onto two to three different hard drives and disks, which are stored in the museum vault. Backups are made after any change is made to the

database. At least one backup is stored off-site at Amy Dansie's home, and backup disks also are stored in the museum vault at the Guild Annex, which is attached to the main museum building.

Written Policies and Procedures

Minimum Standards for Acceptance

No minimum standards for acceptance of artifacts have been written; however, when accepting documentation the museum requests that two report copies, copies of the site records, and a catalog of the collections be included in the submittal.

Curation Policy

No written curation policy exists.

Records-Management Policy

No records-management policy has been written for the Nevada State Museum.

Field-Curation Guidelines

No written field-curation guidelines have been created.

Loan Procedures

The museum's loan procedures have not been detailed in a written document.

Deaccessioning Policy

The curator of the collection presents a deaccessioning request to the board. A vote among the board members makes the decision. Federally owned collections are not deaccessioned without the approval of the responsible agency.

Inventory Policy

No inventory policy is in place.

Latest Collection Inventory

The date of the latest collection inventory is unknown.

Curation Personnel

The Department of Anthropology staff include two permanent full-time state-funded professional positions, the Curator, Don Tuohy, and the

Anthropologist, Amy Dansie. Sue Anne Montileone is a part-time curation assistant.

Curation Financing

Financing for curation occurs at several levels. An annual state budget exists for salaries, building maintenance and supplies. Federal agencies support collections care activities with curation agreements. A curation fee funds the cultural resource management collection.

Access to Collections

The Anthropologist, Amy Dansie, approves written requests only from Native Americans and researchers. The letter must provide a reason for the request and must arrive two weeks prior to the desired date of the appointment.

Future Plans

Future plans include linking all information systems on the computers, updating the accession ledger, improving the physical storage space, and creating a comprehensive plan for curation.

Comments

1. The building is structurally sound.
2. Humidity levels are neither monitored nor controlled and there are no adequate environmental controls.
3. Appropriate pest-management procedures are utilized.
4. Security measures are not adequate.
5. Fire detection and suppression systems are adequate.
6. Collections are not adequately protected from damaging ultraviolet light.
7. Primary and secondary containers are acidic.

8. The original documentation is stored with the artifacts.

9. Records are not archivally processed, and a duplicate copy has not been created.

Recommendations

1. Install environmental controls equipped with a dust filtration system to control the temperature, relative humidity, and dust levels. Monitor both the relative humidity and temperature in the collection storage areas.

2. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label bags directly with indelible ink. Additionally, labels made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), and printed with indelible ink, should be inserted into the secondary containers.

3. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.

4. Remove contaminants and acidic folders from the original records. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection.



New Mexico State University Museum

Las Cruces, New Mexico

Collection Summary

Collections Total: 21.1 ft³ of artifacts and human skeletal remains. 0.25 linear feet of associated records.

Volume of Archaeological Materials: 20.8 ft³
Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: 0.3 ft³
Compliance Status: One individual thought to have been recovered from White Sands Missile Range, New Mexico, is housed at the New Mexico State University Museum.

Linear Feet of Records: 0.25 linear feet (3 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are not adequately funded. Museum overhead funds are used to store the collections in their current condition.

Repository Summary

DATE OF VISIT: September 13, 1996

PERSONS CONTACTED: Patricia Miles and Marilyn Norcini

New Mexico State University Museum has been storing archaeological collections for several years and is currently trying to give them back to the land owners. The museum collects, preserves, and exhibits materials relating to the natural sciences, social sciences, humanities, and folk arts of the Southwest and no longer wants to be involved in curating archaeological materials. Approximately

21.1 ft³ of collections recovered from White Sands Missile Range (WSMR) are located in two different buildings on the New Mexico State University campus. Percentages of material classes are outlined in Table 79.

Structural Adequacy

Repository 1—Kent Hall

Repository 1 is Kent Hall, a Spanish mission-revival building that houses the museum's exhibit and storage areas, and offices (Figure 99). Kent Hall, built in 1957, was originally used as a dormitory. The Museum moved into the facility in 1980. The horseshoe shaped structure has a concrete foundation

Table 79.
Percentages of Material Classes Present in the
White Sands Missile Range Collections Housed
at the New Mexico State University Museum
by Repository

Material Classes	Repository 1	Repository 2	Total
<i>Prehistoric</i>			
Chipped Stone Objects	81	80	80
Ceramics	0	3	3
Flotation Samples	0	3	3
Botanical Samples	0	1	1
Human Skeletal Remains	19	0	1
<i>Historic</i>			
Metal	0	12	11
Other	0	1	1
Total	100	100	100

Note: Percentages of material classes are based on volume. Other historic materials present include ceramic/crockery items and pieces of glass.

and brick exterior walls covered with plaster. A center courtyard is surrounded on three sides by the building and arched gateways on the fourth side. The building has a red-tiled roof and a brightly colored, mosaic-tiled cupola. The building has proven to be structurally solid, although staff have noticed cracks in the foundation and the roof occasionally leaks during heavy rains. There are two floors above ground and one level below grade. There are many windows on both floors above grade, but no windows in the basement. Asbestos is present in the building. The building is regularly maintained by the university facilities personnel.



Figure 99. Exterior of Kent Hall (repository 1), which houses the New Mexico State University Museum in Las Cruces.

The collections storage area, which is located in the basement, encompasses approximately 1800 ft². The room has a concrete floor covered with asbestos tiles, painted concrete block interior walls, and a concrete ceiling.

Repository 2—Storage Bays

Repository 2 is a row of storage bays used by several departments on campus for surplus storage (Figure 100). Bays 58 and 59 have been allocated to the museum for excess storage of archaeological collections. These bays were constructed during the 1980s. The museum moved some of their archaeological collections into bays 58 and 59 in 1987. Each bay encompasses approximately 200 ft² of space and is connected to neighboring bays on three sides. The structure has a poured cement slab foundation and prefabricated plaster-covered sheetrock exterior walls over a wood frame. There are no windows, only an overhead sliding door that serves as an entrance into each single car garage-type structure. During the time of the assessment, a significant amount of water from a severe storm the night before had leaked into the bays where the collections are housed, causing damage to some of the boxes stored on the floor.

Environment

Repository 1—Kent Hall

Electric heating and cooling wall units with individual thermostats are used to keep the temperature at a comfortable level to the people who



Figure 100. An off-site storage facility used to house collections from New Mexico University (repository 2); the open bays indicate the areas used by the museum.

work there. The humidity level in the basement where the WSMR collections are stored is monitored with a hygromograph, but not regulated. A dehumidifier is available to use is needed. Collections storage areas are illuminated with fluorescent bulbs without ultraviolet (UV) filters. Museum staff are responsible for the cleaning of the storage areas.

Repository 2—Storage Bays

No environmental controls and no windows are present in this structure. It was hot, very dusty, and humid during the time of the assessment. Natural light coming through the open bay door was the only light source. Cleaning chores are performed by curatorial staff as needed, but had not been performed in quite a while.

Pest Management

Repository 1—Kent Hall

Sticky traps are used to monitor any pest infestations and a professional pest-management company is called as-needed. Staff are unsure as to which pesticides are used. It was noted that the Museum occasionally has a problem with beetles in the collections storage room.

Repository 2—Storage Bays

A pest-management program is not in effect at this facility. At the time of our assessment, an infestation of spiders and cobwebs was noticed.

Security

Repository 1—Kent Hall

Public access is restricted to the areas in Kent Hall that house offices and storage spaces. Staff and students working in the building have access to the two floors above grade. To get to the basement level, a key is needed to allow elevator access to the basement. All of the collections storage areas are kept locked. Campus security patrol the building on a regular basis. Thermal motion detectors have also been installed throughout the museum.

Repository 2—Storage Bays

The sliding overhead door on the storage bays is secured with a key lock. Access to these keys is limited. There is a chain link fence that surrounds the rows of storage bays; however, the gate is left open, at least during the day. Campus police patrol the area on a regular basis.

Fire Detection and Suppression Systems

Repository 1—Kent Hall

Fire detection measures present in Kent Hall consist of heat sensors and smoke detectors that are wired directly to the campus fire department. Fire suppression measures consist of fire extinguishers placed throughout the building.

Repository 2—Storage Bays

No fire safety measures have been installed in these facilities.

Archaeological Storage Materials

Storage Units

Repository 1—Kent Hall

Storage units in Repository 1 consist of adjustable metal shelving units that have an enamel finish and measure 7.0 x 9.0 x 1.5 feet. There are seven shelves per unit with an additional six inches of clearance between the floor and the bottom shelf to protect collections from any possible flooding in the basement. A metal cabinet with a baked enamel finish that measures 4.5 x 1.5 x 2.0 feet is also used to house a small collection from WSMR (Figure 101).

Repository 2—Storage Bays

The same metal shelving units used in Repository 1 are also used in the storage bays. The shelving units and each shelf have been numbered with adhesive labels to facilitate locating the collection within the storage bays. A piece of paper on each shelf has the project numbers of the collections that should be stored on the shelf. These finding aids, however, are



Figure 101. A metal storage unit with drawers houses small artifacts with paper and plastic envelopes as primary containers. A hygromograph on the unit monitors both temperature and relative humidity.

loose and have a tendency to get shuffled around and possibly become misplaced around the shelving units.

Primary Containers

Repository 1—Kent Hall

Approximately 1.6 ft³ of the collections associated with WSMR are stored in the basement of Kent Hall. An acidic cardboard box (0.3 ft³), taped shut, is used to house the human skeletal remains thought to have been recovered from WSMR. The box is labeled with a paper tag taped to the box. A black marker was used to write the label information.

A metal drawer (1.3 ft³) also contains a small collection of lithic artifacts recovered from WSMR. The drawer is labeled with a piece of paper inserted into the metal label holder on the front of the drawer. This label information is also written in black marker.

Repository 2—Storage Bays

Various sized acidic cardboard boxes are used to store the 19.5 ft³ of collections housed in the storage bays. The boxes are very dusty and have been labeled either directly on the box with a marker, or on a piece of paper that has been taped or stapled to

the box. A loose sheet of paper lists the project numbers that should be found in the collections on each shelf; however, one of the collections associated with WSMR could not be located. Patricia Miles thinks that staff at Human Systems Research, Las Cruces may have requested that particular collection, which means it may be stored at the Human Systems Research offices at this time.

Secondary Containers

Most of the secondary containers used (70%) are paper bags, many of which are stapled and/or taped shut. Plastic bags constitute approximately 13%, and 10% of the artifacts do not have any secondary container. For the remainder of the collection (7%), various secondary containers were used, including plastic film canisters and small acidic cardboard boxes.

Laboratory Processing and Labeling

The majority of the 21.1 ft³ of archaeological materials have been cleaned (97%) and sorted by material class (96%). Approximately 24% of artifacts have been labeled directly on the surface of the artifacts with black ink on a white coat of paint and sealed with a clear top coat.

Human Skeletal Remains

One small acidic cardboard box of human skeletal remains thought to have been recovered from WSMR is stored in the collections storage room in the basement of Repository 1—Kent Hall. The box has a paper label taped to the box. Data on the label include the catalog number, site name, project number, date, and contents. The partial remains of at least one individual are in good condition and have been directly labeled with black ink on a clear coat of polish. The skeletal elements have been wrapped in acid-free tissue paper and placed within thick plastic zip-lock bags or within a plastic vial. The museum inventory says that these remains were used for years to demonstrate cranial morphology in the anthropology lab and forensics class at Breland Hall.

Records Storage

Less than one linear foot (three linear inches) of associated documentation is located at the Museum. These records consist of project records and reports generated from work on WSMR. The records are organized by project and kept in acidic manila envelopes with closeable metal clasps. The records are given report numbers and filed numerically in a metal four-drawer letter-size file cabinet in Room 212. All of the records are in excellent shape, although a few of the envelopes are torn and damaged from use and crowding in file drawers. Associated documentation consists primarily of paper records such as site forms, artifact summary sheets, artifact analysis forms, site maps, field drawings, and report drafts.

Collections Management Standards

New Mexico State University Museum staff informed the assessment team that they are no longer accepting collections with human skeletal remains, or archaeological collections in general.

Registration Procedures

Accession Files

Accession files are maintained on all current and incoming collections. This documentation is kept in binders and shelved in the curator's office.

Location Identification

The location of the collections can be obtained through their collections database which details the building number/name and shelf location of the boxed collection.

Cross-Indexed Files

Records are cross-indexed in their computer system for many fields of information.

Published Guide to Collections

A published guide to the collections has not been produced.

Site-Record Administration

The Museum follows the site numbers assigned by the Laboratory of Anthropology, Archaeological Records Management Section.

Computerized Database Management

Museum staff are currently entering comprehensive collection information into their computer database system.

Written Policies and Procedures

Minimum Standards for Acceptance

The Museum has a Collections Policy (dated 9/1990) that states the conditions of deposit and areas of interest under which the museum will accept collections. This policy is currently being revised.

Curation Policy

At the time of the site visit, the museum did not have a written curation policy addressing the long-term care of archaeological materials and associated documentation.

Records-Management Policy

At the time of the site visit, the museum did not have a written records-management policy.

Field-Curation Guidelines

At the time of the site visit, the museum did not have written field-curation guidelines.

Loan Procedures

Loan procedures are outlined in the 1990 Collections Policies that is currently being revised. These policies address the purpose of the loan, treatment of the collection during the loan, insurance, transportation, and duration of the loan.

Deaccessioning Policy

A written deaccessioning policy is included in the 1990 Collections Policies that is currently being revised.

Inventory Policy

At the time of the site visit, the museum did not have a written inventory policy.

Latest Collection Inventory

Staff have recently been devoting a lot of time to inventorying the collections for their NAGPRA compliance.

Curation Personnel

Patricia Miles is the Curator of Archaeological Collections and is the only full-time museum personnel with access and responsibility for curation of the collections.

Curation Financing

Curation activities are financed through the Museum. The Museum has not been charging the landowning agencies with collections at the museum for curatorial fees and would like to return the collections to these agencies as soon as possible.

Access to Collections

Access to the collections is granted on a case-by-case basis. Researchers are supervised while using the collections.

Future Plans

There are no future plans for upgrading the condition of the collections or their storage location, as the museum would like to return all of the collections to the landowning agencies.

Comments

1. Repository 2 has no environmental controls; collections are in danger of rapid deterioration.
2. An integrated pest-management system is not in place in either repository.
3. Asbestos is present in Repository 1.
4. Repository 2 does not have adequate security measures.
5. There is no means of fire-detection or -suppression in Repository 2.

6. Archaeological materials and records are not housed in appropriate storage containers.
7. A duplicate copy of all records has not been made.

Recommendations

1. Deposit these collections at a permanent curation facility. This facility should meet the minimum requirements outlined in 36 CFR Part 79.
2. Install environmental controls equipped with a dust filtration system to control the temperature, relative humidity, and dust levels. Monitor both the relative humidity and temperature in the collection storage areas.
3. Remove collections from rooms containing asbestos.
4. Install smoke detectors and heat sensors in repository 2. All fire detection measures should be wired directly to the local fire department. Place fire extinguishers in all collections storage areas and install a dry-pipe, zoned, fire suppression system, if possible.
5. Take steps to provide additional security measures for the collections stored in Repository 2, including installing dead bolt locks on all exterior doors and possibly installing an intrusion alarm wired directly to the local police department.
6. House all artifact material in acid-neutral primary and secondary containers, and place an artifact label inside every secondary container.
7. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. Process and arrange all records according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

New South Associates

Stone Mountain, Georgia

Collection Summary

Collections Total: 35 ft³ of archaeological materials. 5.6 linear feet of associated records.

Volume of Archaeological Materials: 35 ft³
Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for curation of archaeological collections.

Human Skeletal Remains: None

Linear Feet of Records: 5.6 linear feet (67.2 linear inches)

Compliance Status: All associated records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded from overhead generated from archaeological projects.

Repository Summary

DATE OF VISIT: May 6-7, 1997

PERSON CONTACTED: Lotta Danielson

New South Associates, located in Stone Mountain, Georgia, conducts archaeological investigations throughout the United States. A large house (Figure 102) serves as their office, laboratory, and equipment storage areas. Collections from Fort Polk, Louisiana, are stored in two collections storage areas. One collections storage area is located in the laboratory and the other is the attic above the laboratory.



Figure 102. New South Associates offices are located in an 87 year old wooden structure.

Structural Adequacy

The structure is approximately 87 years old. The foundation is concrete and the building frame type is wood. The building is privately owned. External walls of the repository are constructed of wood siding and the shingled roof is original to the structure. No structural problems have been noted in the foundation or the roof. Interior walls are wallboard and floors are wood. Ceilings in the repository are wood with plasterboard. Wood framed windows in the repository are sealed and covered with blinds. The repository is 4000 ft² and has space for offices and report preparation as well as areas for examination of artifacts and documents.

The collections areas are located in a portion of the repository that was added onto the main house. Approximately 70% of the laboratory and the entire attic above it are used for collections storage. No structural problems have been noted in either area by any staff members. There are 16 windows in the laboratory and none in the attic. The attic is 500 ft² and the storage space in the laboratory measures 250 ft².

Environment

Temperature and humidity are not monitored in the repository. It is cleaned by the staff, including the collections storage areas. All artificial lighting in the repository is generated either by fluorescent or incandescent light. Repository utilities were updated in 1994.

The collections areas have no temperature or humidity control, though staff do attempt to maintain the temperature at 72 degrees Fahrenheit using a central air conditioning unit separate from that of the main repository. Other utilities in the collections areas are identical to the rest of the repository.

Pest Management

The repository receives biannual pest monitoring by a contracted professional service. No infestations were noticed either by staff or by the assessment team.

Security

The repository has three intrusion alarms wired to the police department, each dedicated to a specific

portion of the repository, the main house, the collections areas, and the graphics area. This facility has areas of controlled access, and motion detectors located throughout the building. Additionally, exterior doors are secured with dead bolt locks and interior offices use key locks.

Fire Detection and Suppression Systems

The repository, including collections areas, has a fire alarm wired to the fire department and a sprinkler/suppression system. In addition, several fire extinguishers and smoke detectors are located throughout the main house.

Archaeological Storage Materials

Storage Units

Fort Polk collections total 35 ft³ of artifacts. Material classes are listed in Table 80. All containers are stored on metal shelving units (Figure 103) that measure 70.0 x 16.0 x 36.5 inches (h x d x w).

Table 80.
Percentages of Material Classes in the
Fort Polk Archaeological Collections
Housed at New South Associates

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Ceramics	4
Chipped Stone	94
<i>Historic Artifacts</i>	
Glass	1
Other	1
Total	100

Note: Percentages of material classes are based on volume. Other historic materials include botanical samples, soil samples, historic ceramics, metal, and brick.

Primary Containers

All materials are stored in acidic cardboard boxes that measure 15.5 x 12.5 x 10.5 inches (d x w x h). The boxes are labeled directly in marker with information regarding site number, provenience, and material type. The boxes have telescoping lids for



Figure 103. Collections are stored in a variety of secondary containers on steel shelving units.

security. Many are overpacked and show some evidence of compression damage and tearing.

Secondary Containers

All secondary containers are plastic, zip-lock bags. Most are labeled directly in marker with provenience information and include a paper insert with similar information. Bags show some signs of punctures and are nested within one another.

Laboratory Processing and Labeling

All of the Fort Polk materials examined have been cleaned or processed. All materials have been sorted by site number for storage.

Human Skeletal Remains

New South Associates holds no human remains from Fort Polk.

Records Storage

Fort Polk archaeological documentation is stored with the collections in the same type of acidic container used to hold artifacts.

Paper Records

Fort Polk records encompass approximately 5.1 linear feet. The materials are stored in manila folders and are in good condition, but do have some contaminants, such as paper clips and staples, throughout.

Maps and/or Oversized Documents

Approximately 0.5 linear feet of maps from Fort Polk are housed at New South Associates.

Collections Management Standards

New South Associates is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

Ms. Lotta Danielson maintains collections held by the firm.

Curation Financing

Costs associated with curation are incorporated into project budgets.

Access to Collections

Access to the records and artifacts is controlled. Staff require a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

New South Associates has no future plans regarding curation or collections storage.

Comments

1. Temperature and humidity levels are not monitored or controlled.
2. There is no integrated pest-management system.
3. Fire-detection and sprinkler systems for fire-suppression are present.
4. Primary containers consist of acidic cardboard boxes with telescoping lids.
5. Records are kept on shelves with artifacts.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Store record and archaeological materials in a stable environment, which includes measures for monitoring and controlling the temperature, humidity, and dust filtration systems.
3. House all artifact material in acid-neutral primary and secondary containers, and place an artifact label inside every secondary container.
4. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. Process and arrange all records according to modern archival practices and standards. Place documents in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Northern Land Use Research

Fairbanks, Alaska

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 3.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 3.1 linear feet (37.5 linear inches)

Compliance Status: All associated records will require partial rehabilitation to comply with

existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Northern Land Use Research (NLUR) is the contractor or subcontractor of projects, not a permanent curation facility; therefore, it is the responsibility of the agency funding the project to include a stipulation in the contract for long term curation. NLUR has a no-collection policy, but if archaeological materials are made they are sent to the University of Alaska Museum in Fairbanks.

Repository Summary

DATE OF VISIT: May 23, 1997

PERSON CONTACTED: Peter Bowers

The Northern Land Use Research (NLUR) office currently curates approximately 37.5 linear inches of associated documentation recovered from Clear Air Force Station (AFS) and Eielson Air Force Base (AFB).

Structural Adequacy

The NLUR offices are located on the second floor of a large office complex called 600 University Plaza (Figure 104). The building was constructed in the



Figure 104. Front view of the exterior of the building where Northern Land Use Research offices are located.

1970s and the second floor originally housed the state law enforcement offices. The building has a concrete foundation with framed wood slate exterior walls. The roof is composed of built-up asphalt and is original to the building. The building has two floors above grade and one below and is structurally solid, with no major cracks or leaks. Internal renovations include periodical reconfigurations of office partitions due to new rental agreements. There are multiple exterior wood framed windows that are equipped with plastic sun shades. These shades do not offer ultraviolet (UV) protection. There are interior wood panel doors in the NLUR office space. The exterior doors, which have combination locks, are metal panels with glass windows. The building is equipped with running water, heat, restrooms, telephone lines, and electricity.

Record collections for Clear AFS and Eielson AFB are stored in two of the offices in the NLUR space. One of the offices, collections storage area 1, measures approximately 168 ft² and the other office, collections storage area 2, measures approximately 240 ft². Interior walls consist of wallboard/plasterboard and the floors are concrete with a plywood floor joint that is covered with carpet. The offices have a suspended acoustical tile ceiling. Each of the collection storage areas have one wood framed window. There is one wood panel door leading into each of the collections storage areas.

Environment

The building NLUR occupies has an oil-operated central furnace with forced-air heat. This system does not have dust filters. Humidity is not regulated or monitored. NLUR is responsible for maintaining their office space, according to their rental agreement. Cleaning is performed by the NLUR staff on an as-needed basis. NLUR contracts out of the office if there are major maintenance concerns. The facility has fluorescent lighting without UV filters. There is no asbestos present in the facility. The collection storage areas environment is identical to the repository.

Pest Management

Precautions are not taken against insects and rodents in the NLUR offices. However, the staff

indicates that there have not been any problems with pest infestation.

Security

Security measures for the building include key locks on all interior doors, combination locks on the exterior doors, and sealed windows. One of the occupants in the building is a 24-hour crisis center; therefore, there are people in the building at all times. There is a sign on the building indicating that it is protected by a private security system, but NLUR staff are not sure if there is a contracted private agency. There have been no past episodes of unauthorized entry.

Fire Detection and Suppression Systems

Fire detection and suppression systems at NLUR consist of smoke detectors that are connected to the wet-pipe sprinkler system. There are also fire extinguishers located in the office area. The local fire department is one mile from the building. The collections storage areas are identical to the repository.

Archaeological Storage Materials

NLUR is not curating artifacts recovered from archaeological projects conducted on any military installations.

Human Skeletal Remains

NLUR is not curating human skeletal remains recovered from archaeological projects conducted on any military installations.

Records Storage

NLUR currently curates approximately 37.5 linear inches of documentation associated with archaeological work performed on Clear AFS and Eielson AFB (Table 81).

Table 81.
Major Classes of Documentation by Installation
Housed at the Northern Land Use Research
(in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Clear AFS	5.00	2.75	1.00	0.25	9.00
Eielson AFB	15.00	6.00	0.25	7.25	28.50
Total	20.00	8.75	1.25	7.50	37.50

Paper Records

NLUR curates approximately 20.0 linear inches of paper records from Clear AFS and Eielson AFB. The administrative records, background records, survey records, analysis records, photograph logs, and paper copies of photographs from these installations are stored in two separate offices. One office, collections storage area 1, has a shelving unit with metal uprights and wooden shelves. The unit has six shelves. This shelving unit measures 5.4 x 0.6 x 6.0 feet (h x d x w). Distance between the shelves varies between 13-14 inches. These shelves are labeled with an adhesive backed tag that was computer generated with the content information. The paper records on this shelving unit consist of all weather field notebooks from Clear AFS and Eielson AFB. These notebooks are labeled directly in marker, pen, or pencil with the project name, location, investigating organization, date, investigator, and book number. The notebooks are in good condition; however, some of the notebooks are held together with rubberbands.

Collections storage area 2 has three letter-sized metal filing cabinets with four drawers per unit. Records for Clear AFS and Eielson AFB are each in one drawer of two separate filing cabinets. The filing cabinets measure approximately 4.3 x 1.8 x 1.3 feet (h x d x w). Each drawer measuring 22.0 x 15.0 x 11.5 inches (d x w x h) is labeled with an adhesive backed tag that is computer generated with the project names. Secondary containers for the paper records are manila folders. The folders are labeled directly in marker, pen, or pencil or with adhesive backed tags that are typed. The tags are consistent with content information. The records are in good condition with the exception of the use of metal contaminants, such as staples, paper clips, and binder clips.

Report Records

Report records for Clear AFS and Eielson AFB total approximately 8.75 linear inches. These report records are stored identically to the paper records in both collections storage area 1 and 2.

Photographic Records

Photographic records at NLUR total approximately 1.25 linear inches, and include color prints, black and white prints, negatives, slides, and aerial photographs. The aerial photographs from Clear AFS and Eielson AFB are stored identical to the paper records in collections storage area 2. The remainder of the photographic material is from Clear AFS and is located in collections storage area 1. This area has another shelving unit that is composed of four particle board shelves that measure approximately 3.3 x 1.0 x 8.0 feet (h x d x w) with a distance of 11-14 inches between the shelves. There are no labels on the individual shelves. The secondary container for the photographic material is a vinyl binder. The binder is labeled with a sticky note on the spine of the binding. The tag is labeled in marker with the installation and year. A second tag, located on the cover, is an adhesive backed pre-made NLUR tag with a note labeled directly in pen on the corners indicating the business phone number and fax number. The color prints, black and white prints, negatives, and slides are all in archival quality sleeves labeled directly in marker with a number (e.g., 1 of) and title (e.g., CR-94-1). The photographs and slides are individually labeled in marker with the title number.

Map Records

NLUR curates approximately 7.5 linear inches of map records. Clear AFS and Eielson AFB have maps, drawings, and graphics stored identically to the paper records located in collections storage area 2. Large rolled maps for Eielson AFB are stored in the corner of the room on the floor of collections storage area 1. Some of the maps are loose and in boxes, other maps are in tubes. Two cardboard tubes contain 6.2 inches of maps from projects conducted on Eielson AFB. The cardboard tubes are labeled with acidic paper tags taped to the tube. The tags are labeled in marker with the installation, date, and contents. These maps are in good condition.

Collections Management Standards

NLUR is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

There is no personnel dedicated to the curation of collections; however, NLUR has a staff of five people. There is an administrative assistant, a graphic specialist/archaeologist, two staff archaeologists, and two owners/archaeologists.

Curation Financing

NLUR is the contractors or subcontractors of projects, not a permanent curation facility; therefore, it is the responsibility of the agency funding the project to include a stipulation in the contract for long term curation. NLUR has a no collection policy, but if archaeological materials are made they are sent to the University of Alaska Museum in Fairbanks.

Access to Collections

Access to the collections is controlled by the NLUR staff.

Future Plans

NLUR does not have a collection policy and is not a curation facility; therefore, it does not have any plans for curation.

Comments

1. The 600 University Plaza Building has a central furnace with forced air that does not have dust filters. Humidity is not controlled or monitored.
2. There is not an integrated pest-management system that includes both monitoring and control.
3. The building has a security system that includes key locks on all interior doors, combination locks on all exterior doors, sealed windows, and possibly a private security company.

4. The repository has a fire-detection system that consists of smoke detectors that are directly connected to the wet pipe sprinkler system. The fire-suppression system in the repository consists of fire extinguishers.

5. Documentation is stored on wood shelves, in metal filing cabinets, and on the floor. Metal, plastic, and rubber contaminants are present on the paper records.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Place documentation in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants. Place the photographic material in archival-quality photographic sleeves, label properly, and store in a secure storage unit.

Northland Research

Flagstaff, Arizona

Collection Summary

Collections Total: 7.9 ft³ of archaeological materials. No associated records.

Volume of Archaeological Materials: 7.9 ft³

Compliance Status: The archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: None

Status of Curation Funding: The temporary storage of the Yuma Proving Ground collection at Northland Research is not funded. The collection storage is provided as a part of the ongoing research contract between Yuma Proving Ground and Northland Research.

Repository Summary

DATE OF VISIT: December 9, 1996

PERSON CONTACTED: Steven Dosh

Northland Research, located in Flagstaff, Arizona, houses approximately 7.9 ft³ of archaeological collections recovered from Yuma Proving Ground (YPG). No YPG project documentation is currently housed at Northland.

Structural Adequacy

The building housing Northland Research (Figure 105) was constructed in 1920 as a duplex, but later



Figure 105. The offices of Northland Research.

functioned as a bus repair facility and then a local television station before being remodeled into office

space for occupation by Northland Research in 1983–1984. The single story building occupies an area of approximately 5850 ft² and is constructed with concrete and stone exterior walls on a concrete foundation. Both the foundation and walls were reported to be structurally solid with no cracks or leaks. The roof, covered with composition shingles, was approximately 10 years old at the time of assessment and was reportedly scheduled to be replaced during the spring of 1997.

The collection materials from YPG are stored on open metal shelves in the office of Steven Dosh, YPG project manager. In this office the floor is concrete covered with carpet, the walls are plasterboard on metal studs, and the ceiling is suspended acoustical tiles. There are no windows and only one wood-panel interior door with key lock. The office occupies an area of approximately 150 ft².

Environment

The facility is heated and partially air conditioned but has no system to monitor or regulate building interior humidity. There are dust filters on the environmental controls. The building is regularly maintained by a maintenance staff that is provided by the building owner. There is no asbestos present and no hazardous chemicals are used or stored within the facility. Unfiltered fluorescent lighting is used throughout the building.

Pest Management

There is no specific program of pest monitoring or eradication; rather, pest control is undertaken on an as-needed basis. There were no reported or observed signs of insect or rodent infestation within the building.

Security

Building security measures include dead bolt locks, controlled access, and window locks. One previous break-in to the facility was reported, although no collection materials were disturbed. All windows are considered to be accessible from the outside. There are no special security measures provided for rooms housing DoD collection materials.

Fire Detection and Suppression Systems

Fire-detection and -suppression within the facility is limited to wall mounted fire extinguishers that are inspected annually by the Flagstaff fire department.

Archaeological Storage Materials

Storage Units

The YPG collection materials are stored on open metal shelves in the office of Steven Dosh, project manager (Figure 106). The collection is organized in primary container boxes by installation and delivery order number. Table 82 summarizes the material classes present in the YPG collection.



Figure 106. Collections from Yuma Proving Ground are housed in acidic cardboard boxes on metal shelves.

Primary Containers

The nine primary containers consist of eight acidic cardboard boxes and one acidic brown paper grocery bag. The collection totals approximately 7.9 ft³ and primary containers range in volume from 0.3 ft³ to 1.3 ft³. Direct labeling in black marker on each

Table 82.
**Percentages of Material Classes in the Yuma Proving
 Ground Collections Housed at Northland Research**

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Ceramics	72
Chipped Stone	27
<i>Historic Artifacts</i>	
Glass	<1
Metal	<1
Total	100

Note: Percentages of material classes are based on volume.

primary container specifies the project and delivery order number. The primary container boxes vary in construction with approximately half being taped or glued, with folding flap security, and the remainder being of folded construction with a telescoping lid. Four of the nine primary containers exhibit tears or compression damage.

Secondary Containers

Secondary containers include acidic brown paper bags and plastic grocery bags that are labeled directly with black ink. The paper bags are secured by folding the tops and fastening with rubber bands, and the plastic grocery bags are secured by tying the handles into a knot. There are tertiary containers nested into two of the secondary containers. Tertiary containers consist of stapled paper bags and nonarchival zip-lock plastic bags. The type of secondary container labeling varies, with some bags having the information filled in on a standard ink stamp form and others having the information hand written without the stamped form. Secondary label information is generally consistent. Some tertiary containers have paper tag insert labels written in ink on ruled notebook paper.

Laboratory Processing and Labeling

All collection materials are cleaned before packaging but only a small portion of the individual artifacts are labeled.

Human Skeletal Remains

Northland Research is not curating any human skeletal remains recovered from YPG.

Records Storage

No project documentation was present at Northland Research.

Collections Management Standards

Northland Research is not a permanent curation facility; therefore, collections management standards were not addressed during the assessment.

Curation Personnel

There are no personnel specifically assigned to the curation of archaeological materials.

Access to Collections

The collection materials are stored in the office of Steven Dosh and are accessible by other Northland Research staff.

Future Plans

No future plans were indicated for building renovation. Currently, Northland Research is awaiting a decision from YPG regarding the permanent disposition of collections.

Comments

1. The building is structurally sound.
2. No standard pest management system has been implemented in the building.
3. Intrusion detection and deterrent measures for the facility do not meet the guidelines established in 36 CFR Part 79.
4. Fire-detection devices are absent in the facility. Adequate and appropriate fire-suppression devices also are lacking.

5. All collections are housed in acidic cardboard boxes; secondary containers consist of acidic paper bags and nonarchival quality plastic bags.
6. No project documentation was present at Northland Research.
7. Lighting in the collection storage area does not have ultraviolet filters in place.
8. Environmental controls are not present throughout the facility.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Label all archaeological materials with indelible ink to prevent information loss if archaeological materials are separated from provenience data.
3. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), label in indelible ink, and insert into the secondary containers.
4. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.

Northwestern State University

Natchitoches, Louisiana

Collection Summary

Collections Total: 16.1 ft³ of archaeological materials. 7.7 linear feet of associated records.

Volume of Archaeological Materials: 16.6 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 7.7 linear feet (92.5 linear inches)

Compliance Status: All associated records require partial to complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are funded through the budget of the Department of Social Sciences at Northwestern State University of Louisiana and through contracts with depositors.

Repository Summary

DATE OF VISIT: December 3, 1996

PERSON CONTACTED: Hiram "Pete" Gregory

Approximately 16.1 ft³ of boxed artifacts and 7.7 linear feet of associated documentation from Louisiana Army Ammunition Plant (LAAP) and Fort Polk were examined at the Northwestern State University (NSU) in Natchitoches, Louisiana (Table 83). The collections consist of both historic and prehistoric elements (see Table 84). Associated

Table 83.
Volume of Archaeological Collections Housed at NSU

Installation	ft ³
Louisiana AAP	16.0
Fort Polk	0.1
Total	16.1

documentation consists of paper records, reports, photographic records, and maps.

NSU was established in 1884 as a Louisiana State Normal School for the preparation of teachers. The school became Northwestern State College of Louisiana by an act of the Louisiana legislation in 1944. It gained its present title and standing in 1970.

Table 84.
Percentage of Material Classes Present in the
Fort Polk and Louisiana AAP Collections
Housed at Northwestern State University

Material Class	LAAP	Fort Polk	Total
<i>Prehistoric Artifacts</i>			
Chipped Stone	26	80	26
Ceramics	4	20	4
Soil Samples	10	—	10
<i>Historic Artifacts</i>			
Ceramic	14	—	14
Glass	12	—	12
Metal	16	—	16
Brick/Masonry	17	—	17
Other	1	—	1
Total	100	100	100

Note: Percentages of material classes are based on volume. Other historic materials include faunal remains and charcoal samples.

The university occupies 916 acres immediately west of the city of Natchitoches, Louisiana. The Department of Social Sciences, where archaeological collections are housed, is located in Kyser Hall (Figure 107).



Figure 107. Kyser Hall, where the Department of Social Sciences is located and archaeological collections are housed.

Structural Adequacy

Kyser Hall was built between 1970 and 1971 as a classroom building. It also contains offices, the Folklife Center, the Williamson Museum, two archaeology laboratories, the social science department, and the microbiology department. A conservation laboratory was recently added. The

foundation of the building is concrete slab and beam, which was resealed in 1996 and found to be structurally sound. The four-story building is of brick masonry construction with no floors below grade. The interior walls were being repainted during the evaluation. The current gravel and tar roof is 15 years old and was resurfaced two years ago. The numerous windows in the building have wood frames and most appear to have been renovated. There is no evidence of window leaks, and all are equipped with shades. The gutter system, the front porch ceiling, the front porch pillars, and floor joints are all either additions or major modifications. Overall, the structure is solid, with no cracks or leaks.

Room 215A, the artifact storage room, has tile floors, painted concrete block walls, and a suspended acoustical tile ceiling. The room covers 68 ft² and has no windows. It is an interior room, accessed through room 215. The door to the hall is solid wood, and the interior door to room 215A is packed wood.

Records are stored in Dr. Hiram Gregory's office, which is a 279 ft² room with a tile floor, painted concrete block walls, and a suspended acoustical tile ceiling. There are two west-facing windows in the room. The aluminum frame windows measure 2 x 5 feet (w x h) and are shaded. There are two interior wood panel doors to this office.

Environment

Kyser Hall is equipped with central air conditioning and has an electric forced-air heating system that is powered by its own generator. The temperature of the building is maintained at around 70° Fahrenheit. The humidity remains between 30–40%, although it is not routinely monitored. Dust filters are not in place on the duct work in the building. Since Kyser Hall is a classroom facility, there is a high volume of pedestrian traffic through the building that generates a fair amount of dust. Fluorescent lighting in the record storage room is not filtered for ultraviolet (UV) radiation. This area and the rest of the building is cleaned daily by the maintenance staff of the university. The artifact collection storage area is not accessible to the maintenance staff, and Dr. Gregory maintains this area on a monthly basis. The artifact storage room is illuminated by incandescent lighting, none of which is filtered for UV radiation, but these

fixtures remain off most of the time. Most raw asbestos has been removed from the building, although some remains in the mechanical room, which is inspected every six months as part of an abatement program.

Pest Management

The university is responsible for pest-management in Kyser Hall. The building is sprayed monthly against potential infestation. The collection storage area and the records storage area are on this schedule. In the past there have been signs of roach infestation, as well as ants. The team saw no signs of infestation at the time of the evaluation.

Security

Kyser Hall is locked between the hours of 10:00 p.m. and 7:00 a.m., but all faculty members have keys to the building. The university police patrol the building twice each night. The campus radio station is located in Kyser Hall and is open at all times, but has a separate entrance from the rest of the building. The building is not wired with an intrusion alarm system. The exterior doors to the building are secured with key locks and dead bolts. The artifact storage room is secured with a key lock. The record storage area has both a key lock and a dead bolt lock. The only incident of unauthorized access to the building in the past was a break-in through a museum widow. A case in the museum was vandalized and projectile points were stolen. Most of the points were recovered. These points were not part of any federal collection held by NSU.

Fire Detection and Suppression Systems

The building was constructed with fire doors and fire walls, and most of the building is of brick/masonry construction. Smoke detectors are installed in the building along with manual fire alarms that are wired to the fire department. Fire extinguishers with current inspection dates are located throughout the building including the archaeology laboratory, the second floor hallway, and the record storage room. There is not an extinguisher present in the artifact

storage room; the nearest fire extinguisher is located across the hall from this room.

Archaeological Storage Materials

Collections from LAAP curated at NSU equal 16 ft³. A small collection from Fort Polk (0.1 ft³) is also curated at this facility. For a breakdown of material classes present in these collections, refer to Table 84.

Storage Units

Collections are stored on unsealed wooden shelving units constructed of plywood and two by fours (Figure 108). The units were constructed in the storage rooms and vary in size to fit the dimension of the area.



Figure 108. Artifacts are stored in a variety of acidic cardboard boxes on wooden shelving units in room 215A in Kyser Hall.

Primary Containers

All the collections are stored in acidic cardboard boxes ranging in size from 0.1 ft³ to 1.6 ft³. Many of these boxes are compressed and overpacked. The boxes are constructed with glue and tape. Most of the boxes are secured with folding flaps or attached

lids, although several have telescoping lids. Eleven of the 14 boxes examined are labeled directly in marker; two boxes have adhesive labels with information written in marker; one box is directly labeled and has an adhesive label. Label information is not consistent from box to box. Some boxes are merely labeled with the installation and project area name. Other boxes include accession numbers, project name, contractor name, site numbers, installation, box number, contents, and processing status.

Secondary Containers

The majority of the artifacts (95%) in the boxes are in plastic bags, both of archival quality and non-archival. Five percent of the artifacts are loose inside the boxes. Some of the loose materials are wrapped in newspaper. Of the plastic bags, about half are secured with zip-locks and half are secured with twist ties, with several of the plastic bags having a folded closure. Plastic or paper bags are contained within some of the secondary plastic bags, and styrofoam packing peanuts are present in several of the bags as additional protection for the artifacts. About half of the bags (49%) are directly labeled in marker. Thirty-two percent of the bags are not labeled, and 19% have paper label inserts.

Laboratory Processing and Labeling

All of the artifacts have been cleaned (100%) and most (81%) have been directly labeled on the surface of the artifact in ink. The majority of the collections have been sorted (71%) by material class in individual plastic bags.

Human Skeletal Remains

No human skeletal remains are associated with the collections housed at NSU. It is their current policy to not curate burials, because they do not have adequate space. They do have a signed agreement with a Native American tribal group to co-curate burials as deemed appropriate by the tribe.

Records Storage

Approximately 7.7 linear feet (92.5 linear inches) of associated documentation from the LAAP were

assessed during this visit. The majority of the records are stored with the archaeological materials in room 215A, either in their own box, or in the same box as the artifacts. A small amount of records is stored in a metal file cabinet with other documentation in Dr. Gregory's office. This is a collection of documentation specifically from the Louisiana Army Ammunition Plant/Bayou Dorcheat Cultural Resource Survey of 1990 and accounts for 8% (7.5 linear inches) of the total documentation assessed.

Paper Records

The paper records constitute 44% of the total documentation (41 inches). These records include administrative records, background records, scopes of work, field notes, excavation records, artifact inventories, site forms, and catalog records. The records are stored in a variety of secondary containers including paper envelopes, file folders, and three-ring binders. They are also bound with staples, paper clips or binder clips. A few of the records are also stored loose.

Report Records

There are approximately 7 linear inches of bound reports that constitutes 8% of the records. They are stored with other documentation by project.

Photographic Records

Photographic records, including black and white contact prints, negatives, and slides, amount to 46% of the documentation collections (43 linear inches). Each negative is stored individually in an archival plastic sleeve within an archival paper envelope. The black and white photographic contact print is glued to the exterior of each envelope along with written information about the photograph. Some of the slides are in archival plastic sleeves and are labeled directly in ink. A collection of slides from the LAAP Testing and Survey-RDX project remains in the original cardboard or plastic containers.

Maps and/or Oversized Documents

Only 2%, or 1.5 linear inches, of the associated documentation consist of maps. These documents are small maps and drawings of sites.

Collections Management Standards

Registration Procedures

Accession Files

Materials and associated documentation are accepted for curation at NSU, but are not formally accessioned. NSU does not have the staff to catalogue collections and assign numbers. An inventory is required to accompany incoming collections. An inventory is not physically verified against the collection. Most collections are stored in the same condition they come to NSU for curation. Basic files are maintained on the collections housed at NSU.

Location Identification

The location of the collection within the repository is not identified in the files. NSU curates federal collections, state collections, and university collections. These three broad categories are the general order in which the collections are grouped in storage. Collections from specific projects are also housed together.

Cross-Indexed Files

There is no overall cataloging system for collections and no files are cross-indexed.

Published Guide to Collections

A published guide to the collections has never been produced outside of the project reports.

Site-Record Administration

Jeff Girard is a regional archaeologist for the state of Louisiana and has an office at NSU in Kyser Hall. Site-records he maintains for the region are the only site-records administered at the repository.

Computerized Database Management

NSU does not have a computerized database for the management of the archaeological collections and associated documentation they curate.

Written Policies and Procedures

Minimum Standards for Acceptance

NSU does not have a minimum standard of acceptance for collections they curate.

Curation Policy

NSU has a drafted plan for curation, which closely follows that of the state of Louisiana. This plan addresses the receipt, the processing, and the use of materials. NSU does not have the resources to process and catalogue all the materials they curate. They request that collections are already processed upon receipt, and a written inventory be included with the collection. The use of the materials is dictated by the agency to which the collection belongs. Materials that fall under the jurisdiction of the Native American Graves Protection and Repatriation Act (NAGPRA) require tribal permission for use.

Records-Management Policy

There is no policy or guidelines for the curation of associated documentation at NSU.

Field-Curation Guidelines

No field-curation guidelines are required or followed for collections made by or accepted by NSU for curation.

Loan Procedures

NSU does not loan out any material.

Deaccessioning Policy

NSU only deaccessions collections when it is stipulated in the contract with the depositing agency. In this instance, the contract must also stipulate how the materials will be deaccessioned.

Inventory Policy

There is no policy that requires an inventory of collections. A written inventory is requested of each agency submitting a collection for curation.

Latest Collection Inventory

The inventory received with a submitted collection is in most cases the only inventory record for the collection. Part of the Department of Defense collections were inventoried in 1993 by the U.S. Army Engineer District, Tulsa, Oklahoma.

Curation Personnel

There is no full-time curator of collections. Dr. Gregory assumes the duties of a curator, but the majority of his time is dedicated to teaching. In addition to the time Dr. Gregory dedicates to collections, there are two student workers hired to assist him at 30 hours a month per student. Curation duties include cataloging of collections, cleaning the artifact areas, shelving of artifacts, and acting as docents.

Curation Financing

All collection facilities and utilities are provided by the university. The university budgets \$30.00 per year for curation activities (this is the smallest amount the university can annually budget to maintain an account annually to keep it open). Other funding is provided by contracts with the depositing agency, although many of the collections are curated without charge. Staff stated that this budget is not adequate. More funds are needed for supplies and additional staff.

Access to Collections

Dr. Gregory and three other staff archaeologists have access to the collections. Researchers are allowed access to the collections with a legitimate research request, proper credentials, and letters of recommendation.

Future Plans

Written guidelines for the curation of archaeological collections are being drafted, based on the guidelines which will closely match those of the State Division of Archaeology. Funding will also be requested of the State Division of Archaeology to help support curation needs. The Social Science Department has acquired a building from the university that was formerly used as a meat processing plant (part of the university's vocational training). This space is being

converted into conservation laboratories and storage for archaeological collections.

Comments

1. The building has proven to be structurally sound.
2. Dust filters are not present on the environmental control systems and humidity levels, while relatively stable, are not monitored on a regular basis.
3. UV filters are not in place on the light bulbs and windows.
4. Curation funding is not adequate to meet the needs of the collections.
5. Security measures do not meet minimal federal standards.
6. Storage units are inappropriate for the long-term curation of archaeological collections.
7. Boxes are not acid-free and many are compressed or showing signs of wear.

Recommendations

1. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.
2. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), label in indelible ink, and insert into the secondary containers.
3. Documentation and archaeological materials should be stored separately. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Place documentation in

acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants. Place the photographic material in archival-quality photographic sleeves, label properly, and store in a secure storage unit.

4. NSU should derive a fee schedule for rehabilitation and long-term curation of collections they currently house, as well as for any future collection they may accept.

5. Renovations of the building designated for archaeological collections storage and conservation should strive to meet required federal standards for such a facility as outlined in 36 CFR Part 79.



Office of Contract Archaeology

University of New Mexico

Albuquerque, New Mexico

Collection Summary

Collections Total: 2.4 ft³ of archaeological materials. 1.9 linear feet of associated records.

Volume of Archaeological Materials: 2.4 ft³
Compliance Status: Archaeological materials require minimum rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.9 linear feet (22.75 linear inches)
Compliance Status: All associated records require minimal rehabilitation to comply with

existing federal guidelines and standards for curation for archaeological documentation.

Status of Curation Funding: The Office of Contract Archaeology has line items in their budget that include materials for processing and packing collections and staff time used to prepare collections for curation. These items are billed to the client. The Office of Contract Archaeology works closely with the Maxwell Museum of Anthropology to prepare collections to the standards of the Maxwell Museum. The Office of Contract Archaeology is not a permanent curation facility; collections are sent to the Maxwell Museum for curation.

Repository Summary

DATE OF VISIT: October 30, 1996

PERSON CONTACTED: Richard Chapman

Approximately 2.4 ft³ of boxed artifacts and 1.9 linear feet of associated documentation from Fort Wingate, New Mexico, are housed at the Office of Contract Archaeology (OCA) in Albuquerque, New Mexico (Figure 109). OCA is affiliated with the University of New Mexico and conducts archaeological work, but is not a curation facility. It



Figure 109. The Office of Contract Archaeology, University of New Mexico is located in a building originally constructed as a tire dealership.

works in conjunction with the Maxwell Museum of Anthropology at the University of New Mexico in preparing collections for curation at the museum. The collections and associated documentation from Fort Wingate that were examined at OCA will be permanently curated at the Maxwell Museum. The collections from Fort Wingate consist of both historic and prehistoric artifacts and survey, photographic, catalog, and analysis documentation. OCA is a nonprofit archaeological contracting agency at the University of New Mexico. OCA moved to its present location at the corner of Lomas and University in 1995. The building was constructed in the 1950s as a tire dealership. Since construction, the building has functioned in several capacities including a laundromat and a flower shop.

Structural Adequacy

The single story building that the OCA occupies has two wings separated by a reception area encompassing a total of 8837 ft². Offices are located in the east wing of the building. The warehouse-type laboratory wing of the facility angles in a northwest direction off the main entrance. Both sides of the building are accessed through the south-facing front entrance and reception area. The main entrance is an aluminum frame glass door. Interior doors lead from the reception area to the laboratory and to the office wing.

The east wing of the building was renovated in 1995 when OCA took occupancy. It is constructed of cement block with a cement foundation and a built-up asphalt roof. This wing has 21 rooms with plasterboard walls, drop ceilings, and carpeted floors. The rooms are offices, an archive, a map library, a computer room, and a storage/mechanical room. Most of the south facade (front) of the building is metal-framed glass windows with blinds. The frames of the windows are not adequately sealed and allow moisture to enter. There are two glass doors that lead to the exterior along the south side of the building. Interior office doors are constructed of wood. Utilities were updated in the east wing with the 1995 renovation. One metal door exits to the exterior on the east side of the building.

