

NEH Application Cover Sheet

Sustaining Cultural Heritage Collections

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Field of expertise: Natural Sciences

INSTITUTION

Milwaukee Public Museum, Inc.
Milwaukee, WI 53233-1478

APPLICATION INFORMATION

Title: *Milwaukee Public Museum Cultural Collections Master Plan*

Grant period: From 2015-10-01 to 2016-09-30

Project field(s): Anthropology; History, General

Description of project: The Milwaukee Public Museum will to develop a master plan for the collections stored in the basement of the museum's building. This includes the ethnology and archeology collections, the history collection, the lantern slide collection, as well as the museum's collection vault. Currently, these collections are in conditions that are subpar, with temperatures that remain consistent but humidity that fluctuates daily and by season. The master plan will establish realistic environmental criteria on a room-by-room basis, determine how collections with similar needs can be co-located, and develop a program for improvements to the basement envelop based on actual environmental needs of specific co-located collections. In addition, the master plan will identify appropriate and space efficient storage units for each area based on actual environmental needs of the specific collections. All of these requirements are consistent with the museum's Sustainability Policy and Plan.

BUDGET

Outright Request	40,000.00	Cost Sharing	61,781.00
Matching Request	0.00	Total Budget	101,781.00
Total NEH	40,000.00		

GRANT ADMINISTRATOR

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Description of project and its significance

The Milwaukee Public Museum will develop a master plan for the collections stored in the basement of the museum's building. These include the ethnology and archeology collections, the history collection, the lantern slide collection, as well as the museum's collection vault. These collections comprise the largest single repository of ethnographic and archaeological material in Wisconsin. Special strengths include material from major archaeological excavations in Wisconsin as well as several other sites in the US. The ethnology collection is one of the finest in the country, with 587 North American Indian groups represented. Particularly strong collections represent Great Lakes tribes, groups from the American Southwest and Northwest Coast. In addition, the collection has significant collections from Central and South America as well as the Old World. Other major historical collections include the Dietz Typewriter collection – the largest and most complete assemblage in the world; the Nunnemacher Arms collection – among the top half dozen publicly held collections in America; the Nunnemacher Decorative Arts collection – comprised mainly of decorative glass. Other major collections include clothing and textiles as well as domestic life and folk arts objects. Among these is the largest and most comprehensive collection of the WPA Milwaukee Handicraft Project in the world, with over 700 dimensional objects, most in excellent condition, some being the only known examples of designs.

Currently, these collections are in conditions that are subpar, with temperatures that remain relatively consistent but humidity that fluctuates daily and by season. In addition, many collection spaces have pipes with clear and waste water running through them, providing the real and potential risk of leaks. Currently the collections are stored by department administering them rather than by material type. All of these factors make it difficult to provide the best conditions for them.

The master plan will establish realistic environmental criteria on a room-by-room basis, determine how collections with similar needs can be co-located, and develop a program for improvements to the basement envelop based on actual environmental needs of specific co-located collections. In addition, the master plan will identify appropriate and space efficient storage units for each area – based on actual environmental needs of the specific collections. All of these requirements are consistent with the museum's *Sustainability Policy and Plan*. This plan will allow the museum to strategically plan for an upgrade to the basement over a five-to-ten year period.

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Introduction

The Milwaukee Public Museum (MPM) respectfully requests a \$40,000 NEH Sustaining Cultural Heritage Collections Planning Grant to develop a master plan for the collections stored in the basement of the museum's building. This includes the ethnology, archeology and history collections. Other non-cultural collections in the basement are geology as well as portions of botany and zoology collections. While we plan to include all basement collection spaces in the master plan to make the most efficient and effective use of all spaces, the cultural collections utilize 68% of that collection space. Hence the bulk of the master plan will focus on addressing the issues in the cultural collections. Currently, these collections are in conditions that are subpar, with temperatures that remain relatively consistent but with humidity that fluctuates daily and by season. The master plan will establish realistic environmental criteria on a room-by-room basis, determine how collections with similar needs can be co-located, and develop a program for improvements to the basement envelop based on actual environmental needs of specific co-located collections. In addition, the master plan will identify appropriate and space efficient storage units for each area – based on actual environmental needs of the specific collections. All of these requirements are consistent with the museum's Sustainability Policy and Plan. The master plan will include a five to ten year schedule for implementing the plan. Successful completion of the proposed planning grant will include a draft of a NEH Sustaining Cultural Heritage Collections Implementation Grant proposal.

The Milwaukee Public Museum is the largest natural and cultural history museum in Wisconsin and one of the largest in the region, holding 4.5 million objects in anthropology, history, geology, botany, vertebrate zoology and invertebrate zoology. Established in 1882, MPM has been actively collecting, preserving and interpreting human and natural history for more than 130 years and serves more than 500,000 visitors annually – making it among the top most-visited museums in the country, on a per capita basis.

The mission of MPM is to inspire curiosity, excite minds and increase desire to preserve and protect our world's natural and cultural diversity through exhibitions, educational programs, collections and research. To accomplish this mission, the museum has dedicated 150,000 sq. ft. of its 400,000 sq. ft. of space to exhibitions that provide an immersive environment that explores the intersection of human and natural history throughout the world. Educational programming deepens the exhibit experience by overlaying additional content, especially as related to current and relevant issues. Underlying exhibits and education are the collections and research which form the foundation for all that we do. In 2011, the museum's collecting plan was updated to reflect the focus and direction of the museum. Each collection area has identified its core strengths and prioritized growth accordingly. MPM has a staff of 152 including 81 FTE's and an annual budget of \$14M. It is accredited by the American Alliance of Museums.

Significance of collections

The museum houses about 886,000 objects in the history and anthropology departments (120,000 in anthropology, 500,000 in ancient history and 266,000 in history). The bulk of these collections are stored in the museum's basement.

The MPM Anthropology Department is responsible for the majority of ethnographic and archaeological artifacts from the indigenous Americas, Africa, Oceania and Europe. Currently there are approximately 57,000 catalogued items or lots in archaeology and 36,000 catalogued items in ethnology. The strong

but focused archaeology collections are mainly from North America (82%), with smaller but important collections from Central and South America (14%). Most of the remaining material (4%) is from the Old World, primarily from paleolithic sites.

Within North America, 77% of the archaeology collection is from Wisconsin. Special strengths include material from major excavations including the Aztalan, McClaughry, Nitschke, Kletzien, Neale, Green Lake, Buffalo Lake, Walker-Hooper, McCauley, Mound Beach, Osceola, Shrake, Nicholls, Schwert, Trempeleau Lakes, Midway, Raisbeck, Kratz Creek, Karow, Hilgen Spring Park, Spencer Lake and DuBay sites or mound groups, among several others. Included are numerous type sites and type collections for major periods of Wisconsin prehistory.

Non-Wisconsin North American archaeological collections include significant collections of Mandan village material, Middle Woodland Hopewellian material from both Illinois and Ohio, a small but valuable collection of material from Spiro Mound in Oklahoma, and sizeable collections of ceramics from both Mississippian period sites in the American midcontinent and ancestral Puebloan sites in the American Southwest. Other areas are more sparsely represented, with forty-eight of fifty states represented. MPM also houses the major site material from the Riverside Site in Michigan.

The Museum also holds important North American collections by artifact type, including the celebrated George West pipe collection and major collections of copper implements, groundstone tools, and grooved axes, via the Ringeisen and related collections. Particularly noteworthy are unique collections such as the Hopewell-period figurines from Knight Mounds, Illinois, and the matched set of large effigy pipes from the Emerald Mound in Mississippi.