The laboratory side of the building is constructed of cement blocks with a cement foundation. Its roof is corrugated metal with six opaque skylights. Fluorescent lights are present in

the laboratory. Walls and floors of the laboratory are unfinished cement. The laboratory is a large open space with several partitioned office spaces and work areas. Interior doors in the laboratory are metal. Three metal overhead loading doors are located on the west side of the building. One of these doors opens directly into the laboratory. The other two open into attached storage rooms with additional interior locked metal doors that lead to the laboratory.

Environment

A heating-ventilating-air conditioning (HVAC) system is not in place at the building occupied by OCA. Heat is provided by a gas-forced air system that is controlled by thermostat and filtered for dust in the office area. Space heaters are employed in the laboratory area. An evaporative cooling system, or "swamp cooler," cools the building. The temperature can be regulated, but not the relative humidity. Lighting is provided by fluorescent bulbs, not filtered for ultraviolet (UV) radiation. Natural light is present in the laboratory area through the skylights. The building is maintained by the custodial staff of the university and is cleaned on a weekly basis.

Pest Management

As part of the University of New Mexico campus, pest management is conducted by the university's service. Traps are used as a precaution against infestation. When OCA first took occupancy of the building, there was a ground squirrel discovered in the laboratory and the office wing had a mice infestation. Those problems were eliminated, but the laboratory side of the building has an occasional trapped bird.

Security

Exterior doors have key locks and intrusion alarms wired to the campus security. Bay doors, exterior gates, and equipment cabinets are secured with pad locks. There are motion detectors present throughout the building. Windows do not open. Access to the collections is limited to employees of OCA.

Researchers using the facilities are supervised by employees. There is no evidence of unauthorized entry.

Fire Detection and Suppression Systems

Fire safety precautions at OCA are also under the jurisdiction of the university. Smoke detectors are present in the building, but no manual alarms or a fire suppression system. One fire extinguisher is present in the east wing of the building. Two extinguishers are in the laboratory; one at the front door to the room and one at a back door. The university inspects and monitors the extinguishers on a schedule, although no tags were present that indicated the last inspection of this equipment. There is a large number of small fire extinguishers stored in a back room that are taken into the field, but these are not part of the building's safety plan.

Archaeological Storage Materials

The 2.4 ft³ of collections associated with a Fort Wingate testing/survey project conducted by OCA staff are being temporarily stored in the OCA laboratory. For a breakdown of material classes present in the collections, refer to Table 85.

Table 85.
Percentage of Material Classes Present in the Fort Wingate Army Depot Collection Housed at OCA

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Chipped Stone	27
Ceramics	18
Faunal Remains	5
Botanical Samples	4
Flotation Samples	36
¹⁴ C	3
Historic Glass	3
Mixed Other	4
Total	100

Note: Percentages of material classes are based on volume. Mixed other materials present include prehistoric charcoal and adobe, and historic paper.

Storage Units

The collections from Fort Wingate are presently stored on a table top in the laboratory. These collections are temporarily stored at OCA while they are being processed. They will be sent to the Maxwell Museum for permanent curation.

Primary Containers

Fort Wingate collections are housed in four acidic cardboard boxes with folding lids. The bottoms of the boxes are secured with tape. These boxes measure approximately 0.6 ft³ each. Boxes are labeled directly in marker with site numbers, field survey numbers, and material classes of the enclosed materials. An artifact inventory on acid-free paper is included in each box. Two boxes have the original site tags rubber banded together and enclosed in the box with the artifacts.

Secondary Containers

Most of the artifacts (90%) in the boxes are in zip-lock plastic bags (Table 86). Ten percent of the artifacts have paper bags as secondary containers (Figure 110). Plastic bags and paper bags are labeled



Figure 110. Plastic zip-lock bags are used as secondary containers for artifacts; some artifacts are additionally packed in aluminum foil and a whole ceramic pot is packed in a cardboard box. Original field tags and envelopes are stored with the artifacts.

Table 86.
Percentage of Secondary Containers in
Fort Wingate Collections Housed at OCA

Secondary Container	Percentage
Plastic Zip-lock Bags	90
Paper Bags	10
Total	100

directly in marker. Within the secondary containers foil is used to store ^{14}C samples. Screening material used to acquire the flotation samples are also kept with the collections. Two complete ceramic pieces have ethafoam within their plastic bags and cardboard supports around the bags as additional protection.

Laboratory Processing and Labeling

Sixty-one percent of the artifacts have been cleaned. Less than one percent have been labeled directly, but all the artifacts have acid-free paper labels enclosed in their secondary containers. All of the collections have been sorted (100%) by material class within their individual primary bag.

Human Skeletal Remains

No human skeletal remains are associated with the collections housed in the OCA laboratory in Albuquerque, New Mexico.

Records Storage

Approximately 1.9 linear feet (22.75 linear inches) of associated documentation was assessed at OCA during this visit. The records are housed on an open wood shelf or loose on top of the boxed archaeological materials in the laboratory area. The records are in excellent condition, with the exception of some dust and paper clips.

Paper Records

Paper records constitute less than one linear foot (1.75 linear inches) of the records. Inventories of the boxed archaeological materials and blank site forms on acid-free paper are contained in an acidic manila file with an adhesive paper label typed "Fort

Wingate Testing." Original survey catalog sheets, flotation processing forms, and site catalogs of artifacts are contained in a three-inch, three-ring vinyl binder. The binder is unlabeled. Tabbed pages separate sites in the binder.

Photographic Records

Photographic records amount to a total of 1.75 linear feet of records, including black and white negatives, contact sheets and prints, color slides, and color prints. Most of the photographic materials are stored in archival sleeves in vinyl three-ring binders. Photologs on acid-free paper are kept with the photographic material. Some color prints remain in the paper film developing envelopes. The binders are labeled directly on their spines with black and white ink. The color slides and archival sleeves are labeled directly with ink.

Collections Management Standards

This facility is not a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no full-time curator at the Office of Contract Archaeology. Kathy Pierce is the Laboratory Director. OCA has a core staff of 20 employees, although the staff has numbered 250 when large contracts were being fulfilled. The staff consists of archaeologists, analysts, and cartographers.

Curation Financing

Curation activities are financed through each project's contract. Line items are included in the budgets for each project to cover the costs of packing materials and labor to process collections. Collections are processed according to the Maxwell Museum's standards.

Access to Collections

Staff members working in these offices have access to the collections. Researchers are granted access upon request with the supervision of staff. Because OCA is affiliated with the University of New

Mexico, the collections are frequently used by students conducting research.

Future Plans

OCA in the past year relocated to its present facility. No major changes or improvements are being planned.

Comments

1. The building has proven to be structurally sound.
2. An HVAC system is not in place at this facility.
3. Temperature levels can be controlled by thermostat in the office areas of the building, however, humidity levels are neither monitored or controlled in the offices or the laboratory.
4. UV filters are not in place for the light bulbs or windows.
5. Water leakage occurs from the windows along the south facade of the building.
6. Fire detection measures are limited to smoke detectors, and fire suppression measures consist of three fire extinguishers.
7. Building security meets the minimum federal standards for safeguarding of archaeological collections.
8. OCA will transfer collections to the Maxwell Museum when processing of the artifacts is complete.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Label all archaeological materials with indelible ink to prevent information loss if archaeological materials are separated from provenience data.

3. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.

4. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), label in indelible ink, and insert into the secondary containers.

5. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Place documentation in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants. Place the photographic material in archival-quality photographic sleeves, label properly, and store in a secure storage unit.



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Office of Public Archaeology

Brigham Young University

Provo, Utah

Collection Summary

Collections Total: No artifact or human skeletal remains in collections. 0.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.25 linear inch)

Compliance Status: All associated records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: The Office of Public Archaeology (OPA) is a division of the Museum of Peoples and Cultures at Brigham Young University. OPA is funded entirely by contracted research. Collections made by OPA are curated at the Museum of Peoples and Cultures under a repository agreement between OPA and the Museum. The Museum receives an operating budget from the University, and receives additional funding through curation fees assessed according to the volume of collections being curated.

Repository Summary

DATE OF VISIT: October 10, 1996

PERSON CONTACTED: Shane Baker and Lorraine Runyan

The Office of Public Archaeology (OPA) is located on the second floor of Allen Hall on the campus of Brigham Young University (Figure 111). The first and third floors of Allen Hall are occupied by the Museum of Peoples and Cultures. The Museum and the OPA are affiliated, and they share space and



Figure 111. Side view of the exterior of the Museum of Peoples and Culture building, which is the location of the Office of Public Archaeology.

staff. The Museum has been in business since 1961, and their facility is considered a permanent repository. OPA began operations as a division of the Museum in 1981 and has a vigorous and active role in cultural resource management throughout the southwestern United States.

Structural Adequacy

Allen Hall was originally built during the 1930s as a dormitory. The foundation is concrete, and the building has a brick exterior. The roof is shingled with fireproof slate, and is original to the building. The facility is solid with no cracks or leaks. There is a total of three floors above grade and one floor below. Interior walls are composed of lathe and plaster, and there have been a number of interior renovations. Multiple wood framed windows exist, all equipped with shades. Window frames are wood. Activity areas include a museum, offices, and laboratory space. The collections storage area occupies approximately 100 ft², and serves as storage space for records and equipment. The room is filled to approximately 70% of capacity.

Environment

Allen Hall is equipped with heat, but only some rooms have air conditioning. Heat is provided by a hot water radiator system. Some rooms overheat during winter because of difficulties in regulating the heating system. Humidity is monitored but not controlled. The building is regularly maintained and cleaned by university staff. The collections storage area is not equipped with air conditioning.

Pest Management

There is no regular pest management system. Monitoring is conducted visually, and treatment is prescribed as necessary. Very little attention was paid to pest management until 1980 when the building was evaluated and then fumigated. There has been little problem with pests since. Specific objects are evaluated and treated if necessary as they arrive for curation.

Security

Exhibit areas and the third floor (where artifacts are stored) are equipped with an intrusion alarm and motion detectors, all wired to the university police department. Exterior doors for the facility are secured with dead-bolt and key locks. The records storage area is secured by key lock.

Fire Detection and Suppression Systems

Fire detection is provided by smoke detectors and heat sensors wired to the university fire and police departments. Fire suppression is accomplished by fire extinguishers. The collections storage area is equipped with heat sensors and a fire extinguisher.

Archaeological Storage Materials

The OPA is not curating any archaeological materials recovered from projects conducted on military installations.

Human Skeletal Remains

The OPA is not curating any human skeletal remains recovered from archaeological projects conducted on military installations.

Records Storage

Approximately one linear inch of documentation associated with military archaeological projects is stored at the OPA (Table 87) or is curated by the Museum of Peoples and Cultures on behalf of OPA. The storage unit for the documentation is a standard letter size four-drawer metal file cabinet.

Table 87.
Major Classes of Documentation by Installation
Housed at the Office of Public Archaeology
(in linear inches)

Installation	Types of Documentation			Total
	Paper	Reports	Photos	
Dugway Proving Ground	0.25	0.25	0.25	0.75
Fort Douglas	0.25	0.25	—	0.50
Total	0.50	0.50	0.25	1.25

Paper Records

Paper records consist of site forms and administrative documents, and measure approximately 0.5 linear inches. Secondary containers for records are manila folders, identified with a typed self-stick adhesive label. Label information consists of the technical series number, project description, and subject property.

Report Records

Report records consist of letter reports and draft reports, measuring a total of 0.5 linear inches. These are stored in the same manner as the paper records.

Photographic Records

Photographic records measure 0.25 linear inches and consist of black and white prints. Photographs are directly labeled in marker with the accession number, and are stored with the paper records.

Collections Management Standards

Registration Procedures

Accession Files

Materials are accessioned using a five component system. The accession number is composed of the year, a sequential number, a lot number, and a specific object number. The system offers specificity at the collections level or the object level.

Location Identification

The location of collections within the repository are identified in the accession files or in the donor files. The locations are also listed in the computer accession files.

Cross-Indexed Files

Files are cross-indexed by the donor, owner, researcher, site number, collection type, and accession number.

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian Trinomial System of site numbering is used.

Computerized Database Management

The OPA utilizes Quattro Pro, Word Perfect, and Paradox for data and word processing. Data are stored on hard drive, standard disks, and on Bernoulli disks. All backups are stored locally, and there is no network.

Written Policies and Procedures

Minimum Standards for Acceptance

There are written minimum standards of acceptance.

Curation Policy

There is a written curation policy, which is separate from the curation standards outlined by the Utah Museum of Natural History. The curation policy addresses the receipt, processing, use, and future preservation of materials.

Records-Management Policy

There are specific records-management policies and procedures outlined in the curation policy that address the proper curation of paper records, photographs, and maps.

Field-Curation Guidelines

There are specific field curation guidelines.

Loan Procedures

There is a written loan procedure.

Deaccessioning Policy

There is a written deaccessioning policy.

Inventory Policy

There is no written inventory policy.

Latest Collection Inventory

Collections are continuously inventoried.

Curation Personnel

Shane Baker is one-half time collections manager. Records are managed by Mr. Baker and Ms. Lorraine Runyan, the OPA business manager. In addition, there is a student collections manager, and a student manager for the photographs. There is no curator.

Curation Financing

Curation is financed through the operating budget of the Museum. Curation fees are also assessed by volume of materials curated at the Museum.

Access to Collections

Access to the collections is controlled by Museum and OPA staff. Staff will sometimes loan collections to researchers.

Future Plans

Funding for curation is not adequate. There are several needs, including space, more computer hardware and software, training, and a conservator.

Comments

1. The facility is heated, but air conditioning is only present in select rooms. Humidity is monitored but not controlled. In addition, heat output appears inadequately unregulated.
2. There is no integrated pest management system in operation.
3. Security measures consist of an alarm system wired to university police, but only in the exhibit areas and the collections areas. The records and photographs are not in secured areas.
4. Fire detection consists of smoke alarms and heat sensors wired to the local fire and police departments. Fire suppression consists of fire extinguishers.
5. Secondary containers for associated documentation and photographs consist of manila envelopes.

Recommendations

1. Install an air conditioning unit in the records and artifacts areas. Monitor humidity levels with a digital or analog hygrothermograph, and control through the use of commercial dehumidifiers if necessary.
2. Implement an integrated pest management system. Protection should include consistent monitoring using sticky traps for insects or mechanical traps or baiting for rodents, and control should plan for regular spraying and/or other control methods.
3. Produce multiple copies of all documentation on acid-free paper, and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Ogden Environmental and Energy Services

Honolulu, Hawaii

Collection Summary

Collections Total: 146.5 ft³ of artifact and human skeletal remains. 7.1 linear feet of associated records.

Army Recreation Center and are scheduled for repatriation.

Volume of Archaeological Materials: 110.5 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for curation.

Linear Feet of Records: 7.1 linear feet (85.75 linear inches)

Compliance Status: All associated records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Human Skeletal Remains: 36 ft³
 Compliance Status: Human skeletal remains, minimum number of individuals is 90, were recovered from Fort Kamehameha and Waianae

Status of Curation Funding: Curation of archaeological collections is currently funded with overhead generated from archaeological projects.

Repository Summary

DATE OF VISIT: March 25, 1997

Hawaii and the surrounding Pacific islands. Ogden houses materials recovered from multiple installations (Table 88).

PERSON CONTACTED: Scott Williams

Ogden Environmental and Energy Services (Ogden), located in Honolulu, Hawaii, conducts archaeological investigations throughout the state of

Structural Adequacy

The structure is approximately 60 years old and was originally used as the main processing plant for the Dole Corporation (Figure 112). The foundation is concrete and the building frame type is steel and

Table 88.
Volume of Artifacts from DoD Installations Housed at
Ogden Environmental and Energy Services

Installation	ft ³
Barbers Point, Naval Air Station	1.0
Bellows Air Force Base	1.0
Fort Kamehameha	75.0
Fort Shafter	5.0
Kahuku Training Area	0.4
Makua Military Reservation	4.0
Marine Corps Air Station, Kaneohe Bay	10.0
Pacific Missile Range Facility, Barking Sands	8.1
Pohakuloa Training Area	20.0
Schofield Barracks	4.0
Waianae Army Recreation Center	17.0
Wheeler Army Air Field	1.0
Total	146.5



Figure 112. Ogden Environmental and Energy Service's main office is located in a building formerly part of the Dole pineapple cannery.

concrete. The building is privately owned. The external walls of the repository are constructed of concrete and the built-up asphalt roof was renovated eight years ago. No structural problems have been noted in the foundation or the roof. Interior walls are wallboard and floors are concrete covered with carpet. Ceilings in the repository are suspended acoustical tile. Windows in the repository have aluminum frames, have shades, and are sealed. The portion of the repository used by Ogden encompasses 10,000 ft². The majority of space in the repository is used for report preparation and for offices. In addition, there is a small kitchen area for employees.

The collections storage area is a separate building located adjacent to the main repository and

contains all boxes holding artifacts from fieldwork. The building holding the collections area is similar in construction to the main building. Interior walls in the collections area are wallboard and concrete. No structural problems have been noted in the area by any staff members. There is one bank of louvered windows in the collections area. The collections storage area encompasses 1200 ft².

Environment

Central air conditioning provides for temperature and humidity stabilization, but neither is monitored. All air conditioning vents have dust filters. The repository is maintained daily by a professional janitorial service. All artificial lighting in the repository is generated by nonfiltered fluorescent light. Repository utilities were renovated eight years ago.

The collections storage area is dominated largely by storage space for archaeological materials and field equipment. The staff provides janitorial services in the collections storage area on an as-needed basis. Utilities in the collections area were also updated eight years ago.

Pest Management

The repository receives professional pest management services on an as-needed basis. Staff monitor for pests and to date the facility has required no pest management services. The collections storage area is also monitored by the staff and has likewise needed no service.

Security

The repository is patrolled by a private security company and has areas of controlled access that are monitored by staff members. All exterior and interior doors are solid wood in construction and possess key locks. The collections storage area has a metal exterior door and is further secured by controlled access and an intrusion alarm wired to the police department.

Fire Detection and Suppression Systems

The repository is equipped with a fire alarm that is wired to the fire department as well as a sprinkler/

suppression system. There are also six fire extinguishers present in the repository that were last inspected in February of 1997. The collections storage area has the same fire safety systems as the rest of the repository, but has only one fire extinguisher.

Archaeological Storage Materials

Storage Units

DoD collections total 146.5 ft³ and are stored on the floor of the collections storage area (Figure 113). All collections are stored loosely by project. Percentages of material classes are outlined in Table 89.

Primary Containers

All artifacts are stored in acidic cardboard boxes that are glued and folded in construction and secured with a telescoping lid. They are all labeled with paper tags that are tucked under the lid of the box. Label information is written in marker. The information is legible and consistent for all



Figure 113. Boxed collections as well as field equipment are stored collectively in a storeroom.

collections and includes information regarding site number, provenience, site name, project, date, catalog number, and material classes. Human remains are stored in acidic and archival cardboard boxes that are labeled in the same manner as the rest of the collection.

Table 89.
Percentages of Material Classes in the DoD Archaeological Collections Housed at Ogden Environmental and Energy Service

Material Class	Percentages Present												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
<i>Prehistoric Artifacts</i>													
Chipped Stone	10	10	3	—	—	33	5	20	10	—	30	—	10
Faunal Remains	10	10	8	—	—	—	5	10	10	—	10	—	8
Shell	10	20	10	—	—	—	2	20	15	—	40	—	9
Soil Samples	30	40	20	—	—	—	80	20	20	45	—	25	25
¹⁴ C	30	10	4	100	50	47	5	10	15	—	10	25	5
Botanical Remains	—	—	5	—	—	10	—	—	20	—	1	—	6
Flotation Samples	—	—	—	—	—	10	—	—	—	—	—	—	1
Other*	—	—	—	—	—	—	—	—	—	—	5	—	4
<i>Historic Artifacts</i>													
Ceramics	—	10	17	—	—	—	1	—	—	25	2	—	10
Glass	5	—	20	—	—	—	2	20	—	15	—	25	14
Metal	—	—	11	—	—	—	—	—	—	15	1	25	7
Other**	5	—	2	—	—	—	—	—	10	—	1	—	1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: (a) Percentages of material classes based on volume. (b) Information on the c.90 individuals is not included in the table.

(1) Barbers Point, Naval Air Station; (2) Bellows Air Force Base; (3) Fort Kamehameha; (4) Fort Shafter; (5) Kahuku Training Area; (6) Makua Military Reservation; (7) Marine Corps Air Station, Kaneohe Bay; (8) Pacific Missile Range Facility, Barking Sands; (9) Pohakuloa Training Area; (10) Schofield Barracks; (11) Waianae Army Recreation Center; (12) Wheeler Army Air Field

*Other prehistoric materials include volcanic glass, worked bone, and modified shell.

**Other historic materials include plastic, tile, coal, rubber, textiles.

Secondary Containers

Approximately 70% of all secondary containers are 2-mil zip-lock, plastic bags and 20% are paper bags. The remaining 10% comprises artifacts that are loose in the primary container (human remains are stored in paper bags or loose in the box). Both plastic and paper bags are directly labeled with provenience and project information. Throughout the collection plastic bags are found to be nested inside the larger paper bags. All bags are in good condition and there are few tears or punctures.

Laboratory Processing and Labeling

None of the artifacts have been cleaned and none have been labeled in any way. They are sorted by project and provenience.

Human Skeletal Remains

Ogden holds approximately 90 individuals from projects conducted on Fort Kamehameha (33.5 ft³) and 16 fragments of human bone from Waianae Army Recreation Center (2.5 ft³). All remains are scheduled for repatriation.

Records Storage

All DoD records reside in standard, legal-sized filing cabinets located in the main office area. Records are stored individually by project in manila folders that use adhesive labels with typewritten information. DoD records encompass approximately 7.1 linear feet from 13 distinct collections (Table 90).

Paper Records

Ogden houses 75.7 linear inches (6.3 linear feet) of paper records from 13 installations. These records include administrative records, background notes, field notebooks, survey records, excavation records, analysis records, and artifact catalogs. The materials are in good condition but do have some contaminants, such as paper clips and staples, throughout.

Report Records

Approximately 5 linear inches of report records from Waianae Army Recreation Center are housed at Ogden.

Photographic Records

Photographic records from Makua Military Reservation, Fort Kamehameha, Marine Corps Air Station, Kaneohe Bay, and Fort DeRussy equal approximately 4.75 linear inches. These records

Table 90.
Major Classes of Documentation by Installation Housed at Ogden (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Barbers Point, Naval Air Station	5.75	—	—	—	5.75
Bellows AFB	4.0	—	—	—	4.0
Fort DeRussy	1.5	—	1.0	—	2.5
Fort Kamehameha	3.75	—	0.25	—	4.0
Fort Shafter	1.0	—	—	—	1.0
Hickam Air Force Base	9.0	—	—	—	9.0
Kahuku Training Area	1.0	—	—	—	1.0
Makua Military Reservation	4.5	—	1.5	—	6.0
Marine Corps Air Station, Kaneohe Bay	15.5	—	2.0	—	17.5
Pacific Missile Range Facility, Barking Sands	0.5	—	—	—	0.5
Pohakuloa Training Area	6.5	—	—	0.25	6.75
Schofield Barracks	2.25	—	—	—	2.25
Waianae Army Recreation Center	20.5	5.0	—	—	25.5
Total	75.7	5.0	4.75	0.25	85.75

(7.1 linear feet)

include negatives, color prints, black and white prints, and slides.

Maps and/or Oversized Documents

A small number of maps and drawings, 0.25 linear inches, from Pohakuloa Training Area are folded and stored in the manila files with the rest of the project records.

Collections Management Standards

Ogden is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

Mr. Scott Williams, Senior Archaeologist, maintains collections held by the firm.

Curation Financing

Curation activities receive no funding. Costs associated with curation are taken from the firm's overhead budget.

Access to Collections

Access to the records and artifacts is controlled. Staff require a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

Ogden has no future plans regarding curation or collections storage.

Comments

1. Environmental conditions are inadequate for federal collections storage purposes. Temperature and humidity levels are not monitored to prevent fluctuations in the collections storage area.
2. There is no integrated pest management system.
3. The facility is not equipped with intrusion alarms or motion detectors.

4. Fire detection and sprinkler systems for fire suppression are present.

5. The collections are stored on the floor of the storage room.

6. Primary containers consist of acidic and archival cardboard boxes with telescoping lids.

7. Primary containers for records are generally adequate, but the secondary containers consist mainly of acidic manila folders.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.

3. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), label in indelible ink, and insert into the secondary containers.

4. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Place documentation in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants. Place the photographic material in archival-quality photographic sleeves, label properly, and store in a secure storage unit.



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Parsons Engineering Science

Fairfax, Virginia

Collection Summary

Collections Total: 1.2 ft³ of archaeological materials. 0.1 linear feet of associated records

Volume of Archaeological Materials: 1.2 ft³
Compliance Status: Archaeological materials comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.25 linear inches)

Compliance Status: All associated records require nearly complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is included in the budget of any given project's work order or memorandum of agreement.

Repository Summary

DATE OF VISIT: September 10, 1996

PERSON CONTACTED: Michael Petraglia and Carter Shields

Parsons Engineering Science (Parsons) is an archaeological contracting firm with multiple offices in more than 25 states and several foreign countries. They have conducted numerous archaeological investigations for United States military installations. The offices, laboratory and temporary artifact storage area for the headquarters of Parsons cultural resources division are located at an office building in Fairfax, Virginia (Figure 114). Since the laboratory



Figure 114. Parsons Engineering Science is a private contract engineering firm that conducts work for various Department of Defense installations.

at this location is used for processing and temporary holding only, Parsons has no plans to expand the facility. Parsons is engaged in multiple ongoing projects for the Department of Defense (DoD), and a total of 1.2 ft³ of artifacts and 1.25 linear inches of records relating to archaeological projects conducted for Lackland Air Force Base (AFB), Texas, are currently housed at Parsons.

Structural Adequacy

Parsons operates out of a privately owned 60,000 ft² office building—constructed around 1981—in downtown Fairfax. The ground level space that Parsons laboratory occupies comprises 5000 of the 36,000 total square footage used by the company at this location. Multiple activity areas are present, including artifact holding, washing, processing, temporary storage, supplies storage, records study, records storage, and offices.

The repository has a concrete foundation and exterior walls are composed of steel frames and concrete blocks covered with bricks. The roof, which is original to the building, is covered with built-up asphalt and has occasionally required repairs. Currently there are no cracks or leaks. There have been no major renovations or upgrades to the building, only minor interior wall restructuring to accommodate changes in office staffing. There are multiple exterior windows and doors throughout the building.

The collections storage/processing area floors are concrete covered by industrial carpeting. The washing area floor is unpainted concrete. All offices and the records storage/library area are also carpeted. Interior walls are painted wallboard, and all ceilings are suspended acoustical tile. There is a set of glass and metal doors to the storage/processing area, and a steel one to the washing area. The remaining interior doors are paneled wood, and the exterior doors are metal framed glass panel. Window frames throughout the building are steel, with no evidence of air leakage. There is only one shaded window present in the collections area, and there are none in the library/records room. Storage/processing areas are virtually filled to capacity with collections. The collections area is identical to the rest of the facility in terms of environment, pest management, security, and fire detection.

Environment

The office building that Parsons operates out of has central air and heat equipped with dust filters. Heat and humidity are not monitored or regulated in the storage/processing area because the environmental controls cannot be set for individual rooms. The entire building is professionally cleaned on a daily basis. All windows are shaded, and additional lighting consists of overhead nonfiltered fluorescent tube fixtures.

Pest Management

There is an integrated pest management plan in place at this facility. The entire building is professionally sprayed biannually for pests. Parsons staff monitor for infestations on an as-needed basis. The team observed no signs of pest infestations and Parsons staff indicated that they had only seen one cricket in the past.

Security

Security measures for the repository consist of sealed exterior doors with an intrusion alarm system tied to the police station, and key locks on interior doors throughout the building. Parsons staff also self-monitors access to the collections area.

Fire Detection and Suppression Systems

Fire detection measures consist of smoke detectors, manual fire alarms, and a main alarm tied to the fire department. Fire suppression systems consist of a heat-activated wet-pipe sprinkler system. Manual fire extinguishers—inspected annually—are also located throughout the building.

Archaeological Storage Materials

Storage Units

Archaeological materials are stored on multiple sets of adjoining, non-movable, enameled metal shelving. Units measure 4 x 7 x 1.5 feet (l x w x d), and have from five to six evenly spaced shelves. Lackland

AFB archaeological materials total 1.2 ft³ and are composed entirely of lithic materials.

Primary Containers

Archaeological materials are stored in acid-free cardboard boxes with a telescoping lids, about 1.2 ft³ in volume (Figure 115). This primary container is labeled (typed) on an acid-free adhesive label with the project and installation name. Archaeological materials are well packed.



Figure 115. Collections from Lackland Air Force in Texas are housed in acid-free cardboard boxes in the laboratory at Parsons Engineering Science.

Secondary Containers

Secondary containers for the archaeological materials consist entirely of 4-mil polyethylene zip-lock bags. Labels consist of acid free paper inserts—labeled in black. Some of the bags are nested.

Laboratory Processing and Labeling

All collections are cleaned and labeled.

Human Skeletal Remains

Parsons does not house any human skeletal material from DoD projects.

Records Storage

All documentation associated with Lackland AFB is held in a manila folder currently stored in the same

primary container as the archaeological materials. There are 1.25 linear inches of relevant paper records housed at Parsons for Lackland AFB.

Paper Records

Paper records for Lackland AFB are currently unprocessed, and are stored together in an acidic, unlabeled manila folder with the archaeological materials.

Collections Management Standards

Parsons is not a permanent repository; therefore, collections management standards will not be addressed in this report.

Curation Personnel

Carter Shields is the Laboratory Director and manages the archaeological collections housed at Parsons.

Curation Financing

Curation funding is financed as overhead in the budget of any project.

Access to Collections

Access to the collections is limited to Parsons cultural resource staff and researchers by permission. A written letter of intent is necessary and access to the collections is supervised.

Future Plans

Because their building space is for processing and temporary storage only, Parsons has no plans to upgrade their space to include curation-level permanent storage.

Comments

1. The building in which Parsons leases space has central heat and air conditioning, but no humidity controls. In addition, Parsons staff have no access to any of the building's environmental monitoring controls.

2. Security is adequate with key locks and intrusion alarms, but not ideal. Custodial staff have access to collections, and the door to the collections area is made of glass.
3. Adequate fire detection and suppression systems are in place.
4. Primary and secondary containers for the artifacts are archival.
5. Associated documentation is currently unprocessed.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. If a box is used, it should be labeled by attaching a stainless steel or polyethylene label holder with an acid-free paper insert—printed or typed in indelible ink and encapsulated in a polyethylene plastic sleeve—to the front of the box.
3. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection. Records should be free of metal staples and paper clips, or other contaminants.

Paul H. Rosendahl, Inc.

Hilo, Hawaii

Collection Summary

Collections Total: 308.8 ft³ of archaeological materials and human skeletal remains. 15.4 linear feet of associated records.

Volume of Archaeological Materials: 308.8 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 0.01 ft³
 Compliance Status: Skeletal remains from a minimum number of one individual were recovered from the Bobcat Trail Cave Habitation Site on Pohakuloa Training Area, Hawaii.

Linear Feet of Records: 15.4 linear feet (184.25 inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are not adequately funded.

Repository Summary

DATE OF VISIT: March 18-20, 1997

PERSONS CONTACTED: Wanda Pua-Kaipō and Tom Wolforth

The contract firm of Paul H. Rosendahl, Inc. (PHRI) has done extensive work on many Department of Defense (DoD) installations on the islands of Hawaii. Artifacts and records from Barber's Point

Naval Air Station (NAS); Bellows Air Force Station (AFS); Hickam Air Force Base (AFB); Kahoolawe Island, Marine Corps Base Hawaii, Kaneohe Bay (MCBH); Pacific Missile Range Facility, Barking Sands (PMRF); Pearl Harbor Naval Complex; Pohakuloa Training Area (TA), and Schofield Barracks are located in either the PHRI offices or in the off-site storage facility. For amounts of collections for these installations, refer to Table 91.

Table 91.
Volume of DoD Archaeological Collections
Housed at PHRI

Installation	Artifacts (ft ³)	Records (linear inches)
Barber's Point NAS	251.3	56.50
Bellows AFS	—	4.75
Hickam AFB	3.9	8.00
Kahoolawe Island	37.3	38.00
MCBH, Kaneohe Bay	11.1	47.00
Pearl Harbor Naval Complex	—	7.75
PMRF, Barking Sands	—	8.25
Pohakuloa TA	5.2	10.75
Schofield Barracks	—	3.25
Total	308.8	184.25 (15.4 linear feet)

Structural Adequacy

Repository 1—PHRI Office Building

PHRI rents office space in what was originally a furniture store, and the staff refer to it as the Tropical Sleep Center building. PHRI moved into the facility in October 1993 and occupies almost 65% (9444 ft²) of the 14,616 ft² building (Figure 116). There is one other tenant in the building, with more space available for rent. The two-story building has a concrete foundation, painted concrete block walls, and a corrugated metal roof which is original to the construction of the building. It is structurally solid, with no visible cracks in the foundation or walls; however, the east wall leaks water during heavy storms.



Figure 116. The building (repository 1) in which PHRI rents office space.

Records and archaeological materials undergoing processing in the laboratory are located in the various offices in the building. Significant internal renovations have been performed and wallboard/sheetrock walls were added to create the offices. Wood framed windows are located on three of the four sides of the building and measure either 6.25 x 7.3 feet (w x h) or 2.3 x 7.3 feet (w x h). Windows are partially shaded and show no evidence of water or air leaks. The concrete floor is carpeted.

Repository 2—Warehouse

PHRI rents storage space in a partially below grade level underneath the Hilo Shopping Center, which was rebuilt in the early 1960s after the 1960 tsunami destroyed the area. PHRI rents approximately 13,400 ft² of the 70,000 ft² building for collections and field equipment storage (Figure 117). The shopping center has a concrete foundation and painted concrete block walls with a steel frame. The



Figure 117. PHRI rents office space in this building (repository 2), which is part of a shopping mall.

original metal roof is supported by metal beams and covered by a five-layered roof of tarpaper and EPDM. There is no asbestos present in the structure. DoD archaeological materials are housed in a 900 ft² area where the floor, walls, and ceiling are concrete. Doors in the collections storage areas are wood paneled. The entire building was renovated and brought up to code in 1985.

Environment

Repository 1—PHRI Office Building

Window air conditioning units controlled by staff members are the only means of regulating the environment. There is no need for a heating system, and humidity levels are not monitored or regulated. A dust filtration system is not in place. The building owner is responsible for building maintenance, and PHRI employs a cleaning staff to clean the offices on the weekends. Natural and fluorescent light fixtures are used; however, they do not have ultraviolet (UV) filters in place.

Repository 2—Warehouse

There are no environmental controls present in the storage area that PHRI rents. The building owner is responsible for the maintenance of the building and PHRI staff clean their storage areas when needed.

Pest Management

An integrated pest management program is not established at either repository. PHRI staff take precautions as needed to control pest infestations. Pest infestations were not evident during this assessment.

Security

Repository 1—PHRI Office Building

An intrusion alarm has been installed on the exterior doors and is wired to a security company. The doors are also equipped with key and dead bolt locks. Access to the keys that unlock the doors is limited. Prior to installing the intrusion alarm on the back door, an intruder broke in and stole petty cash from the offices.

Repository 2—Warehouse

A 24-hour security guard patrols the shopping center, including the storage space below the mall. The shared exterior door has a key lock and all windows are barred on the outside. Interior doors that lead to the collections storage areas are kept locked with padlocks or key locks. Laboratory and collections management staff are the only staff who have keys to these rooms.

Fire Detection and Suppression Systems

Repository 1—PHRI Office Building

A smoke detector in the library and fire extinguishers in the common areas and in the laboratory are the only fire detection and suppression systems in place in the PHRI offices.

Repository 2—Warehouse

There are no fire safety measures in place in the storage areas where the collections are located.

Archaeological Storage Materials

Except for the collections from recent projects that are undergoing processing in the laboratory in Repository 1, all collections are stored in Repository 2. For the percentages of material classes present in the collections, refer to Table 92.

Storage Units

All federal collections have been stored separately from the rest of the collections in a 900 ft² room on a wall-length, unsealed wood shelving unit which measures 8.8 x 2 x 23.3 feet (h x d x w) (Figure 118). This open shelving unit is 2.5 inches off the floor and has four shelves. The shelves are labeled with pieces of paper taped to the edge of the shelf,



Figure 118. Collections in repository 2 are stored on wooden shelves. The windows in this repository have steel bars on the outside and are not filtered against ultraviolet radiation.

Table 92.
Percentages of Material Classes Present in the DoD Collections Housed at PHRI by Installation

Material Classes	Barber's Point NAS	Hickam AFB	Kahoolawe Island	MCBH, Kaneole Bay	Pohakuloa TA	Total
<i>Prehistoric Artifacts</i>						
Chipped Stone	<1	46	—	2	7	2
Faunal Remains	3	11	2	6	—	3
Shell	4	15	—	20	—	4
Flotation Samples	—	—	2	—	27	<1
Botanical Remains Samples	<1	—	2	3	4	1
Soil Samples	86	—	86	60	62	83
¹⁴ C	<1	—	1	1	—	2
Other*	<1	—	7	—	—	<1
<i>Historic Artifacts</i>						
Glass	3	21	—	—	—	2
Metal	2	2	—	2	—	1
Other**	1	5	—	6	—	1
Total	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.

*Other prehistoric material classes include coral, volcanic glass, worked shell, worked bone, and bulk gley samples.

**Other historic material classes include plastic, leather.

identified with a letter or roman numeral written in black marker noting the collection location.

Primary Containers

Primary containers consist of two types of acidic cardboard boxes. PHRI has an arrangement with a local grocery store to take all of their boxes—originally containing Portuguese sausage—and uses them for collections storage. These boxes occupy approximately 0.7 ft³ and are of a folded and glued construction with folding flap lids for security. The second type of box used has a folded and glued construction, telescoping lids for security, and is 1.2 ft³ in volume. Primary container labels are pieces of paper taped to the box with information written in marker that notes the box's number and shelf location. A copy of the box inventory is enclosed within each box.

Secondary Containers

Secondary containers are directly labeled with the site number, provenience, project number, bag number, and date. The labels, which are written in marker, are consistent and legible. For the percentages of secondary containers present in the collections, refer to Table 93.

Table 93.
Percentage of Secondary Containers in
DoD Collections Housed at PHRI

Secondary Container Type	Percentage
Paper Bags	70
Plastic Bags	22
Acidic Paper Envelopes	5
Acidic Cardboard Boxes	3
Total	100

Note: Percentages of secondary containers are calculated by volume.

Laboratory Processing and Labeling

The majority of the collections consist of soil samples, midden samples, and botanical samples (86%). Of the remaining 14% of the collections that could be cleaned and labeled, approximately half of the collections (51%) have been cleaned; however, only 4.2% of the artifacts that can be labeled have been with paper labels inserted into the artifact's tertiary container. All of the collections have been sorted by material class within their tertiary containers.

Human Skeletal Remains

A single piece of bone, which was determined to be a human skeletal element, was recovered with the

Table 94.
Major Classes of Documentation by Installation Housed at PHRI (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Barber's Point NAS	53.50	—	3.00	—	56.50
Bellows AFB	3.25	1.00	0.25	0.25	4.75
Hickam AFB	5.00	2.00	0.25	0.75	8.00
Kahoolawe	24.00	13.50	0.50	—	38.00
MCBH Kaneohe Bay	19.75	15.50	2.75	9.00	47.00
Pearl Harbor Complex	3.25	3.75	0.25	0.50	7.75
PMRF, Barking Sands	8.00	—	0.25	—	8.25
Pohakuloa TA	4.75	3.00	2.50	0.50	10.75
Schofield Barracks	1.00	0.25	—	2.00	3.25
Total	122.50	39.00	9.75	13.00	184.25

(15.4 linear feet)

collections from the Pohakuloa TA Bobcat Trail Cave Habitation site. It is housed in a plastic zip-lock bag within box #5012 with the faunal material from the site.

Records Storage

Approximately 15.4 linear feet of associated documentation are located in the archives, laboratory, editing room, or the library. For the type and amount of records for each installation, refer to Table 94.

Paper Records

Paper records comprise more than 10.2 linear feet of documentation. Completed projects are filed chronologically and by project number in a locked records storage room. A small portion of the oldest records are filed in manila folders in acidic records boxes that have telescoping lids, otherwise records are all filed in standard 4-drawer letter-sized file cabinets. Drawers are labeled with paper slips in metal label holders that list the project numbers filed in each drawer. Paper records consist of administrative correspondence, inventories, national register nomination forms, site survey records, field notebooks, excavation records, and laboratory analysis records. Files are labeled with the project number. Paper contaminants are present and consist of paper clips, staples, metal binder clips, rubber bands, and transparent tape.

Report Records

Drafts and final copies of reports are kept on file in the editing room in file cabinets, also by project number. Approximately 3.3 linear feet (39 linear inches) of reports are stored in files that are labeled with the project number. Reports are sometimes spiral-bound with plastic combs or have paper contaminants present such as staples, paper clips, and metal binder clips.

Photographic Records

Most of the 9.75 linear inches of associated photographic records are kept in the laboratory area in binders on shelves. Contact sheets are filed by project number and are stamped with the roll number on the back. Negatives are located in a fire-proof safe by negative number, which has been assigned independently from the project number, as more than one project may be on one roll of film. A finding aid is available for access to the negatives. Most slides are placed in non-archival quality plastic sleeves and filed by project number. If slides are part of the project records, they are noted in the contact sheet binders by placing colored sheets of paper in the binders where the slides correspond to the contact sheet prints. A few black and white prints, which are directly labeled on the back, are filed with the paper records.

Maps and/or Oversized Documents

Map documents are located throughout the paper documents in the records storage room and comprise 13 linear inches. Several flat map cases in the library are also available for storage of oversized map documents. Types of maps present include hand-drawn field maps, U.S.G.S. topographic maps, copies of topographic maps, plot maps, site maps and report ready maps.

Collections Management Standards

PHRI is not considered a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no dedicated personnel hired to curate the collections; however, the laboratory director and her assistant are responsible for the care and management of the collections.

Curation Financing

Curation activities are not adequately funded. Project funds are used to purchase storage supplies needed for the collections.

Access to Collections

Access to collections is limited to the laboratory staff. St. Louis District staff were granted access to the collections under PHRI staff supervision and with permission from a point of contact for the U.S. Navy.

Future Plans

There are no future plans for the collections or the collections storage facility.

Comments

1. An integrated pest management system is not in place in either repository.
2. Repository 2 has no environmental controls.

3. Repository 2 does not have adequate security measures.

4. There is no means of fire detection or suppression in Repository 2.

5. Archaeological materials and records are not housed in appropriate storage containers.

6. Human skeletal material was recovered from site on Pohakuloa Training Area.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.

3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Powers Elevation Company

Aurora, Colorado

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 0.3 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.3 linear feet (3.75 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Financing for curation is built into project contracts.

Repository Summary

DATE OF VISIT: November 14, 1996

PERSON CONTACTED: Gordon Tucker

Powers Elevation Company curates approximately 3.75 linear inches of associated documentation from archaeological investigations conducted on Lowry Air Force Base (AFB) and Fitzsimons Army Medical Center (AMC) (Table 95). Powers Elevation Company has also conducted investigations on Rocky Mountain Arsenal, but records from this work could not be located for examination by St. Louis District staff. One repository, Central Place 1, houses the records for the investigations conducted on Lowry AFB and Fitzsimons AMC.

Table 95.
Major Classes of Documentation by Installation
Housed at Powers Elevation Company
(in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Lowry AFB	1.00	—	—	2.00	3.00
Fitzsimons AMC	0.25	0.25	0.25	—	0.75
Total	1.25	0.25	0.25	2.00	3.75

Central Place 1 is an office complex located in Aurora, Colorado (Figure 119). The entire building encompasses an estimated 50,000 ft² of office space, storage areas, a mechanical/utility room, and a security monitoring area. Powers Elevation Company offices occupy only about 4863 ft² of this space. The space Powers Elevation



Figure 119. Exterior view of the building where Powers Elevation offices are located.

Company occupies does not have a formal laboratory, but instead uses a kitchen area as their artifact holding, washing, and processing area. The 3.75 linear inches of documentation stored in the office are in a large open area measuring approximately 2000 ft².

A storage facility, located a few miles off-site from the main building, is also maintained by Powers Elevation Company. This facility, measuring 200 ft², was acquired specifically to store archaeological records and supplies. Other archaeological project documentation is stored at this facility.

Structural Adequacy

Central Place 1 was originally constructed in 1984-1985 as an office complex. Powers Elevation Company moved into this building in 1988. The foundation of the building is concrete, and the exterior walls are concrete block. The roof is made up of built-up asphalt and is original to the building. The repository has three floors above grade and is solid, with no major cracks or leaks. Individual office space within the repository has been renovated by the various occupants. There are multiple aluminum framed windows in the building, all equipped with shades.

Within the office space for Powers Elevation Company there are numerous individual offices and a large open space, which serves as the collections storage area. This area has a concrete floor covered with carpet, concrete block interior walls, and a suspended acoustical tile ceiling. There are no

windows in the collections storage area. This area is filled to approximately 10% of capacity with archaeological records.

Environment

Temperature controls for the building consist of air conditioning and gas-forced air heat. Humidity is not monitored or controlled. The building has a problem with static electricity because the air is very dry. There are dust filters on the environmental controls; however, maintenance of the filters is questionable based on reported complaints regarding dust build-up. Maintenance for the building is managed by a private company that is called in on an as-needed basis. A cleaning service vacuums and empties trash on a daily basis. The building is equipped with fluorescent lighting without ultraviolet filters.

Pest Management

Precautions are taken against insects and rodents on an as-needed basis. Control is managed by a maintenance agreement with a company that conducts spraying quarterly. There has been only one problem with pest infestation, an ant problem four years ago, and it was controlled.

Security

Security measures include monitoring by a private security company, as well as police patrols of the area. In addition, there is a janitorial staff on duty at all times. The exterior doors are locked on a timer system. There are key locks on all interior and exterior doors. There have been no past episodes of unauthorized entry in the office complex. The collections storage area has the same security measures as the repository, and additionally uses locks on all filing cabinets.

Fire Detection and Suppression Systems

Fire detection and suppression within the repository consist of manual fire alarms and fire extinguishers. The building provides a fire protection service and is only a few blocks away from the local fire station.

Archaeological Storage Materials

Powers Elevation Company does not curate any archaeological materials for military installations. The majority of the archaeological materials have been sent to the University of Colorado Museum at Boulder.

Human Skeletal Remains

Powers Elevation Company is not curating any human skeletal remains recovered from archaeological projects conducted on DoD land.

Records Storage

Powers Elevation Company currently curates approximately 3.75 linear inches of documentation associated with archaeological work performed on Lowry AFB and Fitzsimons AMC. Powers Elevation Company also curates records from Rocky Mountain Arsenal, but these records could not be located during the assessment visit.

Paper Records

Central Place 1, the main office complex, curates 1.25 linear inches of paper records from Lowry AFB and Fitzsimons AMC. The administrative, background, and survey paper records from these installations are stored in a standard five-drawer legal metal filing cabinet. The filing cabinets measure approximately 1.3 x 2.2 x 4.3 feet (w x d x h). The storage units are labeled with paper tags that are type printed with letter distinctions (e.g. "A," "B," "C"). These paper tags are inserted into metal holders. Secondary containers are manila folders that are labeled with adhesive backed paper tags typed-printed with the subject property and the year. Some of the manila folders have a stamped tag covering the front flap. This stamp is a fill-in-the-box information sheet. All of the records are arranged by project. The paper collection is in good condition, except for the use of metal contaminants such as paper clips.

Report Records

Fitzsimons Army Medical Center has approximately 0.25 linear inches of report records curated at Central Place 1. These records are stored in the same manner as the paper records.

Photographic Records

Photographic records at Central Place 1 total approximately 0.25 linear inches, and include negatives and black and white prints. Photographic records are stored identical to the paper and report records at Central Place 1, except that the photographic records are still in the original processing envelopes, which are labeled with the companies name and the subject property.

Map Records

Lowry AFB curates 2.0 linear inches of map records at the Central Place 1 collections storage area. These map records are stored in a manner identical to that of the paper and report records.

Collections Management Standards

Powers Elevation Company is not a permanent curation facility; therefore, collections management standards were not evaluated.

Curation Personnel

There is no full-time curator, but there are two full-time staff archaeologists within the Powers Elevation Company.

Curation Financing

Curation is financed through client contracts. The funding is estimated prior to the project and is included into the contract.

Access to Collections

Access to collections is controlled by the staff archaeologist, Dr. Gordon Tucker.

Future Plans

Curation is adequate because Powers Elevation Company usually overestimates the curation costs. The majority of artifacts collected by Powers Elevation Company are sent to the University of Colorado Museum at Boulder. Powers Elevation Company does not have any plans to upgrade their curation program.

Comments

1. Humidity levels are not monitored or controlled in the building or the collections storage area.
2. The building does not have an intrusion alarm wired to the police, but does have security monitoring and key locks on all interior and exterior doors.
3. There are manual fire alarms and fire extinguishers. The fire alarms in the building are not wired to the fire department, but the station is only a few blocks away.
4. Original documentation has not been duplicated or stored in an acid-free environment.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

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Public Service Company of New Mexico

Albuquerque, New Mexico

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 0.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1 linear inch)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Public Service Company of New Mexico is not a permanent curation facility and does not budget any money for curation activities.

Repository Summary

DATE OF VISIT: September 18, 1996

PERSON CONTACTED: Scott Berger

Public Service Company of New Mexico (PNM) is the electric and gas service company for New Mexico. The archaeological work that the environmental service section of PNM conducts is

part of environmental impact analyses mandated by legislation or regulations. PNM has conducted work on Kirtland Air Force Base lands upon request from the installation and in conjunction with gas or electrical line projects.

PNM is headquartered in a two city block area of downtown Albuquerque (Figure 120). This building has an overhead pedestrian walkway that connects with the Alvarado Square Building on the other side of the street.



Figure 120. Public Service Company of New Mexico headquarters building is located in downtown Albuquerque.

Structural Adequacy

The Headquarters Building is a poured cement structure that was constructed in 1967 with 12 stories above grade and one below grade. The environmental service section of PNM is located on the fourth floor of the southwest tower of the Headquarters Building. Scott Berger's office is located in the environmental service section. This office has a bank of sealed windows with venetian blinds along an outside wall. The floor is carpeted, and the ceiling is tiled with acoustical tiles. Overhead fluorescent lights are not filtered for ultraviolet (UV) radiation. The entrance to the room has a hollow wood door in a metal frame with a key lock. An interior room on this floor serves as a document room and report production room. This room has the same features as Mr. Berger's office, but due to its location on the interior of the building, it is windowless.