Central and South American archaeology holdings include major collections of Peruvian featherwork, Peruvian mummies, over 7000 pre-Columbian ceramics, gold from Peru, Panama, Costa Rica and Colombia, and a wide variety of pre-Columbian artifacts in other media, including shell, stone and wood. The archaeological featherwork collection is particularly noteworthy. The holdings includes a significant collection of vessels and typed sherds from Casas Grandes in northern Mexico, as well as a strong ceramic collection from South America, with special emphasis on Chimu vessels from the North Coast and Nazca vessels from the South Coast, and excavated material from Lake Amatitlan, Bilbao, and Chinkultik in Central America. Maya materials include a series of Jaina figurines, along with significant materials from West Mexico. The Museum also holds a small collection of archaeological material from the Caribbean, particularly Grenada.

The Old World archaeology collection comprises over 2,100 items including ceramic, glass, metalwork, and lithic items. Of particular interest is the large collection of French Paleolithic material, the Roman lamps, Roman metallurgy, German medieval material, and Maltese ceramics. The Museum also holds an exceptional collection of lake-dweller material from Switzerland.

The MPM also holds outstanding ethnological collections (27,000) with worldwide scope. About 62% of current Anthropology holdings represent 587 North American Indian groups as well as pan-Indian and regionally identified collections. Particularly strong collections represent Great Lakes tribes, including A.B. Skinner's collections among the Ioway, Otoe, Sauk, Mascouten and Kickapoo; groups from the American Southwest, especially the Hopi; Plains groups, especially the Sioux and Blackfeet; Northwest

Coast groups, especially the Kwakiutl, West Coast groups including the Pomo, Washo and Paiute, as well as a variety of Iroquoian, Subarctic and Arctic groups.

Additional special North American ethnographic collections include the James Howard collection of pow-wow outfits and S.A. Barrett's early twentieth century collections of ethnobotanical material from the Hopi and various Woodland, California and Northwest Coast groups. The Museum's collection of Woodland basketry and textiles is also exceptional. Individual highlights of the collection include the Red Hawk Ledger Book, an unusual Kwakiutl thunderbird mask and suit set, an exceptional Kwakiutl skin/pukwis mask, and Iowa clan pipes.

Central and Mesoamerican materials represent about 7% of ethnology holdings, and include important collections from the Caribbean, Mexico, and Guatemala. MPM's carnival mask, Guatemalan Maya, Tarahumara (mainly the Zingg-Bennett collection) and the LaTorre Mexican Kickapoo collections are particularly noteworthy. South American collections represent nearly 5% of ethnology holdings, and focus on rainforest and Andean cultures, with special strengths in featherwork and items of personal adornment.

More than 15% of the ethnology holdings are from Africa, mainly sub-Saharan portions of the continent. The masking traditions of West Africa are well represented, as are items of adornment from East Africa and items relating to religion and magic from Central Africa. Ironwork and edged weapons are also particularly well represented. Strengths of the collections include the Cudahy-Massee collections, the Antidel and related collections from Angola and the Congo, the Ritzenthaler collections from the Cameroons, and the Museum's rare and well-documented collection of Mambila material. Pacific and Oceania material represents about 11% of the ethnology holdings, with strong collections of Polynesian tapa cloth, Australian bark paintings (especially the Waterman-Laskin collection), and a variety of materials from the Philippines, most dating to the time of the 1903 World's Fair. In addition to strong general collections from Oceania, the Morton May Sepik River collection and the Meinecke New Ireland collection are particularly noteworthy.

The MPM anthropology department is the largest single repository of ethnographic and archaeological material in the state of Wisconsin. The closest similar collection in the state, but substantially smaller in size, is found at Beloit College's Logan Museum of Anthropology. The closest similar repository of Wisconsin-based material is found in Madison at the Wisconsin Historical Society. There are no comparable collections of African, Latin American and Oceanic collections in the state. MPM is one of less than a dozen in the Midwest region and one of approximately three dozen in the country that house such a vast collection, in both scope and quantity, of ethnographic and archaeological artifacts.

The History collections (266,000) number roughly 86,000 Historical artifacts (US, Europe and Asia), 38,000 Decorative Arts, 41,000 Numismatic, more than 100,000 Philatelic items, and 2,000 Archaeology (Old World). In addition, there are about 500,000 field excavated artifacts. The collection is one of world-wide scope with a focus on Americana. It also has representative collections in European and Asian decorative and folk arts, technology; arms; domestic life and folk arts; European crafts; fine and decorative arts (especially glass) from the Americas, Europe and Asia; Near and Middle Eastern archaeology; and clothing and textiles. While not exclusively a collection of Milwaukee history, the collections hold significant materials and documents concerning that history. Collection concerning Solomon Juneau, a Milwaukee founder, contains many of his personal papers, including business and

land dealings. It also includes some of his guns and surveying instruments. The Uihlein Stamp Collections is an extensive collection of worldwide postage well in excess of 100,000 specimens many pre-1900. The 41,000 piece Numismatics Collection ranges from ancient coins to modern currency.

Major collections include the Carl P. Dietz Collection of business machines currently numbering approximately 1200 machines of which 900 are typewriters. It is the largest and most complete overall assemblage in the United States and likely the World. The collection reflects the diversity of typewriter manufacturers and the development of machines from the 1870s to the late 1980s. The core of this collection of typewriters and related papers was assembled by Carl P. Dietz and donated to the Museum honoring Christopher Latham Sholes, Milwaukee inventor of the earliest practical commercially produced "writing machine." This is supplemented by 4,000 pieces of trade literature, 1,200 items of related ephemera, and 1,500 documents relating to Sholes' original business activities. The collection is a critical resource for research in this area and contains numerous rare and unique items. The Dietz collection is among the most significant in the world, cited in most publications dealing with the history of the typewriter.

The Nunnemacher Arms Collection contains nearly 3,000 items, ranking it among the top half dozen publicly held collections in America. It is predominately firearms and edged weapons, but is a diverse collection in origin and type, from early European and Japanese weaponry to recent American firearms. There is a good balance between civilian and martial arms, including handguns, shoulder arms and crew-serviced firearms, as well as an excellent collection of airguns. Many are, if not unique, exceedingly rare.

The Decorative Arts Collection contains over 35,000 objects. It includes the range of decorative arts – glass, ceramics, metalwork, wood, stone and ivory. Decorative glass is the single largest category, primarily European and American from the 19th and early 20th centuries with strengths in pressed glass and overlay glass. It is highly representative of numerous techniques, styles and manufacturers (Daum, Galle, Northwood, Lalique, Tiffany, Steuben, etc.). The collection ranges from ancient to modern studio glass (Littleton, Manners, Chihuly, Stankard, etc.) and is the most comprehensive in the state. Of particular note is a collections of glass Blaschka models of invertebrates.

The large ceramics collection is equally broad based. Besides tableware, it includes American art pottery as well as European and Asian ceramics. The strong Asian collection, particularly Japan, China and Korea, also includes silver/enamelwork, jewelry, scroll paintings and carvings in ivory, jade/stone, and horn, much collected in the early 20th century. The extensive carved ivory collection includes over 300 netsuke. The large (500+) Dinerstein collection notably includes 70 enameled objects ranging from the 16th through 20th centuries from Europe, Japan and America.