The Alvarado Square Building is connected to the Headquarters Building by an overhead pedestrian walkway. The poured cement structure was built in 1981-1982 and has a total of eight stories above grade. A small file of documentation for a current project was assessed in an office on the ground level of the Alvarado Building. This office is a partitioned cubicle in a large open room. Hard copies of documentation were examined in these offices, therefore, an assessment was not conducted on the document control center on the fifth floor where all data are duplicated onto microfiche.

Environment

The south facade of the Alvarado Square Building consists of solar panels. The building was designed to use solar energy as a ventilating source. A water tank is installed under the building as part of that system. Below the windows in Mr. Berger's office is a vented register.

Security

Security measures for both the headquarters building and the Alvarado Square building meet minimum federal requirements. Access to the building is controlled by security guards in the lobby of each building. Visitors to both buildings are escorted by a staff member and issued a visitor's pass. Information, including name of guests, employee with whom they have an appointment, and date and time of arrival and departure is recorded by security when passes are issued.

Pest Management

Data on pest management procedures for both buildings were not made available to the team.

Fire Detection/Suppression Systems

Fire safety measures in both buildings meet fire codes of the city of Albuquerque.

Archaeological Materials Storage

The PNM is not curating any archaeological materials recovered from projects conducted on military installations.

Human Skeletal Remains

The PNM is not curating any human skeletal remains recovered from archaeological projects conducted on military installations.

Records Storage

The team assessed approximately one linear inch of documentation from Kirtland Air Force Base housed in several rooms in the PNM complex. Documentation is stored in metal filing cabinets, map cases, and metal shelving. Duplicate copies of records have been produced on microfiche and are stored in a separate, secure location within this building.

Paper Records

Approximately one linear inch of paper documentation was examined for Kirtland Air Force Base. These files are administrative records consisting of contracts and correspondence housed in acidic manila folders in metal filing cabinets. The documentation has some contaminants including paper clips and metal binder clips.

Collections Management Standards

This facility is not a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no full-time curator for the archaeological records. Mr. Scott Berger is responsible for the record maintenance for current projects.

Curation Financing

Public Service Company of New Mexico is not a permanent curation facility and does not budget any money for curation activities.

Access to Collections

Access to the collections is gained through Mr. Berger. Staff working on the project also have access.

Future Plans

There are no plans for upgrading the facilities for the purposes of curation.

Comments

1. The buildings have proven to be structurally sound.
2. An HVAC system is in place at this facility.
3. UV filters are not in place for the light bulbs and windows.
4. Security in both buildings meets the minimum federal standards for safeguarding of archaeological collections.
5. Original records are filed in acidic folders and envelopes. Contaminants are present.
6. Duplicate copies of records have been produced on microfiche and are stored in a separate, secure location within this building.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.



Quivera Research Center

Albuquerque, New Mexico

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 0.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.75 linear inches)

Compliance Status: Documentation require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Quivera Research Center is not a permanent curation facility and does not budget any money for curation activities.

Repository Summary

DATE OF VISIT: October 23, 1996

PERSON CONTACTED: Carol Condie

Less than two linear inches of documentation from archaeological work conducted at Kirtland Air Force Base are present at Quivera Research Center. Quivera does not house any artifacts. Quivera Research Center is a contract archaeology firm run from the private residence of Carole Condie. Ms. Condie has office space for the business in the lower level of her home. The house was designed by

her husband, an architect, who likewise has office space in the lower level from which he conducts business.

Structural Adequacy

The 3200 ft² structure was built in 1975 as a residence, and is maintained as a residence (Figure 121). It has a concrete foundation with slump block exterior walls. The roof of the house is a built-up gravel-surfaced roof that is original to the home. The land on which the structure is built is sloping, with half a floor below grade, and one and a half floors above grade. Eight hundred square feet of office space is on the lower level. Ms. Condie has an office with a desk



Figure 121. Quivera Research Center is operated from a private residence.

and files in one room on this level, and an additional room next door with work space, a copy machine, a map case, and more files. Financial records are stored in labeled document boxes in a closet on the lower level. Each office has a single 3 x 4 feet (h x w) double glazed window with a curtain window treatment. Rooms are lit with unfiltered fluorescent lights. Interior walls are brick and painted wallboard. The rooms in the lower level have gypsum board (painted over) wood frame construction.

Environment

The house is heated by a gas furnace and cooled by an evaporative cooling system, commonly known as a "swamp cooler." The humidity is not monitored or regulated. Dust filters are present on the furnace and air conditioning unit. The building is maintained by the owner.

Pest Management

Pest management is conducted on an as-needed basis. The only infestation problem encountered is ants, which are occasionally present in the spring.

Security

The residence is secured by dead bolt locks, controlled access, and window locks. There has been no evidence of unauthorized entrance from a break-in, but there was one occurrence of theft of a purse due to an unlocked door.

Fire Detection and Suppression Systems

Smoke detectors are installed, but there are no fire extinguishers present in the house. The structure is built to code, but not fireproof.

Archaeological Storage Materials

No archaeological materials associated with Kirtland AFB are located at Quivera Research Center.

Human Skeletal Remains

Quivera Research Center does not house human skeletal remains recovered from any DoD-owned land.

Records Storage

A minimal amount (1.75 linear inches) of original records resulting from work on Kirtland AFB is housed at Quivera Research Center. The paper records consist of correspondence, work plans, proposals, survey records, excavation records, and pottery analysis. These records are arranged by project, and stored in manila folders with typewritten adhesive labels. The folders from current projects are housed in file cabinets. Associated documentation resulting from older projects is stored in cardboard transfer boxes in an adjacent hall closet. There are several drawings present in the files. Photographic records from Kirtland AFB projects consist of 3 x 5 inch prints labeled directly in pencil on the back of the photographs. Negatives are stored in acidic envelopes typed with the pertinent information. Contaminants are present and include staples and paper clips.

Collections Management Standards

This facility is not a permanent repository; therefore, collections management standards are not addressed in this report.

Comments

1. The building has proven to be structurally sound.
2. An HVAC system is not in place at this facility.
3. Temperature levels are controlled, but humidity levels are neither monitored or controlled.
4. UV filters are not in place for the light bulbs and windows.
5. Fire detection measures are limited to smoke detectors. No fire extinguishers are present.
6. Building security does not meet the minimum federal standards for safeguarding of archaeological collections.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.



Sagebrush Archaeological Consultants, L.L.C.

Ogden, Utah

Collection Summary

Collections Total: No artifact or human skeletal remains collections, 3.2 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 3.2 linear feet (38 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Funding for curation activities is covered in the budget for archaeological research contracts. These funds cover the cost of immediate processing, but long-term curation is generally funded by the client.

Repository Summary

DATE OF VISIT: January 15, 1997

PERSONS CONTACTED: Mike and Ann Polk

Sagebrush Archaeological Consultants, L.L.C., is a private firm that performs contract archaeological work primarily in the Great Basin region. The firm has done work for several military installations, and currently houses a total of 3.2 linear feet of associated documentation. Table 96 outlines a breakdown of the records by installation. The installations include Luke Air Force Base (AFB),

Arizona; Hawthorne Army Ammunition Plant (AAP), Nevada; Dugway Proving Ground, Utah; Hill Air Force Base (AFB), Utah; Defense Distribution Depot, Ogden, Utah; and Tooele Army Depot, Utah

Structural Adequacy

Repository 1—Sagebrush Main Offices

Sagebrush occupies three suites of an office building (Figure 122). The building was constructed in 1972, consists of two floors and a basement area, and encompasses approximately 50,000 ft² of space. The foundation is concrete and the exterior walls are brick. The roof is composed of tar and is less than two years old, but it is still subject to occasional



Figure 122. Exterior view of Sagebrush Archaeological Consultants' office building.

leaks. Interior walls are comprised of wallboard, and the ceiling is composed of suspended acoustical tiles. The floor is wood covered with carpet. Doors to the exterior of the suite are solid glass panel, while doors within the interior of the suite are wood panel. The building has multiple aluminum framed exterior windows, all equipped with locks and blinds. Within the offices, the firm utilizes space for artifact holding and temporary storage, for records and photograph storage, and for artifact and records study.

Collections Storage Area 1—Main Offices

The three main suites occupied by Sagebrush on the second floor encompass approximately 9000 ft²; this is Collections Storage Area 1. Within this collections storage area, records are housed in several locations: individual offices, the main file cabinets, the reports library, and the map storage rack.

Collections Storage Area 2—Basement Storage

Sagebrush has a small storage unit located in the office building basement, in a wing separate from the three suites the firm occupies. Entrance to the basement unit is through the firm's suite doors to the exterior of the building and then into another set of exterior doors to a different set of suites. The collections storage unit encompasses approximately 50 ft² of floor space, and houses records as well as supplies/field materials. The floor is concrete, with wallboard exterior walls and a wood panel door. The ceiling is plaster. There is one aluminum frame exterior window, which is at ground level. The window is locked, but not equipped with a shade.

Repository 2—Storage Facility

Sagebrush rents a small storage unit from a large storage facility located several miles from the main office building. The storage unit encompasses approximately 100 ft² of space. The facility has been in existence for roughly 20 years, and has a concrete foundation with brick exterior walls. The roof and interior walls are tin. There are no windows, and the entry of the storage unit is secured by a large metal garage-style upward sliding door.

Environment

Repository 1—Sagebrush Main Offices

Collections Storage Area 1—Main Offices

Environmental controls for the main offices consist of gas-forced air heat and central air conditioning. Air movement systems are equipped with dust filters. There is no humidity monitoring or control; however, the climate is generally very dry and humidity changes are rare. Building common areas are maintained and cleaned by the building's owners, and the Sagebrush suites are maintained and cleaned by the firm's staff. Lighting consists of non-ultraviolet filtered fluorescent tubes.

Collections Storage Area 2—Basement Storage

There are no temperature or humidity controls in the basement storage area. Lighting is provided by incandescent bulbs. Sagebrush staff maintain and clean the area as needed.

Repository 2—Storage Facility

The storage unit has no environmental controls. There is no artificial lighting. Cleaning is performed on an as-needed basis by Sagebrush staff.

Pest Management

Repository 1—Sagebrush Main Offices

There is no integrated pest management system. Neither monitoring nor control are utilized on more than an as-needed basis. There is no current pest problem, and no major pest infestations were reported by Sagebrush staff.

Repository 2—Storage Facility

No precautions against pests are taken for this facility.

Security

Repository 1—Sagebrush Main Offices

Exterior doors to the suites and the suite entrances themselves are equipped with key locks. The basement storage room is secured by a key lock, and a key lock on a hallway door within the suite. Building tenants have access to all the exterior suite doors.

Repository 2—Storage Facility

The exterior door of the storage unit is secured with a key padlock, and an exterior metal bar gate is secured with a combination lock that is accessed by all tenants. The gate only keeps vehicles out of the building area.

Fire Detection and Suppression Systems

Repository 1—Sagebrush Main Offices

Fire extinguishers are the only form of fire suppression, and these are located outside of each suite in the hallways. There are no fire detection devices. The basement storage area is not equipped with a fire extinguisher.

Repository 2—Storage Facility

There are no fire detection or suppression devices or systems.

Archaeological Storage Materials

Sagebrush Archaeological Consultants is not currently curating any artifacts recovered from military installations.

Human Skeletal Remains

Sagebrush has no human skeletal remains recovered from any military installations.

Records Storage

Sagebrush Archaeological Consultants houses approximately 3.2 linear feet of documentation associated with archaeological work performed on military installations (Table 96). Records are stored in the main suite of offices, the basement storage room, and the off-site storage facility. In the main offices, storage units consist of standard letter-sized metal file cabinets, and acid-free cardboard boxes stored on the floor in various individual offices. In Collections Storage Area 2, the Basement Storage Area, storage units consist of metal uprights with particle board shelves (Figure 123). In Repository 2, storage units are again metal uprights with particle board shelves.

Paper Records

Sagebrush houses approximately 18.25 linear inches of archaeological documentation related to work conducted on military installations. Paper documentation includes background records, administrative records, survey records, and site

Table 96.
Major Classes of Documentation by Installation Housed at Sagebrush Archaeological Consultants
(in linear inches)

Installation	Types of Documentation					Total
	Paper	Reports	Photos	Maps	Disks	
Luke AFB, AZ	0.50	0.50	—	—	—	1.00
Hawthorne AAP, NV	8.00	6.00	—	0.25	—	14.25
Dugway Proving Ground, UT	0.75	0.25	—	—	—	1.00
Hill AFB, UT	1.50	2.25	0.25	—	0.25	4.25
Defense Distribution Depot, Ogden, UT	4.50	6.50	—	0.25	—	11.25
Tooele Army Depot, UT	3.00	3.00	—	0.25	—	6.25
Total	18.25	18.50	0.25	0.75	0.25	38.00



Figure 123. Shelving units housing military record collections at Sagebrush Archaeological Consultants' off-site facility. The off-site facility has corrugated metal walls.

forms. Primary containers consist of two acid-free cardboard boxes and the file cabinet in Collections Storage Area 1, four acidic cardboard boxes in Collections Storage Area 2, and one acidic cardboard box and one acid-free cardboard box in Repository 2.

Secondary containers for paper records consist primarily of manila folders, with information typed on an adhesive-backed paper label. Information generally consists of project name, project number, and folder contents. Manila folders for documentation stored in the basement storage room are also enclosed in hanging file folders.

Report Records

Report records total approximately 18.5 linear inches and are stored with the paper records. Reports are either loose or bound in manila folders.

Photographic Records

Photographic records include color prints and negatives, and total 0.25 linear inches. The photographs are currently stored in Collections Storage Area 2, the Basement Storage Area. Prints are stored in non-archival plastic photograph sleeves, with a photograph list included in the sleeve. The

photograph list is typed, and information consists of project, roll number, photograph subject, client, date, and film type. Individual prints are not labeled. Negatives are stored in non-archival plastic sleeves labeled in pencil with the subject, roll number, and photograph number.

Maps and/or Oversized Documents

Large maps total 0.75 linear inches, and are currently in the main offices suite. They are rolled by project and are standing upright in a large metal map rack (Houston map rack). They are unlabeled.

Computer Records

There is a total of 0.25 linear inches of three and one-half inch computer diskettes stored with the paper records in Collections Storage Area 2. They are unlabeled.

Collections Management Standards

Sagebrush Archaeological Consultants is not a permanent curation facility; therefore, collections management standards were not evaluated.

Curation Personnel

Mike and Ann Polk own Sagebrush Archaeological Consultants. They currently employ 12 staff members, including several archaeologists. The regular staff performs most of the processing activities, sometimes with the help of additional staff. There are no personnel devoted to the full time curation of collections, as the firm is not a permanent storage facility.

Curation Financing

Curation is financed through archaeological work contracts. The budgeted funds usually cover the cost of collections processing. Long-term curation is not funded.

Access to Collections

All Sagebrush staff have access to the documentation. Visiting researchers or other interested parties can have access by appointment.

Future Plans

In the future case of a large contract requiring a great deal of collections processing, the firm has plans to acquire an off-site laboratory facility, funding for which would be written into the contract. If necessary, the firm would also rent another temporary storage facility. There are no plans for long-term curation.

2 Produce multiple copies of all documentation on acid-free paper, and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant metal file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Comments

1. Heating and air conditioning systems are present for the main office building, but there are no humidity controls or monitoring devices. There are no environmental controls for Collections Storage Area 2 in the main office building, nor for the off-site storage facility.
2. Sagebrush has no integrated pest management system. Pest control is performed as-needed; there were no signs of any current problems.
3. Key locks are the only form of security for the main office building. Suite doors, including exterior doors, are solid glass. A padlock is the only security for the off-site storage unit.
4. Fire suppression consists only of fire extinguishers. There is no fire detection system. The off-site storage unit has no fire control measures.
5. Records are stored in acidic manila folders, and placed largely in a mixture of acid-free and acidic cardboard boxes. Photographic materials are stored in the basement storage area, which is not equipped with environmental controls.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.



San Diego Museum of Man

San Diego, California

Collection Summary

Collections Total: 14.8 ft³ of archaeological materials. No associated record collections.

Volume of Archaeological Materials: 14.8 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for curation.

Human Skeletal Remains: None

Linear Feet of Records: None

Status of Curation Funding: Curation is financed through the museum, which is a private non-profit corporation with small stipends from the city and county. Financing for archaeological collections is included in the operating budget as a line item. Financing appears to be adequate for maintenance of the status quo, but inadequate for collection storage replacement or rehabilitation of the current facilities.

Repository Summary

DATE OF VISIT: February 12-13, 1997

PERSON CONTACTED: Ken Hedges

Most of the information for this repository summary was collected during an October 1993 visit to the San Diego Museum of Man for the U.S. Navy EFA West project (Halpin and Holland, 1997). Items assessed for the 1997 visit were from the Yuma Proving Ground (YPG) in Arizona.

Structural Adequacy

The San Diego Museum of Man was built in Balboa Park for the 1915 World's Fair and has remained a viable museum devoted to the collection, study and exhibition of ethnographic and archaeological materials from the Western Hemisphere with emphasis on the Western Americas.

The building has a foundation of reinforced poured concrete. The walls are constructed of hollow ceramic bricks with a stucco exterior on a framework of heavily reinforced concrete pillars and cross-members. The roof has been repaired and renovated numerous times and is composed of asphalt and ceramic tile. The structure is solid with no cracks or

leaks, and has two floors above grade and three floors below grade. The electrical system has been replaced as-needed over the past 10-15 years. The plumbing in some parts of the facility is original, but has been rehabilitated and replaced as needed. The heating was recently replaced. The collections are curated in four different collection storage areas. Collection Storage Area (CSA) 1 is Laboratory 2, which holds the majority of the archaeological collections. This laboratory is in the first level below the ground floor. CSA 2 is Laboratory 4, has the only windows present within any collection storage area. These are permanently closed but not covered and are located behind shelving units. Laboratory 4 is accessed by going down another level from a staircase in Room 4a (adjacent to CSA 1). CSA 3 is Laboratory 5, which is accessed through and on the same sub-level as CSA 2. A door from Laboratory 5 leads to the fourth CSA (Laboratory 5a) where oversized groundstone artifacts are stored on a small section of a wood floor. The rest of the room has a dirt floor.

Environment

Collection Storage Area 1–Laboratory 2

The environment is controlled by an HVAC system recently expanded from the rest of the museum. Temperature levels range from 68°-70° Fahrenheit. Humidity levels are also monitored and controlled. Fluorescent lamps protected with ultraviolet (UV) sleeves provide the only light. The janitorial staff clean on an as-needed basis.

Collection Storage Areas 2, 3, and 4–Laboratories 4, 5, and 5a

There are no environmental controls in these storage areas. There are no windows in most of the collections storage areas, except for Laboratory 4. These windows are permanently closed but not covered and provide additional light. Temperature and humidity levels are monitored with a hygrothermograph. Lighting is provided by unfiltered fluorescent lamps. Janitorial staff clean these rooms on an as-needed basis.

Pest Management

Pests are managed through monthly spraying and an on-call policy for specific problems noted during monitoring. An integrated pest management program has been established; however, methods used for monitoring were not described. Any organic materials entering the museum are first inspected and fumigated.

Security

All exterior doors and doors leading to collection storage areas have intrusion alarms that are wired to the security office and to the local police station. All doors have keyed, dead-bolt locks. Museum personnel maintain controlled access to the collection storage areas. No unauthorized access was reported and no evidence of any past episodes of this nature were observed by the assessment team. Visitors allowed into the storage areas are required to gain permission from the curator and sign a guest log. No windows are present in any of the assessed collection storage areas.

Fire Detection and Suppression Systems

Fire inspections are conducted annually. Heat sensors and smoke detectors are located in all of the collection storage areas. These are wired to the local fire department. Fire extinguishers in each area provide the only means of fire suppression.

Archaeological Storage Materials

The artifacts are stored in four different locations. In CSA 1, ceramic sherds, some shell and small lithic materials are stored in wooden drawers built into the wall. Additional drawer storage is located in the center of the room, taking most of the available space. A counter top above this cabinetry is used for staging exhibits and general work space. In preparation for an upcoming exhibit, nearly all of the counter space was taken by baskets. Downstairs in CSA 2, whole and reconstructed ceramic vessels are stored on open metal shelving units (Figure 124). In



Figure 124. Whole vessels are housed on metal and pressed wood shelving units in Lab 4 (Collection Storage Area 2).

a small corner section of the same room, boxes of sherds are stored on open metal shelving units. The third collection storage area is primarily an archaeological storage area. Both sides and the entire back section of the room are devoted to ceramics, lithics, and general archaeological collections; the middle area is shared with ethnographic collections temporarily housed there pending funding of a renovation of ethnographic collection storage space. The fourth and final storage location is adjacent to the third. Oversized ground stone is stored on a small wooden plank deck built over the dirt floor. These large metates are placed in rows with the row number painted directly on the wood panels. The metates are placed side-ways leaning on each other like dominos (Figure 125). The percentages of materials classes included in the collection are given in Table 97.

Table 97.
Percentages of Prehistoric Material Classes in the Yuma Proving Ground Collections Housed at the San Diego Museum of Man

Material Class	Percentage
Ceramics	71
Stone Artifacts	28
Shell	1
Total	100

Note: Percentages of material classes are based on volume.



Figure 125. Large ground stone artifacts are housed in Lab 5 annex (CSA 4).

Storage Units

The storage units in CSA 1 are built-in wooden drawers and the central wooden cabinetry unit with the counter top. The drawers have paper labels. Collections in areas 2 and 3 are stored on open, metal shelving units with particle board shelves labeled numbered with printed labels. Pieces of masking tape are stuck on the metal structure with the site numbers written in marker. These served as finding aids for the collections while they were being placed in their present location. The shelves containing the whole and reconstructed ceramic vessels from southern California are labeled with unit numbers printed on yellow self-adhesive labels. These units also have an additional wooden board along the sides to provide additional earthquake security. No storage units are in CSA 4.

Primary Containers

Primary containers in CSA 1 are wood drawers. Primary containers for the rest of the collections—except for the whole vessels and the oversized manos and metates—are acidic cardboard boxes. The whole ceramic vessels are wrapped in plastic bags and placed in ring stands on the open shelving. The catalog or accession number is directly written on the plastic bag. The metates are loose, lined up against each other on a section of wood flooring.

Secondary Containers

Secondary containers consist of many different types and sizes of small, acidic boxes. Many had no secondary containers. Some are directly labeled in ink or marker.

Laboratory Processing and Labeling

All collections were cleaned and directly labeled with india ink. Collections were sorted by site and by material class.

Human Skeletal Remains

San Diego Museum of Man does not curate any human skeletal remains recovered from YPG.

Records Storage

No associated documentation at the San Diego Museum of Man was assessed for the YPG artifact collection.

Collections Management Standards

Registration Procedures

Accession Files

Collections are accessioned upon receipt by the Registrar.

Location Identification

Location is identified within the inventory sheets.

Cross-Indexed Files

Files are cross-indexed according to catalog number, site number, cultural affiliation, and by accession date.

Published Guide to the Collections

No guide to the collections exists.

Site-Record Administration

The museum uses its own site-numbering system, established by Malcolm Rogers in the 1920s. It is an institutionally established system.

Computerized Database Management

Staff are currently adding collection information to a database.

Written Policies and Procedures

Minimum Standards for Acceptance

The minimum standards for acceptance of collections is outlined in the museum's collection policy. Archaeological collections are no longer accepted.

Curation Policy

Curation policies are written in the collection policy.

Records-Management Policy

There is no records management policy.

Field-Curation Guidelines

No field-curation guidelines have ever been in place for depositing archaeological collections.

Loan Procedures

Loan procedures are discussed in the collection policy. No individuals can obtain a loan. An institution may be granted a loan upon the approval of the director if the purpose is for educational or scientific use.

Deaccessioning Policy

Deaccessioning is addressed in the collection policy. A record of all deaccessioned items is maintained. The approval of the Director, the Board of Trustees and a Chief Curator or Registrar is required.

Inventory Policy

No written inventory policy exists.

Latest Collection Inventory

The collections were last inventoried in the 1970s.

Curation Personnel

Ken Hedges is the Chief Curator for California ethnography, archaeology, and administrative/publications duties; Grace Johnson is the full-time Curator for the Latin American Ethnographic collections and administers the archaeological records search program; and Rose Tyson is a full-time Curator of Physical Anthropology.

Curation Financing

Financing for archaeological collections is included in the operating budget as a line item. Financing appears to be inadequate, considering the need for collection storage rehabilitation.

Access to Collections

Approval for an appointment for access to collections can be made through Ken Hedges. Individuals requesting access must have legitimate, project-specific research needs.

Future Plans

Future plans include computerizing collection data and upgrading storage conditions by acquiring metal cabinets. The San Diego Museum of Man is in full support of the San Diego Repository Corporation in its efforts to establish a regional curation facility in San Diego.

Comments

1. The building is structurally solid.
2. Most of the collection storage areas do not have adequate temperature and relative humidity controls.
3. Only some of the light fixtures have appropriate UV filters.
4. Staff participate in an integrated pest management system.
5. Security measures are adequate.
6. The fire detection is adequate; however fire suppression is not.

7. Primary and secondary containers are not archival quality.

8. Locational records were frequently inaccurate; however, locating artifacts was not difficult.

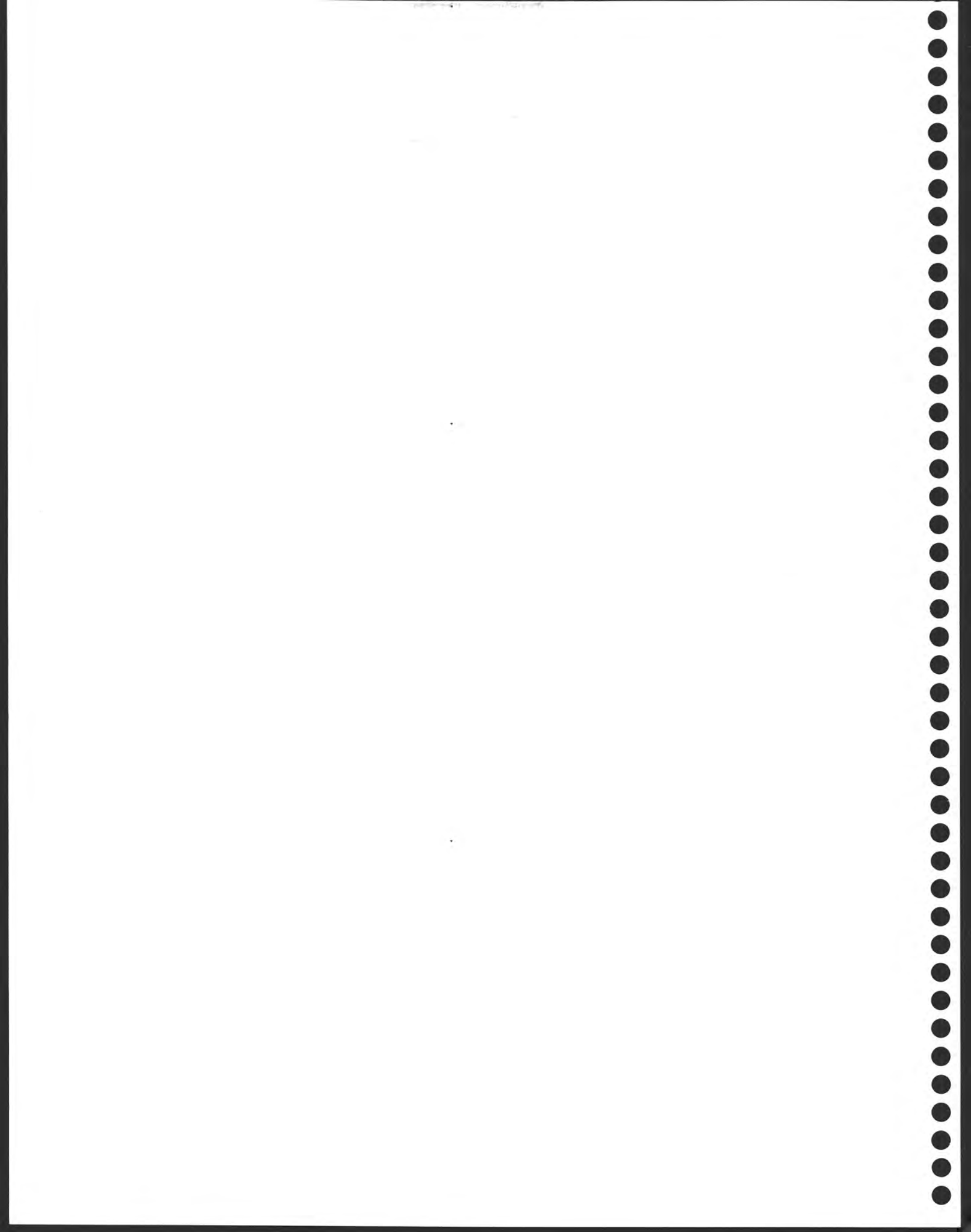
9. Collection storage is overcrowded.

Recommendations

1. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Make labels for secondary containers from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), label in indelible ink, and insert into the secondary containers.

2. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.

3. Install environmental controls equipped with a dust filtration system to control the temperature, relative humidity, and dust levels. Monitor both the relative humidity and temperature in the collection storage areas.



Scientific Consultants Services

Honolulu, Hawaii

Collection Summary

Collections Total: 9 ft³ of archaeological materials.
1.1 linear feet of associated records.

Volume of Archaeological Materials: 9 ft³
Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological collections.

Human Skeletal Remains: None

Linear Feet of Records: 1.1 linear feet (13.75 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservations.

Status of Curation Funding: Curation of archaeological collections is currently funded with overhead generated from archaeological projects.

Repository Summary

DATE OF VISIT: March 21, 1997

PERSON CONTACTED: David Chaffee

Scientific Consultants Services (SCS) is a private contract archaeology firm that conducts archaeological investigations throughout the state of Hawaii and the surrounding Pacific islands. Their facilities are located in downtown Honolulu. Artifact volumes housed at the firm total 9 ft³ (Table 98).

Table 98.
**Volume of Artifacts from DoD Installations
Housed at Scientific Consultants**

Installation	ft ³
Bellows Air Force Station	2
Hickam Air Force Base	1
Kawailoa Training Area	1
Marine Corps Base Hawaii, Kaneohe Bay	3
Makua Military Reservation	1
Schofield Barracks	1
Total	9

Structural Adequacy

The privately owned building is approximately 10 years old. The foundation is concrete and the

building frame type is steel. The external walls of the repository are constructed of metal and the built-up asphalt roof is original to the structure. No structural problems have been noted in the foundation or the roof. Interior walls are wallboard and floors are concrete with carpeting. Ceilings in the repository are suspended acoustical tile. Windows in the repository have aluminum frames and are sealed. The repository has space for analysis of archaeological materials and examination of documents. The majority of the space is used for report preparation. It encompasses 1080 ft².

The collections storage area is a separate office in the repository. This office contains all boxes holding archaeological materials from fieldwork. Records for the projects are also stored in this area, but some still reside with individual project managers. No structural problems have been noted in the archives by any staff members. There are no windows in the collections storage area and it is 60 ft².

Environment

Central air conditioning provides for temperature stabilization, and all air conditioning vents have dust filters. The repository is cleaned daily by a professional janitorial service. All artificial lighting in the repository is generated either by incandescent desk lamp or unfiltered fluorescent lights. Repository utilities are original and have received no major repairs.

The collections area is dominated largely by storage space for artifacts and records, however, some of the space is used for report preparation and other tasks. There are no windows in this area. The same janitorial service that cleans the repository also cleans in the collections area. Utilities in the collections area are the same as those in the repository. They are original to the structure and have not been modified to date.

Pest Management

The repository, including the collections storage area, is not monitored or sprayed for pests. There has been no past incidents of infestation.

Security

The repository has key locks on solid wood exterior and interior doors. In addition, the building is patrolled on a daily basis by an independent security service.

Fire Detection and Suppression Systems

The repository uses a fire alarm that is wired to the fire department as well as a sprinkler/suppression system. Manual fire alarms and smoke detectors are located throughout the building. All interior doors are fire rated at 20 minutes and one fire extinguisher is located in the collections area.

Archaeological Storage Materials

Storage Units

DoD collections total 9 ft³ of artifacts from six installations (Table 99). The materials are stored on nonmovable, metal shelving units measuring 5 x 1.5 x 5 feet (h x w x d). The shelving units are not labeled and are not secured (Figure 126).

Table 99.
Percentages of Material Classes in the DoD
Archaeological Collections Housed at
Scientific Consultants Services

Material Class	Percentages Present						Total
	1	2	3	4	5	6	
<i>Prehistoric Artifacts</i>							
Chipped Stone	67	—	—	—	7	50	14
Soil Samples	—	80	70	20	83	—	29
¹⁴ C	17	—	30	—	—	50	31
<i>Historic Artifacts</i>							
Glass	—	20	—	80	7	—	23
Faunal Remains	16	—	—	—	—	—	2
Shell	—	—	—	—	3	—	1
Total							100

Note: Percentages of material classes are based on volume. (1) Bellows Air Force Station; (2) Hickam Air Force Base; (3) Kawaihoa Training Area; (4) Makua Military Reservation; (5) Marine Corps Base Hawaii, Kaneohe Bay; (6) Schofield Barracks.



Figure 126. Department of Defense collections are housed on steel and wood shelves in the offices of Scientific Consultants Services.

Primary Containers

All materials are stored in acidic cardboard boxes each measuring 1 ft³. The boxes use adhesive labels written in marker with information regarding provenience and project. The boxes have telescoping lids for security. They are not overpacked and are in relatively good condition.

Secondary Containers

Secondary containers are a combination of plastic zip-lock bags (85%) and paper bags (15%). All are labeled directly in marker and provide information regarding provenience, project, site name, site number, date, and box/bag number. Bags show minimal signs of punctures and tears. All are nested within one another.

Laboratory Processing and Labeling

None of the collections have been processed. All archaeological materials are sorted by provenience.

Human Skeletal Remains

SCS holds no human skeletal remains.

Records Storage

DoD records encompass approximately 1.1 linear feet (13.75 linear inches) from eight distinct collections. (Table 100). All DoD records reside in standard filing cabinets located in the collections storage area and within project leader offices. Individual records are stored in manila folders that use adhesive labels with typewritten information. The folders are color coded according to document type (e.g., different colors for proposal, field notes, reports).

Paper Records

Paper records consist of administrative records, background information, field notes, survey, excavation, and analysis records from eight installations. The materials are in good condition but do have some contaminants, such as paper clips and staples, throughout.

Report Records

Approximately four linear inches of report records are housed at SCS from Hickam Air Force Base,

Table 100.
Major Classes of Documentation by Installation Housed at the
Scientific Consultants Services (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Bellows Air Force Station	2.00	—	—	—	2.00
Camp Smith	0.75	—	—	—	0.75
Dillingham Military Reservation	0.75	—	—	—	0.75
Hickam Air Force Base	1.00	2.5	0.25	—	3.75
Kawailoa Training Area	2.25	0.5	—	0.50	3.25
Marine Corps Base Hawaii, Kaneohe Bay	1.50	0.5	—	0.25	2.25
Makua Military Reservation	0.25	0.5	0.25	—	1.00
Total	8.50	4.0	0.50	0.75	13.75

Marine Corps Base Hawaii, Kaneohe Bay, Kawaihoa Training Area, and Makua Military Reservation.

Photographic Records

Photographic records from Hickam Air Force Base and Makua Military Reservation equal approximately 0.5 linear inches and consist of color prints, black and white prints, and negatives.

Maps and Oversized Documents

A small amount of maps and drawings, under one linear inch, are housed with other documentation from Marine Corps Base Hawaii, Kaneohe Bay and Kawaihoa Training Area.

Collections Management Standards

This facility is not a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

Mr. David Chaffee maintains collections held by the firm.

Curation Financing

Curation receives no funding. Costs associated with curation are taken from the firm's overhead budget.

Access to Collections

Access to the records and archaeological materials is controlled. The staff requires a telephone call or a letter of explanation regarding the specific collections desired and the needs of the particular researcher.

Future Plans

SCS has no future plans regarding curation or collections storage.

Comments

1. Environmental conditions are controlled, but not monitored for fluctuating temperature and humidity levels.

2. There is no integrated pest management system.
3. There is no intrusion alarm present in the building.
4. Fire detection and sprinkler systems for fire suppression are present.
5. Primary containers consist of acidic cardboard boxes with telescoping lids.
6. Primary containers for records are generally adequate, but the secondary containers consist mainly of manila folders.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.
3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

Statistical Research, Inc.

Tucson, Arizona

Collection Summary

Collections Total: 27.2 ft³ of archaeological materials. 7.2 linear feet of associated records.

Volume of Archaeological Materials: 27.2 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 7.2 linear feet (86.51 linear inches)

Compliance Status: All associated documentation require partial rehabilitation to comply with modern archival practices for the curation of documentation.

Status of Curation Funding: Curation activities are generally included as a line item in the budget for each contracted project.

Repository Summary

DATE OF VISIT: April 30, 1997

PERSON CONTACTED: Gina Logan, Su Benaron, and Darell Clark

Approximately 7.2 linear feet of associated documentation and 27.2 ft³ of artifacts from Fort Huachuca, Navajo Army Depot, Yuma Proving Ground, Dugway Proving Ground, and Hill Air Force Base are located in the laboratory, library, and office files of Statistical Research, Inc. (SRI). SRI was formed in 1983 as a private corporation to conduct high-quality archaeological and historical

research that balances the need for development with the desire to preserve the past. They have conducted considerable work for the military throughout the west. Because SRI is not a long-term curation facility, artifacts and associated records for specific projects are temporarily stored at company facilities until project completion, when the collections are transferred to a permanent repository. Artifacts and associated records are prepared for curation according to the standards of the permanent repositories at which they will be stored. For the amounts of materials housed at SRI, refer to Table 101.

Table 101.
Volume of Artifact and Record Collections
Housed at Statistical Research by Installation

Installation	Cubic Feet of Artifacts	Linear Inches of Records
Dugway Proving Ground, UT	—	2.25
Fort Huachuca, AZ*	26.2	78.88
Hill Air Force Base, UT	—	1.50
Navajo Army Depot, AZ	1.0	3.13
Yuma Proving Ground, AZ	—	0.75
Total	27.2	86.51 (7.2 linear feet)

*The totals for Fort Huachuca include artifacts and associated records for a project that is still in progress.

Structural Adequacy

SRI leases space in a building constructed in 1973, which housed a home health care provider company prior to renovation for use by SRI (Figure 127). The structure has a concrete foundation and concrete block exterior walls. The roof, which was completely renovated in 1996, has shingles in the front and built-up asphalt in the rear of the building. There are no reported cracks or leaks, and the building appears to be structurally solid. Activity areas present in this 12,000 ft² facility include offices, report production areas, a laboratory with collections storage space, materials/supplies storage space, a reception area with a display case, and a dark room. The one-story facility has multiple windows of varying dimensions; no windows are in the collections storage area, but there are skylights present. The aluminum framed windows in the rest of the building are sealed, have



Figure 127. Statistical Research has offices, a laboratory, and a warehouse.

partial shades, and have never been replaced. There is no evidence that the windows are drafty or leak water. Exterior doors are metal framed with glass panes. Maintenance of the building is the responsibility of SRI.

The laboratory and collections storage area is located in the back of the building. It has a concrete floor, concrete block walls, and a ceiling constructed of an aluminized vapor barrier over trusses. The two 1.5 x 4 foot (w x h) skylights are in wood frames, do not have shades, and have not had any problems with leaking water. An overhead rolling loading bay door leads to the exterior of the building from the collections storage area; two wood panel doors lead to rest of the SRI offices.

Environment

Evaporative cooling units and forced-air heat are used to control temperature levels in the building, which are maintained at 75°-80° F in the summer and 70°F in the winter. Humidity levels are neither monitored or controlled; however, the dry climate of the area and the use of the cooling units helps to stabilize the humidity levels. There are no dust filters present on the environmental controls, but the laboratory staff cleans the areas daily. Due to the climate, a significant amount of dust accumulates quickly, but the laboratory staff clean the areas daily. There is no asbestos in this facility. Non-filtered fluorescent light fixtures and natural light from the skylights illuminate the offices.

Pest Management

An integrated pest management program involving regular monitoring and control measures is present in this facility. A professional pest management company is employed to check and spray the building quarterly. There were no reported infestations, and the assessment team noted no evidence of any pest infestations.

Security

The building is equipped with an intrusion alarm system and motion detectors that are wired directly to a security company. These measures are located on all exterior doors and windows, with the motion

detectors placed throughout the interior of the facility. All the doors are equipped with key locks. According to SRI staff, there has been no evidence of unauthorized entrance, and there has never been any reported instance. NAGPRA materials are stored in a locked, fire-safe room.

Fire Detection and Suppression Systems

Fire detection measures present include smoke detectors and fire alarms that are wired directly to the local fire department. Fire suppression measures in the facility consist of fire extinguishers and a sprinkler system that is installed throughout the building.

Archaeological Storage Materials

Storage Units

Archaeological materials (27.2 ft³) recovered from Fort Huachuca and Navajo Army Depot are housed in the collections storage area of the SRI laboratory. Percentages of material classes are provided in Table 102. Boxed collections are stored on adjustable metal shelving units (Figure 128) that measure 8 x 4 x 8 feet (w x d x h). There are four units with seven pressed wood shelves per unit. The shelves are not labeled.



Figure 128. Archaeological collections are boxed and housed on metal shelving units; processing and field equipment share the space.

Table 102.
Percentage of Material Classes Present in the DoD Collections at Statistical Research

Material Class	Fort Huachuca	Navajo Army Depot	Total
<i>Prehistoric</i>			
Chipped Stone	23	32	26
Ceramics	17	—	17
Flotation	12	—	12
Faunal Remains	5	—	5
¹⁴ C	5	—	5
Botanical Remains	4	—	4
Soil Samples	5	—	4
Shell	3	—	3
Modified Shell	2	—	2
<i>Historic</i>			
Ceramics	3	—	3
Metal	5	18	6
Glass	10	8	10
Brick/Masonry	3	—	2
Asbestos	—	16	<1
Battery Core	—	16	<1
Other*	3	10	<1
Total	100	100	100

Note: Percentages of material classes are based on volume.
*Other historic material classes include aluminum foil, fence piece, quartz crystal, textiles, plastic, electric plug with wire, cardboard, rubber, and coal.

Primary Containers

Archaeological materials, not currently undergoing processing and analysis, are housed in acidic cardboard boxes that vary in size and volume ranging from 0.3 ft³ to 2.5 ft³. The boxes have a folded, glued, stapled, or taped construction (Figure 129). Some of the boxes assessed for DoD



Figure 129. Collections generated from Fort Huachuca are stored in plastic zip-lock bags in acidic cardboard boxes.

Table 103.
Percentages of Secondary Containers Used to House
the DoD Collections at Statistical Research

Container Type	Percentage
Archival Zip-lock Bags	48
Non-Archival Plastic Bags Tied with String	41
Acidic Cardboard Boxes	9
Paper Bags	2
Total	100

Note: Percentages based on volume.

collections are very dusty and exhibit signs of damage from compression. A number of the boxes have pre-printed paper labels that are taped to the box with information written in pencil. The labels are legible and consistent with data consisting of the project name, box number, material type, site number, item number, and provenience. Other boxes have label information written directly on the box.

Secondary Containers

A variety of secondary containers is used to house the archaeological materials, including acidic cardboard boxes, archival and non-archival quality plastic bags, and paper bags. For the percentages of secondary containers present, refer to Table 103. The containers have inconsistent labels that are written directly on the bag or on acid-free paper inserts with information that might include any of the following: site number, provenience, project name, site name, date, bag/box number, investigator, type of investigation, material contents, description, quantity, and comments. The containers are often nested with tertiary containers consisting of more plastic and paper bags, plastic film canisters.

Laboratory Processing and Labeling

All of the artifacts have been processed and sorted by material class within each project. Approximately half of the artifacts (51%) that are large enough have been labeled with site number, year, or item numbers in India ink. A few artifacts also have individual paper labels attached with string. Paper labels have information written on them including the item number, bag number, and project name written on it.

Human Skeletal Remains

There are no human skeletal remains located at SRI associated with DoD installations.

Records Storage

Associated documentation is stored in the library or laboratory. If the project is currently in progress, documentation is located in staff offices. For a breakdown of record amounts by installation, refer to Table 104.

Paper Records

The majority of the associated documentation (4.1 linear feet) is paper records, and, with the exception of the materials related to the currently-in-progress Apache Scouts project, comprises bound reports or duplicate copies of original records that are either curated, in the possession of the client, or both. Binders and files of project records are stored on wooden shelving units in the library and contain administrative records, background reports and correspondence, survey field notes and journals, site

Table 104.
Major Classes of Documentation by Installation
Housed at Statistical Research (in linear inches)

Installation	Types of Documentation						Total
	Paper	Reports	A/V	Photos	Maps	Computer	
Dugway Proving Ground	1.25	—	—	0.75	0.25	—	2.25
Fort Huachuca	45.75	3.00	1.00	27.00	2.00	0.13	78.88
Hill Air Force Base	1.50	—	—	—	—	—	1.50
Navajo Army Depot	1.00	1.25	—	0.25	0.63	—	3.13
Yuma Proving Ground	0.25	—	—	0.25	0.25	—	0.75
Total	49.75	4.25	1.00	28.25	3.13	0.13	86.51 (7.2 linear feet)

forms, collection release forms, excavation records, analysis records, and paper copies of historic photographs. The binders are labeled on the spine with paper inserts in plastic label holders. Paper contaminants, such as staples and paper clips, are present on the records. Some of the records are stored in plastic sleeves to protect them from falling out of the binders. Although there is no finding aid for the SRI record holdings, data compendiums containing a table of contents are sent to the client after each project is completed.

Report Records

Approximately 4.25 linear inches of final reports, drafts of preliminary reports, and chapter sections are located in the working office files of current projects. They are stored in the same manner as the paper records and either stapled together or bound with plastic spiral combs.

Audio-Visual Records

Two audio cassettes are among the associated records from one of the projects conducted on Fort Huachuca. These cassettes are part of a current project and are stored in one of the offices with the rest of the project records. They are labeled with the project name and housed in plastic cassette cases.

Photographic Records

There are 2.4 linear feet of photographic records present, consisting of color prints, black and white prints, oversized prints, aerial photographs, negatives, slides, and contact sheets. Photographic records are stored with the paper records by project. Some of the records are housed in archival quality plastic sleeves in binders; however, many are still in their commercial acidic paper developing envelopes. Most of the prints are directly labeled on the back in pencil. Slides are also kept in plastic boxes. Under the terms of each contract, photographic materials are curated with collections; SRI, however, retains copies of select images for company use.

Maps and/or Oversized Documents

A total of 3.13 linear inches of maps is present in the collection, including U.S.G.S. topographic maps with sites plotted on them, blue-line copies, field maps,

drawings, and report ready maps. These maps are folded and stored with the rest of the project records.

Computerized Records

One floppy disk is included in the Fort Huachuca project records. It is labeled with an adhesive paper label with the project name handwritten on it.

Collections Management Standards

This facility is not a curation facility; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no full-time curation personnel at this facility; however, a full-time laboratory director and assistant are responsible to the storage and management of the collections until they are transferred to a permanent repository.

Curation Financing

In almost all cases, curation is financed as a project-specific line item in the project budget.

Access to Collections

Access to the collections is granted by appointment with the laboratory staff.

Future Plans

There are no future plans regarding curation or collections storage, other than to place the federal collections in a permanent curation facility.

Comments

1. Laboratory staff are efficient and committed to the care and temporary storage of the collections. Staff provided the assessment team with a finding aid for every DoD contract and subsequent collection location.
2. Humidity levels are not monitored or controlled.
3. Environmental controls are not equipped with dust filters; a significant amount of dust was present on some of the collections.

4. Light sources do not have ultraviolet (UV) filters.
5. Collections are housed in acidic cardboard boxes.
6. All original associated records are part of a package that is curated once the project is complete. The only original records at SRI are those for in-progress projects. A security copy of all associated documentation has not been produced.

Recommendations

1. In cases where curation specifications have not been written into the scope of work for a military project, archaeological collections should be transferred to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. If possible, coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.
3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands.

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SWCA, Inc.

Flagstaff, Arizona

Collection Summary

Collections Total: 2.1 ft³ of archaeological materials. 0.6 linear feet of associated records.

Volume of Archaeological Materials: 2.1 ft³
Compliance Status: The archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.6 linear feet (7 linear inches)

Compliance Status: The records collections require partial rehabilitation to comply with modern archival standards for the curation of documentation.

Status of Curation Funding: The storage of collection materials is funded under the contract between SWCA and Camp Navajo. The curation agreement follows Arizona State Museum guidelines.

Repository Summary

DATE OF VISIT: December 10, 1996

PERSONS CONTACTED: Dawn Greenwald, Mary-ellen Walsh-Anduze, Richard Anduze

The offices of SWCA are located in downtown Flagstaff and currently house approximately 2.1 ft³ of archaeological materials and 0.6 linear feet of documentation associated with an ongoing project at Navajo Army Depot.

Structural Adequacy

The building housing SWCA was constructed in 1927 and functioned originally as a post office (Figure 130). It is still referred to as "the old Federal Building." SWCA moved into the building in 1993-1994. The facility has a total of three stories, with two above grade and one below grade. The total area for the facility is approximately 17,000 ft². The building has a concrete foundation, concrete block and sandstone exterior walls, and a built-up asphalt roof. Both the foundation and roof are considered to be structurally solid without cracks or leaks. The roof was replaced in 1986 and some minor repairs were made in 1994.



Figure 130. The offices of SWCA, Inc. are located in Flagstaff in a former federal building.

The collections are stored in two rooms on the floor located below ground. Within the collections storage areas, the interior walls are constructed of painted wallboard, the floor is carpeted concrete, and there is an acoustical tile drop ceiling. There is one interior wood panel door in each of the two storage rooms. There are no means of entering either storage room directly from outside the building. There are no windows in the storage rooms.

Environment

The building is heated by a gas-forced air and gas-hot water system that is equipped with dust filters. A heating-ventilation-air conditioning (HVAC) system is present and functioning within the facility. There is no humidity monitoring or control device within the facility due to the low humidity characteristic of the Flagstaff area. Unfiltered, overhead fluorescent lighting is utilized throughout the facility. Building utilities, including plumbing, electricity, and heating, were replaced in 1986. There is no asbestos present within the building structure, and there are no overhead pipes within the collections storage areas. The facility is maintained on an as-needed basis by a curatorial staff.

Pest Management

There was no specific program of pest management and control reported for SWCA. Precautions are taken on an as-needed basis only. There was no reported or observed problem with pest infestation or damage to collection materials.

Security

The facility is equipped with a security system that includes an intrusion alarm that is wired into a private security agency, motion detectors, key locks, dead-bolt locks, and controlled access. All windows have sensors to detect glass breakage. There was no report or evidence of previous episodes of unauthorized entry.

Fire Detection and Suppression Systems

The facility is equipped with fire detection devices that include manual fire alarms, smoke detectors, and fire alarms that are wired directly into the local fire department. Fire suppression measures include fire extinguishers that are inspected annually, fire walls within the building, and fire doors.

Archaeological Storage Materials

Storage Units

The collection materials held by SWCA are stored on large, unsealed wood and press board shelving units (Figure 131). Table 105 summarizes the material classes present in the Navajo Army Depot collection.



Figure 131. Collections are stored in acidic cardboard boxes on wooden shelves in the archaeological laboratory.

Table 105.
Percentages of Material Classes in the Navajo Army Depot Collections Housed at SWCA

Material Class	Percentage Present
<i>Prehistoric Artifacts</i>	
Ceramics	6
Chipped Stone	41
Shell	1
<i>Historic Artifacts</i>	
Glass	36
Metal	16
Total	100

Note: Percentages of material classes are based on volume

Primary Containers

The Navajo Army Depot collection materials are stored in two acidic cardboard boxes. The boxes are of a folded and taped construction with folded flap lids (Figure 132). The primary containers are in good condition, exhibiting no tears, compression, or other damage. A computer generated acid-free adhesive label is attached to each box and indicates the project name, project number, and the time period related to the enclosed artifacts.



Figure 132. Artifact packaging at SWCA, Inc., includes cardboard boxes and nested acidic paper bags secured with rubber bands.

Secondary Containers

Each of the two primary containers has a different type of secondary container enclosed within it. One box holds only historic period materials with each artifact enclosed in separate paper bags that are secured with rubber bands. These bags are stamped with a form label and are completed in handwritten

black ink. The second box contains only prehistoric artifacts that are enclosed in smaller acid-free boxes with either telescoping lids or folded flap lids. These secondary boxes are labeled with computer generated adhesive labels. Secondary container label information is generally consistent throughout the collection. The prehistoric artifacts contained within the acid-free secondary boxes are further packaged in nested paper bags secured with rubber bands and/or zip-lock plastic bag interior containers. In some cases, artifacts are further enclosed in plastic film canisters within the tertiary bags. Nested interior containers are generally labeled with consistent label information in the same manner as the secondary containers.

Laboratory Processing and Labeling

The artifacts do not appear to have been cleaned and none are individually labeled. The historic period materials are each enclosed in individual secondary containers and the prehistoric materials are sorted into secondary containers by material class.

Human Skeletal Remains

SWCA is not curating any human skeletal remains recovered from Navajo Army Depot or other Department of Defense installations.

Records Storage

Paper Records

At the time of this assessment, there was a total of approximately one inch of paper records that includes Navajo Army Depot project correspondences, site forms, field notes, photo logs, bag lists, and box inventories. The records are stored in standard metal four drawer file cabinets in acidic manila folders. Some records are bound with staples and/or metal clips.

Photographic Records

There are approximately six inches of photographic records for the Camp Navajo project. These materials consist of negatives, contact prints, and photographs that are stored in two three-ring binders.

All photographs and negatives are archivally processed. The photographs and contact sheets are labeled directly in pencil and the negative sleeves are labeled directly in black marker. Label information for the photographic records includes project number and film roll number.

Collections Management Standards

SWCA is not a permanent curation facility; therefore, collections management standards were not addressed during the assessment.

Curation Personnel

SWCA does not employ an archaeological collections curator; however, Jim Potter, Laboratory Director, and one lab technician are responsible for the processing and temporary storage of collections while they are temporarily stored at SWCA.

Access To Collections

Staff members within the firm have access to collection materials. The St. Louis District researchers were granted permission to view and access the collection materials following written request.

Future Plans

No future plans were indicated for building renovation. Currently, SWCA is awaiting a decision from Navajo Army Depot regarding the permanent disposition of collections.

Comments

1. The building is structurally sound.
2. An integrated pest management system is not in place within the collections storage areas.
3. The facility has very good security measures for the temporary storage of Navajo Army Depot collections.
4. Storage of all associated records from Navajo Army Depot does not meet modern archival standards.
5. All Navajo Army Depot collections are housed in acidic cardboard boxes; secondary containers consist of

acidic paper bags, zip-lock plastic bags, and plastic film canisters.

6. Lighting in the collections storage area does not have ultraviolet filtering sleeves in place.

7. Storage units are constructed of unsealed wood which poses the potential of off-gassing and damaging the collections.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.

3. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled with indelible ink, and inserted into the secondary containers.

4. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.

5. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

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Tetra Tech

San Bernadino, California

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 1.5 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 1.5 linear feet (17.7 linear inches)

Compliance Status: The records collections require partial rehabilitation to comply with modern archival standards for the curation of documentation.

Status of Curation Funding: Tetra Tech is not a long-term curation facility. Funding for curation must be provided by the contracting agency.

Repository Summary

DATE OF VISIT: February 14, 1997

PERSONS CONTACTED: Susan Bupp and Barbara Peterson

Tetra Tech is an archaeological consulting firm located in San Bernardino, California. The firm has conducted archaeological research projects on a number of installations, including Bergston Air Force Base (AFB), Falcon AFB, Hill AFB, Kirtland AFB, Luke AFB, Navajo Army Depot, Peterson AFB, and White Sands Missile Range (WSMR). Currently, Tetra Tech houses 1.5 linear feet of records.

Structural Adequacy

The building housing Tetra Tech was constructed as an office complex in 1982-83 with Tetra Tech assuming occupancy of offices on the third floor in 1985. The three story above ground structure has a poured concrete foundation, stucco exterior walls, and a composition roof that is original to the building. Both the foundation and exterior walls were reported to be structurally sound, but the roof was reported to have minor leaks. Within the conference room where collection materials and documentation are temporarily being stored, the floor is carpet covered concrete, the walls are sheet rock/wallboard, and there is an acoustical tile drop ceiling. There are no windows in this room. There is no asbestos present in either the collections storage area or the facility in general.

Environment

Environmental control within the offices of Tetra Tech is provided by a gas-forced air heating-ventilation-and-air conditioning (HVAC) system that is outfitted with dust filters. The system is set for a target temperature of 70° Fahrenheit. Humidity within the building is neither monitored nor controlled. Office lighting is provided by unfiltered fluorescent tubes with additional natural window lighting in some offices. Building support facilities include electricity, restrooms, and telephones. There are no overhead pipes within the rooms used for collections storage and there is no evidence of water damage to any collection materials.

Pest Management

A professional pest management company is employed to monitor and control insects within the facility. Inspections and precautionary measures are taken monthly. There was no report of pest problems within the facility and the assessment team observed no evidence of insects or pest damage during the repository evaluation.

Security

Security measures for the building in general include motion detectors, dead-bolt locks with key pad entry on the main entrance, controlled access, and window locks. Additional security within the Tetra Tech offices is provided by an after hours in-house security guard. There were no reported episodes of previous unauthorized entry and no evidence of entry was observed by the assessment team.

Fire Detection and Suppression

Fire safety within the building is provided by manual fire alarms, fire doors, fire extinguishers, and fire alarms that are wired to the local fire department.

Archaeological Storage Materials

Tetra Tech is not housing any artifact materials from these DoD installations.

Human Skeletal Remains

There are no human skeletal remains among the federal collection materials at Tetra Tech.

Records Storage

The documentation for on-going projects is kept in the offices of Susan Bupp and Evelyn Chandler where it is stored in metal file cabinets. Other documentation is stored in acidic cardboard boxes on the floor of the office conference room (Figure 133). Although the storage boxes have recently been labeled directly in marker with box content information, the materials inside are arranged with no specific order. Project records and photographs are mixed within these boxes. For amounts and types of documentation by installation, refer to Table 106.

Paper Records

Table 106.
Major Classes of Documentation by Installation
Housed at Tetra Tech (in linear inches)

Installation	Types of Documents				Total
	Paper Reports	Photos	Maps		
Bergstrom AFB, TX	1.00	0.25	—	0.25	1.50
Falcon AFB, CO	0.33	2.75	0.13	—	3.21
Hill AFB, UT	0.25	—	—	—	0.25
Kirtland AFB, NM	0.13	0.50	—	—	0.63
Luke AFB, AZ	1.00	0.38	—	—	1.38
Navajo Army Depot, AZ	2.63	0.75	1.00	1.00	5.38
Peterson AFB, CO	0.30	2.75	—	—	3.05
WSMR, NM	1.00	0.25	—	1.00	2.25
Total	6.64	7.63	1.13	2.25	17.65

Paper records consist of more than 6.6 linear inches from Luke AFB, Navajo Army Depot, Peterson AFB, Falcon AFB, Kirtland AFB, WSMR, Bergstrom AFB, and Hill AFB. Paper documents include administrative records, background records, survey records, excavation records, and analysis records.

Report Records

Approximately 7.6 linear inches of report records from Luke AFB, Navajo Army Depot, Falcon AFB, Kirtland AFB, WSMR, Bergstrom AFB. Reports are stored in the same manner as the paper records.



Figure 133. A conference room is temporarily used to house associated documentation.

Photographic Records

Photographic records consist of 1.1 linear inch from Navajo Army Depot and Falcon AFB.

Maps and/or Oversized Documents

Approximately 2.25 linear inches of maps associates with Navajo Army Depot, WSMR, and Bergstrom AFB are located in the Tetra Tech files.

Collections Management Standards

Tetra Tech is not a permanent repository; therefore collections management standards are not addressed in this report.

Curation Personnel

The record collection is managed by the staff at Tetra Tech. The two principal managers are Susan Bupp and Barbara Peterson.

Curation Financing

There are no specific funds allocated for the curation of records. Funding for curation must be provided by the contracting agency.

Access to Collections

Access to the collections is controlled by the Tetra Tech staff.

Future Plans

There are no major plans for upgrading curation management at Tetra Tech.

Comments

1. The building is structurally sound.
2. An integrated pest management plan is in place for the facility and pests have not been a problem among stored materials.
3. An HVAC system that includes dust filters on the environmental controls is present. Lighting in the collection storage is not filtered for ultraviolet radiation.
4. Security measures for the building in general are adequate and Tetra Tech additionally employs an after hours in-house security guard.
5. Adequate and appropriate fire detection systems are in place, but the fire suppression system is inadequate.
6. All collections are housed in acidic cardboard boxes; acidic paper bags, and non-archival quality zip-lock plastic bags are included among the secondary containers.
7. Label information on primary and secondary containers is not consistent.
8. Storage of all associated records from federal installations does not meet modern archival standards, nor has a security copy of associated records been produced.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.
3. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g. Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers. Label archaeological materials with indelible ink.
4. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

Texas Archaeological Research Laboratory

University of Texas

Austin, Texas

Collection Summary

Collections Total: 5.3 ft³ of archaeological materials. 5.0 linear feet of associated records.

Volume of Archaeological Materials: 5.3 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 5.0 linear feet (60.0 linear inches)

Compliance Status: Records consist of circulated reports that require no rehabilitation.

Status of Curation Funding: Currently, the Texas Archaeological Research Laboratory has no formal long term curation agreements with any Department of Defense (DoD) installations. Curation is handled on a project by project basis.

Repository Summary

DATE OF VISIT: October 23, 1996

PERSONS CONTACTED: Darrell Creel

The Texas Archaeological Research Laboratory (TARL) holds collections from six DoD installations located throughout Texas (Table 107). These collections are stored in two buildings, both of which are located on the University of Texas at Austin, J. J. Pickle Research Campus. Building 5 houses the

Table 107.
 DoD Collections by Installation Housed at TARL

Installation	Volume (ft ³)
Bergstrom Air Force Base	1.4
Kingsville Naval Air Station	0.4
Lonestar Army Ammunition Plant	1.1
Matagorda Island Air Force Range	0.7
Red River Army Depot	1.4
U.S. Mine Warfare Center	0.3
Total	5.3

TARL offices. This facility holds several of the smaller archaeological materials from DoD installations. Building 33 is used solely for housing

collections. This facility houses artifacts from two DoD installations.

Structural Adequacy

Repository 1—Building 5

Building 5 is approximately 42 years old and was previously used as a munitions factory for magnesium processing (Figure 134). Offices for faculty and staff are located throughout the facility, but the majority are on the second floor. Most of the central portion of the structure is devoted to collection storage and laboratory space. The facility has undergone internal and external renovations for its current configuration.



Figure 134. Building 5 (repository 1) is located on the campus of the University of Texas at Austin; it formerly served as a munitions factory.

The structure has a concrete and rubble core foundation with brick and corrugated transit exterior walls. The roof is composite (transit/concrete) and is only three years old. The shingles are asphalt. No active cracks in the foundation or active leaks in the roof have been noticed by staff members. The building functions as office space, collection storage, laboratory and classroom areas. The structure possesses three floors above grade. Internal renovations include the addition and removal of walls (sheet rock) to better facilitate current usage. Some windows in repository have steel frames and have either been covered over with walls or been painted over. According to TARL staff, some of these windows have shown evidence of air or water leakage. Most windows in the repository are original.

Building utility systems include: heat, running water, restroom facilities, telephones, air conditioning, and electricity. All utility systems are original equipment. According to TARL personnel there was one incident of water damage in the collections area and to other parts of the building in the early 1980s. The repository comprises approximately 30,000 square feet.

The collections area of building 5 is comprised of two portions. The larger portion is similar in construction to the rest of the repository and occupies about 50% of the total square footage of the repository for artifact and records storage. The second portion is a secured metal vault that occupies approximately 10% of the total square footage of the repository (DoD collections are stored in the vault portion). Space for long-term curation is available in both portions of the collections area, however, space for artifact washing and processing laboratories, study areas, classrooms, record storage and study areas, and photographic and cartographic storage are only present in the non-vault portion of the collections area. Some windows in the non-vault portion of the collections area, like those in the repository proper, have been covered over with wallboard or have been painted over. The vault portion of the collections area has no windows.

Repository 2—Building 33

The TARL portion of building 33 (approximately 1/8 of the building) on the J. J. Pickle Research Campus is entirely devoted to artifact and equipment storage



Figure 135. Building 33 (repository 2) on the J. J. Pickle Research Campus is a corrugated metal building devoted to artifact and equipment storage.

(Figure 135). The building has a concrete foundation and corrugated metal exterior walls.

The collections area of building 33 is identical to the rest of the building in terms of structural adequacy. It measures 4000 square feet and is completely devoted to long-term curation of all archaeological collections from throughout Texas.

Environment

Repository 1–Building 5

Building 5 has air conditioning and heat controls. Temperature is not monitored, but is set to staff preferences. Dust filters are present on the furnace ducts and the building is regularly (daily) maintained by university janitorial services.

The non-vault portion of the collections area in building 5 is identical to the rest of the repository in terms of temperature, humidity, and janitorial service. The vault portion is a completely controlled environment and is cleaned by staff members. Temperature and humidity are held constant and are monitored on a regular basis.

Repository 2–Building 33

Building 33 has no windows, is equipped with heaters, but no air conditioning. The structure is well insulated and is comfortable in the summer. Humidity in the structure is not monitored or controlled. Lighting is incandescent and natural sunlight with no ultraviolet (UV) filters on any light units.

Pest Management

Repository 1–Building 5

Building 5 pest management is handled by university services and occurs on an as-needed basis. The only infestation problem has been the presence of fire ants and mice in some parts of the building. Additional infestations such as spiders, beetles, roaches, silverfish, and termites have been noted by staff.

Both the vault and non-vault portions of the collections area are similarly managed for pests.

Repository 2–Building 33

Building 33 pest management is handled by university services and also occurs on an as-needed basis only.

Security

Repository 1–Building 5

Building 5 possesses key locks on all interior doors, dead-bolt locks for almost all exterior doors and basic locks on all windows. Most windows are covered with walls or painted and covered over.

The non-vault portion of the collections area is similar to the rest of the repository regarding security. The vault portion of the collections area, however, is wired into the university police department. Controlled access and key locks on all cabinets in the vault add to other security measures in place. According to TARL staff, there have been no incidents of unauthorized access in either portion of the collections area.

Repository 2–Building 33

Building 33 security measures consist of electronic locks on the main loading doors and campus police patrols. Collections are stored on open shelving units and exhibit no additional means of security.

Fire Detection and Suppression Systems

Repository 1–Building 5

Smoke detectors, heat sensors, manual fire alarms, and fire extinguishers are present throughout Building 5. The fire extinguishers were last inspected in April of 1996. According to staff, no parts of the structure are considered fireproof.

The vault portion of the collections area is also protected by a CO₂ fire retardant system. The non-vault portion of the collections area is similar to the rest of the repository.

Repository 2–Building 33

Building 33 possesses fire extinguishers located throughout the building. The collections area has several fire extinguishers placed throughout its portion of the building.

Table 108.
Percentage of Material Classes from DoD Installations Located in TARL Building 5

Material Class	Percentage Present					
	1	2	3	4	5	6
<i>Prehistoric Artifacts</i>						
Ceramic	—	—	—	2	57	62
Chipped Stone	77	—	40	64	33	4
Faunal Remains	—	—	—	1	—	10
<i>Historic Artifacts</i>						
Ceramic	23	3	15	5	2	4
Glass	—	91	30	14	4	16
Metal	—	6	15	13	4	4
Brick	—	—	—	1	—	—
Total	100	100	100	100	100	100

Note: Percentages of material classes based on volume

(1) Kingsville NAS; (2) U.S. Mine Warfare Center; (3) Bergstrom AFB; (4) Red River AAP; (5) Lonestar AAP; (6) Matagorda Island Air Force Range

Table 109.
Percentage of Material Classes from DoD Installations Located in TARL Building 33

Material Class	Percentage Present	
	1	2
<i>Prehistoric Artifacts</i>		
Chipped Stone	93	34
Faunal Remains	3	—
Shell	3	—
¹⁴ C	1	—
<i>Historic Artifacts</i>		
Ceramic	—	25
Glass	—	25
Metal	—	11
Brick	—	5
Total	100	100

Note: Percentages of material classes based on volume.

(1) Bergstrom Air Force Base; (2) Red River/Lonestar Army Ammunition Plant

Archaeological Storage Materials

Storage Units

Repository 1—Building 5

Archaeological materials include 3.8 ft³ of material from six DoD installations (Tables 108 and 109). Collections are located in both repositories at TARL. Archaeological materials are stored in the vault portion of the collections area located in Building 5.

These materials are locked inside movable, metal storage cabinets that measure approximately 69 x 30 x 58.5 inches (h x d x w). Each cabinet is further divided into metal drawers that hold the individual collections. The drawers measure 30 x 25 x 1.5 inches (d x w x h).

Repository 2—Building 33

Approximately 1.5 ft³ is curated in building 33 and stored on open metal shelving units that measure 16 x 1.5 x 3 feet (h x d x w).

Primary/Secondary Containers

Repository 1—Building 5

Inside each cabinet drawer the collections are stored in archival plastic, zip-lock bags (2- and 4-mil thickness) that are directly labeled in marker (acid-free paper inserts are placed inside each bag), and in small acid-free boxes that are likewise labeled. On occasion the bags are nested with one another or are placed inside the small boxes.

Repository 2—Building 33

Collections in building 33 are stored in 11 x 17 inch acidic cardboard boxes that are directly labeled in marker. Within each box, material is stored in archival plastic, zip-lock bags (4-mil) that are similarly labeled and also contain acid-free paper inserts.

Laboratory Processing and Labeling

Collections from all DoD installations are cleaned and directly labeled in ink with at least a site number and a lot number.

Human Skeletal Remains

TARL does not hold any skeletal remains from DoD property.

Records Storage

The only documentation associated with these collections are (circulated) cultural resource reports (5 linear feet, approximately 10 linear inches per installation). They are stored in metal storage cabinets or on wooden shelves.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are accessioned upon receipt.

Location Identification

The location of artifacts within the repository is identified in the accession file.

Cross-Indexed Files

Files are cross-indexed by accession number, site number, lot number, and project number in the database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

TARL does maintain site file records.

Computerized Database Management

A computer database—used for collections location only—is used to manage all collections.

Written Policies and Procedures

Minimum Standards for Acceptance

There are written standards required for submitting collections that addresses packaging, processing, and labeling practices.

Curation Policy

There are standards for curation.

Records-Management Policy

There is a written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

There are written guidelines for field-curation that address field conservation and recommendations for manuals to be used.

Loan Procedures

There are written loan procedures, and standard loan forms.

Deaccessioning Policy

There is no deaccessioning policy.

Inventory Policy

Collections are inventoried upon receipt.

Latest Collection Inventory

Collections have been inventoried. New collections are inventoried upon receipt.

Curation Personnel

Dr. Creel is the full-time curator of collections for the TARL. Carolyn Spock is the full-time curator of records. Other staff members consist of part-time assistants.

Curation Financing

Curation funding is obtained from grants, university overhead budgets, or are included in a given project's written contract with the sponsoring agency.

Access to Collections

Access to the collections is limited to TARL cultural resource staff and researchers by permission. A written letter of intent is necessary, and access to the collections is supervised.

Comments

1. Environmental controls are in place in various portions of building 5.
2. Building 5 (vault collections area) intrusion detection and deterrent measures meet the guidelines established in 36 CFR Part 79.
3. DoD collections housed in building 33 are stored in acidic cardboard boxes; secondary containers are archival plastic, zip-lock bags.
4. The professional staff at TARL is dedicated to the safeguarding and care of the materials curated at their facility.

Recommendations

1. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.

TRC-Mariah Associates

Albuquerque, New Mexico

Collection Summary

Collections Total: 49.7 ft³ of archaeological materials. 6.7 linear feet of associated records.

Volume of Archaeological Materials: 49.7 ft³
Compliance Status: Collections require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 6.7 linear feet (80.3 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with existing federal standards and guidelines for modern archival preservation.

Status of Curation Funding: Curation activities are funded through the contracts TRC-Mariah Associates has with their clients.

Repository Summary

DATE OF VISIT: October 24-25, 1996

PERSON CONTACTED: Dorothy Larson

Approximately 49.7 ft³ of archaeological materials and 6.7 linear feet of associated documentation from Kirtland Air Force Base, New Mexico, are housed at the contracting office of TRC-Mariah Associates in Albuquerque, New Mexico. The collections assessed from Kirtland Air Force Base will be turned over to the Maxwell Museum of Anthropology for permanent curation in early 1997 after analysis is complete.

The collections consist of both historic and prehistoric elements (see Table 110). Associated documentation consists of paper records, reports, photographic records, and drawings.

Structural Adequacy

TRC-Mariah Associates, an archaeological contracting firm, are tenants of an industrial park complex located on the northeast side of Albuquerque (Figure 136). The entire 5185 ft² office building is occupied by TRC-Mariah. The single story structure was constructed in the 1980s with a cement foundation and exterior walls of stucco over a wood frame. The building has a flat, composite gravel roof, with the exception of a porch area on the

Table 110.
Percentage of Material Classes Present in the
Kirtland Air Force Base Collections Housed
at TRC-Mariah Associates

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Chipped Stone	46
Ceramics	19
Faunal Remains	4
Botanical Remains	2
Flotation Samples	4
Soil Samples	5
¹⁴ C	1
<i>Historic Artifacts</i>	
Ceramic/Crockery	1
Glass	5
Metal	12
Other	1
Total	100

Note: Percentages of material classes are based on volume. Other historic materials present include worked shell, faunal, and masonry.



Figure 136. The offices of TRC-Mariah Associates are located in an industrial park on the northeast side of Albuquerque.

front of the building, which has a tile roof. Utility systems are original to the building. A reception area and offices occupy the front of the building. Artifact washing, processing, and analysis are conducted in a large room in the center of the building. This area has partitioned work spaces, counters with overhead cabinets, a sink, movable drying racks, a microscope, and computer terminals. A storage room houses shelved collections along with equipment and some records. This room is accessible through a door from the processing area, a door from the office area, a

metal exterior door, and a metal overhead loading door. Interior doors are wood panel. The front door to the building is glass with a metal frame. Interior walls are painted wallboard. Suspended acoustical ceilings with unfiltered fluorescent lights are present throughout the building. The floor in the storage area is cement; in the processing area the floor is tiled, and the office areas are carpeted.

Environment

The building is cooled by a refrigerated air conditioning unit that reportedly leaks, most likely from condensation. The staff was unsure of the method of heating in the building. The temperature is controlled, but the humidity is not. The building is regularly maintained by a private service contracted by the landlord of the property. The storage area is maintained by the staff on an as-needed basis.

Pest Management

Pest management is also the responsibility of the landlord of the building, and the staff of TRC-Mariah was unsure about what precautions are used, if any. They have never seen any signs of infestation.

Security

Access to the building is controlled by staff. Key locked doors are dead-bolted and windows are secured with sliding latches. All windows are considered accessible from the outside. The building has motion detectors and intrusion alarms wired to the police. Police also regularly patrol the area. The back of the building, where vehicles are parked, is enclosed with a chain link fence that has a secured gate. There has been a past episode of theft, where computer equipment was stolen.

Fire Detection and Suppression Systems

Fire detection consists of smoke alarms and heat sensors. Fire extinguishers are present and are inspected annually. The city fire marshal also makes random inspections of fire extinguishers.

Archaeological Storage Materials

Collections associated with projects conducted by TRC-Mariah staff at Kirtland Air Force Base are being temporarily stored at the TRC-Mariah offices. For a breakdown of material classes present in all of the collections, refer to Table 110.

Storage Units

The storage room has two types of shelving units. The processed collections are on units with wood shelves on a metal frame (Figure 137). Each unit measures approximately 7 x 7 x 2 feet (h x w x d) with four shelves spaced approximately three feet apart. A unit constructed of unsealed two by fours and plywood hold collections being processed, as well as, equipment and supplies. This unit measures 6 x 6.5 x 1.5 feet (h x w x d). Boxed collections in the processing room are stored on the counter and a folding table.



Figure 137. Large ground stone and boxed collections are stored on metal and pressed wood shelving units in the storage room of TRC-Mariah Associates.

Primary Containers

Ten percent of the collections have no primary container and are located loose on the shelves. Two percent of the collections have plastic zip-lock bags as their primary containers. Collections are being processed according to the Maxwell Museum's standards of acceptance. Archival boxes measuring 18 x 12 x 5 inches are being used to pack collections

that will be permanently curated at the museum; 46% of the collections have been transferred to these boxes. The boxes close with folded flaps that need to be secured with tape. Boxes are temporarily labeled with lined yellow paper tags taped to each box.

Information on these temporary labels include box number, project number, and site numbers. Some of the labels note that the box is overpacked and needs to be divided into two boxes. The remainder of the collections (42%) are housed in a variety of acidic boxes that range in size and condition. These boxes are labeled directly in marker or with "post-it" notes, which are at risk of becoming separated from the box. Several boxed collections that TRC-Mariah "inherited" from the Center for Anthropological Studies have printed labels.

Secondary Containers

The majority of the archaeological materials (86%) are in archival zip-lock plastic bags (Table 111).

Table 111.
Percentages of Secondary Containers in Collections Housed at TRC-Mariah Associates

Secondary Container Type	Percentage
Plastic Zip-lock Bags	86
Loose Artifacts	12
Paper Bags	2
Total	100

Note: Percentages of secondary containers are calculated by volume.

Paper bags constitute only 2% of the secondary containers, and 12% of the archaeological materials are loose in the boxes. The collections that have been processed to the Maxwell Museum's standards have 4-mil plastic zip-lock bags as secondary containers. The bags are labeled directly in marker and have computer generated paper labels enclosed in the bags. Some of the plastic bags are enclosed in other plastic bags, and aluminum foil is also used to hold material within some of the bags. One large reconstructed pot is nested in Styrofoam "peanuts." This pot is temporarily being held in a acidic cardboard box. The pot extends above the walls of the box.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted by material class. None of the artifacts are labeled directly, but the artifacts that have been processed have identifying labels enclosed in their bags. Several of the loose objects, including large ground stones, have acidic paper labels attached with strings.

Human Skeletal Remains

No human skeletal remains are associated with the collections housed in the TRC-Mariah offices in Albuquerque.

Records Storage

Approximately 6.7 linear feet of associated documentation were assessed from work conducted at Kirtland Air Force Base. The records are currently undergoing processing and organization to comply with the requirements of the Maxwell Museum. At the time of the visit, all the records were located on a counter and a folding table in the processing room. The records were being held in various types of acidic cardboard boxes, or were sorted into piles.

Paper Records

Paper records constitute 24.25 linear inches of the DoD documentation collection. Documents include acid-free copies of site forms sorted by project report, administrative papers, correspondence, Laboratory of Anthropology site record forms that are being updated and corrected, project accession records, Maxwell Museum summary forms for Kirtland Air Force Base collections, a master bibliography for Kirtland Air Force Base, field specimen lists, artifact inventories, excavation forms, photologs, and a hardbound field notebook with 'KAFB' written on the cover in marker. A deteriorating historic record is stored in a plastic sleeve with taped edges. Document contaminants include paper clips, binder clips, and staples. Papers are contained in acidic manila folders, expandable file folders, and three-ring binders.

Report Records

Included in the 30 linear inches of report records assessed are two acid-free, unbound copies of each report for Kirtland Air Force Base. These copies will be submitted to the Maxwell Museum. The original, bound copies of these reports are housed on an open wooden shelf in Dorothy Larson's office. The originals were not assessed, and therefore, are not included in the reported count of documentation.

Photographic Records

More than two linear feet (25 inches) of photographic records associated with Kirtland Air Force Base were assessed. A three-ring binder contains plastic sleeves of color prints and slides. The binder has a post-it note taped to the spine with project and roll numbers. Prints and slides are labeled directly in ink and pencil. Acid-free photologs separate each roll of film. The negatives remain in their original plastic sleeve in an acidic envelope which is labeled with the project and roll number. Black and white photographs pasted to pages of acid-free paper are in a file of Kirtland Air Force Base surveys. Labels on the back of the photographs are legible through the paper, and captions have also been printed on the page below each picture. Other Kirtland Air Force Base material includes black and white contact sheets attached to an acidic envelope with a paper clip. Small acidic cardboard and plastic boxes contain black and white prints, color prints, color slides, and negatives.

Maps and/or Oversized Documents

Two files contain annotated site maps, which are labeled directly in pencil and have site information attached on numerous post-it notes. Maps account for one linear inch of the total documentation.

Collections Management Standards

This facility is not a permanent repository; therefore, collections management standards are not addressed in this report.

Curation Personnel

TRC-Mariah is a private archaeological contracting firm and does not have a full-time curatorial staff. Field work is conducted by archaeologists. Dorothy Larson is the Laboratory Director and Toni Goar is the Laboratory Assistant. They oversee the collections care once they enter the laboratory for analysis, and are responsible for processing and packing collections for transfer to a permanent curation facility.

Curation Financing

Curation activities are financed through each project's contract, or are included as overhead in the budget.

Access to Collections

Staff members have access to the collections. There is no written policy regarding access to the collection by researchers, but appointments can be made with the staff for access.

Future Plans

Plans for the collections from Kirtland Air Force Base that are presently housed at TRC-Mariah include their transfer to the Maxwell Museum in early 1997. Analyses on these collections must first be completed, and collection must be processed to the museum's standards of acceptance.

At the time of the assessment, TRC-Mariah was planning to move their office to a new location. The future office space is located in the same industrial park, not far from the present location. It is 6400 ft³, of which 2400 ft³ is warehouse space.

Comments

1. The building is considered to be to be structurally sound.
2. Temperature levels are monitored and controlled, but humidity is neither monitored nor controlled.
3. The air conditioning unit leaks, most likely from condensation.
4. UV filters are not in place for the light bulbs and windows.
5. Building security meets the minimum federal standards for safeguarding of archaeological collections.
6. Kirtland Air Force Base collections are being processed to meet the Maxwell Museum's standards, where they will be sent for permanent curation.
7. TRC-Mariah was planning on moving its offices to new location shortly after this assessment was conducted. The new location would likewise be in an industrial park on the northeast side of Albuquerque.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers. Chipped stone artifacts should be labeled directly in indelible ink.
3. The reconstructed pot should be housed in an appropriate sized acid-free box, with a lid. The Styrofoam packing materials should be removed, and replaced with an inert mount that will support the pot, but not abrade.
4. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records

should be free of contaminants, including metal fasteners and rubber bands. Provide a finding aid to the record holdings.

5. Maps should be stored flat, if possible. Information written on post-it notes should be transferred directly to the maps, before they become separated.

University of Alaska Museum

Fairbanks, Alaska

Collection Summary

Collections Total: 36.8 ft³ of artifact and human skeletal remains. 4.6 linear feet of associated records.

Volume of Archaeological Materials: 28.9 ft³
Compliance Status: Collections require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 7.9 ft³
Compliance Status: Human skeletal remains recovered from Adak Naval Air Station and Eareckson Air Force Station will require partial rehabilitation to comply with existing federal guidelines and standards for curation. The University of Alaska Museum has inventoried the human skeletal remains in compliance with Native American Graves Protection and Repatriation Act (NAGPRA).

Linear Feet of Records: 4.6 linear feet (55.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: The University of Alaska Museum funds curation activities in a variety of means. \$250 a year of the overhead budget is used for curation, as well as cooperative agreements set up with agencies, such as the National Park Service. Museum staff salaries are paid from state funding. Numerous grants provide support, but the museum must match some grants at 50% of the overhead. Agencies often provide curation supplies (e.g., Fish and Wildlife Service provided the museum with boxes).

Repository Summary

DATE OF VISIT: May 20-23, 1997

PERSON CONTACTED: Craig Gerlach

The University of Alaska Museum (UAM) currently curates approximately 36.8 ft³ of archaeological

materials and 55.5 linear inches of associated documentation recovered from Fort Greely (FG), Fort Wainwright (FW), Harding Lake Recreation (HLR), Kotzebue Military Reservation (KMR), Fort Richardson (FR), Adak Naval Air Station (ANAS), and Eareckson Air Force Station (EAFS) (Shemya Island). For the amounts of collections by installation, refer to Table 112.

Table 112.
Volume of Collections by Installation
Housed at the University of Alaska Museum

Installation	ft ³
Adak Naval Air Station	1.0
Eareckson Air Force Station	6.9
Fort Greely	19.5
Fort Wainwright	3.9
Harding Lake Recreation	1.3
Kotzebue Military Reservation	4.2
Total	36.8

Structural Adequacy

The Otto Geist Building, measuring approximately 40,000 ft², was originally constructed in 1979 for use as a museum (Figure 138). The museum has collection storage facilities, classrooms, office space, artifact holding, washing, and processing areas, temporary artifact-storage areas, materials/supplies storage areas, exhibit areas, artifact study rooms, photographic storage rooms, records storage rooms, laboratories, a receiving/loading dock, a walk-in refrigeration unit, and a security monitoring space. Many of these rooms are multi-purpose.

The repository has a concrete foundation with steel exterior walls and concrete with sheet rock interior walls. The roof is made of concrete and steel and is original to the museum. The building has two floors above grade and one below grade. It is structurally solid, with no major cracks. There have been some minor leaks in both the overhead pipes and in the concrete. The pipes were repaired, but the concrete cannot be mended. There have been external renovations to the building. There are



Figure 138. Exterior view of the University of Alaska Museum in Fairbanks.

multiple exterior steel framed windows located on the east and west sides of the building. Windows are located in the lobby and the administrative offices, but not in the collection storage or exhibit areas. All of the windows have Venetian blinds. There is no evidence of water or air leaks in the windows. There are numerous doors throughout the museum. The entrance/exit doors to the museum are glass. The interior doors are hollow metal fire doors and frames. Utilities in the repository include running water, heat, restrooms, telephone lines, air conditioning, humidity control, and electricity. The plumbing and electricity are original to the museum, however, the HVAC system was rebuilt in 1993.

The archaeological materials storage area has a concrete floor with tile between collection aisles. The interior walls are poured concrete covered with sheet rock and the ceiling is concrete. There are no windows in the collections storage area. In addition to permanent artifact storage, the room serves as temporary artifact storage and records storage. It contains collections from archaeology, earth sciences, ethnology, fine arts, history, botany, ornithology, mammology, and aquatics. The collections storage area totals approximately 7610 ft² of which 2394 ft² is used as permanent archaeological collections storage and 726 ft² is used as temporary archaeological materials storage. The archaeological materials storage area is filled to 100% of its capacity with 40% of the collections being archaeological. The boxes in the storage area are over stacked and the area is cluttered with artifact and record boxes and curation supplies. Utilities in the collections storage area include heat, restrooms, air conditioning, humidity control, and electricity. There are functional overhead pipes above the artifact and records. An air gauge in the overhead pipes cracked from the air pressure causing the pipes to leak water. The leak flooded eight drawers of collections, none of which were federal collections.

Environment

The museum has an air conditioning system and a coal forced-air heat system that is operated by the university power plant. Both of the temperature controls are equipped with dust filters that are changed every three months. Humidity is monitored

by a hygrothermograph and thermohygrometers. The hygrothermograph records the relative humidity levels for the month. Thermohygrometers measure the relative humidity and are used on a weekly basis. The repository is maintained on a daily basis by the university physical plants janitorial staff. The maintenance staff has a monitoring program that involves regular testing of mechanical systems, such as lighting and air handler systems.

The archaeological materials storage area has a zoned forced-air heating system, ventilation, and air conditioning that was installed in 1993 or 1994. The targeted temperature in the collections storage area is $70^{\circ}\pm 3^{\circ}$ Fahrenheit with a $45\pm 10\%$ relative humidity. Humidity is monitored by hygrothermographs and hygrometers, as well as temperature and relative humidity indicator cards. The environmental controls have dust filters. UAM also has flood detectors on the floor underneath the sliding-track compact storage unit. If water reaches more than 1/4 inch, an alarm will sound.

There is both unfiltered and filtered fluorescent lighting in the collections storage area. UV filters are strategically placed on lights in the collections storage area, in order to provide the best protection. The staff feel that because most of the archaeological collections in the sliding-track compact storage unit are covered; lights above the units do not need filters. These lights shut off when the mobile storage unit is not in use; there is a micro-switch located in the floor. The collections storage area is maintained by the curatorial staff and the janitorial staff. The floors are swept daily and mopped twice a week.

Pest Management

Precautions are taken against insects and rodents by freezing all incoming collections to minus 55° Fahrenheit over a 48-hour period. The collections are then brought back to room temperature over a 48-hour period and inspected for infestation before being integrated into the collections facility. There is no program of control for pest infestation because monitoring in the collections storage area has shown no evidence of insects or rodents.

Security

A security measure for the building consists of an intrusion alarm that is wired into campus security and the state troopers. Museum personnel control access throughout the building. After hours, university security and state troopers patrol the area. Motion detectors are located in the collections storage and exhibit areas, as well as the front and back doors and windows. There are key locks on all interior and exterior doors, and many are kept locked at all times. The windows are permanently sealed. The museum also has a special collections vault. Physical plant personnel conducting inspections or repairs must wear identification badges.

The collections storage area has an intrusion alarm, key locks on all doors, controlled access, and no windows. Only certain authorized personnel have keys to certain areas. The walk-in vault, used to store type collections/special artifacts, is accessible by only two museum personnel. The collections storage area and the collection laboratories are protected by a 24-hour security and hazard alarm system that controls access to the research areas. Visitors to the research area are announced from the reception desk and accompanied in the research area by authorized personnel. Visitors must wear badges and be signed in with the name of a sponsoring staff person.

Fire Detection and Suppression Systems

The museum is equipped with fire detection systems that include heat sensors, smoke detectors, and manual fire alarms that are wired into the fire department, as well as in-house. Fire suppression is managed by a dry-pipe sprinkler system that is activated by heat and smoke. Additionally, there are fire doors, dry-chemical fire extinguishers, and fire walls present. The repository is also equipped with a halon suppression system in the fine arts storage area, but this system is disconnected.

Fire detection in the collections storage area consist of manual fire alarms wired into the fire department and smoke detectors. Fire suppression includes a wet pipe sprinkler system, fire doors, non-flammable floors, fire extinguishers, and fire walls. There are five fire extinguishers, one in each laboratory near the door. All of the doors and frames in the collections storage area are fire doors.

Table 113.
Percentages of Material Classes Present in the Military Archaeological Collections
Housed at the University of Alaska Museum

Material Class	ANAS	EAFS	FG	FW	HLR	KMR	Total
<i>Prehistoric Artifacts</i>							
Chipped Stone	—	—	79	69	100	7	52
Ceramics	—	—	—	—	—	31	3
Faunal Remains	5	5	5	17	—	—	5
Botanical Remains	—	—	1	—	—	—	1
Soil Samples	—	—	10	2	—	—	6
¹⁴ C	—	—	4	4	—	—	2
Worked Bone	—	—	—	—	—	62	7
Human Skeletal	95	95	—	—	—	—	19
Wood	—	—	—	1	—	—	1
<i>Historic Artifacts</i>							
Brick/Masonry	—	—	—	2	—	—	1
Metal	—	—	—	3	—	—	1
Glass	—	—	1	1	—	—	1
Egg shell/Wood	—	—	—	1	—	—	1
Total	100	100	100	100	100	100	100

Note: Percentages of material classes are based on volume.

Archaeological Storage Materials

Storage Units

Archaeological Materials for Kotzebue Military Reservation, Harding Lake Recreation, Fort Greely, Fort Wainwright, Adak Naval Air Station, and Eareckson Air Force Station are stored in the archaeology storage area. Percentages of material classes are outlined in Table 113. Archaeological materials equaling 28.9 ft³ are stored in an electric sliding-track compact storage unit, which is key operated (Figure 139). This storage unit dates to the construction of the museum and was one of the first motorized space savers ever installed. The archaeology collections are in the first five rows of the overall unit. Each row measures 8 x 3 feet (h x w) and is divided into two 'ranges' (sides), (each 1.5 feet deep). Each range measures 8 x 1.5 x 44 feet (h x d x w). The archaeology collections are in Ranges 1-9. There are 14 columns of drawers and one column of shelves for large loose items (e.g., metates) in each range. The storage units are constructed of metal with plastic and particle board drawers. The number of drawers per column varies from 17-19 because there are different size drawers.

Two metal clip handles on each drawer are used to slide them off the column. The storage shelves (one column per range) are lined with ethafoam. Each range is labeled with acidic paper insert tags in metal holders with the range number, "Archaeology Storage," accession numbers, and years. There is



Figure 139. View of the archaeology collections storage area showing both the stationary shelving units and the front panels for the five rows or nine ranges of electric sliding-track compact storage unit.

also a clear adhesive backed tag above the metal holder with the range number. It is important to note that the sliding-track compact storage unit does not move (slide) smoothly. The moving rows of drawers stop by hitting one another on rubber shock absorbers, which could displace or damage fragile archaeological materials stored inside, such as ivory or baleen.

Bulk samples, heavy objects, and uncataloged collections are stored on stationary shelving units (columns) tightly positioned around the perimeter of the storage area. Human skeletal remains from Adak Naval Air Station and Eareckson Air Force Station are stored on these shelving units. These shelves contain approximately 7.9 ft³ of the archaeological collections. The height of the columns vary, and the maximum number of shelves per column is 10. There are a total of 35 columns. The measurement of each shelving unit (column) is approximately 2 x 4 x 10.1 x 4.3 feet (d x w x h). Each column is labeled with a column number on an adhesive-backed clear tag. The metal shelves measure 2 x 4 x 1.1 feet (d x w x h) and are individually labeled with computer generated clear adhesive-backed tags. The tags are labeled with a museum location identification (e.g., SU 1 C8 S3 B1-3; meaning, shelf unit 1, column 8, shelf 3, boxes 1-3).

Primary Containers

Primary containers for the sliding-track compact storage unit are drawers constructed from a plastic shell glued to particle board frames. Particle board is also used within some of the drawers as dividers.

Each drawer has metal clip handles to remove them from the column. The drawers vary in size; however, the majority of the drawers with DoD collections measure 1.3 ft³. A few drawers are 2.9 ft³. Many of the drawers are lined with ethafoam. The drawers are labeled with clear adhesive backed tags over vinyl numbers or masking tape labeled in marker with the accession numbers.

Primary containers stored on the stationary shelving units (columns) consist of both acidic cardboard boxes and archival boxes that are folded, taped, or glued with telescoping lids. The boxes include one archival box measuring 1.0 ft³, one acidic cardboard box measuring 1.7 ft³, and two acidic cardboard boxes and two archival boxes each measuring 1.3 ft³. Most of the boxes are labeled with adhesive labels in marker with accession number, project/location, sites, catalog numbers, and contents. Some of the boxes are also labeled directly in marker with the same information.

Secondary Containers

Secondary containers for the military archaeological collections vary in types and sizes, including manila envelopes, plastic bags, paper bags, acidic cardboard boxes, plastic film canisters, and foam (Table 114).

Small manila envelopes are secured with tape, metal clips, rubber bands, or envelope glue and are either labeled directly or with adhesive backed tags, in marker, pencil, or pen. The labels consist of some combination of the Alaska Heritage Resources Survey (AHRS) number, provenience, site name, date, catalog number, investigator, accession number, quad designation, notes on location, UTM

Table 114.
Types and Percentages of Secondary Containers Present in the
DoD Collections Housed at University of Alaska Museum

Secondary Container	ANAS	EAFS	FG	FW	HLR	KMR	Total
Plastic bags	20	100	6	58	67	—	31
Small manila envelopes	—	—	44	7	33	50	29
Small acidic boxes with and without lids	—	—	23	33	—	50	24
Paper bags	—	—	23	2	—	—	12
Foam	—	—	1	—	—	—	1
Plastic film canisters	—	—	2	—	—	—	1
Loose	80	—	1	—	—	—	2
Total	100	100	100	100	100	100	100

Note: Percentages of secondary containers are based on volume

coordinates, datum, and description. Some envelopes are grouped together with acidic paper tags attached with a rubber band. Paper tags are labeled directly in pen or pencil with the level dimensions, coordinates, and accession number. However, not all of the manila envelopes are labeled. Some show evidence of tears and punctures.

There are also two- and four-mil non-archival plastic bags secured by zip-locks, tape, or rubber bands (some have no security). If there are labels on the bags, they are direct in marker, pen, or pencil with some combination of site name, catalog number, accession number, investigator, date, contents, location, description, and coordinates. Some bags are labeled with adhesive backed tags in marker, pencil, or pen with AHRS number, provenience, date, catalog number, investigator, accession number, coordinates, depth, and description. Some do not have an exterior tag but have an interior tag with the AHRS number, site name, investigating organization, investigators, and date labeled in pen. Plastic bags show evidence of tears, punctures, and stretching.

Other secondary containers include paper bags that are secured with tape or rubber bands and show evidence of tears, punctures, and deterioration. Numerous paper bags do not have any security. The paper bags are labeled directly or with adhesive backed tags with information written in marker, pen, or pencil. Some of the bags are stamped with the AHRS number. Paper bags are labeled with some combination of AHRS number, site name, provenience, date, investigators, accession number, catalog number, quad designation, notes on location, UTM coordinates, unit, level, bag number, feature, type of collection, test pit number, procedures done, and description.

Small acidic boxes with and without telescoping lids, if labeled, are labeled directly in marker, pen, or pencil with some combination of AHRS number, site name, date, catalog number, box/bag number, accession number, description, and investigators. A few of the boxes with telescoping lids are labeled with adhesive backed tags in pen with the site name, date, investigating organization, AHRS number, and bag number.

Thick plastic bags (some with zip-lock security) are secondary containers for human skeletal remains. The bags are labeled directly and/or with

adhesive backed tags in marker with the catalog number, provenience, accession number, location, bag number, and description. Some of the human bone is loose within the boxes and wrapped in acid-free tissue.

Tertiary containers include manila envelopes secured with envelope glue, acid-free tissue, open non-archival plastic bags secured with twist ties or zip-locks, plastic film canisters, medicine vials, ethafoam, clear envelopes, air mail envelopes, aluminum foil, and paper bags. If the tertiary container is labeled, it is direct in marker, pen, or pencil with a combination of AHRS number, accession numbers, project location, date, material, investigator(s), contents, coordinates, type of soil, depth, sketches, dimensions, test letter, and depth. Some containers are stamped with the AHRS number.

Laboratory Processing and Labeling

Most (93%) of the artifacts have been cleaned and sorted by material class, site, catalog number, provenience, human skeletal individual, or human skeletal element. The majority (85%) of the artifacts have been directly labeled in India ink or pen with the accession number, AHRS number, and/or catalog number.

Human Skeletal Remains

UAM currently curates 7.9 ft³ (minimum number of individuals = 13) of human skeletal remains from Adak Naval Air Station and Eareckson Air Force Station. The human skeletal remains are on the whole fragmented and range from poor to good preservation and condition. All of the human skeletal remains have been sorted by human skeletal individual or element. All of the human skeletal remains have been labeled directly in pen or India ink with the accession number.

Records Storage

Record collections at UAM are stored in the archaeology laboratory and in the artifact collection storage area. UAM curates records associated with archaeological research performed on multiple

Alaska installations (Table 115). Accession records in the archaeology laboratory are stored in seven, five-drawer metal filing cabinets that measure 5 x 2.4 x 1.5 feet (h x d x w) and are arranged in numerical order. The drawers are labeled with a paper tag in a metal holder with the accession number range. The secondary containers for the accession record files are hanging files with manila folders. The hanging files are labeled with paper tags in the plastic holder and the manila envelopes are labeled with adhesive backed tags. The labels are all type printed with the accession number and AHRS number. If the collection has only a small amount of documentation associated with it, the records are placed in the accession file.

Table 115.
Major Classes of Documentation by Installation
Housed at the University of Alaska Museum
(in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Eareckson AFS	11.25	—	—	—	11.25
Fort Richardson	0.25	—	1.00	7.50	8.75
Fort Greely	1.75	—	1.50	3.50	6.75
Fort Wainwright	2.00	12.00	12.50	1.00	27.50
Harding Lake R	—	0.50	—	—	0.50
Kotzebue MR	0.25	—	0.25	0.25	0.75
Total	15.50	12.50	15.25	12.25	55.50

The archaeology laboratory also has two particle board shelving units that have three shelves per unit. This shelving unit contains binders with photographs and negatives, reports arranged in alphabetical order by project name, and oversized documentation. These records are bound, stored in vinyl binders, or stored in acidic cardboard document holders. The document holders are folded with no security. Most of the primary containers are labeled either directly or with adhesive backed tags with content and year information. Secondary containers include manila envelopes, manila folders, acidic envelopes, acidic boxes, photo processing containers, and archival sleeves. Some of the documentation is stored loose. Secondary containers are labeled directly in marker, pen, or pencil with various information. The documentation shows evidence of damage such as dust and dirt, yellowing,

tears, and use of contaminants like paper clips and staples.

The remainder of the associated documentation is stored in boxes on the open stationary metal shelving units (columns) located in the archaeological materials storage area that is described in the artifacts storage section of this chapter. The primary containers on the shelving units (columns) are archival boxes that are folded with telescoping lids. The boxes measure 1.3 ft³ and are in good condition. The boxes are labeled directly in pencil with the location and project. These documents are currently being organized and inventoried. UAM requests all associated documentation be included with collections when donated, but the documents have not always been submitted by primary investigator, or by the federal agencies directing the archaeological work.

The associated documentation has accession data available; however, the records are not archivally processed, there are no finding aids available, and a security copy has not been made. Some of the records are arranged by accession number or alphabetically by project name. The documentation ranges from good to fair condition.

Paper Records

UAM is curating 15.5 linear inches of administrative records, survey records, analysis records, and excavation records from Fort Richardson, Kotzebue Military Reservation, Fort Greely, Fort Wainwright, and Eareckson Air Force Station. Paper records are located in the archaeology laboratory and the artifact storage area. A small amount of paper records was also located in the artifact drawers of the sliding-track compact storage unit with the artifacts. These records usually consisted of a page or two of notes associated with an artifact or a collection from a specific project.