Of national importance is the WPA Milwaukee Handicraft Project collection. It is the largest and most comprehensive in the world with over 700 dimensional objects, some being the only known examples of what was produced. The Works Progress Administration (WPA) Milwaukee Handicraft Project (MHP) was a federally funded Great Depression work program that hired unskilled women and minorities to produce handicrafts that would be sold to public institutions throughout the United States. The MHP was the largest handicrafts project in the country with eleven work units producing appliqué and pieced coverlets and curtains, block printed textiles, wall hangings, and draperies, woven upholstery fabric, wooden toys and cloth dolls, theatrical costumes, hand bound books, furniture and educational models.

Under the guidance of Elsa Ulbricht, from 1935 to 1942, 5,000 unemployed Milwaukeeans were hired by the MHP.

Milwaukee's project and its collections are highly important for a number of reasons. It was a program of national significance and nationally recognized as a successful WPA project. Rather than running a "make-work" project, Ulbricht and her art educator managers ran the MHP like a business, tailoring their products to customer needs while focusing on teaching workers marketable job skills enabling them to leave the WPA and work in private industry. It has historic importance in minority and female history due to its hiring practices of unskilled women and minorities. Despite the offering of a separate space for African American workers, the administrators integrated the workforce, leading to women of differing nationalities and races working side by side. The art and design work done led to the handicraft project being known for a recognizable style that is prized by collectors and studied by artists.

Adding to its basic significance is the provenience of the collection and its documentation. The bulk of the collection was donated by Elsa Ulbricht and other project managers from their personal collections. It includes over 700 photographic negatives and 16 cubic feet of archival documentation.

The Clothing & Textiles Collection (20,000) is primarily American and includes everyday wear to specialty items like prominent wedding gowns, as well as table linens, quilts and coverlets. Significant collections of shoes and hats also exist augmented by the wide range of accessories (fans, jewelry, etc.). The majority date from the mid-1800s through mid-1900s with some earlier and later items. Women's garments are more fully represented. European and Asian clothing, primarily traditional/ethnic, as well as religious vestments, are represented by several hundred additional specimens. Major components are the military uniforms, insignia and accoutrements ranging from the Civil War to recent times.

The more generalized Domestic Life collections are a wide range of materials and reflect the interest in our exhibition program of showing objects in natural habitats, whether from nature or human occupation. Collections range from colonial to modern household furnishings and materials, medical and pharmaceutical objects, musical instruments, farm implements, trunks, baby carriages, bicycles and architectural pieces, to name a few. Dolls and toys are also a large collection. There is a significant selection of dolls and a representative collection of late 19th/early 20th century toys, including toy trains. The DeFlores collection of Disney toys/memorabilia covering the '30s-'80s (1500 pieces) is one of the largest in a U.S. museum.

Classical Archaeology is represented primarily from Egypt, Mesopotamia, Greece and Rome. They number under 2,000 pieces of pottery, stone, wood and coins as well as two human mummies. However, excavations held at Tell Hadidi, Syria from 1974-8 resulted in thousands of archaeological materials forming an important research collection. There is a small, but important collection of Islamic and medieval materials.

The MPM History department holds collections of size and scope unique to the state. It's European and non-Western collections are the largest in the state. In particular, its business machine, WPA and Arms Collections are unmatched in Wisconsin and some of the most significant in the country. Its clothing and textile collection (20,000) is the largest diversified collection in the state.

The museum has a long history of producing immersive exhibits that are rich in both cultural and natural history objects. The first diorama ever produced in a museum was at the Milwaukee Public Museum by Carl Akeley in 1890. That tradition continues. Associated with our exhibitions is a wide array of educational programs, including docent-led tours, children's programs and camps, adult lectures, family events, distance learning programs, teacher training sessions, programming in early learning and for those with early stage Alzheimer's disease. All of our programming is heavily object based.

In addition to the use of collections for exhibits and public programming, we provide access to them for qualified researchers and students. The anthropology and history departments average 52 researchers each year who work with the collections and documentation through visits that range from a half day to several months. The material is most often utilized by UW-Milwaukee graduate and doctoral students; however the collections are open to any researcher. Numerous publications, MA theses and PhD dissertations have incorporated data based on our collections. Currently, there are 8 graduate students working on theses using the Anthropology Department collections. Beyond theses and dissertations, students work with the collections in various capacities, often as interns and graduate museum studies students.

Artifacts are indispensable in training Anthropology department interns and UW-Milwaukee Museum Studies graduate students in object handling, storage, and research methods. Since 1987, when the Anthropology department began tracking, there have been over 315 interns, 210 museum studies graduate students, and 28 work-study students who have worked with or utilized the collections and associated documentation in the department.

Because of the collection's large size and diversity, items are loaned to other museums looking to create exhibits or to conduct a more in-depth examination of materials. In the past five years, history and anthropology items have been loaned to 22 different institutions from small local historical museums to large art museums (Cleveland Museum of Art, Brooklyn Museum of Art) for exhibition. We have an especially close relationship with the tribal museums and cultural centers in the state and MPM. Anthropology material can be found on long-term exhibit in nearly all of them.

Current conditions and preservation challenges

The bulk of the ethnology/archaeology and history collections are stored in the basement along with geology and some botany and vertebrate zoology collections. The basement is about 45,000 sq ft in size with approximately 12,000 sq ft of non-collection space (mechanical/electrical/maintenance). Of the remaining space, 68% is dedicated to anthropology and history storage.

The building was constructed in the early 1960s with a thin exterior shell made of concrete block without a vapor barrier or insulation. As a result, temperature and humidity conditions are subject to wide fluctuations, especially as seasons change (Appendix p. 29-43). Uncontrolled drainage or leakage around the perimeter of the building may also adversely contribute to high humidity. Relative humidity is more variable than temperature and, in some locations, experiences frequent, short duration swings as high as 30%. Relative humidity also exceeds 65% in some areas, which is generally considered the threshold at which mold spores become active.

When the building was constructed, pipes carrying waste water and clear water were run through many collection rooms (Appendix p.51-52). In addition, in the early 1990s, the museum's café was moved to a

space just above one of the history storage collection areas. As a result of this move, the ceiling in history storage was penetrated in several spaces with pipes that carry kitchen waste and water supplies (Appendix p. 51). The location of pipes in the museum's collection areas is problematic as they invariably leak into the collections. There is also an air intake unit in the ethnology collection area (Appendix p. 51). In the fall and spring, the difference in temperature between incoming air through the unit and the room causes condensation and dripping. Other modifications to the building (communication, security, fire and electrical lines) have also penetrated walls and ceilings in the basement, causing access for moisture and water from storm events. In addition, some storage areas (geology, history) lie below large walk-in freezers. These have the potential to thaw and leak. In the past 10 years, the museum has experienced 7 major incidents of leaking pipes and floods, the most recent in November of 2014.

Because of the issues with water incursion in the basement, many of the collection shelves are draped in sheets of plastic (Appendix p. 54). In addition, many objects are carefully wrapped and bagged. We have completed an assessment of all collections addressing vulnerability to leaks and other issues. Based on the assessment, we have moved vulnerable collections to less vulnerable places within the storage spaces. We have also placed water alarms throughout the collection spaces. These are tied in to the security system. In addition, security and department staff routinely check storage areas with an eye toward spotting leaks as soon as they occur.

The condition in the collection areas varies based on where in the museum's basement the collection resides (e.g., distance from AHU and size of duct feeding room), as well as the number and kind of pipes running through the room. In addition, the conditions vary based on storage furniture. Most collections in the basement are stored on open shelves or in banks of wooden drawers or trays. The predominance of wood drawers in anthropology and history is far from ideal (Appendix p. 53). The wood, which is primarily oak, emits organic fumes, which are harmful to many types of materials. Most history textiles, however, are stored in Interior Steel cabinets of the highest conservation standards.

Collections are stored in spaces based on the department that oversees them rather than based on the type of material. For instance, textiles are stored in several different spaces (history and ethnology) using several different storage methods (Interior Steel shelving vs wooden drawers). This is true for all types of materials. This presents a challenge when trying to condition rooms for proper humidification.

Museum collections staff currently utilizes dataloggers to monitor temperature and relative humidity in 19 separate exhibit and collections areas. Five (5) of these data loggers are used to monitor basement collection storage areas. Current basement monitoring locations include Anthropology Storage (Basement Center), History Storage (Basement West), History Storage (Basement East), Botany Storage (Basement East) and the Artifact Vault (Basement East). All loggers are downloaded and analyzed quarterly with more frequent downloads if a problem has been identified. Environmental monitoring records go back to 1978 using a variety of methods. Current monitoring is done by HOBO Dataloggers. Wireless dataloggers (Hanwell) are utilized in special exhibit areas where we have that capability. In certain exhibits, the Museum also monitors light levels. Dehumidifiers are placed in collection areas when humidity rises.

The Museum also employs an Integrated Pest Management (IPM) program which is a combination of in-house monitoring and the use of a contract pest management control company to monitor and treat the whole facility. The Museum utilizes 95 sticky traps to monitor areas in both the exhibit halls and

collection storage areas. Most traps are generic, “sticky traps,” (glue boards) and are supplemented with hanging pheromone- traps for specific identified problem pests, such as clothes moths. Collection storage areas monitored include: Anthropology, Mammal and Herpetology, Entomology, Educational Collection, and History. A zoned monitoring approach is practiced in Anthropology Storage, which allows for tighter control and quicker identification in the event of an infestation. Selected exhibit cases are also monitored. All traps are checked and analyzed bi-yearly, with weekly analysis if an infestation has been identified or is suspected. In cases of infestation, the Museum uses a process of “freeze fumigation” for treatment. In addition to the in-house monitoring, collection storage areas are visited bi-monthly by an outside pest control firm. Selected areas around floor drains, sinks and pumps are sprayed with water-based, “Demand” brand insecticide. No spraying is done near collections. MPM has a detailed Collections Policy, approved by the Board, which addresses many aspects of collection care. In addition, there is a detailed Emergency Preparedness Plan that addresses, in detail, all aspects from discovery and notification to responses, assessment, and recovery.

A Johnson Controls Metasys System controls the building’s air handling systems. It monitors temperature, humidity and CO₂ and adjusts the building environment accordingly. On the upper floors, the system includes air handlers, humidifiers, variable air volume boxes and return fans. This allows for more effective monitoring of above ground spaces. Unfortunately, the unit that serves the basement is a constant-volume air handling system which currently cannot handle segregating and conditioning specific rooms.

The collections are under the oversight of the Senior Vice President/Academic Dean. Each collection has a dedicated collection manager or curator who oversees the organization and access to the collection. In addition, the registrar and assistant registrar oversee metadata for collection items as well as collection policy administration. The museum currently does not have a conservator. Funds to hire contract conservation specialists are in the Academic Dean’s budget and are used as projects or issues arise. Day-to-day conservation issues are overseen by the registrar’s office.

History of the project

In 1998, the Milwaukee Public Museum (MPM) conducted an IMLS-funded general conservation survey of its collections, the results of which were presented in an extensive written report and which formed the basis for MPM’s Long-Range Collections Preservation Plan (LRCPP). In that report, many issues were identified related to the building envelope and environmental systems, especially those in the basement of the museum. As a result of the survey, in October 2000, MPM received an IMLS-funded Conservation Project grant to bring in Landmark Facilities Group (LFG) to evaluate our building-wide environmental problems and to make recommendations for long-term improvements to the building and systems. When Landmark Facilities Group submitted their final report to MPM in December 2001; their recommendations gave us confidence that our building-wide environmental problems would be correctable. However given the structure of the building and the design of our ductwork, we have since found our environmental problems are more complicated to resolve in a timely fashion than we had initially anticipated.

In the time since that report, many of the recommendations were implemented, especially those requiring fewer personnel and/or museum finances. For example, in 1998 MPM undertook a museum-wide clean up and completed an Emergency Preparedness Plan. In July 2001, MPM’s Emergency Preparedness Committee purchased emergency equipment for the unpredictable water problems that

have plagued the institution. The museum continues to conduct environmental monitoring of all spaces.

The museum has received several grants to address some of the collection issues. Most recently, the past conservator completed an IMLS grant that cleaned and documented the typewriter collection. This collection is now stored on movable shelving units but they are stored in various locations in the basement because the conditions in the space they were in are not environmentally adequate. This will be addressed in the master plan.

The museum upgraded 7 HVAC units in 2011 by adding FVD controls and updated humidification systems. This has improved the environment on the first four floors of the museum. The basement environment, with its sole unit AHU, has not been addressed. Engineering strategies will help determine the needs -- additional Air Handling Units, Variable Air Volume Units, Air Reheat System, Dehumidification, and Zone controls.

Also in the intervening time, in 2009, MPM adopted a Sustainability Policy and Plan. The policy outlines our commitment to doing our business in a conscious and sustainable way for procurement and replacement; waste prevention; building and construction; and education. Since the policy was approved, the museum has replaced the exterior wall of the museum with solar panels, creating the largest solar wall array on a building in the country; insulated the south side of the building with the north side to be insulated in 2015; replaced an aging traditional roof with a living green roof; implementing a robust recycling program for staff and visitors; reduced its energy through efficiency programs including changing lighting to LED (ongoing) and reducing the number of printers on each floor by networking them; use low VOC material when building exhibits and in new construction; among other things. This project aligns with the policy and plan.

In 2013, the conservator updated the LRCCP and placed an emphasis on addressing the issues with the collections in the basement. These were deemed most critical because of all the continuing issues with the environmental conditions. In 2014, the new President of the museum re-emphasized the need to address the collection issues and has made this a priority for strategic planning and fundraising. The expected outcome for this planning process is that the museum has a clear idea of the steps that it will take to improve the conditions in the basement storage areas as well as a clear idea of the funds needed to properly address the issues. In addition, the process will help us to define how we can, through proper collection care that looks also at best practices in sustainability, be a leader in the community – using our efforts to educate our visitors and staff about the link between best care in collections and sustainability.

Methods and standards

The ultimate goal of this project is to provide the museum with a master plan for upgrading the environmental conditions for collections stored in the basement of the museum, with an emphasis on doing this in the most sustainable way possible. This will be done by bringing together a team comprised of the museum's registrar, collection staff, facilities director and senior vice president as well as a contract conservator and representatives from McGuire Engineers. As with all new projects undertaken by the museum, our policy is to provide a healthy and sustainable environment for staff, visitors and collections based on best standards and practices (Appendix p. 44). We chose McGuireEngineers to lead our master planning process because it supports the US Green Building Council's LEED Program and utilizes sustainable design practices on all projects. We will also use best practices in conservation to

insure that our collections are kept in the most appropriate environment based on types of materials (The Preservation Management Handbook: A 21st-Century Guide for Libraries, Archives, and Museums Hardcover, 2014 and Storage Of Natural History Collections: A Preventive Conservation Approach, 1995).