Report Records

Harding Lake Recreation and Fort Wainwright have 12.5 linear inches of report records stored at UAM in both the archaeology laboratory and the archaeological materials storage area.

Photographic Records

UAM is curating 15.25 linear inches of photographic records from Fort Richardson, Kotzebue Military Reservation, Fort Greely, and Fort Wainwright. Photographic records include black and white prints, color prints, negatives, slides, contact sheets, and black and white aerials. Some of the photographic records are labeled in pen and marker with various information. Photographic records are located in the archaeology laboratory and the archaeological materials storage area.

Map Records

Approximately 12.25 linear inches of map and drawing records are stored at UAM for Fort Richardson, Kotzebue Military Reservation, Fort Greely, and Fort Wainwright. The map records are stored in both the archaeology laboratory and the artifact storage area.

Collections Management Standards

Registration Procedures

Accession Files

Both archaeological materials and documentation are accessioned and inventoried upon receipt.

Location Identification

The location of the collection within the repository is identified in the accession file to the drawer and on the database.

Cross-Indexed Files

The files are in the process of being cross-indexed.

Published Guide to Collections

A published guide to the collections has not been written; however, there is collection information on the museum's Internet web page.

Site-Record Administration

A formal system of site-record administration is not yet in place; however, the museum works with the

State Historic Preservation Office to maintain complete updated files. The museum uses the AHRS trigraph index. This index includes a three-letter quadrangle map name abbreviation. The AHRS number has a trigraph index abbreviation and a site number (e.g., FAI-023).

Computerized Database Management

The repository uses automated data processing techniques to manage its collections. Records are backed-up weekly on tapes. The tapes are stored in a safe deposit box in a separate building. Collections management information and documentation is organized on a computerized relational database, consisting of a server in the archaeology collections laboratory and data access terminals in the archaeology and ethnology laboratories, in the archaeology and ethnology curator's offices, in the graduate student lab, and in the special projects manager's office. Access to the database is by password, assigned by the archaeology collections manager.

Written Policies and Procedures

Minimum Standards for Acceptance

The repository does have a written minimum standards for the acceptance of archaeological collections in the "Collections Management Policy, University of Alaska Museum." The policies require collections to support the mission of the museum. The acquisition of objects must be through purchase, contract, gift, bequest, exchange, field collecting, or other appropriate means. Objects collected on state or federal lands must conform to Memoranda of Agreement or to applicable regulation of the state or federal agencies. Only the appropriate curator can grant approval to accept and accession an object into the collections. For more specific guidelines see the policy listed above.

Curation Policy

Each division curator has their own comprehensive plan for curation that includes receipt of materials, processing of materials, use of materials, and future preservation. The repository has written guidelines and standards for the curation of artifacts in the

"Collections Management Policy, University of Alaska Museum."

Records-Management Policy

The repository is in the process of writing guidelines and standards for the curation of associated documentation that will include paper records, photographic materials, maps, tapes, and future preservation.

Field-Curation Guidelines

The repository has written field guidelines for researchers depositing collections.

Loan Procedures

The museum sends or receives loans for the purpose of research, education, or exhibition. The museum lends objects to qualified institutions for scholarly research and exhibition, subject to policies and practices within each collection. For more specific incoming and outgoing loan procedures see "Collections Management Policy, University of Alaska Museum."

Deaccessioning Policy

Deaccessioning of an item can only be authorized by the appropriate division curator. The curator must fill out a Museum Deaccession Form that must be approved by the Director of the Museum. Once approved, the entry must be made in the permanent records and a copy of the deaccession form and any other pertinent documentation must be put into the permanent file. For more specific deaccessioning policies refer to "Collections Management Policy, University of Alaska Museum."

Inventory Policy

The repository does have a written inventory policy for the archaeological collections. Staff at the museum will perform spot checks when needed.

Curation Personnel

The archaeology collections are managed full-time by the curator of archaeology, the archaeology collections manager, and part-time by the curatorial assistant. However, due to funding restraints, not all three positions are filled during the summer months.

Additional student employees are hired as funding becomes available. At present, there are five employees, apart from the collections manager, and more than 20 volunteers working in the archaeology lab.

Curation Financing

The University of Alaska Museum funds curation activities with \$250 a year of the overhead budget, as well as cooperative agreements set up with agencies, such as the National Park Service. Museum staff salaries are paid with state funding. Numerous matching grants provide support. Agencies often provide curation supplies (e.g., Fish and Wildlife Service provided the museum with boxes). The Director provides additional funds to support various projects on an as-needed basis. Overall, the curator does not feel the funding for curation is adequate.

Access to Collections

Access to collections is controlled by the curatorial staff. The curator, collections manager, special projects manager, and data specialist all have access to the archaeological collections. Researchers can access collections easily if the owner is state or federal. Access to collections subject to NAGPRA require special permission. The collections are accessible for scholarly and educational purposes and the museum will try to comply with all serious requests, as long as all procedures necessary to safeguard the objects are met. Restrictions may be imposed by exhibition requirements, availability of study space and facilities, availability of appropriate curatorial staff, and approval of the appropriate curator. Collections, data, and images may be used by for-profit organization or by agencies only when contractual arrangements are made between them and the museum specifying use, user fees, and acknowledgment of museum's ownership of the resources used. Curators are responsible for visitors working in the collections storage area. For more specific guidelines see "Collections Management Policy, University of Alaska Museum."

Future Plans

Future plans include an expansion, which will entail an extension on the facility providing new space. The repository would also like to move the overhead pipes or the archaeological materials to prevent any

further damage or threat of damage. The curator would also like to establish a conservation plan.

Comments

1. UAM has air conditioning and coal forced-air heating systems that are equipped with dust filters. Humidity is monitored by hygrometers and thermohygrometers. Temperature ranges in the collections storage area are maintained at $70^{\circ}\pm 3^{\circ}$ Fahrenheit with a $45\pm 10\%$ relative humidity.
2. There is an integrated pest management system that includes both monitoring and control. No evidence of pest infestation has been found. All new collections are frozen before being integrated into the collections.
3. There are overhead pipes throughout the collections storage area. There have been leaks in the pipes and damage to non-federal collections. The museum is aware of the problem and the staff have plans to rectify the situation.
4. UAM has a security system that meets guidelines outlined in 36 CFR Part 79.
5. The repository has a fire detection and suppression system that meets the guidelines in 36 CFR Part 79.
6. The sliding-track compact storage unit in the archaeological materials storage area does not move smoothly along the track and the rows of drawers hit one another when the unit is stopped.
7. Primary containers for the archaeological materials consist of metal and particle board drawers and acidic and archival cardboard boxes. Secondary containers for the artifacts consist of a wide range of containers including plastic bags, manila envelopes, acidic boxes, paper bags, foam, film canisters, and loose artifacts.
8. Documentation stored in the archaeology laboratory is in metal filing cabinets and on particle board shelving units. These records are stored in hanging files, manila folders, manila envelopes,

vinyl binders, document holders, and bound. The associated documentation in the archaeological materials storage area is stored on metal shelving units (columns) in archival boxes.

9. All registration procedures, written policies, and procedures are in place for the long term curation of collections as outlined in 36 CFR Part 79.

Recommendations

1. Repair the sliding-track compact storage unit so that it moves smoothly and/or put rubber buffers between the rows of drawers to prevent the rows from slamming into one another.
2. Rebox those collections that are in acidic cardboard boxes. Rebag all archaeological materials into 4- or 6-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in some of the drawers and bags, so that containers are not over packed.
3. Produce security copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

University of Colorado

Colorado Springs, Colorado

Collection Summary

Collections Total: 5.6 ft³ of archaeological materials. 6.1 linear feet of associated records.

Volume of Archaeological Materials: 5.6 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 6.1 linear feet (73.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Funding for curation activities is acquired as part of the budget in archaeological research contracts. These funds cover the cost of immediate processing but not long-term curation.

Repository Summary

DATE OF VISIT: November 19, 1996

PERSONS CONTACTED: Thomas Wynn and William Arbogast

The University of Colorado at Colorado Springs (UCCS) currently curates 5.6 ft³ of artifacts and 6.0 linear feet of associated documentation from the United States Air Force Academy (USAF Academy). In addition, 0.1 linear feet of documentation associated with an archaeological survey of the

Cheyenne Mountain Air Force Base are currently in the care of the UCCS.

Structural Adequacy

The Anthropology Department is located in Dwire Hall (Figure 140) on the UCCS campus. Dwire Hall is a large university classroom building that was originally constructed in 1971-72. Facilities include classrooms, laboratories, offices, a computer center, and a library spread throughout a structure three floors above grade. The foundation is concrete, and the exterior is composed of prefabricated concrete. The roof is built-up asphalt and has been replaced at



Figure 140. Exterior view of Dwire Hall, the location of the archaeology department at the University of Colorado, Colorado Springs.

some point since the building was constructed. Some cracks in the foundation and ceilings were reported by the UCCS staff. Dwire Hall is located on the side of a large hill, the Austin Bluffs in Colorado Springs, and the foundation is slipping gradually down slope. Approximately five years ago, cracks in the roof had to be repaired.

The 600 ft² collections storage area is used primarily as laboratory and classroom space. Archaeological collections are stored on two shelves of cabinets in the rear of the room. The floor consists of linoleum, and walls are plasterboard and poured concrete. The ceiling is reinforced concrete. There are no exterior windows in the collections storage area, and two solid wood doors open to an interior hallway of Dwire Hall. One of the doors contains a small glass window in the upper half. The collections storage area has overhead water pipes that are functional; however, they are not directly over the archaeological collections.

Environment

Dwire Hall is equipped with air conditioning and heating. The air systems are equipped with dust filters. Humidity is neither monitored nor controlled. The building is maintained as needed, and is cleaned nightly by university staff. Lighting in the collections storage area consists of non-UV filtered fluorescent tubes.

Pest Management

There is no program for the monitoring or control of pests. The assessment team did not observe any signs of pest infestations.

Security

Dwire Hall is secured by key locks on exterior doors, and there is a 24-hour patrol of the campus area by university police. Normally, the building is open 24 hours per day because of computer labs, and the labs generally are occupied to some capacity during that time. The collections storage area is secured by key locks on the doors to the hallway, and the wood cabinets that contain the artifacts and records have key locks.

Fire Detection and Suppression Systems

Dwire Hall is equipped with manual fire alarms and smoke detectors. Fire alarms are wired to the local fire department. Fire suppression consists of fire extinguishers and a sprinkler system. Fire suppression in the collections storage area consists of fire extinguishers. The sprinkler system does not extend into the collections storage area.

Archaeological Storage Materials

Storage Units

Storage units for artifacts and documentation consist of three particle board wood cabinets with locking doors (Figure 141). The cabinets, which are equipped with four interior shelves, measure 72 x 34 x 48 inches (h x w x d). Military archaeological collections are housed on the bottom two shelves of one cabinet. Table 116 outlines the types of materials present in the USAF Academy archaeological materials.

Primary Containers

Primary containers consist entirely of acidic cardboard boxes with telescoping lids. Some boxes are labeled with a yellow self-adhesive paper that

Table 116.
Percentages of Material Classes in the
USAF Academy Archaeological Collections Housed
at the University of Colorado, Colorado Springs

Material Class	Percentage Present
<i>Prehistoric Artifacts</i>	
Chipped Stone	42
Faunal Remains	9
Worked Bone/Shell	2
Wood	1
<i>Historic Artifacts</i>	
Ceramic	1
Glass	22
Metal	14
Wood	7
Buttons	2
Total	100

Note: Percentages of material classes are based on volume.



Figure 141. Wooden shelving storage unit for
artifact and record collections from the
U.S. Air Force Academy.

contains the project, year, inclusive site numbers, and box number recorded in pen. Within each box are artifact inventory sheets on acid-free paper. Archaeological materials stored in two of the primary containers are in the processing stage.

Secondary Containers

Secondary containers for artifacts consist primarily of plastic zip-lock bags (Table 117). In addition, nearly one-half of the artifacts are stored loose within boxes. Secondary containers are generally labeled directly, and they generally have interior acid-free paper tags. Direct labels consist of site number, contents, and field number recorded in marker. Acid-free paper tags are preprinted forms with information that consists of site number, county, project, provenience, and contents recorded in pen.

Table 117.
Percentages of Secondary Containers in USAF
Academy Archaeological Collections Housed at the
University of Colorado, Colorado Springs

Secondary Container Type	Percentage Present
Loose Artifacts	48
Plastic Zip-lock Bags	31
Paper Bags	14
Small Cardboard Boxes	7
Total	100

Note: Percentages of secondary containers are calculated by volume.

Laboratory Processing and Labeling

All of the artifacts have been cleaned. Forty-eight percent of the artifacts have been labeled, and processing is ongoing. All of the artifacts have been sorted by material class.

Human Skeletal Remains

UCCS is not curating any human skeletal remains recovered from active military installations.

Records Storage

Storage units for paper records are the particle board wood cabinets where artifacts are stored.

Documentation is stored alongside the artifacts on the bottom two shelves of one cabinet. Table 118 outlines the types and amounts of documentation curated. A small amount of associated documentation is stored in a standard letter-size, four-drawer metal filing cabinet.

Table 118.
Major Classes of Documentation by Installation Housed at the
University of Colorado, Colorado Springs (in linear inches)

Installation	Types of Documentation					Total
	Paper	Reports	Photos	Maps	Microformat	
USAF Academy	26.25	1.75	17.50	20.00	6.00	71.50
Cheyenne Mtn AFB	1.00	0.25	0.25	0.25	—	1.75
Total	27.25	2.00	17.75	20.25	6.00	73.25 (6.1 lin ft)

paper records consist of manila folders, mailing envelopes, and bound field notebooks. Manila folders and mailing envelopes are generally labeled directly in pen or pencil with information varying from strictly contents to contents and the addition of provenience, date, and project. The field notebook is unlabeled.

Report Records

Reports (two inches) are generally bound and included in the same primary containers as the paper records. Only one report is unbound, and it is enclosed in a manila envelope. The envelope is labeled directly in pencil with the contents.

Photographic Records

Photographic records encompass nearly 18 linear inches (1.5 linear feet), and consist of color prints, black and white prints, negatives, and slides. None of the photographs are labeled. Some negatives have been placed in polyethylene archival-quality sleeves. However, most prints, negatives, and sleeves are stored in small Kodak Processing Services paper and plastic boxes and in film processing paper envelopes.

Maps and/or Oversized Documents

Oversized maps encompass 20.25 linear inches (1.7 linear feet) and are stored rolled and loose in the wood cabinets behind the artifact and records primary containers. Maps are unlabeled.

Computer Records

Approximately six linear inches of 3.5 and 5.25 inch computer disks are stored in the metal file

cabinet with paper records. The discs contain site forms and draft reports. They are labeled with the project information.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are or will be accessioned and assigned a number that consists of the state site number. Accession files will include information on the disposition, location, description, date, weight (if applicable), and existence of photographs (if applicable). Documentation is not accessioned.

Location Identification

The location of the collections within the repository is identified in the accession files.

Cross-Indexed Files

Files are not cross-indexed.

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian trinomial site-numbering system is used. In addition, an annual site number and a temporary site number are assigned to each site.

Computerized Database Management

Currently, there are no computerized database management systems in use.

Written Policies and Procedures

Minimum Standards for Acceptance

The University of Colorado at Colorado Springs only accepts collections that are produced by UCCS research projects.

Curation Policy

UCCS follows the University of Colorado Museum's guidelines for the curation of archaeological materials.

Records-Management Policy

UCCS follows the University of Colorado Museum's guidelines for the curation of archaeological documentation.

Field-Curation Guidelines

There are no field-curation guidelines for researchers depositing collections.

Loan Procedures

There is no written loan procedure policy.

Deaccessioning Policy

There is no written deaccessioning policy.

Inventory Policy

There is no written inventory policy.

Latest Collection Inventory

Collections are currently being inventoried.

Curation Personnel

There are no permanent curation staff. Curation is the responsibility of the teaching staff at UCCS. Dr. Thomas Wynn is the archaeology professor and primary investigator for most projects, and William Arbogast generally serves as part-time instructor and supervisor for research projects. Students perform and supervise artifact and records processing activities.

Curation Financing

Curation costs are covered in the contracts with the agency requesting the archaeological research. These costs cover the immediate processing activities but not long-term curation.

Access to Collections

Access to the collections is through Dr. Wynn, Mr. Arbogast, or the current Anthropology Department chair, Dr. Forest Tier.

Future Plans

There are no definite plans. Dr. Wynn hopes to acquire another room in Dwire Hall dedicated specifically for curation purposes.

Comments

1. Heating and air conditioning systems are present for the facility, but there are no humidity controls or monitoring devices.
2. The UCCS facility has no integrated pest management system.
3. Dwire Hall is secured with key locks on exterior doors, but it is generally open 24 hours per day because of a university computer lab. The collections storage area is secured with key locks. There is no electronic security system.
4. Fire detection consists of smoke detectors and manual fire alarms, and fire suppression consists of a sprinkler system and fire extinguishers.
5. Primary containers for artifacts are acidic cardboard boxes. Secondary containers for artifacts consist of archival-quality, plastic zip-lock bags and acidic paper bags, although the majority of the artifacts are loose.
6. Records are stored in acidic manila folders, acidic mailing envelopes, and plastic binders. Primary containers consist of acidic cardboard boxes.

Recommendations

1. Monitor humidity in the collections storage area with analog or electronic humidity monitoring devices. If possible, install a humidity control device.
2. Begin an integrated pest management system. Protection should include consistent monitoring and control.
3. Secure the collections storage area with key locks when not in use.
4. Obtain appropriate storage units that will accommodate standard-size, acid-free cardboard boxes. For example, baked-enamel metal units are acceptable for archaeological materials. In addition, provide a bottom shelf so that primary containers are not stored on the floor.
5. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.
6. Produce multiple copies of all documentation on acid-free paper, and store in separate, secure locations. Place documentation in acid-free folders, and lightly pack into fire-resistant metal filing cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples, paper clips, or other contaminants.

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University of Colorado Museum

Anthropology Division, CRM Repository

Program

Boulder, Colorado

Collection Summary

Collections Total: 1.1 ft³ of archaeological materials. 0.5 linear inches of associated records.

guidelines and standards for modern archival preservation.

Volume of Archaeological Materials: 1.1 ft³

Compliance Status: Collections require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Status of Curation Funding: The University of Colorado Museum charges a one-time fee at the time of deposit based on the volume of the collection. The University of Colorado Museum, funded by the University, supports the CRM Repository Program by funding 0.33 fiscal year FTE graduate assistant salary to serve as manager of the CRM Repository Program on a daily basis, plus portions of the Curator's and Assistant Curator's FTE for administration, in addition to space and supplies.

Human Skeletal Remains: None

Linear Feet of Records: <1 linear foot (0.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal

Repository Summary

DATE OF VISIT: November 18, 1996

PERSON CONTACTED: Rebecca Hutchins

The University of Colorado Museum (UCM) currently curates approximately 1.1 ft³ of archaeological materials recovered from Fitzsimons

Army Medical Center, Peterson Air Force Base, Rocky Mountain Arsenal, and the U.S. Air Force Academy. The 1.1 ft³ total of archaeological materials is divided approximately equally among the installations. The repository also has 0.5 linear inches of associated documentation from the U.S. Air Force Academy.



Figure 142. Exterior view of the Henderson Building used for the University of Colorado Museum.

Structural Adequacy

The Henderson building, measuring approximately 22,000 ft², was originally constructed in 1935 for use as both a museum and as classroom space (Figure 142). Today, it is totally a museum facility, including four exhibition galleries, museum administrative offices, museum public education offices, and the curatorial divisions of Entomology and most of the Division of Anthropology. The museum is broken into 5-6 departments, which have different curators and administrative guidelines, and these additional curatorial divisions are housed in two additional museum buildings on campus, which include one further portion of the Anthropology Division as well. This summary focuses on the Anthropology Section of the Museum. Within the Anthropology Section, the military collections were curated under the guidelines and standards for the Cultural Resource Management (CRM) Repository Program. The Anthropology Section encompasses 11 rooms in the Henderson building, which are all multi-purpose.

The Henderson building has a concrete and stone foundation with a mixed concrete block, brick, and stone exterior wall configuration. The roof is made of clay tile on top of re-enforced concrete. The building has three floors above grade and one below grade and is structurally solid, with no major cracks or leaks. There have been internal renovations. There are multiple exterior aluminum framed windows. Some of the windows are covered in black cloth, as well as blinds.

The CRM collections storage area resides in a separate room in the Henderson building. This

separate CRM repository includes 99% of the total CRM holdings numbering approximately 800,000 objects plus associated documentation. One percent of the CRM repository collections are stored in the Hunter Annex building. The CRM collections storage area encompasses approximately 500 ft², and is also utilized as an artifact and records study area for CRM repository users. The interior walls and ceiling consist of plaster and the floors are concrete covered with tile. There are no windows located within the collections storage area. A set of double wooden panel doors leading to an exhibit area is present. The collections storage area is filled to approximately 90% of capacity with CRM archaeological collections.

Environment

The building has a heating system and dust filters, but no air conditioning. The heating system, gas-forced air with centralized 24-hour filtered air, was installed in 1985 and upgraded in 1996. Humidity is not regulated but is monitored sporadically throughout the Museum. A hygromograph is rotated between the various collection storage areas and exhibit areas to monitor for humidity. This monitoring is performed in anticipation of improving their environmental system. At present, the museum staff has no control over the Henderson system, as it is centrally controlled by the University Facilities Management Department.

There is a periodic cleaning service provided by the University. The Henderson building has a building proctor who is in charge of managing repairs on an as-needed basis. The Henderson building proctor submits a request to the University, which then manages the repair and covers the cost. The collection storage areas are maintained by the curatorial staff. The Anthropology Division collection areas have fluorescent lighting with ultraviolet sleeves, as well as other types of lighting systems. Lighting within the CRM collections storage area consists of incandescent bulbs. Asbestos is present throughout the building, both underneath the tiled floors and wrapped around the pipes. However, these areas are monitored frequently and maintained regularly. Hazardous chemicals, such as acetone, are used in a laboratory area. Ventilation of these chemicals is directed to the exterior of the

building through the use of a fume hood in the Exhibits Division.

Pest Management

A monitoring and control program is in place within the repository to protect against insect and rodent infestation. Precautionary measures are part of the maintenance staff's responsibility and are performed on an as-needed basis. All artifacts that are integrated into the museum collections are kept separate, in order to examine, rebag, and freeze or vacuum, if necessary. The CRM collections are isolated from all other collections in the museum and are not treated the same with respect to pest management. Pest management precautions are usually not taken against the CRM collections, unless they are perishables. The assessment team observed no signs of pest infestation within the CRM collections storage area.

Security

Security measures for the building consist of an intrusion alarm that is wired into the police department. There are key locks on all exterior doors, storage areas, processing areas (due to the temporary storage of archaeological materials), and cabinets within the collection storage areas. Some of the exterior and interior doors also have dead bolt locks. Access into the museum is controlled and monitored by a security guard at the main entrance, who is on duty during working hours. At the security desk there is a phone equipped with a hot switch to the police. There are also cameras, monitored from the security desk, located in certain areas throughout the museum, such as exhibit areas and some hallways. Motion detectors are located within the exhibit areas. All of the windows are equipped with standard window locks, and the first floor windows have been sealed. Twenty-five years ago a theft occurred in a Henderson building exhibition gallery of some jewelry from the UCM Anthropology Division collections; subsequently security systems were upgraded in the Henderson building and trained security personnel were employed. However, none of the CRM collections have ever been stolen. The CRM collection storage area has a key lock with a bolt in addition to controlled access.

Fire Detection and Suppression Systems

The UCM is equipped with manual fire alarms that are wired into the fire department, as well as smoke detectors. Fire suppression consists of fire extinguishers. The manual fire alarms are located on each floor. There are also fire extinguishers throughout the building with the exception of the CRM collections storage area. The CRM collections storage area is also not equipped with the delayed sprinkler system.

Archaeological Storage Materials

Storage Units

Archaeological materials for Fitzsimons Army Medical Center (FAMC), Peterson Air Force Base (PAFB), Rocky Mountain Arsenal (RMA), and the U.S. Air Force Academy (USAFA) are stored in the CRM collections storage area, designated CRM Repository, Henderson room 1B. Percentages of material classes are outlined in Table 119. These collections are contained in nonmovable metal storage units that consist of 18 rows of six drawers each (Figure 143). There are 11 of these metal storage units, consisting of 108 drawers per unit. The military collections are scattered throughout five units.

Table 119.
Percentages of Material Classes Present
in the Military Archaeological Collections
Housed at the University of Colorado Museum

Material Class	FAMC	PAFB	RMA	USAFA	Total
<i>Prehistoric Artifacts</i>					
Chipped Stone	50	60	100	80	74
Fossilized Bone	—	40	—	20	16
Historic Military Button	50	—	—	—	10
Total					100

Note: Percentages of material classes are based on volume.

Primary Containers

Primary containers consist entirely of metal sliding drawers that are riveted, stamped, and bolted. The drawers measure 17 x 5.5 x 4 inches (l x w x h).



Figure 143. Artifact collections for multiple military installations are stored in metal drawer storage units.



Figure 144. The primary and secondary containers for the artifact collections from multiple military collections.

Table 120.
Types and Percentages of Secondary Containers
Present in the Military Artifacts Housed at
University of Colorado Museum

Secondary Container	FAMC	PAFB	RMA	USAFA	% Total
Plastic zip-lock bags (non-archival 2-mil)	100	100	—	100	80
Small manila envelopes	—	—	100	—	20
Total					100

Note: Percentages of secondary containers are based on volume.

Primary containers have an acidic paper tag placed in a metal holder with the county and site number(s) labeled in pen. The containers are tightly packed.

Secondary Containers

Secondary containers for the military archaeological collections consist almost entirely of non-archival 2-mil plastic zip-lock bags (Figure 144). Small manila envelopes with folded flaps are also present in the collection (Table 120). Secondary containers have a preprinted acidic insert paper tag. The site number, provenience, catalog number, investigator, contents, and artifact number are labeled in pen. The secondary containers are not nested.

Laboratory Processing and Labeling

All of the artifacts have been cleaned and sorted by material class. Approximately 70% of the artifacts have been directly labeled in india ink with a catalog number.

Human Skeletal Remains

The UCM is not curating human skeletal remains recovered from any archaeological projects conducted on any military installations.

Records Storage

The UCM currently curates approximately 0.5 linear inches of documentation associated with archaeological work performed on the U.S. Air Force Academy. Documentation is stored on open metal shelves in the CRM collections storage area, Henderson room 1B, that measure 3 x 6.5 x 1 feet.

Paper records consist of administrative and survey records from the U.S. Air Force Academy. These records are bound and labeled in marker with the site numbers and contractor. There is no processing information, except that they are arranged by project. The records are in good condition with the exception of the use of contaminants such as a metal folder binder.

Collections Management Standards

Registration Procedures

Accession Files

All materials are accessioned upon receipt. The materials are given a number that consists of the year, the sequential number in which they were received within that year, the number of boxes, and an accession number within the Anthropology Division of the Museum.

Location Identification

The location of the CRM collection is not identified within the museum accession file because all collections are located in one room. Within the room materials are arranged by site numbers and can be located in the site card file. Accession files are used for some information.

Cross-Indexed Files

Documentation files of contractor produced records are cross-indexed with the site card file. These documentation files are organized by standardized site number, stored in the metal bookcases. The UCM has intentions of setting up a database that will compile all of the CRM information.

Published Guide to Collections

There is not a published guide to the collections; however, there is an in-house guide.

Site-Record Administration

The Smithsonian River Basin Survey Trinomial System of site numbering is used.

Computerized Database Management

Paradox 3.5 was the automated data processing system that the Anthropology Section was using, but there are plans to upgrade to Access. Records are backed up on disks and the information is updated approximately every six months. Back-up records are not stored at an off-site location. The Museum computer system is not hooked up to a network. The curation staff within the

Anthropology Section are the only personnel who have access to the computers.

Written Policies and Procedures

Minimum Standards for Acceptance

The University of Colorado CRM Repository Program sends a CRM Curation Agreement Packet to the contracting firms for specific curation requirements to standardize the collections. The museum has legal agreements with contracting firms that can be terminated, if necessary. Materials that are incomplete or inadequately processed and documented may be refused by the University of Colorado Museum or charged an additional fee. The only collections accepted are from those agencies with permits to do so.

Curation Policy

The CRM Repository Program has developed a CRM Curation Agreement Packet that was developed to standardize the processing of collections that are curated at the Museum. The packet includes a copy of the curation agreement, curation requirements for CRM collections (labeling and packaging of artifact and documentation collections and delivery of collections), access procedures, curation fees, and guides for proper curation techniques for the UCM.

Records-Management Policy

There are specific records management policies and procedures outlined in the aforementioned CRM Curation Agreement Packet. The policy for records management is detailed on pages 2, 3, and 4 of "The Curation Requirements for CRM Collections."

Field-Curation Guidelines

There are specific field-curation guidelines that are outlined in the CRM Curation Agreement Packet.

Loan Procedures

A written request is required for all artifact collection loans. Based on written policies it is at the curator's discretion to accept or decline a loan request. Record collections are not loaned to the public.

Deaccessioning Policy

There is a deaccessioning policy. Collections have been deaccessioned, but this is not a common practice. The records of all archaeological materials or parts of archaeological materials that have been destroyed through analysis are incorporated into the deaccession file and also placed with the contractor files.

Inventory Policy

The CRM collections are not part of the inventory reconciliation because the UCM feels that these collections are only entrusted to their facility. These collections are catalogued and inventoried only as needed.

Latest Collection Inventory

There has never been a formal inventory, but the last inventory was probably in the early 1990s when the computerized database was first set up.

Curation Personnel

The Anthropology Division of UCM has a full-time (12 month fiscal year) curator, a full-time (9-month academic year) assistant curator and a temporary part-time graduate student assistant (0.33 fiscal year FTE). Daily management of the CRM Repository is one of the responsibilities of the graduate assistant (occupying 55% of their time). The curator and assistant curator contribute to the administration of the CRM program.

Curation Financing

Curation is not financed, but the museum is subsidized by the university. For CRM contracted collections, the UCM-Anthropology Division charges a one-time fee based on the volume of the collections. Artifacts and documentation from each project are billed individually by the increment of one quarter of a banker's box. Contractors are billed for the actual amount of materials, not by the number of boxes.

Access to Collections

An appointment and a written request addressed to the curator is necessary to gain access to the CRM collections, preferably two weeks in advance.

Appointments are set up with the curation staff of the Anthropology Section (Graduate Assistant, Assistant Curator, or Curator). The staff does not accommodate drop-in visitors for collection access. Access to the CRM collections is generally not granted during the summer term (May 15- August 15) when the Anthropology Division is unstaffed. Researchers, specifically students, are required to specify what staff member or professor they are working with and their work parameters.

Future Plans

To meet curatorial standards the budget will need to be doubled, especially as the collections increase. There are no definite plans for a curation upgrade, but the Museum is working with the state of Colorado to either acquire additional off-site space (storage) or to discontinue acceptance of new accessions to the CRM Repository. Ideally they would like to have more on-site space. Although the CRM Repository Program does not have a computer specifically for its exclusive use, an upgrade in May 1996 of the computer in the Anthropology Division allows for shared use.

Comments

1. The Henderson building of UCM has a heating system but does not have central air conditioning. Humidity levels are being monitored sporadically throughout the building with a hygrothermograph. The CRM Repository collection storage room has incandescent lighting.
2. There is an integrated pest management system that includes both monitoring and control, on an as-needed basis. Insect and rodent precautionary measures are primarily the responsibility of the maintenance staff.
3. Henderson building has a security system that includes an intrusion alarm wired to the police, key locks on both exterior and interior doors, dead bolt locks on some of the interior and exterior doors, motion detectors in the exhibit areas, sealed or locked windows, controlled access, and a security guard at the front entrance that monitors the security cameras.

4. The Henderson building has a fire detection system that consists of a fire alarm wired into the fire department and smoke detectors. The fire suppression system in the building consists of multiple fire extinguishers. However, the CRM collections storage area have no fire detection or suppression systems in place at this time.

5. Primary containers for the military collections are metal file drawers. Secondary containers for the archaeological materials are non-archival 2-mil zip-lock bags and small manila envelopes.

6. Documentation is stored on open metal shelves in a binder. Metal contaminants are present on the paper records.

Recommendations

1. Install an air conditioning system in the repository. If present monitoring shows the need for humidity control, it can be maintained through the use of commercial dehumidifiers or humidifiers.

2. A more consistent pest monitoring system for the repository—using sticky traps for insects or mechanical traps or baiting for rodents—would be beneficial.

3. Install at least one fire extinguisher in the CRM collections storage area.

4. Rebag all archaeological materials into 4- or 6-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed.

5. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.



University of Denver Museum

Denver, Colorado

Collection Summary

Collections Total: 2.2 ft³ of archaeological materials. 0.4 linear feet of associated records.

Volume of Archaeological Materials: 2.2 ft³
 Compliance Status: Collections require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.4 linear feet (4.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation funding is provided by the university and annual storage fees charged to depositing institutions and agencies.

Repository Summary

DATE OF VISIT: February 27, 1997

PERSON CONTACTED: Terry Reynolds

The University of Denver Museum (DUMA) currently curates approximately 2.2 ft³ of artifacts recovered from two military installations (Table 121) and 4.25 linear inches of associated documentation. Archaeological materials and documentation are stored in Pioneer Hall, where the anthropology offices are located. Museum exhibits are located in a separate building, Mary Reed Hall. The assessment team was permitted to examine the artifact and

Table 121.
 Volume of Military Archaeological Collections
 Housed at the University of Denver Museum

Installation	Volume of Artifacts (ft ³)
Falcon Air Force Base	2.1
U.S. Air Force Academy	0.1
Total	2.2

records collections in the anthropology laboratory in Pioneer Hall. However, the assessment team was not allowed to enter and observe the collections storage areas, nor was the team allowed to take any photographs, including of the exterior of the facilities.

Structural Adequacy

Pioneer Hall was constructed in 1945 as a dorm and office building, and was later renovated to house only offices and classrooms. The building is approximately 42,720 ft², of which the Museum occupies 8600 ft². Activity areas include artifact and records storage and study rooms, photographic storage, and offices. The foundation is concrete with asphalt waterproofing, and exterior walls are brick. The roof is a wood frame covered with bituminous bur and gravel. In a June 1996 assessment, an architect judged the structure as solid, with no major cracks or leaks. Currently, the Museum operates offices, laboratories, and collections storage areas in Pioneer Hall. There are three floors above grade and one floor below. A major renovation has not yet occurred, but is scheduled within the next three-four years. The building has multiple windows, each with steel frames. In the collections storage areas, windows are either blocked or shaded.

The following information (and in subsequent sections of this report) regarding collections storage areas has been extrapolated from visual observations in the laboratory, where the assessment team viewed the artifact and records collections. Collections storage areas encompass approximately 4200 ft², in three separate rooms. Floors are concrete, with concrete masonry walls. The ceilings are composed of poured concrete. There are multiple steel-frame windows, all of which are equipped with shades. Interior doors are wood panel. Collections storage capacity is estimated at 100%, with the Museum scheduled to accept one large collection in the immediate future.

Environment

Pioneer Hall is equipped with steam heat, and some individual rooms are air conditioned. There are no dust-filtered air movement systems. The building stays seasonally constant at between 8-12% relative humidity, confirmed by staff of the Rocky Mountain Conservation Center. Currently there is no funding for the installation of humidity monitoring devices. Cleaning is performed daily by university staff, except in collections storage areas where weekly cleaning is the responsibility of the curatorial staff. Maintenance is on-call. Lighting consists of ultraviolet (UV) filtered fluorescent tubes. UV filters

were recently checked for leakage, which was determined to be not appreciable.

Pest Management

For the past five years, the Museum has operated an integrated pest management system. Insects are monitored with strategically placed sticky traps. Control is then exercised as the situations dictate. Food is restricted in collections storage areas and the laboratory.

Security

Exterior doors for Pioneer Hall are equipped with key locks. Campus police regularly patrol the exterior and interior of the building. Most interior rooms are equipped with dead-bolt locks and security hinges on the doors. Access to collections storage areas is also tightly controlled by curation staff (three people total), who monitor use of the door keys. Access to the room containing NAGPRA materials is very restricted.

Fire Detection and Suppression Systems

Pioneer Hall is equipped with fire doors, heat sensors wired to the local fire department, and multiple fire extinguishers.

Archaeological Storage Materials

Storage Units

The assessment team was not permitted to observe the storage units within the collections storage areas. Primary containers for artifacts were brought to the laboratory room for assessment. Percentages of material classes are outlined in Table 122.

Primary Containers

Primary containers consist of acidic cardboard boxes. Labels consist of adhesive-backed acidic paper, with information typed, written in marker, or computer-generated. The Arizona state site recording system is used, and these numbers are recorded on

Table 122.
Percentages of Material Classes in the Military
Archaeological Collections Housed at the
University of Denver Museum

Material Class	Percentage Present		Total
	Falcon FB	USAF Academy	
<i>Prehistoric Artifacts</i>			
Chipped Stone	1	100	50
Botanical Remains	9	—	5
Historic Metal Artifacts	90	—	45
Total	100	100	100

Note: Percentages of material classes are based on volume.

all primary container labels (e.g., CO S:5:8). Other information varies, consisting of Smithsonian trinomial site numbers, site area and/or feature numbers, container contents, and container number.

Secondary Containers

Secondary containers consist almost entirely of two-mil plastic zip-lock bags. Most secondary containers have interior acid-free paper tags, which are labeled in pen. Information generally consists of an Arizona site system number, date, catalog number, bag number, and number of objects.

Laboratory Processing and Labeling

All of the artifacts have been cleaned, but none of the artifacts have been labeled. All have been sorted by material class.

Human Skeletal Remains

The University of Denver Museum is not curating any human skeletal remains recovered from archaeological projects on military installations.

Records Storage

Storage units for archaeological documentation were not observed by the assessment team. DUMA curates records associated with work performed at Falcon Air Force Base (Table 123); records from work conducted at the U.S. Air Force Academy were also observed at the Museum. These records were stored with Lucy

Bambrey, a former archaeologist with the IT Corporation in Englewood, Colorado. Ms. Bambrey is loosely affiliated with the University of Denver. The U.S. Air Force Academy records remain in Ms. Bambrey's personal care.

Paper Records

Paper records (1.25 linear inches) consist of administrative, background, survey, and analysis documents, which are stored in acid-free folders. The containers are in excellent condition. Labels are located on adhesive-backed paper. Information is recorded in marker and consists of the Arizona site system number and the Smithsonian trinomial site number. Most records have been transferred to acid-free paper.

The U.S. Air Force Academy archaeological documentation is housed in an expandable manila file folder, which is in excellent condition. The folder is labeled directly in pen with the subject property and the IT project number. Draft reports, a final report, folded maps, and drawings are also kept in the expandable manila folder. Photographs are still with the IT Corporation, which does not now have an archaeologist on staff.

Report Records

Reports total 0.5 linear inches, and are stored with the paper records.

Photographic Records

A total of two linear inches of photographic records is stored with the paper records. Photographs consist of slides, color prints, black and white prints, negatives, and contact sheets. Slides are labeled directly in pen or pencil with the site number and subject, and are stored in archival quality plastic

Table 123.
Types and Amounts of Associated Documentation
Housed at the University of Denver Museum
(in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Falcon AFB	0.25	0.5	0.5	—	1.25
USAF Academy	1.00	—	1.5	0.5	3.00
Total	1.25	0.5	2.0	0.5	4.25

sleeves. Prints are labeled directly in indelible ink with project name and year. Prints are stored in plastic zip-lock bags, and in archival sleeves. Negatives and contact sheets are housed in archival sleeves, with acid-free paper insert labels with project name and year recorded in pen.

Maps and/or Oversized Documents

Maps total 0.5 linear inches and are mostly stored folded with the paper records. One large field map is filed in a map flat case.

Collections Management Standards

Registration Procedures

Accession Files

All archaeological materials and documentation are accessioned upon receipt. The accession number consists of site number, collection number, and year/event. An extra number is affixed to educational collections.

Location Identification

The location of each collection within the repository is identified in the computer system used by DUMA.

Cross-Indexed Files

Files are cross-referenced by the accession number, Smithsonian trinomial site number, Arizona site system number, and contractor number.

Published Guide to Collections

There is no published guide to collections, but there is an institutional guide.

Site-Record Administration

The primary method of administration is the Arizona site system, cross-referenced with the Smithsonian trinomial system.

Computerized Database Management

The Museum utilizes a non-relational program developed over 25 years ago and operated on a

mainframe computer. The program functions like a flat file database and is searchable. The university performs regular backups of data on tape.

Written Policies and Procedures

Minimum Standards for Acceptance

Minimum standards for acceptance are outlined in the DUMA "Collections Management Handbook." Probably the most important condition of acceptance for artifacts is that their title will be given to DUMA without any restrictions.

Curation Policy

Curation policies are outlined in the DUMA "Collections Management Handbook." Policies outlined include acquisitions, deaccessioning, loans, security and access, records and supplementary documents curation, curation procedures, and forms.

Records-Management Policy

Records and supplementary documents curation is outlined in the DUMA "Collections Management Handbook."

Field-Curation Guidelines

Minimal field curation guidelines are set forth in the DUMA "Collections Management Handbook."

Loan Procedures

Loan procedures are explicitly outlined in the DUMA "Collections Management Handbook." Borrowers must be a scientific, cultural or educational institution, a member of the University of Denver faculty, or a DUMA Studies graduate student.

Deaccessioning Policy

The conditions and terms of deaccessioning are outlined in the DUMA "Collections Management Handbook."

Inventory Policy

Inventories are conducted if funds are provided by the interested institution or agency. Otherwise, DUMA conducts periodic inventories as internal policy or by agreement.

Latest Collection Inventory

Collections are continuously inventoried.

Curation Personnel

Four museum personnel have direct responsibility for the collections. These include the Director, Dr. Dean Saitta; the Curator of Archaeology, Dr. Sarah Nelson; the curator of Ethnography, Dr. Richard Clemmer-Smith, and the collections manager, Jan Bernstein.

Curation Financing

There is no direct curation funding from the institution. Curation staff salaries are provided by the university, and curation facilities, supplies, and equipment are financed out of an annual storage fee charged to depositing institutions and agencies.

Access to Collections

Only members of the museum staff have access to the collections. Outside researchers must contact the collections manager for access.

Future Plans

Approximately by the year 2000, DUMA will be acquiring part of Sturm Hall, currently occupied by the School of Business Administration, for collections, laboratory, and office space. Sturm Hall will be partially renovated to provide better environmental controls. Storage equipment, including shelves and cabinets, will be acquired.

Comments

1. Heating is present for the facility, but there is no air conditioning nor humidity controls and monitoring devices. Fluorescent lights have UV filters installed.

2. DUMA operates an integrated pest management system. Pest monitoring is conducted on a regular basis.

3. Pioneer Hall is secured with key locks on exterior doors. The collections storage areas are secured with key locks. There is no intrusion alarm for interior or exterior doors or windows.

4. Fire detection consists primarily of heat sensors wired to the local fire department and fire extinguishers. No sprinkler system is present for fire suppression.

5. Primary containers for artifacts are acidic cardboard boxes or wood and metal construction drawers. Secondary containers for artifacts consist almost entirely of archival quality plastic zip-locks.

6. Records are stored in acid-free folders. Records for the USAF Academy are not maintained by the museum

Recommendations

1. If possible, monitor humidity in the collections storage areas with an electronic data logger humidity monitoring device or an analog hygrothermograph. Control humidity levels through the use of a commercial dehumidifier or a humidifier.

2. Rebox all archaeological materials into folded acid-free cardboard boxes with telescoping lids.

3. Retrieve project documentation for all collections, including USAF Academy.

4. Produce multiple copies of all documentation on acid-free paper, and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant metal file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.



University of Hawaii

Hilo, Hawaii

Collection Summary

Collections Total: 15 ft³ of archaeological materials. No associated records.

Volume of Archaeological Materials: 15 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: None

Status of Curation Funding: The curation of the Pohakuloa Training Area archaeological collections is not specifically funded. The cost of storing these archaeological materials comes from the Department of Anthropology, University of Hawaii, Hilo budget.

Repository Summary

DATE OF VISIT: March 19, 1997

PERSONS CONTACTED: Barbara Lass and Craig Severance

Archaeological materials recovered from the Bobcat Trail Cave site on Pohakuloa Training Area are currently housed in a room devoted to collections storage in the Anthropology Department on the University of Hawaii, Hilo (UHH) campus.

Structural Adequacy

The anthropology department and collections storage room is located in the Edith Kanakaole Hall (EKH), Building 333 on the UHH campus (Figure 145).



Figure 145. Department of Defense collections are housed in Building 333 on the campus of the University of Hawaii at Hilo.

EKH was constructed in 1982 as a university classroom and office building. It has a concrete foundation with painted concrete block exterior walls. The corrugated metal roof has a concrete sub-

roof that has been repaired as needed when leaks occur. The building is structurally solid with no visible cracks in the walls or foundation. There are two floors above grade; the collections storage room is located on the second floor. Building 333 has multiple windows in aluminum frames that have never had to be replaced and there is no evidence that the frames leak water or air.

The collections storage room encompasses approximately 1140 ft². It has concrete floors covered with linoleum tiles and painted wallboard interior walls. The concrete ceiling has also been painted. The four windows present in this room are almost completely blocked by the large storage units that line the walls.

Environment

The building is equipped with an electric-chilled air conditioning system that has thermostat temperature controls set for staff comfort. The system is maintained by an outside, independent contractor. There are no dust filters on the environmental controls. The humidity within the building is neither monitored nor regulated. There is no asbestos present within the building structure and no overhead pipes within the collections storage area. Windows throughout the collections storage room are shaded with curtains and covered with a ultraviolet (UV) filtering film. The facility is regularly maintained by University Auxiliary Services personnel.

Pest Management

A pest management and control service is provided by the university and includes periodic building inspection and fumigation spraying as needed. In the past, there have been infestation of cockroaches, silverfish, cane bugs, and possibly termites within the building.

Security

Building security measures include key locks, controlled access into the collections storage room, and campus security who patrol the grounds routinely. No episodes of unauthorized entry into the EKH building were reported. All doors are locked

after school hours, and the door to the collections storage room is always locked.

Fire Detection and Suppression Systems

Fire protection measures within the building include manual fire alarms, smoke detectors, and fire extinguishers that are inspected on a regular basis.

Archaeological Storage Materials

Storage Units

Enameled metal non-movable cabinets with locked sliding doors measure 7.25 x 6 x 2.25 feet (h x w x d). The storage unit that contains the PTA collections has ten adjustable shelves. For the percentages of material classes present in the PTA collections, refer to Table 124.

Table 124.
Percentages of Material Classes Present
in the Pohakuloa Training Area Collections
Housed at the University of Hawaii, Hilo

Material Classes	Percentages
<i>Prehistoric Artifacts</i>	
Chipped Stone	6
Botanical Remains Samples	91
Volcanic Glass	2
Other*	<1
<i>Historic Artifacts</i>	
Other**	<1
Total	100

Note: Percentages of material classes based on volume.

*Other prehistoric materials in the collection include shell and faunal material.

**Other historic materials in the collection include leather and textile material.

Primary Containers

Primary containers consist of acidic cardboard boxes and an acidic brown paper bag with volumes ranging from 0.5 ft³ to 4.5 ft³ (Figure 146). Most of the boxes have a volume of 1.2 ft³. The boxes are of a glued, folded, and taped construction with either folding flap lids, some of which have been taped shut, or telescoping lid security. Labels are either paper



Figure 146. Collections from Pohakuloa Training Area are stored in a variety of acidic cardboard boxes and paper bags in a metal storage unit.

inserts in adhesive plastic holders or are written directly on the surface of the container. Label information is consistent and legible and includes the project number and box number. Some labels include the material contents.

Secondary Containers

Paper bags are used as secondary containers for two-thirds (66%) of this collection. Twenty-two percent of the artifacts are housed in plastic bags, both open and zip-locks, and 7% of the artifacts have no secondary containers. Other secondary containers used for the remaining 5% of the collection are acidic paper envelopes and small acidic cardboard boxes. Nested within the secondary containers are additional tertiary containers, which include foil, smaller plastic zip-lock bags, paper bags, glass vials with rubber plugs, and Styrofoam peanuts. Labels have been written directly on the front of the secondary containers in pen, pencil, and marker. Label information is not on every container, nor is it consistent. Information generally includes the site number, provenience, date, investigator, and contents. Paper bags are unlabeled. A box inventory is enclosed in each secondary container.

Laboratory Processing and Labeling

Most of the collections have been sorted by material class (82%); however, only 20% are cleaned and 10% are labeled. Archaeological materials that are labeled have the site number and accession number applied directly to the surface in pen or ink and sealed with a clear top coat.

Human Skeletal Remains

No human skeletal remains from Pohakuloa Training Area or any other Department of Defense installation are currently being housed at the EKH storage facility at UHH.

Records Storage

There are no associated documents housed at this facility. These collections are part of the larger collections currently being held by the contracting firm of Paul H. Rosendahl, Inc. (PHRI) where all of the records are maintained in their archives.

Collections Management Standards

Registration Procedures

Accession Files

The Pohakuloa Training Area collection housed at UHH are accessioned through the PHRI system, and not through the university. Accessioning has not been a consistent practice here and UHH is currently in the process of accessioning and cataloging all of their holdings, which will not include the Pohakuloa Training Area collection.

Location Identification

Collection location information will be available through their accession records when they have finished that project.

Cross-Indexed Files

Files are not cross-indexed at this time.

Published Guide to Collections

A published guide has not been produced.

Site-Record Administration

UHH uses the State of Hawaii's site numbering system, which is based on an island designation and district number. Sites are numbered sequentially within their districts that are generally based on the old ahupua'a sections (the chiefdom land division of each island that generally extends from the center of the island to the sea).

Computerized Database Management

Collection information is entered onto computerized databases. A backup copy has not been made to date.

Written Policies and Procedures

Minimum Standards for Acceptance

UHH only houses collections that have been generated through projects performed by their staff. The Pohakuloa Training Area collection is housed here because Dr. Paul Rosendahl was affiliated with the university for many years and has other collections from non-DoD projects located here.

Curation Policy

A written curation policy is not in place at this time.

Records-Management Policy

A written records-management policy is not in place at this time.

Field-Curation Guidelines

Written field-curation guidelines are not in place at this time.

Loan Procedures

UHH has not loaned material out to other institutions or individuals and does not have written guidelines or forms for this procedure.

Deaccessioning Policy

UHH has not deaccessioned any material to date and does not have a written policy covering this procedure.

Inventory Policy

UHH does not have a written inventory policy.

Latest Collection Inventory

Staff are currently inventorying and accessioning their entire collections holdings.

Curation Personnel

There are no personnel specifically assigned to the curation of archaeological materials. The staff archaeologist is responsible for collections maintenance.