Since the enactment of NAGPRA in 1990, the museum has fully complied with the law. The Museum developed a NAGPRA policy and procedures handbook for museum, board and tribal use and has an internal NAGPRA committee that meets to discuss each repatriation request. We have hosted over 50 visits from tribes and native peoples from all over the country, provided collections information to over 580 groups, and returned over 600 artifacts and human remains to 14 federally recognized tribes. We take our role as custodians of all collections material very seriously but do recognize the special nature that the North American Indian material and human remains hold in the anthropology collections.

Methods

1. Review past studies and changes to building envelop since the last report
2. Establish realistic environmental criteria on a room-by-room basis throughout the basement
3. Determine how collections with similar environmental needs could be co-located in the building
4. Research and determine best storage furniture for collections based on environmental needs and space
5. Develop a program for improvements to the building envelop based on the actual environmental needs of specific collections, including storage furniture
6. Analyze the actual heating, cooling and ventilation requirements throughout the basement
7. Evaluate the existing distribution system to identify ductwork modifications required to match actual individual room load requirements
8. Determine the size and quantity of air handlers necessary to support the load.
9. Develop a five-to-ten year schedule for implementing changes.
10. Draft NEH Sustaining Cultural Heritage Collections implementation grant proposal to address most immediate issue.

Work Plan

Dates	Action	Who
Oct 2015	Contracts signed, studies and other relevant materials distributed to team	PI
Nov 2015	First meeting – discuss objectives of grant, review materials and changes to building since studies; agree on timelines and assign tasks	Team
Nov-Dec 2015	Analyze current heating, cooling and ventilation requirements; evaluate existing duct system	Facilities Director, McGuire Engineers
Dec 2015	Establish realistic environmental criteria	Conservator, facilities director, McGuire Engineers
Dec 2015	Determine co-location of collections	Conservator, registrar, collection staff
Jan-Jun 2016	Draft plan for improvements to building envelop based on actual needs for collections, determine necessary air handler	Facilities Director, McGuire Engineers

	systems and ductwork	
Jan 2016	Determine best type of storage for collections as well as costs	Conservator, registrar, collection staff
Jun 2016	Review draft plan	Team
Jul 2016	Develop 5 to 10 year plan for implementation	Team
Aug-Sep 2016	Write draft proposal and final report	PI and team

Project team

The project manager is **Dr. Ellen J. Censky**, Senior Vice President and Academic Dean. She is ultimately responsible for all collections in the building. Her responsibility will be to oversee and guide the process. She has worked in museums for the past 37 years. Her experience includes collection management, curation, budget management and administration. She also leads the museum's Green Team and led the effort to adopt the sustainability policy and plan, as well as oversaw the recent green initiatives.

Larry Bannister, Director of Facilities, has worked at the museum for 12 years. He has worked in the industry for more than 30 years. He has an intimate knowledge of the building systems and envelop along with all of the challenges. He will be an invaluable source for helping to determine current conditions as well as most effective way to move forward.

Claudia Jacobson, Registrar, has been at the museum for 35 years. She has overall responsibility for collections documentation, loans and the Museum Library, Archives, and Photography Collection. She has extensive experience in collections management and knowledge of the Museum collections and storage concerns. She has been a point person for all collection emergencies and will be invaluable to the team because of her experience with the building and its conditions as related to collections.

Dawn Scher Thomae, Curator of Anthropology Collections/Senior Collection Manager, will be responsible for contributing to decisions made for both Anthropology and History collections. She will coordinate collection of any necessary information for the project related to the collections. Dawn has been at the museum for 27 years and is very knowledgeable regarding the storage and care of ethnographic and archaeological material.

Christine Del Re, Collection Care and Conservation Consultant, was MPM's Senior Conservator from January 1997 until May 2013. She has thirty-five years of conservation experience, having received her B.Sc. in Archaeological Conservation and Materials Science from the Institute of Archaeology, University of London, London, England in July 1980. She was Project Director for MPM's 1998 IMLS-funded museum-wide conservation survey, the 2001 IMLS-funded HVAC Survey, the 2003 IMLS Photo Collection Survey, and the 2009 IMLS Decontamination and Preservation of Dietz Typewriter Collection grant. On this project, she will work with the team to establish and meet collection preservation criteria and standards for the proposed Master Plan.

McGuire Engineers is a consulting engineering group that specializes in the design of building systems for museums, historic buildings and collection conservation. They have worked with several notable facilities, including The Art Institute and The Field Museum in Chicago as well as regional museums such as The Paine Art Center in Oshkosh, Wisconsin, Midway Village in Rockford, Illinois and The Elmhurst Historical Museum in Elmhurst, Illinois. They are active members in The International Association of

Museum Facility Administrators and are currently working with several museums to develop sustainable collection conservation systems and criteria.

Others who will participate to a lesser extent are Susan Borkin, Head of Natural Sciences and Al Muchka, Curator of History Collections/Senior Collections Manager. They will provide input on the collections under their care. Sara Podejko, Assistant Registrar, will provide assistance with data collection and research.

Project results and dissemination

The expected outcome for the project will include a master plan which will provide a step-by-step process for reorganizing collections by material type, upgrading building systems to produce achievable environment conditions appropriate to the types of materials. This plan will identify a process for moving collections that is efficient and doable. In addition, the plan will determine what type of storage units are appropriate for the collections, based on space, material types and environmental conditions. The master plan will be placed in the museum's website with updates posted as we achieve milestones. In addition, as we make sustainable improvements to the collections, we will add a description of them to our MPM Going Green exhibit on the museum's ground floor. Staff involved in the project will present papers on the project at local, statewide and national museum meetings.

History of Grants

IMLS-CP. 1997. Funding to do a general conservation survey at the Milwaukee Public Museum. \$26,000

IMLS-CP. 2001. Funding to complete and environmental systems assessment at MPM. \$38,400.

IMLS-CP. 2002. Funding to re-house its bryophyte and fungi collections. \$47,480.

IMLS-CP. 2003. Funding to survey museum-wide photographic collections. \$22,491.

IMLS. 2006, funding to re-house its Huron Smith Wisconsin Indian Ethno-botanical Collections, to comprehensively test for mercuric chloride throughout the herbarium, and to digitally scan the Ethno-botany collection to make it web-accessible. \$75,706.

IMLS. 2009. Funding to decontaminate and preserve the Dietz Typewriter collection. \$136,841

List of Participants

Bannister, Larry B.

Brooks, David M.

Censky, Ellen J.