Curation Financing

The curation of the Pohakuloa Training Area archaeological collections is not specifically funded. The cost of storing these archaeological materials comes from the Department of Anthropology, University of Hawaii, Hilo budget.

Access To Collections

Access to the collections is controlled by Dr. Barbara Lass, Staff Archaeologist, and by Dr. Craig Severance, Chairman of the Anthropology Department. There are four people in the Anthropology Department who have access to the collections. An appointment must be made in advance for access to their holdings. The assessment team coordinated this visit through staff from PHRI.

Future Plans

Future plans for collections management at UHH include completing their cataloging and inventory project for all of the collections; improving the physical conditions where the collections are stored; and deaccessioning the historical and miscellaneous material currently being housed with the archaeological collections.

Comments

1. The building is structurally sound.
2. An integrated pest management system has not been initiated within the collections storage area.

3. All Pohakuloa Training Area collections are housed in acidic cardboard boxes; secondary containers consist of a variety of materials including acidic paper bags, cardboard boxes, envelopes, and zip-lock plastic bags.

4. Lighting in the collections storage area does not have ultraviolet filtering sleeves in place.

Recommendations

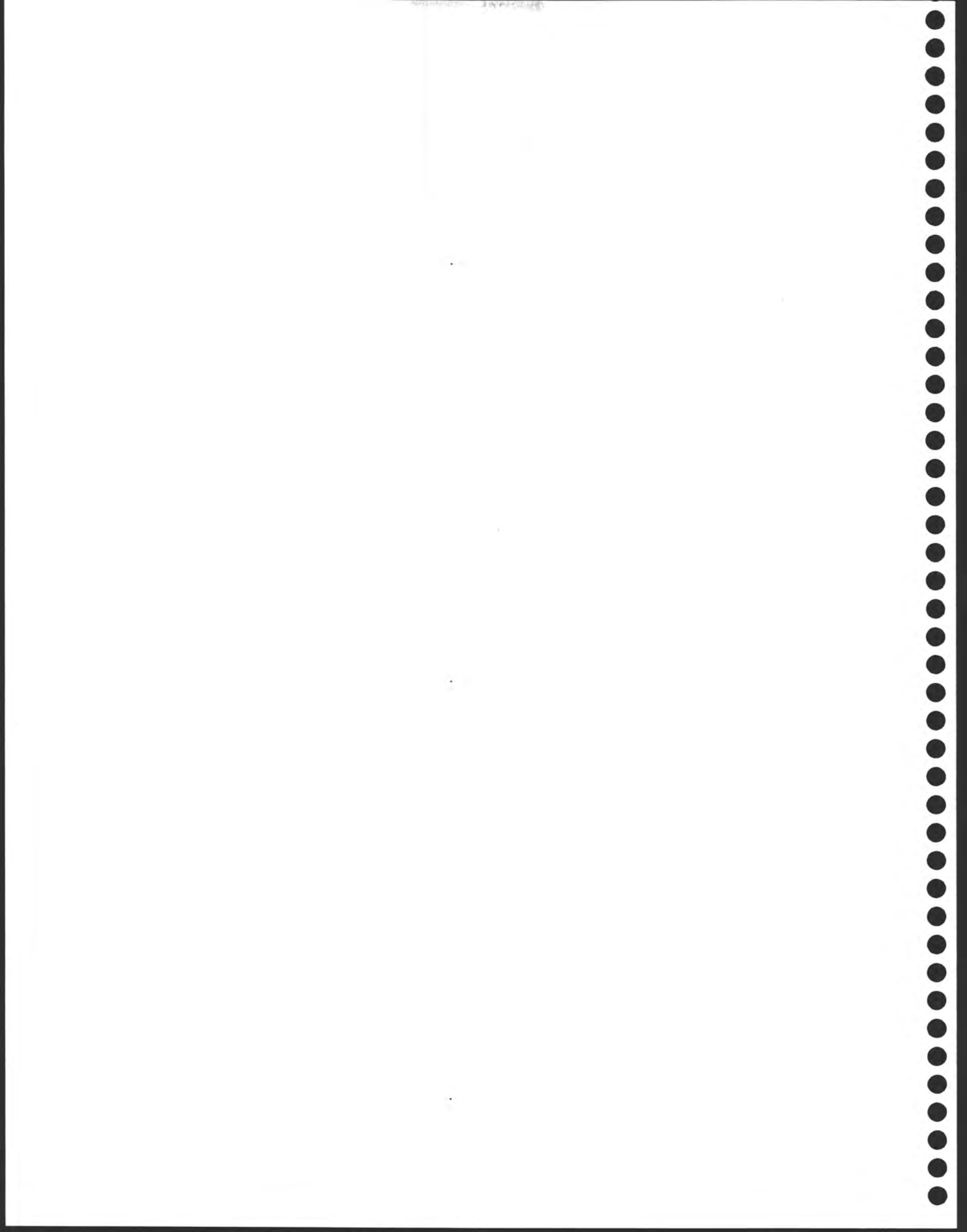
1. Implement an integrated pest management system in the facility, which includes both regular monitoring and control measures when needed.

2. Place ultraviolet filters on fluorescent lights in collection storage and documents storage areas.

3. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.

4. Replace secondary containers with 4-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled with indelible ink, and inserted into the secondary containers.

5. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.



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Museum of Anthropology

University of Kansas

Lawrence, Kansas

Collection Summary

Collections Total: 50 ft³ of archaeological materials. 0.9 linear feet of associated records.

Volume of Archaeological Materials: 50 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.9 linear feet (11.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is financed by a per box curation fee.

Repository Summary

DATE OF VISIT: August 14-19, 1996

PERSON CONTACTED: Mary Adair

The museum is located on the university campus in Spooner Hall, which was built as the University's first library in 1894 (Figure 147). Currently, Spooner Hall houses exhibit space for the Museum of Anthropology, a gift shop, the collections storage areas, offices, an archaeology laboratory, and classrooms. There are approximately 50 ft³ of Fort Leavenworth collection materials and approximately



Figure 147. Exterior of the Museum of Anthropology Building.

Table 125.
Percentages of Material Classes in the Fort
Leavenworth Archaeological Collections Housed at
the University of Kansas Museum of Anthropology

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Ceramic	7
Chipped Stone	51
Faunal Remains	7
Shell	<1
Flotation Samples	26
Soil Samples	2
¹⁴ C	<1
Botanical Remains	<1
Other	6
Total	100

Note: Percentages of material classes are based on volume. Other prehistoric material includes light fraction samples, daub, copper, and burned clay.

0.9 linear feet of project documentation from Fort Leavenworth and Sunflower Army Ammunition Plant (AAP) being curated at the museum. For a summarization of the collection by material classes, see Table 125.

Structural Adequacy

The repository is a four-story structure, built into the side of a hill, with two floors above ground and two floors that are partially below ground. The building has a stone foundation, sandstone exterior walls, and a clay tile roof. The roof was partially replaced during the mid-1980s. The foundation, the exterior walls, and the roof are each considered to be structurally sound and without cracks or leaks. Many of the building's original wooden window frames have been replaced with steel frames, but there is some evidence of water leakage around those not yet replaced. All windows in the facility are thermal paned but only the windows in the exhibit gallery have ultraviolet (UV) filters.

The museum collections are stored in the archaeology laboratory that is located on the first sub-grade level of the repository. The laboratory/collections storage room is entered through a plywood sheet door after descending one of the dual staircases just inside Spooner Hall's main entrance. The floor in this room is cement covered with tile, the walls are painted dry wall, and the ceiling is

suspended acoustical tile. There are four wood and steel framed windows on the north wall of the collections storage room. Three of these windows are shaded. None are filtered against UV radiation. There was no reported incidents or evidence of water or air leakage around these windows.

All project documentation is housed in Dr. Mary Adair's office, which also serves as the archives area. This office/archives area is entered through an interior doorway on the east wall of the collections storage room. The floor in the archives area is cement covered with linoleum tile, the walls are painted drywall, and the ceiling is unfinished cement. There are four unshaded windows on the north wall and three on the east wall. None are filtered against UV radiation. All window frames are constructed of wood and steel and there was evidence of water and air leakage around them.

Environment

A heating, ventilation, and air conditioning system (HVAC) monitors and maintains the facility temperature and relative humidity. University staff in charge of operations check and set the relative humidity level approximately every six months. There are dust filters on the environmental controls. Lighting in both the collections storage and document archives rooms is provided by a combination of unfiltered fluorescent overhead tubes, desk lamps, and unfiltered natural lighting from the unshaded windows. There is no asbestos present within the building structure and there are no overhead pipes within the collections storage area.

Pest Management

No program of pest management currently exists and no specific precautions are taken to monitor or protect collection materials from insect and rodent damage. During previous instances of insect infestation, the affected artifacts have been removed from the collection storage area for treatment. Dr. Adair indicated that roaches are a continuing problem, but that there is no current evidence of other insect pests or rodents. She also stated that the museum staff is currently researching methods for non-invasive pest management.

Security

Interior and exterior repository doors are equipped with both dead bolt locks and key locks, and access into the collection storage areas is controlled by museum staff. None of the windows can be opened, and additional security is provided by metal bars covering the exterior of all ground accessible windows. According to Dr. Adair, the museum is in the process of acquiring a motion detection security system; installation bids have already been taken from contractors. No unauthorized entry to the collections storage area has been reported.

Fire Detection and Suppression Systems

Fire detection devices include manual fire alarms, heat sensors, smoke detectors, and fire alarms wired into the fire department. Fire suppression devices consists of a sprinkler system, a fire door, fire walls, and fire extinguishers.

Archaeological Storage Materials

Storage Units

Primary containers are housed on fixed, open, metal shelving units. Individual shelving units measure approximately 85 x 35 x 24 inches (h x w x d) and each unit contains a total of six shelves with approximately 15 vertical inches between shelves (Figure 148). There is an aisle distance of



Figure 148. Artifacts are processed in the storage room.

approximately 54 inches between the rows of shelving units. A total of eight shelves on shelving units number 109 and number 110 was utilized to house DoD collections from Fort Leavenworth, Kansas. One of these shelves was noted as being bowed under the excessive weight of the heavily packed collection boxes. For a breakdown of material classes see Table 125.

Primary Containers

Primary containers for the artifacts are folded construction acidic cardboard boxes with telescoping lids. The primary container boxes measure approximately 24 x 17.5 x 3.5 inches (d x w x h), or 0.85 ft³ each. Primary containers are labeled with typed adhesive labels that record site and box content information.

Secondary Containers

Secondary containers are 1- and 2-mil non-archival quality plastic bags with a zip-lock closure (Figure 149). Frequently, there are additional containers nested within the secondary containers. Secondary containers are not labeled externally, but contain acidic paper insert tags with information about the site and container contents written in pencil.

Laboratory Processing and Labeling

Approximately 50% of the collection materials were cleaned prior to packaging and storage. Bulk stone



Figure 149. Artifacts are labeled directly in ink and housed in a plastic zip-lock bag; a label is also inserted in the bag with the artifacts.

items such as limestone, sandstone, and quartzite were generally packaged without cleaning. Only larger items in the collection have direct labeling in indelible ink. Small items are not individually labeled. Over 90% of the collection materials were sorted by material type.

Human Skeletal Remains

There are no human skeletal remains at the museum.

Records Storage

Paper Records

Paper records are stored on open shelves and arranged by project or site, and by type of documentation. Acid-free copies of records are stored with the originals. There are approximately 3.75 linear inches of paper record project documentation for Fort Leavenworth, and approximately 0.25 linear inches of paper record documentation for Sunflower Army Ammunition Plant. For a breakdown of the types of documents present within the collection from each installation, see Table 126.

Table 126.
Major Classes of Documents by Installation
Housed at the Museum of Anthropology,
University of Kansas (in linear inches)

Installation	Types of Documentation				Total
	Paper	Reports	Photos	Maps	
Fort Leavenworth	3.75	3.25	3.50	0.25	10.75
Sunflower AAP	0.25	0.25	—	—	0.50
Total	4.00	3.50	3.50	0.25	11.25

Report Records

Reports measure 3.25 inches for Fort Leavenworth and 0.25 linear inches for Sunflower AAP.

Photographic Records

There are approximately 3.5 linear inches of photographic records related to projects conducted at Fort Leavenworth and no photographic records from Sunflower AAP. The photographic records have been archivally processed and are stored in a metal filing

cabinet. Photographic records are labeled by project and/or site.

Maps and/or Oversized Documents

Maps from Fort Leavenworth measure 0.25 linear inches.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials and documentation are accessioned upon receipt of the materials.

Location Identification

Location information for the archaeological collections is controlled by the Collection Manager for Archaeology. The accession files do not contain location information. Locational information is maintained by the registrar.

Cross-Indexed Files

The files are cross indexed.

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian River Basin survey trinomial system is used.

Computerized Database Management

Automated data processing techniques are used to manage the collection. Disk back-ups of these records are made at least yearly. They are created primarily in the fall after new collections from the summer field school have arrived. The computer is attached to a network; however, the information is stored locally within the building, not on the server. These locally stored records are not part of the on-line records. At least one back-up copy is stored off-site at Dr. Adair's home. At present, access to this computerized information is limited to Dr. Adair and her assistant.

Written Policies and Procedures

Minimum Standards for Acceptance

Collections must have proper significance, clear title, and provenience.

Curation Policy

There is a written curation policy describing all acquisition and registration procedures as well as processing, storage, and material conservation.

Records-Management Policy

The repository has written guidelines and standards that address the management and continued preservation of documents such as paper records, photographic materials, and maps.

Field-Curation Guidelines

None exist.

Loan Procedures

The repository has a written loan policy.

Deaccessioning Policy

Collection materials may be deaccessioned at the discretion of the Museum Director and Curators. The deaccessioning procedure is outlined in the Museum's Registration Manual.

Inventory Policy

The repository has no written inventory policy.

Latest Collection Inventory

Collections are not regularly inventoried, but are inventoried as they are used for research purposes.

Curation Personnel

The repository has no full-time curator for the archaeological collections.

Curation Financing

Curation is financed by a per box curation fee.

Access to Collections

Access to the collections is controlled by the museum staff. Interested researchers with proper credentials may gain access by making a pre-arranged appointment with the Director or Curator.

Future Plans

The museum plans to complete a written standard for the curation and accessioning of collection materials. There have been some preliminary discussions with federal agencies regarding the formation of cooperative agreements for curation. These discussions are expected to continue. Dr. Adair also plans to continue seeking grant money to finance upgrades to the archaeological collection.

Comments

1. The building is structurally sound.
2. Temperature and humidity levels within the facility are monitored and controlled.
3. No standard pest-management system has been implemented in the building.
4. Repository fire detection and suppression systems are adequate especially in the collection storage room.
5. Collections are stored in non-archival quality containers.
6. Duplicate copies of original project documentation are currently stored in the same file as the original documents.
7. Lighting in the collections storage area does not have ultraviolet sleeves in place

Recommendations

1. Implement a professional pest-management system for the facility.

2. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents changes, inserts are replaced, thus reducing the chance for conflicting and confusing information.
3. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.
4. Place all paper records in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes. Store duplicate copies of records in a separate, fire-safe, secure location.

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U.S. Army Engineer District

Albuquerque, New Mexico

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 9.5 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 9.5 linear feet (114.5 linear inches)

Compliance Status: All associated records require partial rehabilitation to comply with modern archival practices for the curation of documentation.

Status of Curation Funding: Curation activities are not specifically funded; however, the processing and accessioning of the Fort Wingate collection to the Maxwell Museum was funded through a Delivery Order in a contract with the Office of Contract Archaeology and the University of New Mexico, Albuquerque.

Repository Summary

DATE OF VISIT: October 21, 1996

PERSON CONTACTED: Ron Kneebone

Approximately 9.5 linear feet of associated documentation from Fort Wingate Army Depot, New Mexico, are housed in the offices of the U.S. Army Engineer District (USAED), Albuquerque, Environmental Section. This office has been handling all of the compliance work necessary for the closure of the Fort Wingate. St. Louis District staff have previously assessed records stored in the Albuquerque offices for Holloman Air Force Base and Melrose Air Force Range in 1994 under the Air Combat Command

project (Drew 1996). Since the time of that assessment, the Albuquerque District has moved into a new building where they are the sole tenants. This report documents the results of the repository evaluation performed for this new facility.

Structural Adequacy

The new building is located in the northeast section of Albuquerque in an industrial park and was completed in the summer of 1995 (Figure 150). This building encompasses approximately 58,800 ft² of space and has three floors all above grade, a concrete foundation, and exterior walls constructed with a steel frame faced with stucco. The roof is a single-ply roof with a ballast. The building is structurally sound and has shown no evidence of leaks or cracks in the structure. All of the



Figure 150. The U.S. Army Engineer District, Albuquerque headquarters building was constructed in 1995.

windows, which measure 5 x 5 feet, have aluminum frames shaded with Venetian blinds. Windows are sealed shut and have been covered with film that has a mirror effect from the outside. No significant internal or external renovations have occurred. The bank of exterior doors are glass in metal frames, while all of the interior doors are solid wood.

Associated records are located in offices within the Environmental Section, Room 122 (collection area 1) and in an excess storage room, Room 107 (collections area 2), both of which are located on the first floor. Room 122 is divided into work spaces and cubicles for the Environmental Section staff. This room has gray carpeting on the floor and interior walls comprised of prefabricated wallboard. The ceiling is covered with acoustical ceiling tiles. Room 107 is used for excess records storage and has a bare concrete floor, an exposed concrete ceiling, and a locked steel, chain-link fence barring access to the filing cabinets and shelves of documents.

Environment

This facility has a heating-ventilating-air-conditioning (HVAC) system with a gas powered hot-water heating system, which monitors and controls the temperature in the building. Humidity levels are not monitored or controlled; however, the region typically has low humidity levels. Fluorescent light bulbs are used to light the rooms, but these do not have ultraviolet (UV) filters. As previously mentioned, a UV-filtering film has been placed on all windows. Dust filters are located on the HVAC system vents, which are regularly checked

by contracted maintenance personnel who are also responsible for the maintenance and cleaning duties within the building. Environmental control panels are present in most rooms to monitor the temperature throughout the building. All of the utilities are original to the construction of the building. Water damage to the building or collections has not occurred. There is no asbestos present in this building.

Pest Management

Pest management responsibilities are performed by a contracted company that has a regular monitoring and pest control schedule. Staff in the building have not noticed any evidence of pest infestations.

Security

All doors have been wired with intrusion alarms that notify the local police department, federal security personnel, and District Security personnel. All exterior and interior doors are locked after business hours. The door to room 107 is kept locked at all times and access to the keys is controlled by a few authorized personnel. All visitors are required to check in at the receptionist's desk and sign in. Visitors are given badges that are to be worn at all times and an escort by Corps personnel is mandatory. Additional security measures have been taken in room 107 with the locked chain-link fence barring access to the records storage area where the Fort Wingate records are housed.

Fire Detection and Suppression Systems

Fire detection systems present in the facility consist of smoke detectors. A wet-pipe sprinkler system that is heat activated has been installed throughout the building; sprinkler heads for this system are present in both collections storage rooms.

Archaeological Storage Materials

Artifact materials are not housed in this facility.

Human Skeletal Remains

No human skeletal remains are housed in this facility.

Records Storage

Approximately 9.5 linear feet of associated documentation were assessed during this visit. All associated documentation was generated from work conducted on Fort Wingate for environmental compliance surveys under the Base Realignment and Closure Act (BRAC). Records present include paper records, report records, maps and oversized documents, photographic records, and computer records. Approximately two linear feet of associated documentation is located in Room 122, the Environmental Section offices, and 7.5 linear feet of records in Room 107, the excess records storage room (Figure 151).



Figure 151. Project records for Fort Wingate are stored within a fenced and locked area of an excess storage room.

Paper Records

Approximately 8.1 linear feet of paper records are present including administrative correspondence, contract records, copies of site records, project scopes of work, meeting notes and minutes, survey data, and color printed copies of photographs. Those records stored in collections storage area 1 consist of less than one linear foot of these records (10.25 inches) kept in hanging files in Ron Kneebone's office. The files are

labeled directly in both pencil and ink and are kept in a roll-out lateral file drawer. The working files are in very good condition but are arranged only by need and use of the project material by Mr. Kneebone. Staples are present in these working files.

Paper records kept in Room 107, collections storage area 2, encompass approximately 7.25 linear feet and are stored in acidic cardboard boxes on metal shelves or in metal upright file cabinets. The metal shelving units have sliding glass doors, but the boxes of records are too deep to close them. The records themselves are filed in acidic manila files or envelopes that are labeled directly in pencil or ink. Records have been arranged by project and are in good condition. Contaminants including paper clips, staples, metal binder clips, and rubber bands are present throughout the documents.

Report Records

Less than one linear foot (4 inches) of report records is present in the collection. Draft report sections, final reports, and a progress report on a Fort Wingate survey are located in both collections storage rooms either in the hanging files in Mr. Kneebone's office or in the filing cabinet in Room 107. The condition of the reports is the same as described for the paper records.

Photographic Records

Less than one linear foot (10.75 inches) of photographic records are present in the collection. Records consist of black and white prints, negatives, and slides which are kept in three-ring vinyl binders in Room 122, collections storage room 1, on an open metal shelf. The binders are been labeled directly on the spine with either white paint or black ink. The records are housed in archival quality plastic photo sleeves that are labeled with the project information. Photologs also accompany the photographs. The slides are labeled directly on their paper or plastic frame in ink. A set of black and white prints is wrapped in an archival plastic photo bag and secured with a rubberband. These are inside the binder with the rest of the photographic material. The records are arranged chronologically and by phase of the survey. A significant amount of surface dirt or dust was noticed on the records and paper clips are present in the binders.

Maps and/or Oversized Documents

Approximately 1.5 linear inches of documents are located in Room 122, collections storage room 1, in a metal upright map storage unit (EASI FILE), which contains of U.S.G.S. 7.5' and 15' topographic maps, blue line maps and oversized aerial maps. Small report ready maps, large folded maps, and blue line maps are stored with the paper and report records in Mr. Kneebone's office. One-half inch of folded copies of U.S.G.S. topographic maps are stored with the paper records in Room 107, collections storage area 2. These records are in the same condition and arrangement as the paper records.

Computer Records

Currently, four 3 1/2 inch disks contain Fort Wingate documentation. These disks are located in Kneebone's office on his desk in Room 122. Kneebone stated that he also had numerous files regarding Fort Wingate on his hard drive that haven't been backed up onto disk yet. These files will eventually be transferred to disk and become part of the record collection.

Collections Management Standards

This building is not a permanent curation facility; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no curation personnel at this facility. Mr. Kneebone and the rest of the Environmental Section staff are responsible for the safety of these associated records.

Curation Financing

Curation activities are not specifically funded; however, the processing and accessioning of the Fort Wingate collection to the Maxwell Museum was funded through a Delivery Order in a contract with the Office of Contract Archaeology and the University of New Mexico, Albuquerque.

Access to Collections

Access to the Fort Wingate associated documentation is controlled by Mr. Kneebone.

Future Plans

The installation of intrusion alarms for the windows is being considered; however, there are no plans to permanently curate collections at this facility. Fort Wingate is an installation within the Army's Material Command (AMC) and is undergoing necessary compliance measures required for its BRAC status. All of the collections are the responsibility of the AMC and the final disposition of the material has yet to be determined.

Comments

1. This state-of-the-art facility is structurally sound and meets almost all of the environment, pest management, security, and fire detection and suppression requirements outlined in 36 CFR Part 79.
2. Humidity levels are neither monitored nor controlled; however, the region historically has low levels of humidity.
3. The permanent disposition and curation of these materials has not been determined.
4. Associated documentation is arranged primarily by use and is not consistently stored in archival quality materials.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

U.S. Army Engineer District

Baltimore, Maryland

Collection Summary

Collections Total: 1.9 ft³ of archaeological materials. No associated records.

Human Skeletal Remains: None

Volume of Archaeological Materials: 1.9 ft³
 Compliance Status: Archaeological materials require complete rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Linear Feet of Records: None

Status of Curation Funding: Curation of archaeological collections is financed as overhead in the state budget.

Repository Summary

DATE OF VISIT: September 9, 1996

PERSON CONTACTED: Mark Baker, Ken Baumgardt, Steve Israel, and Scott Watkins

The U.S. Army Engineer District (USAED), Baltimore oversees archaeological compliance activities for civilian projects and military installations within its military district jurisdiction. The Corps offices are located in the federal building in downtown Baltimore. A storage facility for the Corps is located adjacent to Fort McHenry, south of downtown Baltimore. A total of 1.9 ft³ of artifacts recovered from Walter Reed Army Medical Center is housed at the Corps storage facility. USAED,

Baltimore was visited previously as part of two St. Louis District projects in 1995, the Atlantic Navy Division (Bade and Shingleton, 1999) and the Legacy 1994 (Shingleton et al., 1999). Repository and collections information was collected during both visits.

Structural Adequacy

The storage facility is used for a variety of storage purposes, only one of which is archaeological collections. It was constructed during the 1950s and encompasses approximately 5000 ft² of floor space in one floor (Figure 152). The building has areas for artifacts, materials storage, and offices. The foundation of the building consists of concrete, and exterior walls are composed of concrete block. The roof is tin, and is original to the building. The roof



Figure 152. Archaeological collections, including ones generated from Walter Reed Medical Center, are housed in a storage facility constructed circa 1950.

has leaked in the past. Interior renovations have consisted of additions and rearrangements of plywood partitions for interior walls. There are four exterior windows on the east side of the building, all with aluminum frames, and not equipped with shades.

The floor in the collections storage area is concrete, and walls are plywood. The collections storage area has a plywood ceiling that is shorter and not connected to the ceiling of the storage facility. There are no windows, and one wood panel door opens to the rest of the facility.

Environment

The storage facility has no environmental controls. Maintenance and cleaning are conducted as-needed by the Corps' Logistics Department.

Pest Management

There is no monitoring or control of pest infestations on a regular basis. When needed, rat poison is used to control rodent infestations.

Security

The exterior doors of the facility are locked with padlocks and key locks.

Fire Detection and Suppression Systems

There is no fire detection system. Fire suppression consists of fire extinguishers.

Archaeological Storage Materials

Storage Units

Artifact primary containers were stored on the floor of the storage facility adjacent to Fort McHenry (Figure 153). Table 127 outlines the types of material classes present in the Walter Reed Army Medical Center housed at the USAED, Baltimore.

Primary Containers

The primary container is an acidic cardboard box with a telescoping lid. The box is labeled directly in



Figure 153. The collections storage area is partitioned off from the rest of the building with plywood walls and a locking door.

Table 127.
Percentages of Historic Material Classes in the Walter Reed Army Medical Center Archaeological Collections Housed at the U.S. Army Engineer District, Baltimore

Material Class	Percentage
Glass Artifacts	20
Metal Artifacts	40
Ceramic Artifacts	18
Faunal Remains	20
Textiles	2
Total	100

Note: Percentages of material classes are calculated by volume.

marker. Label information consists of installation, provenience, year, and contents.

Secondary Containers

Secondary containers consist entirely of paper bags, many with interior plastic zip-lock bags holding the artifacts. Bags are labeled directly in marker, with information consisting of site numbers and provenience.

Laboratory Processing and Labeling

All of the artifacts have been cleaned, but none have been labeled. The artifacts are sorted by provenience.

Human Skeletal Remains

The Baltimore District is not curating any human skeletal remains recovered from military installations in the project area.

Records Storage

The Baltimore District does not have documentation associated with archaeological projects conducted on military installations in the project area.

Collections Management Standards

This building is not a permanent curation facility; therefore, collections management standards were not evaluated for this report.

Curation Personnel

Mark Baker, Ken Baumgardt, Steven Israel, and Scott Watson are all involved partially in the acquisition and curation of archaeological collections. Scott Watson has more direct responsibility for the collections.

Curation Financing

Curation is financed through the Baltimore District, Planning Division overhead.

Access to Collections

Access to the collections is primarily limited to the cultural resources staff. Other staff members and outside researchers have access through request.

Future Plans

The Baltimore District is interested in acquiring the funds and administrative support to enhance the existing storage facility adjacent to Fort McHenry.

Comments

1. The storage facility adjacent to Fort McHenry is not equipped with environmental controls, and the roof leaks.
2. The storage facility does not have an integrated pest management system.
3. The storage facility is secured with only a key lock.
4. The storage facility has only fire extinguishers for fire protection. The federal building has a sprinkler system for fire detection and suppression.
5. The primary container for artifacts is an acidic cardboard box. Secondary containers are paper bags.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.



U.S. Army Engineer District

Los Angeles, California

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 0.1 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 0.1 linear feet (1.15 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is financed through archaeological work contracts. The budgeted funds cover the cost of collections processing. Long-term curation is not funded.

Repository Summary

DATE OF VISIT: February 12, 1997

PERSON CONTACTED: Pam Maxwell

The offices of the U.S. Army Engineer District (USAED), Los Angeles are located in a high-rise office building in downtown Los Angeles, California. The facility curates no archaeological artifact material, but does house approximately 1.15 linear inches of documentation, primarily administrative records, from archaeological projects at several military installations in the western United

States. See Table 128 for a complete list of installations represented by the documentation and the quantity of records related to each.

Table 128.
Associated Documentation
by Installation Housed at the U.S. Army Engineer
District, Los Angeles (in linear inches)

Installation	Volume
Fort Huachuca, AZ	0.75
Luke AFB/Barry Goldwater Range, AZ	0.10
Navajo Army Depot, AZ	0.05
Yuma Proving Ground, AZ	0.25
Total	1.15



Figure 154. The U.S. Army Engineer District, Los Angeles has offices in a large downtown office building.

Structural Adequacy

The building housing the USAED, Los Angeles was constructed as an office complex in 1980. The facility (Figure 154) occupies a total area of approximately 376,212 ft², and within that total, the Los Angeles Engineering District offices occupy approximately 4900 ft².

The 23 story building is constructed with granite curtain exterior walls on a cement foundation. Both the foundation and walls were reported to be structurally solid with no cracks or leaks. The roof, constructed of built-up asphalt, was approximately 10 years old at the time of assessment. Other than the addition of individual office cubicles there have been no major renovations to the building since its construction.

The archaeological project records are housed in two metal filing cabinet drawers in the office cubicle of Pam Maxwell, staff archaeologist. Within this office space, the floor is carpeted concrete, the walls are sheet rock, and the ceiling is

suspended acoustical tile. There are seven floor-to-ceiling aluminum frame windows that measure approximately 9 x 9 feet with 4 feet between windows. There is no evidence or report of water or air leakage around the window frames. All interior and exterior doors connected with the records storage area are of solid core wood panel construction.

Environment

The environment within the entire building is controlled by a heating, ventilating, and air conditioning (HVAC) system that is equipped with dust filters. The targeted temperature range is from 70° to 75° F. Humidity is neither monitored nor controlled within the facility. Interior lighting is provided by unfiltered fluorescent tubes and unfiltered natural light entering through the windows. Overhead pipes containing water for the fire suppression system are present within the documents storage area. No previous failure of the system was reported. Asbestos is not present within the facility.

Pest Management

Pest management consists of regular monitoring and monthly spraying by a professional pest control firm. There was no report or observed evidence of a pest infestation problem.

Security

Security measures include an intrusion alarm system, a 24-hour in-house guard provided by a private security company, dead-bolt locks on doors, and controlled access. There was no reported or observed evidence of unauthorized entry into the facility.

Fire Detection and Suppression Systems

To provide fire safety, the building is equipped with manual fire alarms, smoke detectors, fire extinguishers, a sprinkler/suppression system, fire doors, and fire walls. No fire extinguishers were located in the immediate vicinity of the records collection. The facility is not considered to be fireproof.

Archaeological Storage Materials

The USAED, Los Angeles is not curating any artifacts recovered from military installations.

Human Skeletal Remains

The USAED, Los Angeles has no human skeletal remains recovered from military installations.

Records Storage

The file cabinet is a two-drawer, metal, legal-sized file cabinet within Ms. Maxwell's cubicle. Files are in alphabetical order by installation. Files are placed in acidic accordion folders that are labeled with a computer-generated, clear, adhesive label. Invoice information is removed from the files when the contractor has received all of their earnings.

Copies of the circulated technical reports are kept in the District library within view of Ms. Maxwell's work space. There are no duplicates of the paper records. There are three additional archaeologists employed there who also have access to the documentation.

Paper records

The paper records consist of administrative files. The records are in good condition; however, each is contained in a metal, two-hole, tongue and slide binder. Each file contains a copy of the purchase order and a scope of work. Some have staples. The project contractors are either Brian Mooney and Associates or Far Western Anthropological Research Group.

Collections Management Standards

The USAED, Los Angeles is not a permanent curation facility; therefore, collections management standards were not evaluated.

Curation Personnel

There are no personnel devoted to the curation of collections; however, there are four archaeology staff

members, including three staff archaeologists and one senior archaeologist.

Curation Financing

Curation is financed through archaeological work contracts. The budgeted funds cover the cost of collections processing. Long-term curation is not funded.

Access to Collections

All archaeology staff have access to the documentation. Any visiting researchers are allowed access by appointment.

Future Plans

The district has no future plans for the curation of collections.

Comments

1. The building is structurally sound.
2. Environmental controls lack relative humidity monitoring and control.
3. Lights lack any ultraviolet filtration.
4. Pest management activities are adequate.
5. Appropriate security measures have been taken.
6. Fire detection and suppression systems are sufficient.
7. Records are stored with contaminants in acidic folders.
8. No safety copies of associated documentation exist.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable

installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

U.S. Army Engineer District

Honolulu, Hawaii

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 7.4 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Feet of Records: 7.4 linear feet (88.5 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal standards and guidelines for modern archival preservation.

Status of Curation Funding: Curation activities are not specifically funded. Storage and care of the documents is a direct result of the efforts of the Environmental Section staff.

Repository Summary

DATE OF VISIT: March 21 and 24, 1997

PERSON CONTACTED: Kanelei Shun and Farley Watanabe

Approximately 7.4 linear feet of associated documentation from Fort Shafter, Fort Kamehameha, Wheeler Army Airfield/Schofield Barracks, Waianae Army Recreation Center, Bellows Air Force Station, Fort DeRussy, Hickam Air Force Base, Marine Corps Base Hawaii-Kaneohe Bay, and Pohakuloa Training Area are located in the office files of Mr.

Chuck Streck. The U.S. Army Engineer District (USAED), Pacific Ocean Division works with many of the islands installations in contracting the cultural resource management work needed at the installations.

Structural Adequacy

The Pacific Ocean Division offices are temporarily located in Building T-1 on Fort Shafter (Figure 155). A new building to be used by the USAED was under construction at the time of this assessment and was not evaluated; however, the temporary office space allotted to the Environmental Division was assessed. Building T-1 is thought to have been constructed



Figure 155. Office of the U.S. Army Engineer District, Pacific Ocean Division are temporarily housed in Building T-1 at Fort Shafter.

during the 1920s-30s. Built with a concrete foundation on raised wood pier and pilings, it has a wood frame with wood siding exterior walls. The wood roof is covered with asphalt shingles. There is a significant amount of mold and rust stains evident on the building, a result of the tropical, humid environment.

Associated records are located in a office space which occupies approximately 72 ft² within the Environmental Section. This area has been divided into work spaces and cubicles for the Environmental Section staff. Office space is cramped and cluttered with office supplies and documentation. Industrial grade carpeting covers a wood floor and interior walls are comprised of prefabricated wallboard. The ceiling is covered with acoustical ceiling tiles. Wood framed windows measure 2.5 x 4.4 feet (w x h) and are fitted with louvered glass panes, which are opaque. There is one window in the office area where the associated records are stored.

Environment

Environmental controls present in these offices consist of ceiling fans and window air conditioning units. Temperature and humidity levels are neither monitored nor controlled. Dust filters are not in place on the air conditioning units. The installation has a contracted cleaning and maintenance service for the buildings on post. Light sources are not filtered for ultraviolet (UV) radiation.

Pest Management

Pest management responsibilities are performed by a contracted company that has a regular monitoring and pest control schedule. During the assessment, however, the team encountered silverfish and a spider in the records and reports.

Security

The only security measures present for this facility are key locks on all doors and the base security that regularly patrol the post.

Fire Detection and Suppression Systems

Fire detection systems located throughout the facility consist of smoke detectors, heat sensors, and manual fire alarms wired to the fire department. Fire extinguishers, last inspected in November 1992, are located in the hallways and at the exits. Emergency exit lighting units are installed throughout the building.

Archaeological Storage Materials

Artifact materials are not housed in this facility.

Human Skeletal Remains

No human skeletal remains are housed in this facility.

Records Storage

Approximately 7.4 linear feet of associated documentation from Fort Shafter, Fort Kamehameha, Wheeler Army Airfield/Schofield Barracks, Waianae Army Recreation Center, Bellows Air Force Station, Fort DeRussy, Hickam Air Force Base, Marine Corps Base Hawaii-Kaneohe Bay, and Pohakuloa Training Area were assessed during this visit. Records are arranged by installation and by project in Mr. Streck's office files. For the amounts of types of documents for each installation, refer to Table 129.

Table 129.
Major Classes of Documentation by Installation Housed at the
U.S. Army Corps of Engineers, Pacific Ocean Division (in linear inches)

Installation	Types of Documentation			Total
	Paper	Reports	Maps	
Bellows Air Force Station	7.0	15.0	5.0	27.0
Fort DeRussy	3.0	6.0	—	9.0
Fort Kamehameha	5.0	8.0	—	13.0
Fort Shafter	—	4.5	—	4.5
Hickam Air Force Base	1.0	3.0	—	4.0
Marine Corps Base Hawaii, Kaneohe Bay	2.0	5.0	—	7.0
Pohakuloa Training Area	4.5	5.5	—	10.0
Waianae Army Recreation Center	2.0	5.0	—	7.0
Wheeler Army Airfield/Schofield Barracks	—	7.0	—	7.0
Total	24.5	59.0	5.0	88.5

7.4 linear feet

Paper Records

Approximately 2 linear feet (24.5 linear inches) of paper records are present including administrative correspondence, contract records, project scopes of work, meeting notes and minutes, background information, and analysis records. Documents are kept in manila files in standard enameled metal five-drawer legal filing cabinets. The files, directly labeled in both pen and marker, are in fair condition. Paper contaminants are present in these working files including metal paper clips and staples.

Report Records

Report records constitute the majority of the collections (4.9 linear feet). Draft report sections, final reports, and progress reports are located in the files with the paper records, on metal shelves, or stacked in piles on the floor and desk. The condition of the reports is the same as described for the paper records and many of them have been bound with plastic spiral combs.

Maps and/or Oversized Documents

Approximately five inches of maps, located in the Bellows Air Force Station files, are folded and filed in the same manner as the paper records. Large U.S.G.S. topographic, hand-drawn, and report ready maps are included.

Collections Management Standards

This facility does not have any archaeological materials and has not been designated as a curation facility; therefore, collections management standards are not addressed in this report.

Curation Personnel

There is no curation personnel at this facility. Mr. Streck and the rest of the Environmental Section staff are responsible for the safety of these associated records.

Curation Financing

Curation activities are not funded.

Access to Collections

Access to the associated documentation is monitored by Mr. Streck and the USAED, Pacific Ocean Division Environmental Section staff.

Future Plans

A new building is being constructed to be used by USAED, Pacific Ocean Division. Space limitations will hopefully be alleviated with the move into a larger office. The permanent disposition of the associated documentation has not been determined.

Comments

1. Environmental and security measures available for Building T-1 are inadequate for the storage of associated documentation.
2. Paper records are in danger of deteriorating from a pest infestation of silverfish.
3. The permanent disposition and curation of these materials has not been determined.
4. Associated documentation is arranged primarily by use and is not consistently stored in archival quality materials.
5. A new building is under construction for USAED, Pacific Ocean Division.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.

U.S. Army Engineer District

Sacramento, California

Collection Summary

Collections Total: No artifact or human skeletal remains collections. 0.8 linear feet of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: None

Linear Inches of Records: 0.8 linear feet (9.5 linear inches)

Compliance Status: Records require complete rehabilitation to comply with existing federal standards and guidelines for modern archival preservation.

Status of Curation Funding: Curation is financed as part of the project overhead for the District.

Repository Summary

DATE OF VISIT: May 20, 1997

PERSON CONTACTED: Patti Johnson

The U.S. Army Engineer District (USAED), Sacramento is a tenant in an office building located in downtown Sacramento. The building was originally constructed as office space, and is less than 10 years old. Associated documentation for archaeological work performed on Hawthorne Army Ammunition Plant (AAP), Nevada, is located in this office building.

Structural Adequacy

The prefabricated, 19-story building has exterior walls composed of concrete and glass. The roof is

probably built-up asphalt original to the building. The foundation is concrete and structurally solid. There have been no known structural renovations. There are multiple exterior windows, all equipped with aluminum frames and interior shades.

The records are stored in an office that has a carpeted concrete floor and plaster walls. A metal panel door separates the office from the remainder of the repository. The ceiling is composed of suspended acoustical tiles.

Environment

The building environment is controlled by a heating, ventilating, and air conditioning (HVAC) system with forced-air heat and central air conditioning. Humidity is neither monitored nor controlled. The building is regularly maintained and cleaned.

Pest Management

Pests have never been a problem, and no pest infestations were observed by the assessment team. No preventive precautions are taken and no monitoring program is in place.

Security

Security measures are managed by a private security company. A 24-hour in-house guard, an intrusion alarm, an after 6:00 p.m. restriction on all elevators, and key locks on each door compose the various strategies for securing the building. There was no evidence of any unauthorized entry; however, a past episode of theft of computer equipment had been reported.

Fire Detection and Suppression Systems

Fire detection measures in the building consist of heat sensors. The building is equipped with a sprinkler suppression system.

Archaeological Storage Materials

Artifact materials are not housed in this facility.

Human Skeletal Remains

No human skeletal remains are housed in this facility.

Records Storage

The records are stored in a letter-sized, five-drawer, metal file cabinet. Each drawer has a key lock. The documentation is in a single drawer and is arranged by project area. The pertinent records for this assessment fit in less than half of the drawer. Duplicates of the reports, contracts, and correspondence have been produced on non-archival paper and have been placed in separate offices within the Contracting and Planning Divisions of the USAED, Sacramento. Copies of reports are also kept on computer disks. An inventory of records has been completed and the list is on computer disk in dBase format. Hard copies are kept on file.

Paper Records

The paper records consist of 4.5 linear inches of administrative records. Each project is kept in an acidic accordion file and separated in manila folders. Manila folders are labeled either directly or with a self adhesive label. All labels are legible and the medium ranges from typewritten to marker or ink pen. The records have no finding aids nor have they been archivally processed.

Report Records

Report records measure 4 linear inches. Reports are in the same condition and are stored with the paper records.

Photographic Records

Photographic records consist of color prints measuring 0.5 linear inches. Photographic records are stored with the paper records.

Maps and/or Oversized Documents

There are approximately 0.25 linear inches of maps and 0.25 inches of blueprints stored with the paper records.

Collections Management Standards

The USAED, Sacramento is not a permanent curation facility; therefore, collections management standards were not evaluated for this report.

Curation Personnel

The staff of two full-time archaeologists and one historian jointly manage the archaeology record files.

Curation Financing

Curation activities are not specifically funded. The cost of housing these files is financed as part of the project overhead for the District.

Access to Collections

Access to the records is controlled by cultural resources staff. After obtaining permission, staff

members and outside researchers may only study the records on the premises.

Future Plans

No plans have been made for changing procedures of managing the records.

Comments

1. The building is structurally sound.
2. The relative humidity is not monitored.
3. The repository has no pest management system.
4. Security measures are adequate.
5. The fire detection and suppression system meet 36 CFR Part 79 standards.

Recommendations

1. Transfer archaeological records to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants. The photographic material should be placed in archival quality photographic sleeves, labeled properly, and stored in a secure storage unit.



Utah Division of State History

Salt Lake City, Utah

Collection Summary

Collections Total: 11.1 ft³ of archaeological materials. 1.0 linear foot of associated records.

Volume of Archaeological Materials: 11.1 ft³
Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 1 linear foot (12 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded by the State of Utah and through private donations.

Introduction

DATE OF VISIT: January 13, 1997

PERSON CONTACTED: Janet Smoak

The Utah Division of State History (UDSH) is located near central downtown Salt Lake City in a partially converted historic railroad station (Figure 156). The UDSH has several missions including acting as state archaeology records' repository, issuing and regulating permits needed to conduct archaeological research, operating public education and outreach programs, conducting archaeological research—coordinated through the Utah Geological Society



Figure 156. Utah Division of State History exterior view looking northwest.

(UGS is the designated field archaeology division of UDSH), and the long term care, storage, and

management of state owned historic collections. UDSH also occasionally functions as a temporary repository for prehistoric collections made by UGS. State law mandates that historic collections be curated at UDSH, and that prehistoric collections are curated with the Utah Museum of Natural History at the University of Utah. No potentially hazardous materials—such as live ordnance or artifacts known to have been exposed to debilitating chemicals—are accepted for curation by UDSH. Approximately 11.1 ft³ of artifacts and 1 linear foot of documentation (the Donner-Reed Collection) are being housed at UDSH for the Utah Test and Training Range/Hill Air Force Base, Utah.

Structural Adequacy

The repository was originally constructed by the Denver-Rio Grande Railroad Company for use as a railroad station in 1910. This building was later purchased by the State of Utah for its current function as headquarters for the preservation of state history (about 1975). Present space utilization in the building is as follows: the basement of the repository is dedicated to storage of artifacts and records, paleontological specimens, processing areas, and curators' offices; the first level contains several additional offices, a restaurant, an employee break room, a gift shop, and an exhibit area in the main lobby; the second floor contains a small library, the state archaeological record files, and most of the administrative offices.

The Rio Grande Railroad Depot is a two-story, 480,000 ft² wood frame structure with granite block and masonry exterior walls seated on brick and cement conglomerate foundation pillars. During utility upgrades in 1979, the original 4-foot high crawl space under the building was dug out around the foundation pillars into a full basement that was lined with cement. The repository's plumbing was upgraded in 1995. The single gable wood frame roof, which is original to the building, is covered with Italianate style red slate tiles. There are no cracks or leaks in either the roof or the foundation, but due to the high water table in Salt Lake City, the foundation does occasionally have seepage problems during seasonal changes. In addition to the seepage, heavy rains sometimes cause water buildups to spill into the basement, the direct result of an old storm drain

that was not properly rerouted during the aforementioned renovations.

Both of the above ground levels of the repository have wood floors; in entrances and other public areas these floors are covered with granite and marble tiles. Original ceilings are lathe and plaster, but in some of the offices and other areas peripheral to the lobby (lobby ceiling is original) the ceilings are covered with acoustical tiles. There are multiple windows in the above ground levels, all of which are original to the building, constructed with wood frames, and apparently free of any substantial air leakage. Second floor windows in the exhibit area are covered with an ultraviolet filtering film, but first floor banks of entry doors have windows in them that are not filtered. Windows in all other areas are shaded. All door styles in above ground levels are a plain, solid wood or solid wood set with glass panes. Lighting is accomplished with a combination of incandescent and fluorescent ceiling fixtures in all above ground rooms except the lobby. The lobby, which also serves as the exhibit area, has suspended incandescent chandeliers, and freestanding metal frames fitted with incandescent track lighting immediately over the exhibit cases.

DoD archaeological materials are stored in the basement of the repository, with the exception of a handful of artifacts presently on display in the main exhibit area. The floors and exterior walls in the basement are bare concrete. Ceilings are unadorned wood. All basement lighting is accomplished with UV-filtered fluorescent ceiling fixtures. There are no windows in the basement. Non-weight bearing walls are constructed of wood frames and wallboard. There is one main archaeological collections storage room, which is also used as overflow storage for records and sometimes as a processing lab. Water bearing pipes related to the building's plumbing system were noted in this room. The receiving area, accessed via a large, tightly secured freight elevator, has multiple functions as well including washing, holding, and temporary artifact isolation/storage. Current project records and all photographic media are kept in Janet Smoak's office. All doors in the collections area are metal firedoors. The collection area is currently filled to 100% capacity.

Environment

The entire repository is equipped with a heating-ventilation-air-conditioning system (HVAC). This system is set to a constantly monitored temperature of 68 degrees Fahrenheit. All vents for the HVAC system are equipped with dust filters. According to staff, humidity in the Utah desert region is a fairly constant 42%, except for a few weeks a year when the onset of seasonal changes can bring humidity up to around 55%. UDSH, therefore, does not have, nor does it require, any special humidity controls. Nonetheless, a hygrothermograph is rotated throughout the repository on a set schedule to allow thorough monitoring of both temperature and humidity at the facility. The regional proliferation of salt water poses unique preservation problems for some of the artifacts housed at UDSH, including a portion of the Utah Test and Training Range/Hill Air Force Base collection. At present, any salt water inundated objects are kept in a freezer in Ms. Smoak's office. The repository is professionally cleaned on a daily basis by a private firm, with the exception of the collections area, which is cleaned by the museum staff on an as-needed basis.

Pest Management

There is no integrated pest management policy in place at UDSH, although repository staff constantly monitor the entire facility for pests due to a known problem with roaches. Pest attracting factors on the first floor include an employee break room in east wing, and a restaurant in the west wing. To control the roaches, all areas of the building—except for the collections area—are professionally sprayed on a monthly basis with a chlorine-based chemical. Sticky traps are also used in the hallways outside the collections area. No roaches have been noted inside the collections area by staff in the past, and no insects, living or dead, were seen by the assessment team. UDSH staff indicated that most other insects common to the region are not generally considered harmful to historic collections and that rodents have not been a problem since the basement was added in 1979.

Security

Security measures for the repository consist of staff-monitored access, key locks throughout the building, button-type security locks (function similar to a card key) in the collections area, and computer controlled motion detectors and contact point security systems at all exterior doors and windows that are professionally monitored by State Capitol Patrol Protection Services. The rarest objects curated at UDSH are housed in locked, fireproof cement vaults. No incidents of unauthorized access were reported by UDSH staff, and no evidence of unauthorized entry was seen by the assessment team. Any loss of objects from the repository in the past has been the direct result of either water damage or human error (accidental breakage). Outside access is granted only to valid researchers by appointment and all activities are closely monitored by UDSH staff.

Fire Detection and Suppression Systems

The fire alarm system at UDSH is wired to the same private protection service as the security system. Dry-pipe heat-activated sprinkler systems are in place throughout the building, and all rooms in the basement have fire-rated metal doors. There are also manual fire alarms at the main exits, and manual fire extinguishers are located throughout the building. In addition, all doors in the collections area are posted with a typed list of evacuation and emergency procedures to be followed in the event of a fire or natural disaster.

Archaeological Storage Materials

Storage Units

Utah Test and Training Range/Hill Air Force Base archaeological materials are stored on multiple sets of open, adjoining, non-movable, enameled metal shelving units (Figure 157) measuring 3.5 x 3.5 x 8.2 feet (h x l x w), one free standing pedestal display case with a Plexiglas cover, and one standard size domestic upright freezer. Table 130 outlines the material class types present among Utah Test and Training Range/Hill Air Force Base collections at UDSH.