Del Re, Christine

Jacobson, Claudia

McGuire, Anthony B

Scher Thomaе, Dawn



Budget Form

Applicant Institution: *Milwaukee Public Museum*

Project Director: *Ellen J. Censky*

Project Grant Period: *10/01/2015 -9/30/2016*

[click for Budget Instructions](#)

	Computational Details/Notes	(notes)	Year 1	(notes)	Year 2	(notes)	Year 3	Project Total
			10/01/2015- 09/30/2016		n/a		n/a	
1. Salaries & Wages								
Project Director (Ellen Censky)	Salary: \$ (b) (6)	5%	\$ (b) (6)	%		%		\$ (b) (6)
Facilities Director (Larry Bannister)	Salary: \$ (b) (6)	10%	\$ (b) (6)	%		%		\$ (b) (6)
Registrar (Claudia Jacobson)	Salary: \$ (b) (6)	10%	\$ (b) (6)	%		%		\$ (b) (6)
Senior Collection Manager (Dawn Scher Thomae)	Salary: \$ (b) (6)	10%	\$ (b) (6)	%		%		\$ (b) (6)
2. Fringe Benefits								
All personnel	Benefit rate: 28.21%		\$ (b) (6)					\$ (b) (6)
3. Consultant Fees								
								\$0
4. Travel								
Conservator's travel	2 trips to MPM (total 5 days) (Phoenix to MPM) Air:\$500x 2; per diem: \$168 x 5 days)		\$1,840					\$1,840
McGuire Engineer travel	4 trips Chicago to MKE (180 mi RT @\$56/mi)		\$403					\$403
5. Supplies & Materials								

6. Services								
Contract Conservator	15 days @ \$(b) (6)/day		\$ (b) (6)				\$ (b) (6)	
McGuire Engineers			\$25,500				\$25,500	
7. Other Costs								
8. Total Direct Costs								
	Per Year		\$78,053		\$0		\$0	
9. Total Indirect Costs								
Rate: 30.40% Federal Agency: IMLS Date of Agreement: 05/15/2014								
	Per Year		\$23,728		\$0		\$0	
10. Total Project Costs							(Direct and Indirect costs for entire project)	\$101,781
11. Project Funding								
a. Requested from NEH				Outright:			\$40,000	
				Federal Matching Funds:			\$0	
				TOTAL REQUESTED FROM NEH:			\$40,000	
b. Cost Sharing				Applicant's Contributions:			\$61,781	
				Third-Party Contributions:			\$0	
				Project Income:			\$0	
				Other Federal Agencies:			\$0	
				TOTAL COST SHARING:			\$61,781	
12. Total Project Funding							\$101,781	

Total Project Costs must be equal to Total Project Funding ----> (\$101,781 = \$101,781 ?)

Third-Party Contributions must be
greater than or equal to Requested Federal Matching Funds ----> (\$0 ≥ \$0 ?)

Budget Justification

The Milwaukee Public Museum requests \$40,000 to help fund the master planning process for the museum’s collections in the basement.

Salaries and Wages

The museum will provide the following staff for the project. Censky will spend 5% of her time coordinating the project and timetables, running meeting, managing the budget and helping to write reports. Bannister will spend 10% of his time working with the contract engineers to address all building-related aspects of the master plan. Jacobson and Scher Thomae will each spend 10% of their time working with the conservator to determine how to co-locate materials, what type of storage equipment to use and what environmental conditions to achieve for each collection type. Each staff will conduct research as necessary and be involved in writing the plan and the proposal. Other staff that are not included in this grant (Collection manager in History, Head of Natural Sciences, Head of Cultural Sciences, and Assistant Registrar) will be asked to provide input and research in their areas of expertise.

Fringe Benefits

The fringe benefit rate for all staff at MPM is the same (28.21%).

Travel

The conservator will make two trips to MPM – one for the first (coordinating) meeting during which time she will also review all collection spaces and gather any information necessary to help determine co-location of collections and establish realistic environmental criteria. A second trip will be done to determine the co-location of the collection and gather any additional information needed. The conservator lives in Arizona.

McGuire Engineers is located in Chicago (just 90 miles from Milwaukee). They will make 4 trips by car to the museum to gather all information needed to make their recommendations.

Services

The museum does not currently have a conservator therefore we need to hire one on contract for this project. We have chosen Chris Del Re because she recently left the museum to move to Arizona. She has intimate knowledge of this project and has a strong desire to see this happen. She will provide us with 15 days of work – 2 days to meet with museum staff and review materials, 3 days establishing realistic environmental criteria, 5 days helping to determine how to co-locate materials, 3 days helping to determine the best type of storage furniture, and 2 days reviewing draft plans and proposals.

McGuire Engineers will provide engineering expertise for the following:

Task	Hours	Billing Rate	Total
Review past studies, etc. plus site visits		(b) (4)	
Room by room criteria			
Conceptual program			
Actual HVAC requirements, site visit			
Existing system evaluation, site visit			
5 to 10 year schedule			
Conceptual BOD for future grants			
Total			

COLLECTION SURVEY
FOR
The Milwaukee Public Museum

Catharine Hawks
Meg Loew Craft
Sian B. Jones
January 1999

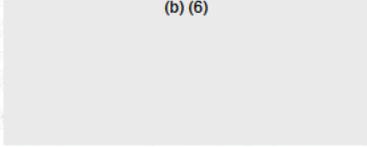
1998 IMLS CONSERVATION ASSESSMENT REPORT
MILWAUKEE PUBLIC MUSEUM

ACKNOWLEDGMENTS

This complex assessment project would not have been possible without the superb organization and preparation by Christine Del Re. Claudia Jacobson and Rose Henderson were instrumental in assembling information and helping the site visit run smoothly. In addition, the assessors are extremely grateful to MPM senior administrators who demonstrated their interest in the project by dedicating significant time for meetings with the assessors: William Moynihan, James Krivitz, Lisa Froemming, Terry Gauette and Allen Young. We also gratefully acknowledge Mary Pat Morris from Marriott and the many MPM staff who provided facilities tours, took the time to discuss aspects of the survey with us, and helped compile written information on collections, facilities and programs: Emilio Bras, Ralph Bowen, Lazar Brkich, Amy Chionchio, Wendy Christensen-Senk, Floyd Easterman, Robert Henderson, Joan Jass, Terri Johnson, Greg King, Mary Korenic, Nathan Kraucunas, Neil Luebke, John Lundstrom, Carter Lupton, Kevin Lyman, John MacArthur, Paul Mayer, Ann McMullen, Randall Mooi, Al Muchka, Jim Nickel, Gerald Noonan, Susan Otto, JoAnne Peterson, Kyle Pottratz, Rick Regazzi, Charles Rhoades, Gerald Ryack, Mike Schill, Richard Scholl, Sher Schachameyer, Peter Sheehan, Nancy Sommer, Spencer Stehno, Frank Sproehlich, Carl Taylor, Dave Teske, Dawn Scher Thomae, Judith Turner, Richard Swainston, George Ulrich, and Rodney Watkins.

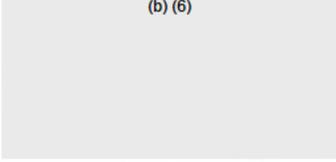
Catharine Hawks
Conservator

(b) (6)



Meg Loew Craft and Sian B. Jones
Art Conservation and Technical Services

(b) (6)



1998 GENERAL CONSERVATION ASSESSMENT
MILWAUKEE PUBLIC MUSEUM

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**1998 IMLS CONSERVATION ASSESSMENT REPORT
MILWAUKEE PUBLIC MUSEUM**

EXECUTIVE SUMMARY

INTRODUCTION

The IMLS Conservation Assessment

The reports that follow are the result of an April-May, 1998, assessment of the collections and facilities of the Milwaukee Public Museum (MPM), Milwaukee, Wisconsin, by conservators Catharine Hawks (natural science collections, facilities and environments), Sian Jones and Meg Loew Craft (cultural and decorative arts collections, facilities and environments). The assessment included: a review of storage areas, laboratories, exhibits, and all other spaces that might impact collections care; review of environmental monitoring data, collections policies and procedural documents, collections histories, and other written information related to the facilities and collections; extensive interviews with over 30 members of the museum staff and administration; and examination of collections. The project coordinator was Christine Del Re, MPM Senior Conservator and Section Head. She accompanied the consultants during the site visits, along with Claudia Jacobson, Registrar, and Rose Henderson, Collections Care Specialist. Primary funding for the assessment project was provided by a grant from the Institute of Museum and Library Services.