Figure 157. Overview of collections storage area. Enameled metal shelving units house some of the Utah Test and Training/Hill Air Force Base collections.

Primary Containers

Archaeological materials for Utah Test and Training Range/Hill Air Force Base are stored in both acidic and non-acidic cardboard boxes. There are two sizes of primary containers in use: one acidic box 2.2 ft³ in volume, and four non-acidic boxes 1.4 ft³ each in volume encompassing a total volume of 7.8 ft³ in boxed materials. An additional 3.5 ft³ of salt water affected materials are being housed in an upright freezer in the curator's office (Figure 158). All



Figure 158. View of the freezer interior showing primary and secondary containers for artifacts from Utah Test and Training/Hill Air Force Base.

Table 130.
Percentages of Historic Material Classes in the Utah Test and Training/Hill Air Force Base Archaeological Collections Housed at the Utah Division of State History

Material Class	Percentage
Metal Artifacts	27
Wood	20
Soil Samples	16
Wagon Parts	16
Faunal Remains	12
Shell Artifacts	4
Ceramic Artifacts	2
Glass Artifacts	2
Shaving Brush	1
Total	100

Note: Percentages of material classes are based on volume.

primary containers have telescoping lids. Labels for the primary containers are directly applied in black pen and/or marker, with data consisting only of an abbreviation of the project name: "Donner."

Secondary Containers

Secondary containers for the archaeological materials consist of archival quality 4- or 6-mil thick polyethylene zip-lock bags (95%). Miscellaneous containers such as small acidic paperboard boxes (1%), a plastic box (1%), and glass vials with plastic lids (1%) are also present. In addition, there are two large, plaster encased faunal bones (2%) packed in Styrofoam peanuts. Labels on secondary containers are directly applied in marker. Information on the containers includes data such as field numbers, UDSH temporary numbers, accession numbers, and collection location numbers.

Laboratory Processing and Labeling

All of the collections for Utah Test and Training Range/Hill Air Force Base have been sorted by material class or special storage requirements (organic-based materials found frozen in salt water are being stored in the aforementioned freezer). The salt water inundated objects will require extensive treatment by an accredited conservation laboratory, and UDSH does not have funds available at this time to proceed with any treatment. Only the artifacts

currently on display in the main lobby have been cleaned and labeled. Labels consist of a field specimen number applied in india ink on a yellow tinted base coat. The plaster encased faunal bones will require special handling to prepare them for long term storage and should also be examined by an accredited conservator.

Human Skeletal Remains

Utah Division of State History does not curate any human remains from Utah Test and Training Range/Hill Air Force Base or any other Department of Defense installation.

Records Storage

Documentation for Utah Test and Training Range/Hill Air Force Base is stored in a file cabinet and on open shelving in the curator's office. The environment in this area is the same as for the collections area. There is a total of one linear foot of documentation housed at UDSH for Utah Test and Training Range/Hill Air Force Base.

Paper Records

Paper records housed at UDSH for Utah Test and Training Range/Hill Air Force Base, totaling four linear inches, are stored in unlabeled enameled metal letter-size filing cabinets. Primary containers consist of acid-free hanging files. Secondary containers are acid-free file folders and a plastic coated 3-ring binder. Arrangement of records is by project, year, and recording media. Secondary containers are labeled directly in marker or pencil with the project name and the contents. There are staples present on some of the records.

Report Records

There is one linear inch of report documentation relevant to the Utah Test and Training Range/Hill Air Force Base collections stored in the aforementioned binder with the project's field notes.

Maps

One linear inch of maps relevant to the Utah Test and Training Range/Hill Air Force Base collections

are stored in the same binder as the project's field notes.

Photographic Records

Six linear inches of photographic records for Utah Test and Training Range/Hill Air Force Base are currently stored in an acid-free box with a telescoping lid on an open, enameled metal shelving unit in the curator's office. These slides and negatives have been organized within the primary container into acid-free paper holders directly labeled in pencil with the roll number, exposure number, site number, and year. The primary container label is directly applied in marker. Data on the primary label consist of a range of dates. Duplicate copies of slides and photographs are kept in a climate controlled vault at the archives owned and operated by the Church of Jesus Christ of Latter Day Saints in Salt Lake City.

Collections Management Standards

Registration Procedures

Accession Files

Archaeological materials are accessioned upon receipt, using a deed of gift form. The accession number is also entered into a ledger book kept specifically for this purpose.

Location Identification

Each row of shelves and each shelving unit have an assigned number and each shelf within a unit is designated by a letter of the alphabet. The combination of these three sets of information is the location of the artifact within the repository and this number is identified in both the computer database and the accession files.

Cross-Indexed Files

Files are not cross-indexed.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

The UDSH is the state repository for all archaeological site records. These records are housed in an office on the second floor. These files are organized alphabetically by county and by sequential number within each county as established by the Smithsonian River Basin Survey Trinomial Site-Numbering System.

Computerized Database Management

Wang List Processing software is used for cataloging collections. A standard cataloging worksheet and Robert Chenhall's Nomenclature is used to assist in maintaining data entry consistency.

Written Policies and Procedures

Minimum Standards for Acceptance

There is no written draft of standards that is required for submitted collections that addresses packaging, processing, and labeling practices.

Curation Policy

There is a written draft of standards for curation activities.

Records-Management Policy

There is no separate written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

There are no written guidelines for field-curation that address field conservation or recommendations for manuals to be used.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

There is a written deaccessioning policy and a standard form for the procedure.

Inventory Policy

Collections are inventoried upon receipt.

Latest Collection Inventory

Collections were undergoing a complete inventory in 1987 when the Curator of Collections left. This inventory was suspended at that time and has not resumed, although there is a written policy for the process that can be implemented by current staff as time allows.

Curation Personnel

There are seven curators on staff at UDSH with each in charge of different divisions such as historic records and paleontology. Ms. Smoak is the full-time curator of archaeological collections, and Ms. Linda Thatcher oversees coordination between all divisions.

Curation Financing

Curation is financed as overhead in the state budget and through private donations. Ms. Smoak would like to see an additional two thousand dollars in the budget to care for current collections.

Access to Collections

Access to the collections is limited to UDSH staff and researchers by permission. A written letter of intent is necessary and access to the collections is supervised.

Future Plans

The UDSH is currently undergoing space stress, with all available storage areas virtually filled to capacity. UDSH personnel and other interested state and local parties are attempting to address and resolve the issue of expansion and its related costs.

Comments

1. The building is solidly constructed and the entry contact point security system—constantly monitored by the State Capitol Patrol Protection Services—along with key and button security monitored by the staff, provide more than adequate protection for the collections.

2. The seepage from the water table and the overflow from the old storm drain has caused loss of collections in the past.
 3. There is no integrated pest management system in place at this time, despite a known problem with roaches.
 4. UDSH staff noted, and the assessment team agrees, that the current fire detection/suppression system would likely be ineffective in the lobby/exhibit area where the ceiling is over two stories high. In the event of a fire in the lobby, the sensors there would not likely set the sprinklers off until the building was already compromised, or, if the sensors did function in a timely manner, the heat from the fire would in all probability vaporize the water before it could reach the fire source.
 5. There was apparently some confusion as to whether or not the site is located on Utah Test and Training Range/Hill Air Force Base lands (based on site file records and maps, it is). As a result, most of the Donner collection has not yet been processed.
 6. More than 3.5 ft³ of the Utah Test and Training Range/Hill Air Force Base collections (those artifacts currently refrigerated, the two plaster encased faunal bones, and a wooden table leg) need the attention of an accredited conservator.
 7. Photographs and slides are duplicated and stored a separate and secure location.
 8. Most of the archaeological collections are easily located and generally in good condition at the time of the assessment.
 9. Staff appear well informed, organized, and dedicated.
- emergency device to assist in controlling overflow from the old storm drain.
2. An integrated pest management study should be undertaken and the results used to create and implement an integrated pest management policy for the entire repository. A major source of insects is the restaurant located in the north wing of the building.
 3. Consult with the local fire department in regard to the previously addressed concerns about the fire suppression system in the lobby. Given the stone floor coverings and lack of flammable materials in the central lobby area, perhaps a few additional manual fire extinguishers or an operable fire hose is all that is necessary to alleviate the perceived potential problem.
 4. Complete Donner collection processing as soon as possible, so that a list can be compiled of all objects needing the attention of a conservator. Due to the historic prominence of the Donner-Reed party's trek, these objects should be assessed and cared for by a conservator as soon as it is financially feasible to do so. Recommend continued frozen storage in the interim, and that UDSH contact the subject property in regard to the needs for a conservator and long term storage arrangements.
 5. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to boxes. Labels should no longer be applied directly to the boxes. When label information or box content changes, inserts are replaced, thus reducing the chance for conflicting or confusing information.
 6. Remove contaminants and acidic folders from the original records. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection.

Recommendations

1. Due to the level of the water table, UDSH should consider implementing a policy to store all materials a minimum of 12 inches off the floor and 12 inches from existing basement exterior walls. If financially feasible, a sump-pump would be an effective



Utah Geological Survey

Salt Lake City, Utah

Collection Summary

Collections Total: 20.5 ft³ of archaeological materials, 0.7 linear feet of associated records.

Volume of Archaeological Materials: 20.5 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 0.7 linear feet (8 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation is not funded. Archaeological collections are analyzed and processed according to standards established by the Utah Museum of Natural History or the hiring agency, and are then turned over to the Museum or the agency.

Repository Summary

DATE OF VISIT: October 8, 1996

PERSON CONTACTED: David Madsen and Monson Shaver

The Utah Geological Survey is a division of the Utah Department of Natural Resources, which is located in Salt Lake City. Within the Geological Survey is the Archaeological Resources Section, which performs some archaeology under contract to various

state and federal agencies. The Survey is not a long-term curation facility. Table 131 outlines the military archaeological collections currently in the care of the Survey, and Table 132 lists the material classes present in those collections.

Table 131.
Volume of DoD Archaeological Collections
Housed at the Utah Geological Survey

Installation	ft ³
Dugway Proving Ground	11.5
Utah Test and Training Range/Hill Air Force Base	9.0
Total	20.5

Table 132.
Percentages of Material Classes in the Archaeological Collections

Material Class	Percentage Present		Total
	Utah Test and Training Range	Dugway Proving Ground	
<i>Prehistoric Artifacts</i>			
Ceramic	—	4	2
Chipped Stone	—	30	17
Faunal Remains	—	24	14
Shell	—	4	2
Flotation Samples	—	6	3
Soil Samples	—	12	7
¹⁴ C	10	4	7
Botanical Samples	10	—	4
Pollen Samples	10	6	4
Fecal Material	60	—	30
Worked Bone	—	4	2
Wood	—	3	2
Mixed	10	—	4
<i>Historic Artifacts</i>			
Glass	—	1	1
Other	—	2	1
Total	100	100	100

Note: Percentages of material classes are based on volume.

Prehistoric mixed includes lithics, cordage, soil, fauna, ¹⁴C samples, fecal materials, metal, and construction materials.

Historic other includes paper, rubber, and feathers.

Structural Adequacy

The Department of Natural Resources building (Figure 159) was completed in 1996, and was occupied for only approximately four months prior to the assessment team's visit. Facilities consist primarily of multiple offices and laboratories, and public assistance counters. The foundation is concrete, with concrete block exterior walls. The



Figure 159. Exterior view of the Utah Department of Natural Resources building. The building has natural light reflectors located above the windows.

roof is built-up asphalt. There are multiple windows and doors, and three floors above grade. There are two collections storage areas within the archaeology section on the third floor.

Collections Storage Area 1—The Main Lab and Offices

The main lab and offices section is located on the third floor. The area has a concrete floor covered with carpet. Interior walls are wallboard/sheet rock, and the ceiling is suspended acoustical tile. There are multiple windows to the exterior, all equipped with shades and aluminum frames. There are several interior doors, and one door to the main hallway for the third floor. In addition, a hallway leads out of this area into another hallway of offices and laboratories. Doors are solid wood. Collections Storage Area 1 covers approximately 2500 ft², and includes sections for artifact holding, processing, study, records study, and offices. The area is filled to approximately 60% capacity.

Collections Storage Area 2—The Laboratory

This collections storage area measures approximately 1000 ft² and consists entirely of lab and storage space. The area is filled to approximately 50% capacity. The floor is concrete covered with linoleum. Interior walls are wallboard/sheet rock, and the ceiling is suspended acoustical tile. There are no windows. Two solid wood doors lead to third floor hallways. There is one interior solid wood door that opens to a closet. The laboratory is equipped with a fume hood, although no hazardous chemicals are presently used.

Environment

The building operates heating, air conditioning, and humidity control through a building-wide environmental system. The system is equipped with dust filters. Two methods of lighting are utilized in the facility. Fluorescent lights are activated by motion detectors in many areas. Areas closer to the exterior are illuminated by natural light drawn in by a series of panels on the exterior of the building that reflect the light onto the interior ceiling. Maintenance and cleaning are conducted regularly by a contracted firm.

Pest Management

The Division of Natural Resources addresses pest control as needed. With the young age of the building, no problems have yet arisen, and there are no signs of pest problems in the collections storage areas.

Security

The building operates several levels of security. The building has an intrusion alarm that is tied to the Utah capitol security. Capitol 24-hour in-house guards view video cameras located in the Department of Natural Resources. In addition, internal doors are equipped with key locks and electronic keys, which employees can access by qualification at different security levels. As a further precaution, archaeology staff control access to the archaeological collections.

Fire Detection and Suppression Systems

The building is equipped with a sprinkler detection/suppression system, and smoke detectors for fire detection. In addition, there are multiple fire extinguishers available for fire suppression. Collections Storage Area 2 is equipped with a fire extinguisher, but Collections Storage Area 1 is not.

Archaeological Storage Materials

Storage Units

Storage units in both collections storage areas consist of metal uprights and sliding wood drawers. Uprights measure 44 x 22 x 71 inches (w x d x h) (Figure 160). Neither uprights nor drawers are consistently labeled.



Figure 160. Collections storage area 1 and the artifact processing area. Artifacts for Dugway Proving Ground are located in this area.

Primary Containers

Primary containers consist primarily of sliding wood drawers. The drawers are constructed of plywood, some of which are chipped and have splitting bottoms. The tops of the drawers are open. Dugway Proving Ground materials are housed in 16 drawers, all located in metal uprights in Collections Storage Area 1, Utah Test and Training Range/Hill Air Force Base materials are housed in 11 drawers, all located in Collections Storage Area 2. In addition, other

materials recovered from the Utah Test and Training Range/Hill Air Force Base are stored in one acidic cardboard box with a telescoping lid, which is stored on top of the metal uprights in Collections Storage Area 2. Labels exist only for the drawers in Collections Storage Area 1, and for the acidic cardboard box located in Collections Storage Area 2. Labels are adhesive, with information consisting of site number and year recorded in marker.

Secondary Containers

Secondary containers consist mainly of archival quality plastic zip-lock bags, but also include small acidic cardboard boxes, plastic vials, and paper bags (Table 133). Zip-locks bags and paper bags are generally directly labeled in marker with the site number and provenience. Processed collections are labeled with a preprinted acidic paper tag insert upon which site number, provenience, and material type are recorded in marker or pen. Small acidic cardboard boxes and plastic vials are labeled with adhesive-backed paper tags, with information consisting of site number and provenience recorded in marker or pen. Some cardboard boxes and plastic vials have preprinted acidic paper tag inserts with site number and provenience recorded in marker or pen. Nested containers consist mainly of plastic zip-lock bags and plastic vials. It is important to note that all military collections are still being processed and analyzed.

Table 133.
Percentages of Secondary Containers in Military Collections Housed at the Utah Geological Survey

Secondary Container Type	Percentage
Plastic Zip-lock bags	62
Acidic cardboard boxes	29
Plastic vials	5
Paper bags	4
Total	100

Note: Percentages of secondary containers are calculated by volume.

Laboratory Processing and Labeling

Approximately 56% of the artifacts have been cleaned (many are still in some stage of processing). A small percentage (6%) of the artifacts are directly labeled with the site number or a field site number. All have been sorted by material class. Material classes that are generally unlabeled (thus not included in this statistic) include faunal remains, soil or botanical samples, fecal materials and flotation materials.

Human Skeletal Remains

The Utah Geological Survey is not curating any human skeletal remains recovered from archaeological projects conducted on military installations.

Records Storage

Approximately eight linear inches of documentation associated with military archaeological projects are stored at the Utah Geological Survey (Table 134). Storage units consist of sliding cover systems furniture shelves, and a four-drawer standard-size metal file cabinet. Storage units are kept in Monson Shaver's office, a systems furniture cubicle which is located in Collections Storage Area 1 near the exterior windows.

Table 134.
Major Classes of Documentation by Installation Housed at the Utah Geological Survey (in linear inches)

Installation	Types of Documentation			
	Paper	Reports	Photos	Total
Dugway Proving Ground	1.50	0.25	1.50	3.25
Utah Test and Training Range/ Hill Air Force Base	2.00	1.00	1.75	4.75
Total	3.50	1.25	3.25	8.00

Paper Records

Paper records, approximately 3.5 linear inches, consist of field notes, field site forms, correspondence, and photograph logs. Records are housed in plastic vinyl binders that are either labeled in pen or with a laser print tag. Label information

consists of project, site number(s), contents, and the year. A small amount of paper records is stored in acidic manila folders, which are labeled in marker with the contents. The binders are stored on the systems furniture shelves and the folders are housed in the file cabinet.

Report Records

Report records—1.25 linear inches— consist of a draft report and a technical proposal. These are stored in the same manner as the paper records.

Photographic Records

Photographic records comprise 3.25 linear inches and consist of color and black and white prints, negatives, slides, and contact sheets. Primary containers for photographic records consist of plastic vinyl binders, labeled either with an adhesive or with a paper label in a plastic sleeve on the exterior of the binder. Label information consists of site numbers/project and contents, either recorded in marker or computer generated. Photographic records are stored in plastic archival sleeves in the binders. Prints and slides are directly labeled, as are the contact sheets. Archival sleeves housing negatives and slides are labeled with adhesive-backed paper tags. Information is in marker or pen, and generally consists of a photograph number, field number, site name or number, and description.

Collections Management Standards

The Utah Geological Survey is not a permanent curation facility; therefore, collections management standards were not evaluated for this report.

Curation Personnel

There is no full-time curator for the archaeological collections. There is, however, a laboratory manager, who ensures that collections are processed according to the standards outlined by the Utah Museum of Natural History. The archaeology section employs four full-time staff and two part-time, and staff numbers vary seasonally.

Curation Financing

Curation is not financed. Collections are given back to the hiring agency, or are transferred to the Utah Museum of Natural History for proper long-term curation.

Access to Collections

Access to the collections is controlled by Survey staff. Staff will sometimes loan collections to researchers, particularly as parts of the collections need specialized analysis conducted on them.

Future Plans

There are no future plans for upgrading the curation program.

Comments

1. The Department of Natural Resources building was completed in 1996, and is equipped with an environmental system that regulates and controls temperature and humidity.
2. There is no integrated pest management system in operation. However, no pest problems have been detected since the move to the new facility.
3. Security measures consist of key locks and electronic card access to interior doors, and an alarm system for the facility. Alarms and video cameras in the building are tied to the state capitol security force.
4. Fire detection and suppression are addressed with a sprinkler system. In addition, the facility utilizes smoke detectors and fire extinguishers.
5. Primary containers for artifacts consist of plywood drawers and one acidic cardboard box. Secondary containers consist of a variety of types, although the majority are plastic zip-lock bags.
6. Primary containers for associated documentation and photographs consist of plastic vinyl binders and manila envelopes.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.
2. Rebox those collections that are not in archival boxes and rebag collections into four- or six-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.
3. Produce multiple copies of all documentation onto acid-free paper, and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal staples and paper clips, or other contaminants.

Utah Museum of Natural History

Salt Lake City, Utah

Collection Summary

Collections Total: 2.1 ft³ of human skeletal remains. 0.25 linear inches of associated records.

Volume of Archaeological Materials: None

Human Skeletal Remains: 2.1 ft³
 Compliance Status: The Utah Museum of Natural History is currently curating human skeletal remains recovered from Fort Douglas, Utah.

Linear Feet of Records: <1 linear foot (0.25 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are funded partially through state legislature and private donations; however, the Museum relies heavily on grants.

Repository Summary

DATE OF VISIT: October 9, 1996

PERSON CONTACTED: Kathy Kankainen

Utah Museum of Natural History (UMNH) is affiliated with the University of Utah in Salt Lake City. The repository is composed of offices, laboratories, storage areas, study rooms, utility rooms, and exhibit areas. There are numerous collections storage areas within the facility and the Fort Douglas collection is housed at two separate locations. The anthropology building on campus

contains the artifact holding and washing area, as well as storage areas for some of the collections.

The UMNH curates approximately 2.1 ft³ of human skeletal remains recovered from Fort Douglas. In addition, there are approximately 0.25 linear inches of documentation associated with these human remains.

Structural Adequacy

The building was originally constructed as a library in 1935 and since then the interior of the Museum has undergone several renovations (Figure 161). The exterior of the building has a concrete foundation and brick walls. The roof is made of built-up asphalt



Figure 161. View of the exterior of the Utah Museum of Natural History.

and has been redone several times. The Museum has multiple exterior windows. All of these windows are aluminum framed with ultraviolet protective screens and show no evidence of water and/or air leaks. There are no doors to the exterior of the repository from any collections storage area.

The building is three floors above grade and one below grade and is solid, with no major cracks or leaks. However, the Museum is located in an earthquake zone and the staff has taken some precautionary measures against such an event. There has also been a problem with minor flooding in the basement due to a two-step 'trough' construction where water sometimes accumulates. There has been no apparent damage to any of the archaeological collections because of the flooding.

Collections Storage Area 1

The collections storage area for human skeletal remains measures approximately 276 ft². The area has a tiled floor with plaster interior walls. The ceiling is concrete. There are three aluminum framed windows covered with ethafoam that face the repository hallway. One solid wood interior door is present. It is unknown whether asbestos is present in the collections storage area. The collections storage area is filled to approximately 60% of capacity with human skeletal remains.

Collections Storage Area 2

This area measures approximately 1120 ft². The collections storage area has tiled floors and plaster interior walls. The ceiling is concrete. There are

seven aluminum framed windows equipped with ultraviolet protective screens. All of these are exterior windows facing south. There is one interior solid wood door leading out of this collections storage area, and seven interior wood doors leading to the various offices and other storage areas. This section has offices, record storage, and an artifact processing area. The collections storage area is filled to approximately 40% of capacity with archaeological collections.

Environment

The building has temperature controls, which include central air conditioning and steam heat, as well as dust filters. Humidity is monitored weekly by a hygromograph. Fluorescent lighting without ultraviolet filters is present in the collections storage areas. The entire building is cleaned regularly by the university custodians. Areas of the Museum are cleaned daily, weekly, or monthly as required. Hazardous chemicals are dissipated through a fume hood that vents directly to the exterior.

The collections storage areas have heating, ventilation, air conditioning, and dust filters for environmental controls. The targeted temperature for these areas is between 68-70 degrees Fahrenheit. Humidity is not a main priority because of the climate in Utah, but staff monitors it for some collections on an as-needed basis. The humidity in these areas is monitored weekly by a hygromograph for a targeted consistency of 25-28%. Fluorescent lighting with ultraviolet filters are in use for the collections storage areas. These areas are cleaned by the University custodians under staff supervision.

Pest Management

The UMNH has an integrated system that follows a pest management workbook. The Museum monitors monthly for pest infestation. Precautions taken against insects and rodents include sticky tapes, fumigation control on an as-needed basis, inspection of organic materials monthly and textiles biannually, fumigation or deep freeze of all new collections (especially organic material), and pest management training for all new employees. If a problem is beyond the staff's expertise, professional assistance is sought. At the time of the assessment visit, there were no signs of infestation.

Security

Security measures for the Museum consist of a variety of systems and devices. An intrusion alarm that is wired into the police station is in place at the Museum. There are dead bolt locks on all exterior doors and key locks on all of the doors. A guard is on duty Monday - Friday from 9:00 a.m.-5:30 p.m. and on weekends. There is controlled access throughout the Museum. The exhibit area has motion detectors. The collections storage areas each have an intrusion alarm and key lock that is room specific. There have been no past episodes of unauthorized entry.

Fire Detection and Suppression Systems

Fire detection and suppression consist of manual fire alarms, a sprinkler system, heat sensors, fire extinguishers, and smoke detectors. The collections storage areas maintain the same types of systems.

Archaeological Storage Materials

There are no DoD artifacts curated at this facility.

Human Skeletal Remains

The human skeletal remains for Fort Douglas are located in Collections Storage Area 1. Storage units for skeletal remains consist of baked enamel metal uprights and shelves. The six shelves measure 2.5 x 1.0 x 6.1 feet (h x w x d). The boxes are not overstacked or in cluttered conditions.

The primary container for this collection consists of a folded acid-free cardboard box with a telescoping lid. The volume of the box is 2.1 ft³. The primary container is labeled directly in marker with the human skeletal set number. The acid-free cardboard primary container is in good condition and shows no sign of damage. The remains are resting on acid-free tissue.

The UMNH curates a minimum of one individual recovered from Fort Douglas. It is not a complete skeleton, but is in very good condition. The remains are labeled individually in marker with the human skeletal number. Some of the bones appear to be cut, as if they had analysis done on them prior to

their curation (see Chapter 71 of this report, "Fort Douglas, Utah" for additional information).

Records Storage

The UMNH currently curates approximately 0.25 linear inches of documentation associated with the human skeletal remains recovered from Fort Douglas. Documentation is stored in Collections Storage Area 2.

These records include an analysis report and the accession records. The analysis report is stored in a standard four drawer metal filing cabinet that measures 1.1 x 2.3 x 4.3 feet (h x w x d). The secondary container is an acid-free folder that is labeled with an adhesive backed paper tag. The tag is labeled directly in type print with the site number or contents. The collections are fully processed. This information includes accession data, archival processing, finding aids, and a preservation copy. The records are in good condition, except for the use of metal contaminants (e.g., paper clips). The accession record is one page of information that is stored on an open shelf in the reports library. There are six particle board shelves that measure approximately 3.3 x 1.0 x 6.6 feet (h x w x d). The primary container is a bound notebook labeled with an adhesive backed paper tag in marker with the contents and volume number. There are several copies of the records, the original, a working copy, and the information is listed in a database. The original is in fair condition, however, there is slight discoloration due to age.

Collections Management Standards

Registration Procedures

Accession Files

All artifacts and documentation are accessioned as soon as possible after receipt. The accession number consists of the date and number of archaeological materials received that year (e.g., UMNH 89.5). The site numbers used in Utah are the Smithsonian River Basin Survey Trinomial System (e.g., 42In24). The field specimen and catalog number are the preferred cataloging system (e.g., FS101.20). The Museum

uses a three part number including the site number, FS/catalog number, and accession number to identify collections (e.g., 42In24; fs 101.20; UMNH 89.12).

Location Identification

The location of the collections within the repository is identified by the accession file. The repository maintains a file of documented property receipts and a copy of the initial inventory. There is a master catalog for the collections on a database.

Cross-Indexed Files

Presently the files are not cross indexed; however, the Museum has plans to install a new ARGUS system that will cross reference the collections by site number. This system will allow them to do computer searches and sorting.

Published Guide to Collections

There is no published guide to the collections.

Site-Record Administration

The Smithsonian River Basin Survey Trinomial System of site numbering is used.

Computerized Database Management

The repository uses MINARK as their automated data processing technique to manage the collections. Information is stored both on hard drive and on disk, as well as being attached to the network. One backup copy is stored in the Anthropology building on campus. The Museum plans to update their system by installing ARGUS, which will cross-reference all of the files and allow for searches.

Written Policies and Procedures

Minimum Standards for Acceptance

The repository has written minimum standards for acceptance of archaeological collections. The UMNH accepts collections for storage and curation from various Utah State Land Management Agencies through the Utah State Division of Antiquities and from the University of Utah Department of Anthropology. The Museum may enter into curation agreements with federal land management agencies, at its discretion.

Curation Policy

There is a written policy entitled "Guidelines Governing Deposition of Archaeological Collections at the Utah Museum of Natural History." This document was produced by the Utah Museum of Natural History. The guidelines cover a variety of curation subjects such as, acquisition policies, fees, proper processing and storage, receipt, care, and accessibility procedures to be followed by research firms.

Records-Management Policy

There are specific records-management policies and procedures outlined in the aforementioned "Guidelines Governing Deposition of Archaeological Collections at the Utah Museum of Natural History."

Field-Curation Guidelines

The repository has specific field curation guidelines.

Loan Procedures

The repository has a written loan procedure that is outlined in the aforementioned "Guidelines Governing Deposition of Archaeological Collections at the Utah Museum of Natural History."

Deaccessioning Policy

There is a written deaccessioning policy that is outlined in the aforementioned "Guidelines Governing Deposition of Archaeological Collections at the Utah Museum of Natural History." However, collections are seldom deaccessioned.

Inventory Policy

There is no written inventory policy.

Latest Collection Inventory

The collections were inventoried in 1991 for objects, and in 1996 for human remains.

Curation Personnel

Curation personnel consist of three full time curators: Dr. Duncan Metcalfe, the Curator of Anthropology and Archaeology; Laurel Casjens, the Curator of Collections; and Kathy Kankainen, the Collections Manager.

Curation Financing

Curation is financed partially through state legislature and private donations, however, the Museum relies heavily on grants. The curator does not feel that the financing is adequate for their curation needs.

Access to Collections

Access to the archaeological collections is tightly controlled by the three full time curatorial personnel through security codes and supervision. Students and researchers have access to the collections, but this is usually under supervision and by permission only. Researchers wishing to utilize the collections or records stored at the UMNH are required to send a detailed request in advance to the Museum.

Future Plans

Kathy Kankainen does not feel that the Museum has the adequate funding for curation needs. There are plans for a new building on the University of Utah campus.

Comments

1. The Museum has dust filters in their collections storage areas and steam heat and air conditioning throughout the building. Humidity is monitored weekly by hygrothermographs.
2. The UMNH has an integrated pest management system. The Museum follows a pest management workbook, which has an advanced monitoring and controlling system.
3. Security measures at the repository include an intrusion alarm wired to the police station, dead bolt locks on all exterior doors, key locks on both interior and exterior doors, and a security guard on duty five days a week during working hours and on weekends. The exhibit areas are secured with motion detectors and collections storage areas are secured through controlled access, as well as individual intrusion alarms and room specific key locks.

4. The repository has a fire detection system that consists of manual fire alarms, smoke detectors, and heat sensors and a fire suppression system that consists of a sprinkler system and multiple fire extinguishers.
5. The UMNH has baked enamel metal uprights and shelves that accommodate standard-size acid-free cardboard boxes.
6. Human skeletal materials are stored in acid-free cardboard boxes with telescoping lids. These remains are wrapped in acid-free tissue within the box.
7. Documentation is stored in various locations and could be more accessible. Use of metal contaminants on the paper records is currently practiced.

Recommendations

1. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a finding aid to the collection. Records should be free of metal binder clips, staples, and paper clips, or other contaminants.



Weber State University

Ogden, Utah

Collection Summary

Collections Total: 16.9 ft³ of archaeological materials. 1.3 linear feet of associated records.

Volume of Archaeological Materials: 16.9 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: None

Linear Feet of Records: 1.3 linear feet (15 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation activities are funded through several separate means. Funding for curation is provided through the Weber State University (WSU) budget, the U.S. Forest Service, and small grants. There is no plan for a major upgrade of the curation facility at WSU.

Repository Summary

DATE OF VISIT: October 15-16, 1996

PERSON CONTACTED: Brooke Arkush

Weber State University (WSU) is located in Ogden, Utah. The repository is located in a very large building (the Social Sciences Building) composed of classrooms, offices, and laboratories. The archaeology laboratory, located within the repository,

houses the archaeology staff, equipment, and collections. There are three collections storage areas within the archaeology laboratory.

The WSU archaeology laboratory curates approximately 16.9 ft³ of artifacts recovered from Utah Test and Training Range/Hill Air Force Base. In addition, there are approximately 1.3 linear feet of associated documentation housed at WSU. Table 135 outlines the percentages of material classes present in the Utah Test and Training Range/Hill Air Force Base archaeological collections.

Table 135.
Percentages of Material Classes Present in the
Utah Test and Training Range/Hill Air Force Base
Archaeological Collections Housed at Weber
State University

Material Class	Percentage Present
<i>Prehistoric Artifacts</i>	
Chipped Stone	43
Ceramic	5
Faunal Remains	16
Shell	2
Botanical Remains	4
Worked Bone	2
Other	5
<i>Historic Artifacts</i>	
Glass	8
Metal	6
Leather	2
Wood	7
Total	100

Note: Percentages of material classes based on volume. Other prehistoric materials consist of feathers, cordage, and basketry.

Structural Adequacy

The building was originally constructed in 1972 as the Social Sciences Building (Figure 162). The WSU archaeology laboratory consists of three rooms. One room is devoted to office space and two large rooms serve as the processing and collections storage area, as well as equipment storage.

The building has a concrete foundation and brick exterior walls. The roof is made of built-up asphalt. The building has three floors above grade and one below grade. The WSU archaeology



Figure 162. Exterior view of the Social Sciences building on Weber State University, which is the location of the archaeology laboratory.

laboratory is located in the floor below grade. The building is solid, with no major cracks or leaks. There are multiple exterior windows.

Collections Storage Area 1

The collections storage area is a large vault that measures approximately 64 ft². The area has concrete walls, and the concrete floors are covered with tile. The ceiling is also concrete. There are no windows located within the vault and the only entrance/exit is a solid metal door. The collections storage area is filled to approximately 30% of capacity with archaeological collections and some equipment.

Collections Storage Area 2

The laboratory measures an estimated 800 ft². This area has tile covered concrete floors and paneled walls. The ceiling is suspended acoustical tile. There are no windows located in the laboratory. One interior metal panel door and two exterior metal panel doors—one on each end of the laboratory—are present. The collections storage area has an artifact holding area, washing area, processing laboratory, temporary storage area, and artifact and records study room. The collections storage area is filled to approximately 40% of capacity with archaeological collections and equipment.

Collections Storage Area 3

This area consist of office space that measures an estimated 1200 ft². It has a concrete floor covered with carpet and paneled walls. The ceiling is suspended acoustical tile. There are no windows in the office, and only one metal panel door to the exterior is present. It is filled to approximately 40% of capacity with archaeological collections.

Environment

The building has temperature controls, which include central air conditioning and heat, as well as dust filters. This is true for all the collections storage areas except for the vault, which does not have dust filters for environmental controls. The entire environmental system was redone in the summer of 1996. Humidity is not regulated or monitored in the collections storage areas. The targeted temperature is 60° F throughout the archaeology laboratory.

Unfiltered fluorescent lighting is in use throughout the collections storage areas. The entire building is cleaned regularly by the University custodians. For security reasons, the vault is cleaned by archaeology staff on an as-needed basis.

Pest Management

There is no integrated system that includes regular monitoring or control of pest infestation. Precautions are taken against insects and rodents on an occasional basis; to date however, there has not been any incidents of infestation.

Security

Security measures for the building consist of key locks and regular patrols by campus police. The WSU archaeology laboratory is secured by key locks and punch pad locks on exterior doors. The vault is secured by a solid metal door with a combination lock that is accessible by only two personnel members.

Fire Detection and Suppression Systems

Fire detection and suppression consist only of a sprinkler system.

Archaeological Storage Materials

Storage Units

Archaeological materials for Utah Test and Training Range/Hill Air Force Base are stored in collections storage area 1, which is the vault (Figure 163). Storage units for the archaeological collections consist of plywood/particle board shelves with a veneer finish. There are five shelves that measure 6.7 x 1.5 x 7.3 feet (h x w x d). Utah Test and Training Range/Hill Air Force Base artifacts are located on two of the five shelving units. The boxes are not overstacked or cluttered. The storage area also contains some equipment.



Figure 163. Artifact collections for Utah Test and Training/Hill Air Force Base are located in the collections storage area 1, a large vault.

Primary Containers

Primary containers consist almost entirely of folded and stapled acid-free cardboard boxes—double thickness—with telescoping lids. The volumes of these boxes are consistently 1.3 ft³ each. There is a total of 13 boxes, eight of which are located in the vault and five that are being processed. Two large groundstone artifacts are stored loose on the shelves.

Primary containers are labeled directly in marker and list the date, survey name, and box number. The loose artifacts are labeled directly in marker. The acid-free cardboard primary containers are in good condition and show no signs of damage.

Secondary Containers

Secondary containers for the Utah Test and Training Range/Hill Air Force Base archaeological collections consist of archival plastic zip-lock bags and plastic vials (Table 136). Secondary containers are labeled directly in marker with information consisting of provenience number, date, and site number or location. The secondary containers are in good condition.

Tertiary containers for the artifacts consist of smaller plastic zip-lock bags, acid-free tissue, and

Table 136.
Types and Percentages of Secondary Containers
Present in the Utah Test and Training/Hill Air Force
Base Artifacts Housed at Weber State University

Secondary Container Type	Percentage
Plastic zip-lock bags	80
Loose	10
Plastic vials	10
Total	100

Note: Percentages of secondary containers are calculated by volume.

plastic vials. The acid-free tissue and plastic vials were used to protect more fragile artifacts.

Laboratory Processing and Labeling

All of the artifacts have been cleaned, labeled directly with a catalogue number, and sorted by material class.

Human Skeletal Remains

Weber State University is not curating any human skeletal remains recovered from archaeological projects conducted on Utah Test and Training Range/Hill Air Force Base.

Records Storage

Weber State University currently curates approximately 1.3 linear feet of documentation associated with archaeological work performed on Utah Test and Training Range/Hill Air Force Base. Documentation is stored in two locations. Collections Storage Area 3, the office, is the location of paper records (including report copies), while the maps are stored in Collections Storage Area 2, the laboratory.

Paper Records

There are approximately 11 linear inches of paper records in the Utah Test and Training Range/Hill Air Force Base collections. These paper records consist of original survey, excavation, and background records. The records are stored in a two-drawer lateral metal filing cabinet. The filing cabinet

measures 3.0 x 1.5 x 2.3 feet. Secondary containers consist of manila folders that are labeled directly in marker with the contents and the date, if applicable. Some of the records are stored loose within the filing cabinet and are not labeled. These materials are copies of the Inter-Mountain Antiquities Computer System site forms. There is no processing information for any of the records. Utah Test and Training Range/Hill Air Force Base retains copies of some of the documentation. Most of the paper records are arranged by topic or year of the survey. Documentation is in good condition, with the exception of some metal contaminants such as paper clips.

Photographic Records

Photographic records at the WSU archaeology laboratory total 2.5 linear inches, and include color photos, negatives, contact sheets, and slides. All of the photographic material, except for the slides, are stored in a metal desk drawer. These materials are stored in one manila folder that is labeled directly in marker with contents information, subject installation, photographer, and photo type. Slides were stored on the top shelf of a plywood/particle board shelving unit with a veneer finish. The shelving unit measures 5.2 x 0.8 x 7.7 feet (d x w x h). Secondary containers are binders that are not exteriorly labeled. Some of the interior archival plastic sleeves were labeled in marker with the state topographic map name on an adhesive backed piece of paper. Individual slides were labeled in pencil. The information on the slides varied between subject installation, site number, site name (if applicable), and field number and season. Overall appearance of the photographic records was good, but the bound material on the shelf did have some surface dust. There is no apparent processing information.

Maps and/or Oversized Documents

Maps consist of large Geographic Information Systems maps, master topographic maps and field topographic maps, totaling 1.5 linear inches of documentation. They are stored in metal map flats that are stacked four high. The map flats have a paper tag insert (in a tag holder) labeled in pen with personnel names and contents.

Collections Management Standards

WSU is not a permanent curation facility; therefore, collections management standards are not evaluated.

Curation Personnel

There is no full-time curator for the archaeological collections.

Curation Financing

Curation is financed partially through the WSU budget and the U.S. Fish and Wildlife Service, as well as small grants.

Access to Collections

Access to the archaeological collections is tightly controlled; they are accessible only through Brooke Arkush and the Chair of the Department of Sociology and Anthropology.

Future Plans

Brooke Arkush believes that there is adequate funding for the curation needs of WSU. The WSU archaeology laboratory tries to maintain a small collection by transferring most of the materials to other facilities. The only plans for curation improvement may be the addition of ultraviolet filters for the fluorescent light tubes.

Comments

1. The facility has temperature controls that include heat, air conditioning, and dust filters; however, not all of the collections storage areas have dust filters. Humidity levels are not monitored. The collections storage areas have fluorescent lighting without ultraviolet filters.

2. There is no integrated pest management system for the WSU archaeology laboratory. Insects and rodents are controlled as needed.

3. The WSU archaeology laboratory is not equipped with an alarm system, but is secured by key locks on doors and police patrol.

4. The documentation is stored in various locations and is not easily accessible. Metal contaminants are used on the paper records.

Recommendations

1. Transfer archaeological collections to a permanent repository that meets the curation standards outlined in 36 CFR Part 79. Coordinate with applicable installations to establish Memoranda of Agreement for the permanent disposition of the collections.

2. Produce multiple copies of all documentation on acid-free paper and store in separate, secure locations. Documentation should be placed in acid-free folders, and lightly packed into fire-resistant file cabinets. Arrange documentation in a logical order, and provide a key to the collection. Records should be free of metal staples and paper clips, or other contaminants.



Wilderness Park Museum

El Paso Archaeological Society Laboratory

El Paso, Texas

Collection Summary

Collections Total: 158.7 ft³ of artifact and human skeletal remains collections. 5.1 linear feet of associated records.

Volume of Archaeological Materials: 156.4 ft³
 Compliance Status: Archaeological materials require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Human Skeletal Remains: 2.3 ft³
 Compliance Status: The remains of a minimum of 2, possibly 3, individuals are the responsibility of Fort Bliss that are housed at this repository. Fort Bliss is handling compliance issues in regard to these materials.

Linear Feet of Records: 5.1 linear feet (61.2 linear inches)

Compliance Status: Records require partial rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Status of Curation Funding: Curation of archaeological collections is currently funded through El Paso Archaeological Society (EPAS) membership dues, sales of EPAS's publication "The Artifact," donations, and occasionally through cultural resource compliance contracts with various agencies.

Repository Summary

DATE OF VISIT: April 28-May 1, 1997

PERSON CONTACTED: John (Jack) Hedrick

EPAS is a non-profit organization operated primarily by volunteers interested in researching and preserving the archeological resources in the El Paso area. The

Wilderness Park Museum (WPM), (Figure 164), which is owned and operated by the city of El Paso, has donated space to EPAS for their headquarters and laboratory. In exchange for space, EPAS provides assistance to WPM in the form of volunteer labor, research, exhibit development, and publication support. EPAS occasionally acted as a contracting organization in the past and was responsible for conducting several archaeological projects on Fort Bliss lands in the 1960s and 1970s. EPAS is



Figure 164. The El Paso Archaeological Society has offices and laboratory space at the Wilderness Park Museum.

presently holding 158.7 ft³ of boxed artifacts, including the skeletal remains of at least two individuals (2.3 ft³) and two bedrock mortars currently incorporated into an outdoor exhibit, and 5.1 linear feet of documentation for Fort Bliss, Texas. Collections storage is presently overflowing, with nearly half of the boxed materials at EPAS currently stacked on the floor.

Structural Adequacy

WPM was constructed in 1975 by the city of El Paso for use as a museum. The collections storage wing now occupied by EPAS was added in 1976. This single level structure has a concrete foundation; all exterior and interior walls are masonry and concrete block with stucco facade. The roof is of wood frame construction with a built-up tar and gravel surface. There are a few minor cracks in the foundation, but no leakage problems were reported by EPAS staff, and no evidence of past or present leakage was seen by the assessment team. The roof on the main structure is original, with no cracks or leaks. However, the roof on the 1976 addition has required several repairs due to wind damage. According to EPAS staff, no water damage occurred as a result of the roof failure, and the new repairs seem to have resolved the problems. Some water damage to boxes was noted, but it was highly dispersed, and does not appear to have occurred while the collections were housed at this facility.

The WPM building covers 10,000 ft², of which EPAS occupies 1300 ft². Full utilities are

present, all of which are original equipment. There are no windows in the building, and artificial lighting is accomplished with a mixture of fluorescent and incandescent fixtures. All doors are hollow core steel. Space within the facility is frequently utilized for dual purposes, but WPM essentially has the following: gift shop, offices, employee kitchen/break room, general supply storage, library, exhibit preparation/display, collections storage, documentation storage, research space, artifact processing, and publication printing.

Environment

The entire building is equipped with forced-air gas heat and a roof-mounted evaporative cooling unit circulated via ceiling ducts with unfiltered vents. These systems are set to staff preference, and there are no humidity controls. Regional relative humidity is very low, around 10% most of the year, and dust levels are very high. Artificial lighting is not filtered for ultraviolet (UV) rays. The main building is cleaned by contracted professionals on at least a weekly basis, and the EPAS laboratory is cleaned by their volunteers as needed. The collections storage area is very overcrowded with boxes of artifacts, equipment, supplies, and a printing press.

Pest Management

Neither WPM or EPAS have an integrated pest management policy in place. Spraying for pests is conducted as needed by a professional contractor. Sticky traps are used in the EPAS laboratory to control flying insects. Pests that are occasionally noted by EPAS staff include beetles, scorpions, and spiders. Some insect parts were noted by the assessment team in and around the shelving units, but no evidence of pest infestation was noted in the primary or secondary containers for the collections.

Security

Security for the building consists of: an intrusion alarm system wired to the police; motion detectors on exterior doors and throughout the interior of the building; two security guards on duty during regular hours of operation; key operated deadbolt locks on all doors; staff controlled access to collections

storage; absence of windows; and padlocking of the access road gate after hours.

Fire Detection and Suppression Systems

The building's heat activated fire alarm system, which is part of the overall security system, is wired to the fire department. Manual alarms are also located at all exits. Fire suppression consists of seven ABC fire extinguishers in the museum and one in the EPAS laboratory, all of which had current inspections.

Archaeological Storage Materials

Storage Units

Collections are stored both on the floor and on open, painted shelving units constructed of 2 x 2-inch studs and 3/8-inch plywood. These shelving units are attached directly to the walls in the space occupied by EPAS. Ten of the units measure 96 x 12 x 80 inches (h x d x w) and four of the units measure 48 x 12 x 80 inches (h x d x w). There are no labels on the units. Table 137 outlines the material classes present

Table 137.
Percentages of Material Classes in the Fort Bliss Archaeological Collections Housed at the Wilderness Park Museum

Material Class	Percentages Present
<i>Prehistoric Artifacts</i>	
Chipped Stone	40
Ceramics	35
Human Remains	7
Painted Adobe Plaster	4
Plaster Molds of Adobe and Beam	3
Faunal Remains	3
Botanical Remains Samples	2
Soil Samples	2
Worked Shell	1
<i>Historic Artifacts</i>	
Metal	1
Other	3
Total	100

Note: Percentages of material classes are based on total volume. Other materials include historic metal, minerals, flotation samples, ¹⁴C samples, unmodified shell, worked wood, worked turquoise, and worked bone.

among Fort Bliss collections housed at EPAS. Additionally, two large bedrock mortars are kept outside and have been incorporated into a nature trail.

Primary Containers

Primary containers for the collections consisted entirely of acidic cardboard boxes (Figure 165). These boxes were highly variable in size, ranging from 6 x 12 x 3 inches (l x w x h) and 0.12 ft³ in volume to 19.5 by 14 by 10 inches (l x w x h) and 1.55 ft³ in volume. Most of the boxes are dirty and in poor condition, often with compression and/or water damage. The water damage to the boxes, however, may have occurred prior to being used for archaeological materials, as there is no sign of damage to the secondary containers or the archaeological materials housed in them. Many of the boxes are very heavy and overpacked. Security for boxes consists of telescoping lids, folded flaps, and attached, single flap tab inserts. All labels are hand written in marker. Most labels are applied directly to the surface of the box, but there are a few acidic paper tags taped to the boxes as well as some non-archival adhesive labels. Data on the labels consist of an EPAS site number, a project name, and (variably) the box contents.



Figure 165. Collections from Fort Bliss have acidic cardboard boxes as primary containers and plastic zip-lock bags as secondary containers.

Secondary Containers

Secondary containers for the archaeological materials consist predominately of 4-mil thick polyethylene zip-lock bags, but other container types were also encountered during the assessment. See Table 138 for the percentage of secondary containers present by type in the collections at EPAS for Fort Bliss. Labels on most of the secondary containers are applied directly in marker; occasionally noted were non-archival adhesive labels with information hand written on them in pen, pencil, or marker. Data most often consist of an EPAS site number, project name, and provenience data. Acidic paper tag inserts are also present in many of the secondary containers; these appear for the most part to be the original field "bag tags." Inserts have data such as site numbers, site names, provenience information, project names, collector names, catalog numbers, feature numbers, and dates of collection hand printed on them in pen, pencil, or marker.

Table 138.
Secondary Container Types Present
at Wilderness Park Museum

Secondary Container	Percentage
4-mil Polyethylene Zip-lock Bags	70
Acidic Paper Bags	10
Loose Artifacts	6
Acidic Cardboard Boxes	4
Non-archival Plastic Bags	2
Glass and Plastic Vials	1
Glass Jars with Metal Lids	1
Tin Foil	1
Tyvek Bags	1
Other	4
Total	100

Other secondary containers include Band-Aid and coffee tins, plastic boxes, acidic-paper envelopes, and plastic film canisters.

Laboratory Processing and Labeling

All of the collections for Fort Bliss have been cleaned and are sorted by project, material class, and/or provenience. Diagnostic archaeological materials large enough to label (about 20 % of the total collection) are directly labeled with an EPAS or Centennial Museum site number and/or a

catalog number in black india ink on a clear or white base coat.

Human Skeletal Remains

EPAS at the WPM has physical possession of at least two individuals (2 ft³) that are the responsibility of Fort Bliss. Remains of one adult (EPAS-4; Hot Wells Site) and one child (EPAS-10; North Gate Site), as well as soil and artifacts associated with these individuals were found among the collections. A box of ceramic sherds associated with a site known to contain human burials (EPAS-60; Sgt. Doyle Site) was also located. In addition, one bag of bone fragments for EPAS-3 (also Hot Wells Site) was tentatively identified by St. Louis District staff as human. In this instance, the fragments were too deteriorated to make a positive identification, but it is unlikely that faunal remains in this condition would have been collected, as all other animal bones in the collections at EPAS were retrieved specifically for species classification purposes.

All remains and associated objects are stored in the aforementioned acidic cardboard boxes. Most of the bones and artifacts are individually bagged in 2-mil plastic bags that are tied or folded closed. The skulls have been placed loose in separate primary containers with Styrofoam peanuts and newspaper as padding. Some mandible fragments are also loose in the primary containers with the skulls. The skull of the adult contained a few actual roasted peanuts, and it is not clear if the nuts were being used to measure the internal volume of the cranium.

Primary containers have note cards taped to the boxes with data written on them in marker. Information on the labels consists of an EPAS site number, provenience, contents of the box, and a box number. Secondary containers are mostly unlabeled, although a few pieces of acidic paper with data written on them in pen or pencil were noted inside some of the bags.

Records Storage

Documentation for Fort Bliss is stored in the same room as the artifacts. Storage units consist of two enameled metal filing cabinets measuring 52 x 25 x 18 inches (h x d x w) and 60 x 27 x 18 inches (h x d

x w). Some additional records for EPAS-4 are stored in an unlabeled acidic cardboard box on the floor next to the artifacts for that site. Many of the Fort Bliss slides, negatives and photographs were not at EPAS during the assessment, as one of the volunteers is in the process of renovating and cataloging them in her home. She could not be contacted during the visit, so these materials were not seen. However, Mr. Hedrick was able to give the assessment team the volume of materials currently possessed by the volunteer. There is a total of 5.1 linear feet of documentation housed by EPAS for Fort Bliss, including the unseen photographic media mentioned above.

Paper Records

Paper records housed at EPAS total 2.45 linear feet. These records include field notes, analysis sheets, site sketches, contracts, correspondence, site form copies, artifact catalogs/inventories, and finding aids. The records stored in the aforementioned box for EPAS-4 are housed in secondary containers such as manila file folders, non-archival plastic or cloth three-ring binders, and miscellaneous acidic paper envelopes; a few pages of documentation were also stored loose in the bottom of the box. Some of the binders have non-archival, typed adhesive paper labels, but most have no labels. The site file records at EPAS are stored in metal filing cabinets. These records are organized by EPAS site number into acidic manila envelopes with string closures. Each of these envelopes is clearly labeled in black indelible marker with the EPAS site number and sometimes a site name. Finding aids in the form of a card file, housed in a metal box with a hinged lid, and a cloth bound ledger are also present in the filing cabinets.

Photographic Records

There are 2.65 linear feet of photographic records at EPAS for Fort Bliss including slides, negatives, black and white prints, color prints, and contact sheets. These records are predominately stored among the paper records, the only exception being the media that are currently undergoing renovation. Many of the black and white prints are loose in the manila envelopes that house the site files records. Secondary containers in use include acidic cardboard slide boxes nested in non-archival plastic bags, and

non-archival plastic sleeves and envelopes. Secondary containers are generally not labeled. Most photographs are not labeled, but are identified by a sign visible in each photograph. This sign displays the site number, site name, and the year the excavation or survey took place.

Collections Management Standards

Although the WPM accessions collections used in their mission statement, the collections that EPAS has in their control are not part of the museum or subject to its policies. EPAS does not accession collections, and is not a permanent repository for any federal collections. Therefore, collections management standards and written policies will not be addressed for this facility.

Curation Personnel

There is a Laboratory Director for EPAS, Jack Hedrick, who is a full-time volunteer. All other adjunct staff at EPAS are also volunteers.

Curation Financing

Curation of archaeological collections is currently funded through EPAS membership dues, sales of EPAS's publication "The Artifact," donations, and occasionally through cultural resource compliance contracts with various agencies.

Access to Collections

Access to the collections is limited to EPAS and WPM staff and researchers by permission. A written letter of intent addressed to Mr. Hedrick is required two weeks in advance of an on-site visit. No unsupervised access to the collections area is allowed.

Future Plans

EPAS is planning to upgrade all primary and secondary containers in their collections to archival quality receptacles. They are also conducting an inventory to identify which collections in their care are the responsibility of other agencies so that those materials can be removed from EPAS's facility. Fort Bliss collections have already been identified, and

EPAS is waiting for the installation to contact them and make arrangements to move the relevant materials to the Fort Bliss Environmental Center. Because the current storage space is filled beyond reasonable capacity, EPAS has temporarily suspended all collecting by its members. Business will resume when existing collections have been properly dispensed and/or renovated. The Society also is seeking ways to make its collections more accessible to local educators.

Comments

1. EPAS staff have a long and well established presence in the El Paso area and are committed to doing whatever is best for the collections they have in their care.
2. There are no UV filters present on any of the lighting elements.
3. There is no integrated pest management plan at EPAS or WPM.
4. Temperature and relative humidity levels are not controlled.
5. Fire and security measures meet minimum standards for safeguarding of federal collections.
6. All primary and some secondary containers for both artifacts and documentation need to be replaced with properly labeled and archivally sound products.
7. Human remains and associated objects were found in collections for Fort Bliss.
8. Two large mortars from Fort Bliss are located outside the EPAS lab and incorporated in the WPM nature trails.
9. Only the site file records have a security copy stored off site.
10. Photographic media for Fort Bliss is currently dispersed and in danger of deterioration.

Recommendations

1. Fort Bliss should be contacted again by EPAS personnel and arrangements made to transport all relevant collections to the Fort Bliss Environmental Center as soon as possible, especially given the NAGPRA Section 5 materials present in the collections for the subject installation. Fort Bliss has indicated that they will be conducting compliance for all Section 5 materials at their new Environmental Center on post.
2. Rebox those collections that are not in archival boxes and rebag collections into 4- or 6-mil archival quality polyethylene zip-lock bags. Reduce the volume of artifacts in each drawer and bag, so that containers are not over packed. Insert acid-free paper labels into each bag. Do not use contaminants to secure the containers.
3. Make duplicate copies of all associated documentation onto acid-free paper. Store these copies in a separate and secure location. All records should be processed and arranged according to modern archival practices and standards. Documents should be placed in acid-free folders and lightly packed into fire-resistant file cabinets. All records should be free of contaminants, including metal fasteners and rubber bands. It is suggested that all original photographic media from Fort Bliss projects be rehabilitated at the EPAS facility in order to avoid loss or damage of the materials. Provide a finding aid to the record holdings.

Findings Summary

One hundred and seven repositories at 86 facilities in 17 states are known to curate 5061.5 ft³ of archaeological materials and 783 linear feet of associated documentation recovered from DoD owned lands (Tables 139 and 140). Each of these facilities and their satellite repositories were visited by assessment teams (Table 141). Overall, the teams examined collections recovered from 73 military installations. Assessment teams performed complete examinations of all known military collections at each location. A building evaluation, survey questionnaire, and collections and documentation assessments were completed for all facilities except the Oklahoma Museum of Natural History. This facility is therefore not included in any of the statistics that are described below, thus all statistics are based on 106 repositories. In addition, data on pest management procedures for two repositories at Public Service Company were not available at the time of assessment. This information is, therefore, not included below, thus only 104 repositories are represented for pest management.

At base, the following can be concluded: Twenty-nine repositories housing military collections meet the standards of 36 CFR Part 79. They include the following:

University of Alaska
Arizona State Museum (Repository 1)
Statistical Research

KEA Environmental
Natural History Museum of Los Angeles County
San Diego Museum of Man (Repository 1 and 2)
Tetra Tech
U.S. Army Engineer District, Los Angeles
University of Denver
Ogden Environmental and Energy
University of Hawaii, Hilo
Frontier Army Museum
Gulf South Research Corporation
Northwestern State University, Natchitoches
Museum of New Mexico, Laboratory of
Anthropology, Museum of Indian Arts and
Culture (Repository 1 and 2)
Maxwell Museum of Anthropology (Repository 1),
University of New Mexico
New Mexico State University Museum
(Repository 1)
University of Nevada, Las Vegas
Fort Sill
Fort Hood
Fort Sam Houston
Texas Archaeological Research Laboratory
(Repository 1)
Museum Texas Tech University
Centennial Museum, University of Texas, El Paso
Fort Douglas Military Museum
Utah Museum of Natural History
Utah State Historical Society

Table 139.
Facilities and Number of Repositories Housing Archaeological Collections
from Department of Defense Installations

Facility	City	State	No. of Repositories
Bureau of Land Management, Northern District Office	Fairbanks	Alaska	1
Eielson Air Force Base	Eielson	Alaska	1
Northern Land Use Research	Fairbanks	Alaska	1
Sullivan Road House Delta Chamber of Commerce	Delta Junction	Alaska	2
University of Alaska, Fairbanks	Fairbanks	Alaska	1
Archaeological Research Services	Tempe	Arizona	1
Arizona State Museum	Tucson	Arizona	2
Arizona State University	Tempe	Arizona	2
Bureau of Land Management, Phoenix District	Phoenix	Arizona	1
Bureau of Land Management, Yuma District	Yuma	Arizona	1
Fort Huachuca	Ft. Huachuca	Arizona	2
Luke Air Force Base	Phoenix	Arizona	1
Museum of Northern Arizona	Flagstaff	Arizona	1
Northland Research	Flagstaff	Arizona	1
Statistical Research	Tucson	Arizona	1
SWCA	Flagstaff	Arizona	1
Williams Air Force Base	Phoenix	Arizona	1
Yuma Proving Ground	Yuma	Arizona	2
KEA Environmental	San Diego	California	1
Natural History Museum of Los Angeles County	Los Angeles	California	1
San Diego Museum of Man	San Diego	California	2
Tetra Tech	San Bernardino	California	1
U.S. Army Engineer District, Los Angeles	Los Angeles	California	1
U.S. Army Engineer District, Sacramento	Sacramento	California	1
Colorado Department of Transportation,	Denver	Colorado	1
Peterson Air Force Base	Colorado Springs	Colorado	1
Powers Elevation Company	Aurora	Colorado	1
University of Colorado, Colorado Springs	Colorado Springs	Colorado	1
University of Colorado Museum	Boulder	Colorado	1
University of Denver	Denver	Colorado	1
New South Associates	Stone Mountain	Georgia	1
Archaeological Consultants of Hawaii	Haleiwa	Hawaii	1
Bishop Museum	Honolulu	Hawaii	3
Cultural Surveys Hawaii	Kailua	Hawaii	1
Garcia and Associates	Honolulu	Hawaii	1
International Archaeological Research Institute	Honolulu	Hawaii	2
Ogden Environmental and Energy	Honolulu	Hawaii	1
Paul H. Rosendahl, Inc.	Hilo	Hawaii	2
Scientific Consultants Services	Honolulu	Hawaii	1
University of Hawaii, Hilo	Hilo	Hawaii	1
U.S. Army Engineer District, Honolulu	Honolulu	Hawaii	1
Frontier Army Museum	Ft. Leavenworth	Kansas	1
Kansas State Historical Society	Topeka	Kansas	1
University of Kansas Museum	Lawrence	Kansas	1
Fort Polk	Leesville	Louisiana	1
Gulf South Research Corporation	Baton Rouge	Louisiana	1
Northwestern State University	Natchitoches	Louisiana	1
U.S. Army Engineer District, Baltimore	Baltimore	Maryland	1
Kansas City Museum	Kansas City	Missouri	2
Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas	Las Vegas	Nevada	1
Nevada State Museum	Carson City	Nevada	1
Agency for Conservation Archaeology, Eastern New Mexico University	Portales	New Mexico	2
Human Systems Research	Las Cruces	New Mexico	1
Human Systems Research	Tularosa	New Mexico	1

Table 139.
Facilities and Number of Repositories Housing Archaeological Collections
from Department of Defense Installations (Continued)

Facility	City	State	No. of Repositories
Kirtland Air Force Base	Albuquerque	New Mexico	1
Laboratory of Anthropology, Museum of Indian Arts and Culture	Santa Fe	New Mexico	3
Maxwell Museum of Anthropology	Albuquerque	New Mexico	2
New Mexico State University Museum	Las Cruces	New Mexico	2
Office of Contract Archaeology, University of New Mexico	Albuquerque	New Mexico	1
Public Service Company	Albuquerque	New Mexico	2
Quivera Research Center	Albuquerque	New Mexico	1
TRC-Mariah	Albuquerque	New Mexico	1
U.S. Army Engineer District, Albuquerque	Albuquerque	New Mexico	1
White Sands Missile Range	White Sands	New Mexico	2
Garrow and Associates	Raleigh	North Carolina	1
Fort Sill	Lawton	Oklahoma	1
Oklahoma Museum of Natural History	Norman	Oklahoma	1
Center for Archaeological Research, University of Texas, San Antonio	San Antonio	Texas	1
Fort Bliss	El Paso	Texas	1
Fort Hood	Killeen	Texas	1
Fort Sam Houston	San Antonio	Texas	1
Geo-Marine	Plano	Texas	1
Texas Archaeological Research Laboratory	Austin	Texas	2
Texas Tech University	Lubbock	Texas	1
University of Texas, El Paso, Centennial Museum	El Paso	Texas	1
Wilderness Park Museum, El Paso Archaeological Society	El Paso	Texas	1
Bureau of Land Management, Salt Lake City District	Salt Lake City	Utah	1
Dames and Moore	Salt Lake City	Utah	1
Dugway Proving Ground	Dugway	Utah	1
Fort Douglas Military Museum	Salt Lake City	Utah	1
Office of Public Archaeology, Brigham Young University	Provo	Utah	1
Sagebrush Archaeological Consultants	Ogden	Utah	2
Utah Geological Survey	Salt Lake City	Utah	1
Utah Museum of Natural History	Salt Lake City	Utah	1
Utah State Historical Society	Salt Lake City	Utah	1
Weber State University	Ogden	Utah	1
Parson's Engineering Science	Fairfax	Virginia	1
Total			107

Table 140.
Repositories Holding Department of Defense
Archaeological Collections and Quantities of Collections

Repository/Installation(s)	ft ³ *	l.i.**
<i>Bureau of Land Management, Northern District Office, AK</i>	0.2	9.25
Fort Greely, AK		
Fort Wainwright, AK		
<i>Delta Junction Chamber of Commerce Sullivan Roadhouse, AK</i>	25.6	0.00
Fort Greely, AK		
<i>Eielson Air Force Base, AK</i>	—	4.25
Eielson Air Force Base, AK		
<i>Northern Land Use Research, AK</i>	—	37.50
Clear Air Force Station, AK		
Eielson Air Force Base, AK		
<i>University of Alaska Museum, AK</i>	36.8	55.50
Adak Naval Air Station, AK		
Eareckson Air Force Base, AK		
Fort Greely, AK		
Fort Richardson, AK		
Fort Wainwright, AK		
Harding Lake Recreation Area, AK		
Kotzebue Military Reservation, AK		
<i>Archaeological Research Services, AZ</i>	—	29.50
Luke Air Force Base/Goldwater Range, AZ		
Yuma Marine Corps Air Station/Goldwater Range, AZ		
Yuma Proving Ground, AZ		
<i>Arizona State Museum, AZ</i>	104.0	78.00
Fort Huachuca, AZ		
Luke Air Force Base/Goldwater Range, AZ		
Navajo Army Depot, AZ		
Williams Air Force Base, AZ		
Yuma Marine Corps Air Station/Goldwater Range, AZ		
Yuma Proving Ground, AZ		
<i>Arizona State University, AZ</i>	6.4	16.40
Williams Air Force Base, AZ		
<i>Bureau of Land Management, Phoenix Field Office, AZ</i>	1.3	38.75
Luke Air Force Base/Goldwater Range, AZ		
Yuma Marine Corps Air Station/Goldwater Range, AZ		
<i>Bureau of Land Management, Yuma Field Office, AZ</i>	—	18.00
Yuma Proving Ground, AZ		
<i>Fort Huachuca, AZ</i>	191.7	89.25
Fort Huachuca, AZ		
<i>Luke Air Force Base, AZ</i>	1.0	62.25
Luke Air Force Base/Goldwater Range, AZ		
<i>Museum of Northern Arizona, AZ</i>	38.8	11.50
Williams Air Force Base, AZ		
<i>Northland Research</i>	7.9	0.00
Yuma Proving Ground, AZ		
<i>Statistical Research, AZ</i>	27.2	86.50
Dugway Proving Ground, UT		
Fort Huachuca, AZ		
Utah Test and Training Range/Hill Air Force Base, UT		
Navajo Army Depot, AZ		
Yuma Proving Ground, AZ		
<i>SWCA, AZ</i>	2.1	7.00
Navajo Army Depot, AZ		
<i>Williams Air Force Base, AZ</i>	6.0	8.25
Williams Air Force Base, AZ		

Table 140.
 Repositories Holding Department of Defense Archaeological
 Collections and Quantities of Collections (Continued)

Repository/Installation(s)	ft ³ *	l.i.**
<i>Yuma Proving Ground, AZ</i>	3.1	17.00
Yuma Proving Ground, AZ		
<i>KEA Environmental, AZ</i>	2.5	1.75
Yuma Marine Corps Air Station, AZ		
<i>Natural History Museum of Los Angeles County, CA</i>	7.5	4.40
Fort Bliss, TX		
<i>San Diego Museum of Man, CA</i>	14.8	0.00
Yuma Proving Ground, AZ		
<i>Tetra Tech, CA</i>	0	17.70
Bergstrom Air Force Base, TX		
Falcon Air Force Base, CO		
Utah Test and Training Range/Hill Air Force Base, UT		
Kirtland Air Force Base, NM		
Luke Air Force Base, AZ		
Navajo Army Depot, AZ		
Peterson Air Force Base, CO		
White Sands Missile Range, NM		
<i>U.S. Army Engineer District, Los Angeles, CA</i>	0.0	1.15
Fort Huachuca, AZ		
Luke Air Force Base/Goldwater Range, AZ		
Navajo Army Depot, AZ		
Yuma Proving Ground, AZ		
<i>U.S. Army Engineer District, Sacramento, CA</i>	0.0	9.50
Hawthorne Army Depot, NV		
<i>Colorado Department of Transportation, CO</i>	0.0	2.75
Falcon Air Force Base, CO		
U.S. Air Force Academy, CO		
<i>Peterson Air Force Base, CO</i>	0.1	3.0
Peterson Air Force Base, CO		
<i>Powers Elevation Company, CO</i>	0.0	3.75
Fitzsimons Army Medical Center, CO		
Lowry Air Force Base, CO		
<i>University of Colorado, Colorado Springs, CO</i>	5.6	73.25
Cheyenne Mountain Air Force Base, CO		
U.S. Air Force Academy, CO		
<i>University of Colorado Museum, CO</i>	1.1	0.50
Fitzsimons Army Medical Center, CO		
Peterson Air Force Base, CO		
Rocky Mountain Arsenal, CO		
U.S. Air Force Academy, CO		
<i>University of Denver Museum, CO</i>	0.2	4.25
Falcon Air Force Base, CO		
U.S. Air Force Academy, CO		
<i>New South Associates, GA</i>	35.0	67.2
Fort Polk, LA		
<i>Archaeological Consultants of Hawaii, HI</i>	0.0	3.00
Hickam Air Force Base, HI		
Pacific Missile Range Facility-Barking Sands, HI		

Table 140.
 Repositories Holding Department of Defense Archaeological
 Collections and Quantities of Collections (Continued)

Repository/Installation(s)	ft ³ ^a	l.i. ^{**}
<i>Bernice P. Bishop Museum, HI</i>	779.8	70.26
Barbers Point Naval Air Station, HI		
Bellows Air Force Station, HI		
Fort Kamehameha, HI		
Fort Shafter, HI		
Helemano Radar Station, HI		
Hickam Air Force Base, HI		
Kaena Point Tracking Station, HI		
Lualualei Naval Magazine		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pacific Missile Range Facility-Barking Sands		
Waianae Army Recreation Center, HI		
Combined Army Installation, HI		
<i>Cultural Surveys Hawaii, HI</i>	7.0	18.2
Fort Kamehameha, HI		
Kaena Point Tracking Station, HI		
Kipapa Military Reservation, HI		
Marine Corps Base Hawaii-Kaneohe Bay		
Waianae Army Recreation Center, HI		
<i>Garcia and Associates, HI</i>	33.2	11.25
Camp Smith		
Fort DeRussy, HI		
Fort Shafter, HI		
Hickam Air Force Base, HI		
Makua Military Reservation, HI		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pohakuloa Training Area, HI		
<i>International Archaeological Research Institute, Inc. (IARII), HI</i>	14.9	86.25
Barbers Point Naval Air Station, HI		
Bellows Air Force Station, HI		
Ford Island Naval Air Station, HI		
Fort DeRussy, HI		
Fort Kamehameha, HI		
Fort Shafter, HI		
Hickam Air Force Base, HI		
Lualualei/Waikele NAVMAG		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pacific Missile Range Facility-Barking Sands, HI		
Pohakuloa Training Area, HI		
Schofield Barracks, HI		
Wheeler Army Air Field, HI		
<i>Ogden Environmental and Energy Services, HI</i>	146.5	85.75
Barbers Point Naval Air Station, HI		
Bellows Air Force Station, HI		
Fort DeRussy, HI		
Fort Kamehameha, HI		
Fort Shafter, HI		
Hickam Air Force Base, HI		
Kahuku Training Area, HI		
Makua Military Reservation, HI		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pacific Missile Range Facility-Barking Sands, HI		
Pohakuloa Training Area, HI		

Table 140.
Repositories Holding Department of Defense Archaeological
Collections and Quantities of Collections (Continued)

Repository/Installation(s)	ft ³ *	l.i.**
<i>Ogden Environmental and Energy Services, HI (cont'd)</i>		
Schofield Barracks, HI		
Waianae Army Recreation Center, HI		
Wheeler Army Air Field, HI		
<i>Paul H. Rosendahl, Inc., HI</i>	308.8	184.25
Barbers Point Naval Air Station, HI		
Bellows Air Force Base, HI		
Hickam Air Force Base, HI		
Kahoolawe Island, HI		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pearl Harbor Naval Complex, HI		
Pacific Missile Range Facility-Barking Sands, HI		
Pohakuloa Training Area, HI		
Schofield Barracks, HI		
<i>Scientific Consultants Services, HI</i>	9.0	13.75
Bellows Air Force Station, HI		
Camp Smith, HI		
Dillingham Military Res., HI		
Hickam Air Force Base, HI		
Kawailoa Training Area, HI		
Makua Military Reservation, HI		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Schofield Barracks, HI		
<i>University of Hawaii, HI</i>	15.0	0.00
Pohakuloa Training Area, HI		
<i>U.S. Army Engineer District, Pacific Ocean Division, HI</i>	—	88.50
Bellows Air Force Station, HI		
Fort DeRussy, HI		
Fort Kamehameha, HI		
Fort Shafter, HI		
Hickam Air Force Base, HI		
Marine Corps Base Hawaii-Kaneohe Bay, HI		
Pohakuloa Training Area, HI		
Schofield Barracks, HI		
Waianae Army Recreation Center, HI		
Wheeler Army Air Field, HI		
<i>Frontier Army Museum, Fort Leavenworth, KS</i>	32.3	12.50
Fort Leavenworth, KS		
<i>Kansas City Museum, KS</i>	0.1	1.20
Sunflower Army Ammunition Plant, KS		
<i>Kansas Historical Museum, KS</i>	2.8	0.00
Fort Leavenworth, KS		
<i>University of Kansas, Museum of Anthropology, KS</i>	50.0	11.25
Fort Leavenworth, KS		
Sunflower Army Ammunition Plant, KS		
<i>Fort Polk, LA</i>	318.9	1341.60
Fort Polk, LA		
<i>Gulf South Research Corporation, LA</i>	5.0	4.50
Fort Polk, LA		
<i>Northwestern State University, Natchitoches, LA</i>	16.1	92.50
Louisiana Army Ammunition Plant, LA		
Fort Polk, LA		

Table 140.
Repositories Holding Department of Defense Archaeological
Collections and Quantities of Collections (Continued)

Repository/Installation(s)	ft ^{3*}	l.i.**
<i>U.S. Army Engineer District, Baltimore, MD</i> Walter Reed Army Medical Center, D.C.	1.9	0.00
<i>Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas, NV</i> Hawthorne Army Ammunition Plant, NV	12.6	33.30
<i>Nevada State Museum, NV</i> Hawthorne Army Depot, NV	2.0	1.25
<i>Agency for Conservation Archaeology, Eastern New Mexico University, NM</i> White Sands Missile Range, NM	1.3	14.25
<i>Human Systems Research, Las Cruces, NM</i> White Sands Missile Range, NM	106.6	477.60
<i>Human Systems Research, Tularosa, NM</i> White Sands Missile Range, NM	54.0	240.75
<i>Kirtland Air Force Base, NM</i> Kirtland Air Force Base, NM	—	56.00
<i>Museum of New Mexico, Laboratory of Anthropology, Museum of Indian Arts and Culture, and ARMS, NM</i> Fort Bliss, TX Fort Wingate, NM Kirtland Air Force Base, NM White Sands Missile Range, NM	55.0	26.50
<i>Maxwell Museum of Anthropology, University of New Mexico, NM</i> Fort Wingate, NM White Sands Missile Range, NM	48.0	1.50
<i>New Mexico State University Museum, NM</i> White Sands Missile Range, NM	21.1	3.00
<i>Office of Contract Archaeology, University of New Mexico, NM</i> Fort Wingate, NM	2.4	22.75
<i>Public Service Company, NM</i> Kirtland Air Force Base, NM	—	1.00
<i>Quivera Research Center, NM</i> Kirtland Air Force Base, NM	—	1.75
<i>TRC-Mariah Associates, NM</i> Kirtland Air Force Base, NM	49.7	80.30
<i>U.S. Army Engineer District, Albuquerque, NM</i> Fort Wingate, NM	0.0	114.50
<i>White Sands Missile Range, NM</i> White Sands Missile Range, NM	1.0	682.80
<i>Garrow and Associates, NC</i> Corpus Christi Naval Air Station, TX	1.2	8.40
<i>Fort Sill, OK***</i> Fort Sill, OK	241.5	unk
<i>Oklahoma Museum of Natural History, OK****</i> Fort Sill, OK	unk	unk
<i>Centennial Museum, University of Texas, TX</i> Fort Bliss, TX White Sands Missile Range, NM	28.4	80.40
<i>Center for Archaeological Research, University of Texas, San Antonio, TX</i> Fort Bliss, TX Fort Polk, LA Fort Sam Houston, TX Kelly Air Force Base, TX Lackland Air Force Base, TX Laughlin Air Force Base, TX	287.0	360.00
<i>Fort Bliss, TX</i> Fort Bliss, TX	1300.0	2712.00

Table 140.
Repositories Holding Department of Defense Archaeological
Collections and Quantities of Collections (Continued)

Repository/Installation(s)	ft ^{3*}	l.i.**
<i>Fort Hood, TX</i>	345.7	1339.08
Fort Hood, TX		
<i>Fort Sam Houston, TX</i>	2.5	0.25
Fort Sam Houston, TX		
<i>Geo-Marine, TX</i>	13.2	15.76
Fort Bliss, TX		
Fort Sill, OK		
<i>Museum Texas Technical University, TX</i>	5.2	28.80
Reese Air Force Base, TX		
<i>Texas Archaeological Research Laboratory (TARL), TX</i>	5.4	60.00
Bergstrom Air Force Base, TX		
Kingsville Naval Air Station, TX		
Lonestar Army Ammunition Plant, TX		
Matagorda Island Air Force Range, TX		
Red River Army Depot, TX		
U.S. Mine Warfare Center, TX		
<i>Wilderness Park Museum, El Paso Archaeological Society, TX</i>	158.7	61.20
Fort Bliss, TX		
<i>Bureau of Land Management, Salt Lake City Office, UT</i>	—	1.25
Dugway Proving Ground, UT		
<i>Dames and Moore, UT</i>	2.3	12.50
Dugway Proving Ground, UT		
<i>Dugway Proving Ground, UT</i>	2.7	99.00
Dugway Proving Ground, UT		
<i>Fort Douglas Military Museum, UT</i>	2.0	0.00
Fort Douglas, UT		
<i>Office of Public Archaeology, Brigham Young University, UT</i>	—	1.25
Dugway Proving Ground, UT		
Fort Douglas, UT		
<i>Sagebrush Archaeological Consultants, UT</i>	—	38.00
Dugway Proving Ground, UT		
Hawthorne Army Depot, NV		
Utah Test and Training Range/Hill Air Force Base, UT		
Luke Air Force Base, AZ		
Ogden Defense Distribution Depot, UT		
Tooele Army Depot, UT		
<i>Utah Geological Society, UT</i>	20.5	8.00
Dugway Proving Ground, UT		
Utah Test and Training Range/Hill Air Force Base, UT		
<i>Utah Museum of Natural History, UT</i>	2.1	0.25
Fort Douglas, UT		
<i>Utah Division of State History, UT</i>	11.1	12.00
Hill Air Force Base, NM		
<i>Weber State University, UT</i>	16.9	15.00
Utah Test and Training Range/Hill Air Force Base, UT		
<i>Parson's Engineering Science, VA</i>	1.2	1.25
Lackland Air Force Base, TX		
Total	5061.5	9394.5 (783 linear feet)

* Refers to cubic footage of archaeological materials.

** Refers to linear inches of associated documentation.

*** Records from Fort Sill were not available for examination.

**** Collections at the Oklahoma Museum of Natural History were not available for examination at the time of the assessment.

Table 141.
Types and Frequencies of Facilities Curating
Department of Defense Archaeological Collections

Type of Facility	Number	
	Present	Percentage
Museum	25	29
University Laboratory/Curation Facility	12	14
Contract Firm	27	31
Military Installation	13	15
Government Agency	9	11
Total	86	100

To achieve proper care, collections should be coalesced into designated repositories. Fifty-two facilities house artifact collections that require rehabilitation; 18 artifact collections require complete rehabilitation and the remaining 30 collections require partial rehabilitation. Four collections require no rehabilitation.

None of the facilities possessing record collections reach the level of care for those records that is stated in the standards for archival preservation. Eighteen records collections require complete rehabilitation and 45 need only partial rehabilitation. Seven institutions do not currently curate documentation associated with the military collections stored there.

Management controls and a master collection inventory and database for military collections are deficient to nonexistent and should be created immediately.

Environmental Controls

Seventy-eight of the 106 repositories control temperature through the use of central or radiated heat and air conditioning (Table 142). Additionally, 25 repositories that are equipped with temperature controls either monitor or control humidity, but not both. Twenty-eight repositories have no type of temperature or humidity monitoring or control systems.

Pest Management

Fifty-nine of 104 repositories control for pests. This treatment is either performed by staff on an as-needed basis or is conducted by trained professionals on a regular schedule (Table 142). Forty-five of the repositories take no precautions against pests

whatsoever. The types of chemicals used, their frequency of use, and the attendant hazard to personnel and collections are beyond the scope of this report and should be investigated.

Security

Seventy of the 106 repositories meet minimum federal standards for security of archaeological collections (e.g., possess intrusion alarms and/or guards) (Table 142). All of the repositories are secured with key and/or deadbolt locks, most provide for limited access and those with windows include simple window locks. Although there were no documented cases of unauthorized entry linked with loss of DoD collections, the potential for this exists at several of the repositories examined.

Fire Safety

Fire detection and/or suppression devices are nonexistent in 42 of the 106 repositories. Sixty-four repositories provide adequate to superb fire detection, meeting minimal federal requirements.

Archaeological Material Curation

Fifty-two facilities house DoD archaeological collections (Table 140). None of these facilities has properly prepared the collections for long-term curation. Eight-three percent of the collections have been cleaned and 53% have been labeled. However, most of the collections are housed in repositories that lack full-time curatorial care.

Overall, primary containers are acidic or acid-free cardboard boxes with telescoping lids each encompassing a volume slightly larger than one cubic foot. Many are overpacked and coated with dust. Almost all boxes included some type of label (53%), if only rudimentary.

Most of the collections are stored in archival quality polyethylene plastic zip-lock bags. Two percent of the collections are stored loose, without secondary containers. Most secondary containers are labeled directly, although adhesive or interior labels are also present. The wide variety of nonarchival secondary containers and the overall lack of any

Table 142.
Presence/Absence of Infrastructure Controls at Repositories
Housing Department of Defense Archaeological Collections

Facility	Fire Safety	Security	Environmental Controls	Pest Management	36 CFR 79 Standards
Bureau of Land Management, Northern District Office ¹	Yes	No	Yes	No	No
Eielson Air Force Base ¹	Yes	No	Yes	No	No
Northern Land Use Research ¹	No	No	Yes	No	No
Sullivan Roadhouse Delta Chamber of Commerce ¹					
Repository 1	No	No	No	No	No
Repository 2	No	No	No	No	No
University of Alaska, Fairbanks ²	Yes	Yes	Yes	Yes	Yes
Archaeological Research Services ¹	No	No	Yes	No	No
Arizona State Museum ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	No	Yes	Yes	Yes	No
Arizona State University ²					
Repository 1	Yes	No	Yes	No	No
Repository 2	Yes	No	Yes	No	No
Bureau of Land Management, Phoenix District ¹	Yes	No	Yes	No	No
Bureau of Land Management, Yuma District ¹	Yes	Yes	Yes	No	No
Fort Huachuca ²					
Repository 1	No	No	No	Yes	No
Repository 2	Yes	No	Yes	Yes	No
Luke Air Force Base ¹	Yes	Yes	Yes	No	No
Museum of Northern Arizona ²	No	Yes	Yes	Yes	No
Northland Research ¹	No	No	Yes	No	No
Statistical Research ¹	Yes	Yes	Yes	Yes	Yes
SWCA ¹	Yes	Yes	Yes	No	No
Williams Air Force Base ¹	Yes	No	Yes	Yes	No
Yuma Proving Ground ¹					
Repository 1	No	Yes	Yes	Yes	No
Repository 2	No	Yes	Yes	Yes	No
KEA Environmental ¹	Yes	Yes	Yes	Yes	Yes
Los Angeles Museum of Natural History ²	Yes	Yes	Yes	Yes	Yes
San Diego Museum of Man ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	Yes	Yes	Yes	Yes	Yes
Tetra Tech ¹	Yes	Yes	Yes	Yes	Yes
U.S. Army Engineer, Los Angeles ¹	Yes	Yes	Yes	Yes	Yes
U.S. Army Engineer, Sacramento ¹	No	Yes	Yes	No	No
Colorado Department of Transportation ¹	Yes	Yes	No	No	No
Peterson Air Force Base ¹	Yes	Yes	Yes	No	No
Powers Elevation Company ¹	No	No	Yes	Yes	No

Table 142.
Presence/Absence of Infrastructure Controls at Repositories
Housing Department of Defense Archaeological Collections (Continued)

Facility	Fire Safety	Security	Environmental Controls	Pest Management	36 CFR 79 Standards
University of Colorado Museum ²	Yes	Yes	Yes	No	No
University of Colorado, Colorado Springs ²	Yes	Yes	Yes	No	No
University of Denver ²	Yes	Yes	Yes	Yes	Yes
New South Associates ¹	Yes	Yes	No	Yes	No
Archaeological Consultants of Hawaii ¹	No	No	No	No	No
Bishop Museum ²					
Repository 1	No	No	No	Yes	No
Repository 2	No	No	No	Yes	No
Repository 3	No	Yes	Yes	Yes	No
Cultural Surveys Hawaii ¹	No	No	No	No	No
Garcia and Associates ¹	Yes	Yes	No	Yes	No
International Archaeological Research Institute ¹					
Repository 1	Yes	No	No	No	No
Repository 2	Yes	Yes	No	No	No
Ogden Environmental and Energy ¹	Yes	Yes	Yes	Yes	Yes
Paul H. Rosendahl, Inc. ¹					
Repository 1	No	Yes	No	No	No
Repository 2	No	No	No	No	No
Scientific Consultants Services ¹	Yes	Yes	Yes	No	No
University of Hawaii, Hilo ¹	Yes	Yes	Yes	Yes	Yes
U.S. Army Engineer District, Honolulu ¹	Yes	Yes	No	Yes	No
Frontier Army Museum ²	Yes	Yes	Yes	Yes	Yes
Kansas Historical Museum ²	Yes	Yes	Yes	No	No
University of Kansas Museum ²	Yes	No	Yes	No	No
Fort Polk ²	No	No	Yes	No	No
Gulf South Research Corporation ¹	Yes	Yes	Yes	Yes	Yes
Northwestern State University ²	Yes	Yes	Yes	Yes	Yes
U.S. Army Engineer District, Baltimore ¹	No	No	No	No	No
Kansas City Museum ²					
Repository 1	No	Yes	Yes	Yes	No
Repository 2	No	Yes	Yes	Yes	No
Harry Reid Center for Environmental Studies University of Nevada, Las Vegas ²	Yes	Yes	Yes	Yes	Yes
Nevada State Museum ²	Yes	No	Yes	Yes	No
Agency for Conservation Archaeology, ENMU ¹					
Repository 1	Yes	No	Yes	Yes	No
Repository 2	No	No	No	Yes	No
Human Systems Research, Las Cruces ¹	No	Yes	No	Yes	No
Human Systems Research, Tularosa ¹	No	No	No	Yes	No

Table 142.
Presence/Absence of Infrastructure Controls at Repositories
Housing Department of Defense Archaeological Collections (Continued)

Facility	Fire Safety	Security	Environmental Controls	Pest Management	36 CFR 79 Standards
Kirtland Air Force Base ²	Yes	Yes	Yes	No	No
Museum of New Mexico, Laboratory of Anthropology, Museum of Indian Arts and Culture ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	Yes	Yes	Yes	Yes	Yes
Repository 3	Yes	No	Yes	Yes	No
Maxwell Museum of Anthropology ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	No	Yes	No	Yes	No
New Mexico State University Museum ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	No	Yes	No	No	No
Office of Contract Archaeology, University of New Mexico ¹	No	Yes	Yes	Yes	No
Public Service Company ^{1*}					
Repository 1	Yes	Yes	Yes	Unknown	Unknown
Repository 2	Yes	Yes	Yes	Unknown	Unknown
Quivera Research Center ¹	No	No	Yes	No	No
TRC-Mariah ¹	Yes	Yes	Yes	No	No
U.S. Army Engineer District, Albuquerque ¹	No	Yes	Yes	Yes	No
White Sands Missile Range ¹					
Repository 1	No	Yes	No	No	No
Repository 2	No	No	No	No	No
Garrow and Associates ¹	No	No	Yes	No	No
Fort Sill ²	Yes	Yes	Yes	Yes	Yes
Oklahoma Museum of Natural History ^{2**}	Unknown	Unknown	Unknown	Unknown	Unknown
Center for Archaeological Research, University of Texas, San Antonio ²	No	No	Yes	Yes	No
Fort Bliss ²	No	Yes	Yes	Yes	No
Fort Hood ¹	Yes	Yes	Yes	Yes	Yes
Fort Sam Houston ²	Yes	Yes	Yes	Yes	Yes
Geo-Marine ¹	Yes	No	Yes	No	No
Texas Archaeological Research Laboratory ²					
Repository 1	Yes	Yes	Yes	Yes	Yes
Repository 2	No	No	No	No	No
Texas Tech University ²	Yes	Yes	Yes	Yes	Yes
University of Texas, El Paso, Centennial Museum ²	Yes	Yes	Yes	Yes	Yes
Wilderness Park Museum, El Paso Archaeological Society ¹	Yes	Yes	No	Yes	No
Bureau of Land Management, Salt Lake City District ¹	Yes	Yes	Yes	No	No
Dames and Moore ¹	No	Yes	Yes	Yes	No

Table 142.
Presence/Absence of Infrastructure Controls at Repositories
Housing Department of Defense Archaeological Collections (Continued)

Facility	Fire Safety	Security	Environmental Controls	Pest Management	36 CFR 79 Standards
Dugway Proving Ground ¹	Yes	Yes	Yes	No	No
Fort Douglas Military Museum ¹	Yes	Yes	Yes	Yes	Yes
Office of Public Archaeology, Brigham Young University ²	Yes	Yes	No	No	No
Sagebrush Archaeological Consultants ¹					
Repository 1	No	No	Yes	No	No
Repository 2	No	No	No	No	No
Utah Geological Survey ¹	No	Yes	Yes	No	No
Utah Museum of Natural History ²	Yes	Yes	Yes	Yes	Yes
Utah State Historical Society ²	Yes	Yes	Yes	Yes	Yes
Weber State University ¹	No	Yes	Yes	No	No
Parson's Engineering Science ¹	Yes	Yes	No	Yes	No

1. Nonpermanent repositories holding DoD collections. For detailed descriptive statistics see the Executive Summary of this report.

2. Permanent repositories holding DoD collections. For detailed descriptive statistics see the Executive Summary of this report.

* Public Service Company had no information for pest management available and could not be assessed according to 36 CFR Part 79.

** Oklahoma Museum of Natural History was not assessed for this information.

secondary containers together will contribute to the deterioration of these collections (Table 143).

Data were also collected regarding the major prehistoric and historic material classes observed in each of the collections (Table 144). Stone archaeological materials are most abundant in the prehistoric collections. Principal historic materials include glass, metal, and ceramics.

Table 143.
Percentages of Secondary Containers Housing
Department of Defense Archaeological Collections

Secondary Containers	Percentage
Plastic Bags	72
Paper Bags	17
Cardboard Boxes	6
Loose	2
Other	3
Total	100

For types of secondary containers included under "Other" see individual chapters.

Note: Total based on 4820 ft³, as collections at Fort Sill were not assessed for secondary containers.

Table 144.
Percentages of Material Classes Present in the
Department of Defense Archaeological Collections

Material Class	Percentage
<i>Prehistoric Artifacts</i>	
Stone (chipped and/or ground)	33
Ceramics	10
Fauna	3
Shell	4
Botanical	2
Flotation	2
Soil	10
¹⁴ C	2
Human Skeletal Remains	14
Other	3
<i>Historic Artifacts</i>	
Ceramics	2
Metal	7
Glass	6
Brick/Masonry	1
Other	1
Total	100

For materials listed under prehistoric "Other" see individual chapters.

For materials listed under historic "Other" see individual chapters.

Note: Percentages are calculated by volume.

Human Skeletal Remains

Human skeletal remains and associated burial goods comprise 14 percent of the prehistoric material classes. A minimum number of 1681 individuals (based on anatomical singularity) is included in the collections, which comprise 747.6 ft³. In those cases where it has not already been done, all human remains should be examined by a qualified physical anthropologist. Additionally, complete rehabilitation (e.g., reboxing, rebagging, labeling) should be carried out in order to stabilize the remains and a complete inventory should be generated in order to comply with the Native American Graves Protection and Repatriation Act (P.L. 101-601).

Records Management

Records associated with archaeological work conducted on DoD installations encompass 783 linear feet and include paper, photographic, maps, and draft report records. In many cases, paper records are not housed in acid-free folders, photographs are not isolated and stored in chemically inert sleeves, and large-scale maps are not stored flat in map drawers. In most cases documentation for the collections has either been misplaced over the years or simply was not curated with the archaeological materials after fieldwork was completed.

Environmental controls for both temperature and humidity that meet the federal standards in 36 CFR Part 79 exist at only 29 of the repositories. Records housed in the remaining repositories are subject to temperature and humidity fluctuations. Archive materials readily absorb and release moisture, leading to expansion and contraction, dimensional changes that accelerate deterioration and promote major visible damage such as cockling paper, flaking ink, warped covers on books, and cracked emulsion on photographs.

Management Controls

Information regarding management controls was available from only 33 repositories. Of those, basic policy and procedure statements for artifact curation, inventories, and records management are present at 25 and do not exist in any form at eight. Therefore,

most of the examined facilities entrusted with the care of these collections have no long-term plan for the management of these resources. This responsibility must be honored by the federal managers as well, and must be corrected immediately. Failure to meet elementary curation needs as responsibilities has led to the substandard care of many of the DoD collections.

Prior to this collections assessment, the DoD was unfamiliar with the extent, location, or conditions of its archaeological collections in the project area states. DoD personnel should be commended for recognizing this problem and addressing it, but now that specific deficiencies have been identified, action must be taken to protect these collections. At minimum a plan of action for the long-term management of the collections should implement the following four terms.

1. Inventory all human skeletal remains to comply with NAGPRA.
2. Establish a priority for the collections and their rehabilitation.
3. Inventory and rehabilitate the collections.
4. Develop and archives management plan.

Implementation of these minimal tasks will contribute greatly to our understanding of the culture history of not only the western United States, but also of North America.



Appendix I

Project Reports for Installations with No Collections

Alaska

Elmendorf Air Force Base

Carberry, Michael and Donna Lane

1986 *Patterns of the Past: An Inventory of Anchorage's Historic Resources.*

Denfeld, D. Colt, Jennifer Abel, and Dale Slaughter

1988 *Nike Missile Defenses in Alaska: 1958-1979.* HAER: Historic American Engineering Record the Nike System in Alaska. U.S. Army Corps of Engineers, Alaska District, Anchorage.

Denfeld, D. Colt, with contributions by Jennifer Abel and Dale Slaughter

1994 *The Cold War in Alaska: A Management Plan for Cultural Resources, 1994-1999.* U.S. Army Corps of Engineers, Alaska District, Anchorage.

EBASCO Services, Inc.

1987 *World War II in Alaska: A History and Resources Management Plan.* Volume I. Final Report. EBASCO Services, Inc., Newark, New Jersey.

Matanuska-Susitna Borough

1988 *Evaluation of Historic Sites in Palmer, Alaska.* Matanuska-Susitna Borough, Cultural Resource Division.

Reynolds, Georgeanne L.

1984 *Archeological Reconnaissance of the Elmendorf Gasline Corridor, Elmendorf Air Force Base, Alaska.* G. L. Reynolds. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.

1984 *Letter Report: Site Report, ANC-430, ANC-431, and ANC-432.* U.S. Army Corps of Engineers, Alaska District, Anchorage.

1988 *Historical Overview and Inventory: White Alice Communications System.* U.S. Army Corps of Engineers, Alaska District, Anchorage. Prepared for United States Air Force Alaskan Air Command, Elmendorf AFB, Anchorage.

USARAL PD Tok Junction

Bacon, Glenn H., James A. Ketz, and Charles M. Mobley

1985 *Historic Preservation Plan for U.S. Army Lands in Alaska (Volume 1).* Alaska Heritage Research Group, Inc., Fairbanks. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.

1986 *Historic Preservation Plan for U.S. Army Lands in Alaska (Technical Appendix).* Alaska Heritage Research Group, Inc., Fairbanks. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.

Denfeld, D. Colt, Jennifer Abel, and Dale Slaughter

1988 *Nike Missile Defenses in Alaska: 1958-1979.* HAER: Historic American Engineering Record the Nike System in Alaska. U.S. Army Corps of Engineers, Alaska District, Anchorage.

- Denfeld, D. Colt, with contributions by Jennifer Abel and Dale Slaughter
1994 *The Cold War in Alaska: A Management Plan for Cultural Resources, 1994-1999*. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- Dixon, E. James, Jr., and Peter M. Bowers
1975 *An Historic and Archaeological Resource Assessment of the Proposed Tok Loran-C Station*. E. James Dixon and Peter M. Bowers.
- EBASCO Services, Inc.
1987 *World War II in Alaska: A History and Resources Management Plan*. Volume I. Final Report. EBASCO Services, Inc., Newark New Jersey.
- Reynolds, Georgeanne
1985 *Historic Preservation Plan, U.S. Army Installations and Satellites in Alaska: Phase I Inventory of Cultural Resources and Overview*. G. L. Reynolds, U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1986 *Letter Report: Historic Preservation Plan U.S. Army Installations and Satellites in Alaska*. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1988 *Historical Overview and Inventory: White Alice Communications System*. U.S. Army Corps of Engineers, Alaska District, Anchorage. Prepared for United States Air Force Alaskan Air Command, Elmendorf AFB, Anchorage.
- Whittier Anchorage Pipeline Terminal**
- Bacon, Glenn H., James A. Ketz, and Charles M. Mobley
1985 *Historic Preservation Plan for U.S. Army Lands in Alaska (Volume I)*. Alaska Heritage Research Group, Inc., Fairbanks. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1986 *Historic Preservation Plan for U.S. Army Lands in Alaska (Technical Appendix)*. Alaska Heritage Research Group, Inc., Fairbanks. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.
- Denfeld, D. Colt, Jennifer Abel, and Dale Slaughter
1988 *Nike Missile Defenses in Alaska: 1958-1979*. HAER: Historic American Engineering Record the Nike System in Alaska. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- Denfeld, D. Colt, with contributions by Jennifer Abel and Dale Slaughter
1994 *The Cold War in Alaska: A Management Plan for Cultural Resources, 1994-1999*. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- EBASCO Services, Inc.
1987 *World War II in Alaska: A History and Resources Management Plan*. Volume I. Final Report. EBASCO Services, Inc., Newark, New Jersey.
- Reynolds, Georgeanne L.
1984 *Letter Report: Trip Report of Site File Visit to Whittier Terminal in Conjunction with the Army Historic Preservation Plan*. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1985 *Historic Preservation Plan, U.S. Army Installations and Satellites in Alaska: Phase I Inventory of Cultural Resources and Overview*. G. L. Reynolds. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1986 *Letter Report: Historic Preservation Plan U.S. Army Installations and Satellites in Alaska*. U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1986 *Trip Report—Whittier, Alaska*. G. L. Reynolds. Submitted to U.S. Army Corps of Engineers, Alaska District, Anchorage.
- 1988 *Historical Overview and Inventory: White Alice Communications System*. U.S. Army Corps of Engineers, Alaska District, Anchorage. Prepared for United States Air Force Alaskan Air Command, Elmendorf Air Force Base, Anchorage.

Colorado

Pueblo Army Depot

- Hammer, Siler, George Wilson and Company
1994 *Pueblo Depot Activity Reuse Development Plan*. Edaw, Inc. MacDonald and Mack Partnership, Minneapolis, Minnesota.
- 1984 *Historic Properties Report Pueblo Depot Activity, Pueblo, Colorado (Final Report)*. MacDonald and Mack Partnership, Minneapolis, Minnesota.
- Larson, Thomas, K. and Dori M. Penny
1994 *Results of a Class III Pedestrian Survey of Portions of the Pueblo Depot Activity Area, Pueblo County, Colorado*. Volume I and II, Draft. Larson-Tibesar Associates, Inc., Laramie, Wyoming.
- Montgomery, John
1984 *An Archaeological Overview and Management Plan for the Pueblo Depot Activity, Pueblo County, Colorado*. Final Report No. 19. Nickens and Associates, Montrose, Colorado.

Lamar Communication Facility Annex

- Carrillo, Richard F. and Sandra K. Winter
1996 *The Lamar Communications Facility Annex (5PW76): An Historical Archaeology Study of the Material Remains of the Cold War, Prowers County, Colorado*. Richard F. Carrillo and Sandra K. Winter, La Junta, Colorado.

District of Columbia

Fort McNair

- Anonymous
1994 No Title. KFS Historical Preservation Group, Kise, Franks & Straw, Inc. Submitted to the U.S. Army Engineer District, Baltimore.

Hawaii

Aliamanu Military Reservation

- Hawaii State Historic Preservation Officer
1974 *Report of the Hawaii State Historic Preservation Officer on the Matter of the Proposed H-3 Project and Its Effect on the Moanalua Valley/ Pohaku Ka Luahine, Oahu, Hawaii*.
- Rosendahl, Paul H.
1977 *Archaeological Inventory and Evaluation Report for U.S. Army Support Command, Hawaii (USASCH) Part I: Report Text*. Department of Anthropology, Bernice P. Bishop Museum, Honolulu, Hawaii. Submitted to U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.
- 1977 *Archaeological Inventory and Evaluation Report for U.S. Army Support Command, Hawaii (USASCH) Part II: Tables*. Department of Anthropology, Bernice P. Bishop Museum, Honolulu, Hawaii. Submitted to U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.
- Takemoto, Anne H. and Pauline King Joerger
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