The purpose of the survey was to provide information to be used by the MPM staff to prepare a Long-Range Conservation Plan. A Long-Range Conservation Plan, which complements and enhances the Museum's institutional plans and goals, is essential internally to help focus energies on undertaking and completing priority conservation projects and preventative maintenance activities. Cooperation and participation are necessary, especially in an institution as large as the MPM, but with limited staff size and resources.

The Long-Range Conservation Plan is critical for seeking funds from granting agencies and foundations to support preservation activities. Both the Institute of Museum and Library Services (IMLS) Conservation Support Program and the National Endowment for the Humanities (NEH) National Heritage Preservation Project require or highly recommend inclusion of a Long-Range Conservation Plan and/or conservation surveys when applying for funds for conservation projects for preservation and stabilization of material culture collections. Such agencies increasingly ask for information to ensure that their limited funds will be wisely invested on priority projects benefiting the recipient's collections and facilities.

The goal of the survey is to make recommendations to improve the preservation prospects of the collections through examination of storage and display materials and methods, environmental and facility conditions, and museum collections' policies and procedures. While recommendations are prioritized and outlined in varying detail by the consultants, undertaking the ensuing projects including prioritizing, scheduling, funding and staffing, must be formulated by the museum staff in the Long-Range Conservation Plan. The recommendations are based on the most current and highest standards, which are unfortunately not available from a single source, but are gathered from a variety of printed material and professional and institutional practices. As many of the sources as possible are listed in the text, in the Suggested Readings, or are incorporated in the Attachments.

Milwaukee Public Museum

Milwaukee, WI

Environmental Systems Assessment

October 2001

LANDMARK FACILITIES GROUP, Inc.

252 East Avenue
East Norwalk, CT 06855
(203) 866-4626

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1. INTRODUCTION.

The objective of this project was to perform an accurate assessment of existing environmental control conditions throughout the Milwaukee Public Museum and, from this information, develop a program that will achieve realistic improvements that are in harmony with the thermal limitations of the building.

This study process consisted of the following steps:

- Analysis of temperature and relative humidity data collected in twelve locations by the Museum staff.
- Review of available design drawings for the facility
- On site inspection of building envelope, collection storage facilities and exhibit areas.
- On site inspection and selected testing of existing HVAC equipment.
- Informal workshops with representatives of various departments to identify deficiencies.
- Analysis of findings and preparation of report.

The analytical findings and improvement recommendations are presented herein.

Appreciation is expressed to the Christine Del Re and the other staff members at the Milwaukee Public Museum who worked with us on this most ambitious project.

2. EXECUTIVE SUMMARY

a. Findings.

The Milwaukee Public Museum is a unique facility housing a broad spectrum of collections. The staff has done an admirable job of maintaining the building and collections given the shifts in funding and ownership over the past few years.

The collections include anthropology, history, botany, geology, and zoology. Many of the collections are moisture sensitive and require a stable environment to prevent degradation over time. Also, there are numerous collections that contain organic materials that can be damaged by mold. Several storage areas and the Library show signs of current or past mold activity.

The analysis of the temperature and relative humidity monitoring data showed that the temperature and relative humidity conditions in the Museum are subject to wide fluctuations, especially during the intermediate seasons. Relative humidity was more variable than temperature and, in some locations, experienced frequent, short duration swings as high as 30%. Relative humidity also exceeded 65% in some areas, which is generally considered the threshold at which mold spores will become active.

The building was built in the early 1960's with a thin exterior shell, single glazed windows, and no known insulation. Considering the construction materials, it is likely the building was not originally intended to support a humidified interior climate during the winter. The thermal limitations of the building envelope pose a significant limitation to any proposed environmental criteria within the building.

Space use has remained relatively unchanged since the building was originally occupied. Generally, administrative offices, limited collections storage, and labs are located on the fourth, fifth, and sixth floors; exhibit areas are located on the first, second and third floors; collections storage and mechanical spaces are

located in the basement. However, there are numerous areas where special storage and conservation activities have been inserted into spaces not originally intended for collections, resulting in mixed zones. Also, the need for the facility to generate revenue has created a situation where galleries throughout the Museum are rented for large private functions and the climate control system cannot provide adequate cooling and ventilation.

The air handling equipment in the building was recently replaced. Unfortunately, the existing air distribution deficiencies and several control deficiencies were not addressed as part of the air handler replacement program. Also, the humidification equipment is not performing properly and may not be suitable for use in a museum.

Although life safety issues are not a part of this analysis, catastrophic loss due to fire is a serious threat when considering the preservation of collections. The collections represent a significant fuel load in the event of a fire and the building does not contain an automatic fire suppression system. Further, many of the air handling system return air grilles are located in exit corridors and this is considered a fire safety hazard.

b. Recommendations

We envision a two-part environmental improvement program for the Milwaukee Public Museum. The first part consists of immediate measures that need to be undertaken to protect the building and/or the collections. The second part consists of developing a comprehensive master plan for the future building envelope and climate control improvements. The proposed improvement program is as follows:

i. Immediate Measures

1. Repair or replace faulty humidifiers for AHU-403, AHU-405, and AHU-601.

2. Improve environmental control for collections storage in the basement.
3. Install new refrigeration system for the Fur Vault.
4. Install air filtration equipment for the Hide Vault.
5. Improve storage facility for cellulose nitrate films.
6. Develop designated rental function areas and upgrade the HVAC serving those areas.
7. Provide supplemental air conditioning for the Uihlein Gallery.
8. Introduce highly filtered ventilation into closed dioramas
9. Improve air circulation to the exterior walls in the upper floor areas of the building as a temporary measure to prevent mold growth.
10. Create new climate controlled storage areas for selected moisture sensitive collections.
11. Install water treatment for the humidifier water serving the Vivarium.
12. Expand the direct digital control system to include zone reheat coils in the galleries.
13. Calibrate temperature and relative humidity sensors.

ii. Master Plan

The existing building envelope does not possess adequate thermal and moisture transmission characteristics to support "museum quality" climate control. There are also numerous deficiencies in the existing air distribution system throughout the building. The complete renovation of the building envelope and air handling systems would be extremely expensive and disruptive. Further, it may not be necessary to undertake a complete renovation to provide a suitable environment for the long-term preservation of collections. The Master Plan would encompass the following:

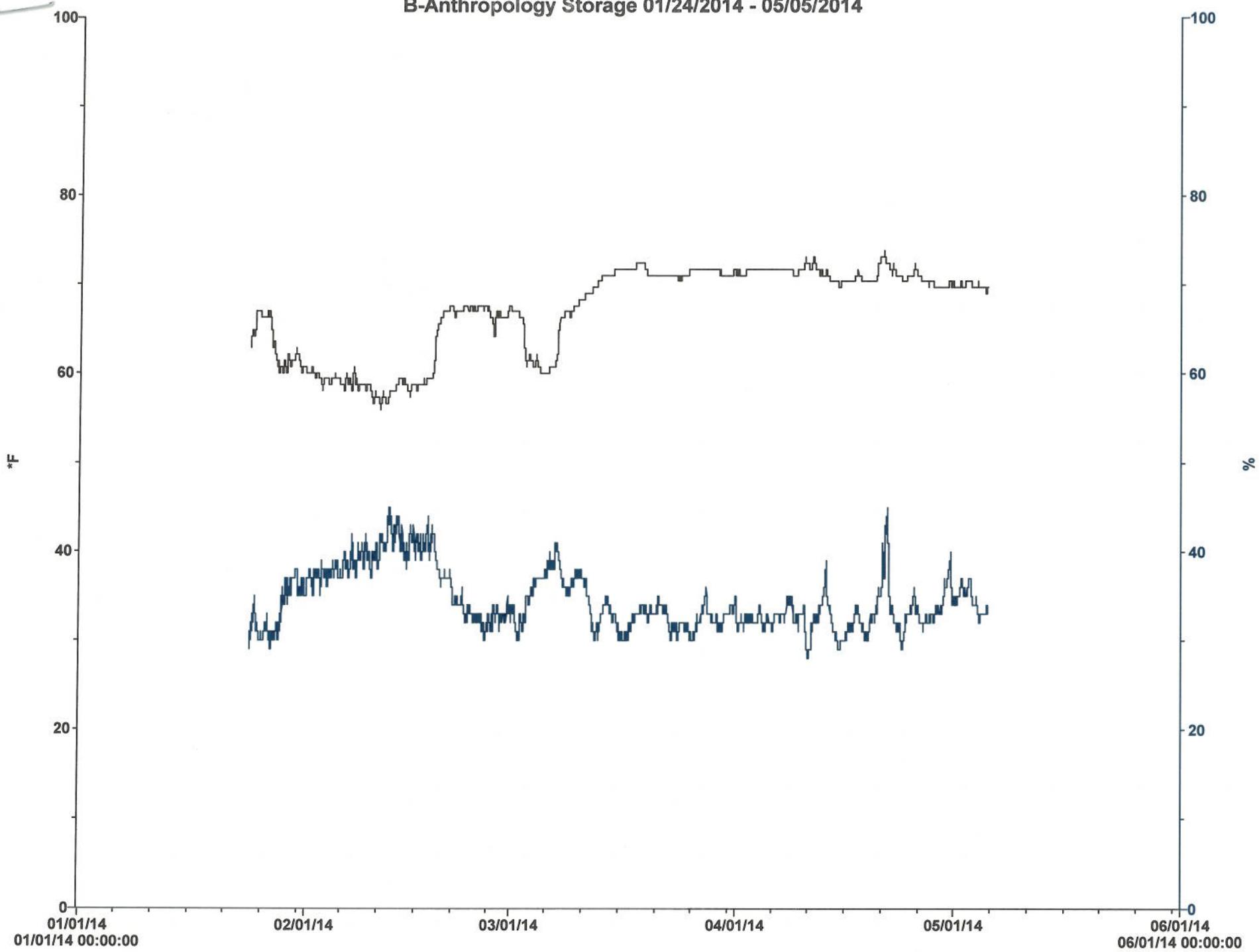
1. Establish realistic environmental criteria on a room-by-room basis throughout the facility.
2. Work with the Museum staff to determine how collections with similar environmental needs could be co-located with in the building

3. Develop a program for improvements to the building envelope based on the actual environmental needs of specific collections.
4. Analyze the actual heating, cooling and ventilation requirements throughout the Museum
5. Evaluate the existing air distribution system to identify ductwork modifications required to match actual load requirements
6. Determine the size and quantity of air handlers necessary to support the load.
7. Develop a five to ten year schedule for implementing the changes as room use is changed or galleries are reinstalled.

An annual budget outlay of about \$500,000 should be considered to improve the building envelope and systems to support an environment appropriate for the collections.

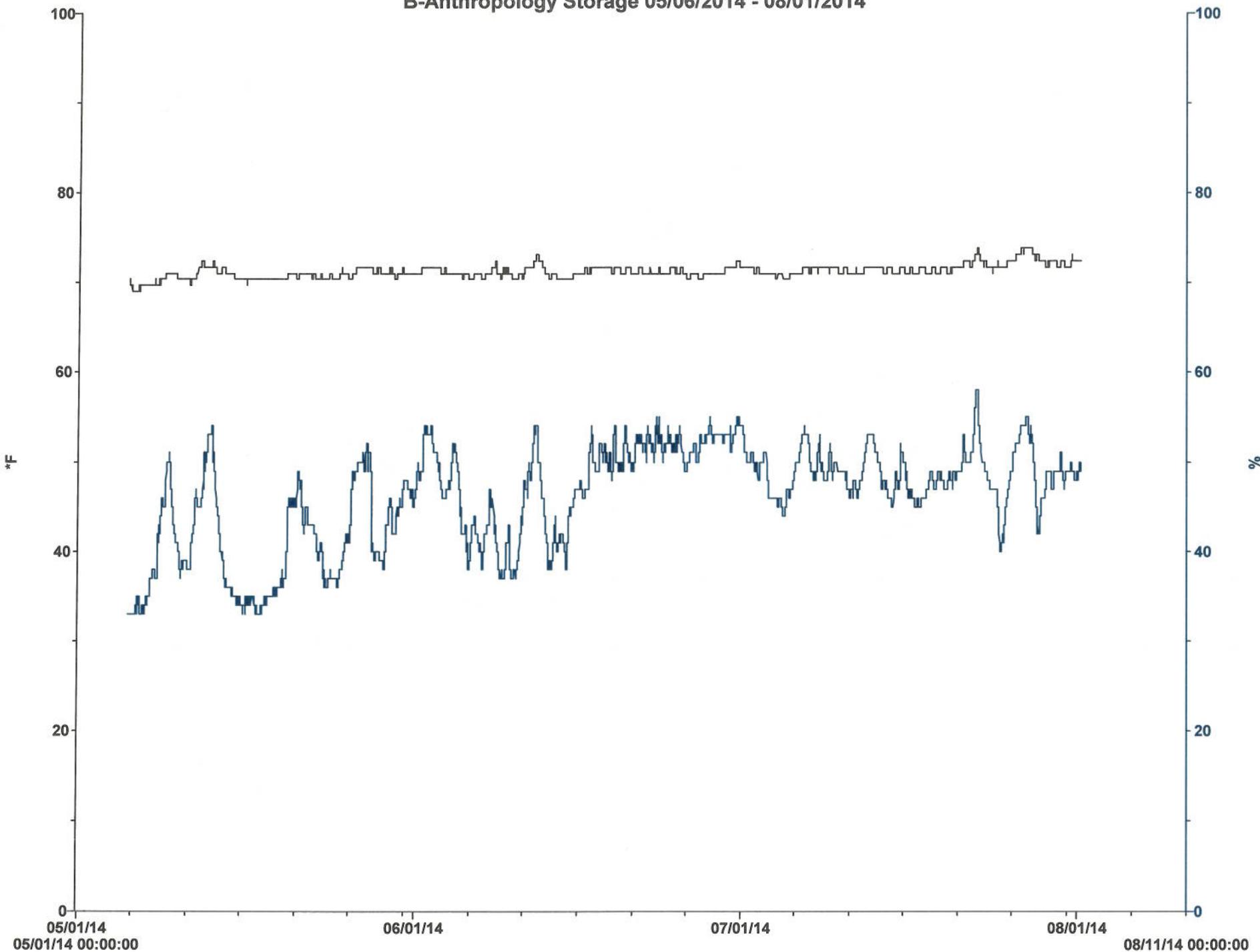
The text that follows presents our findings in further detail.

B-Anthropology Storage 01/24/2014 - 05/05/2014



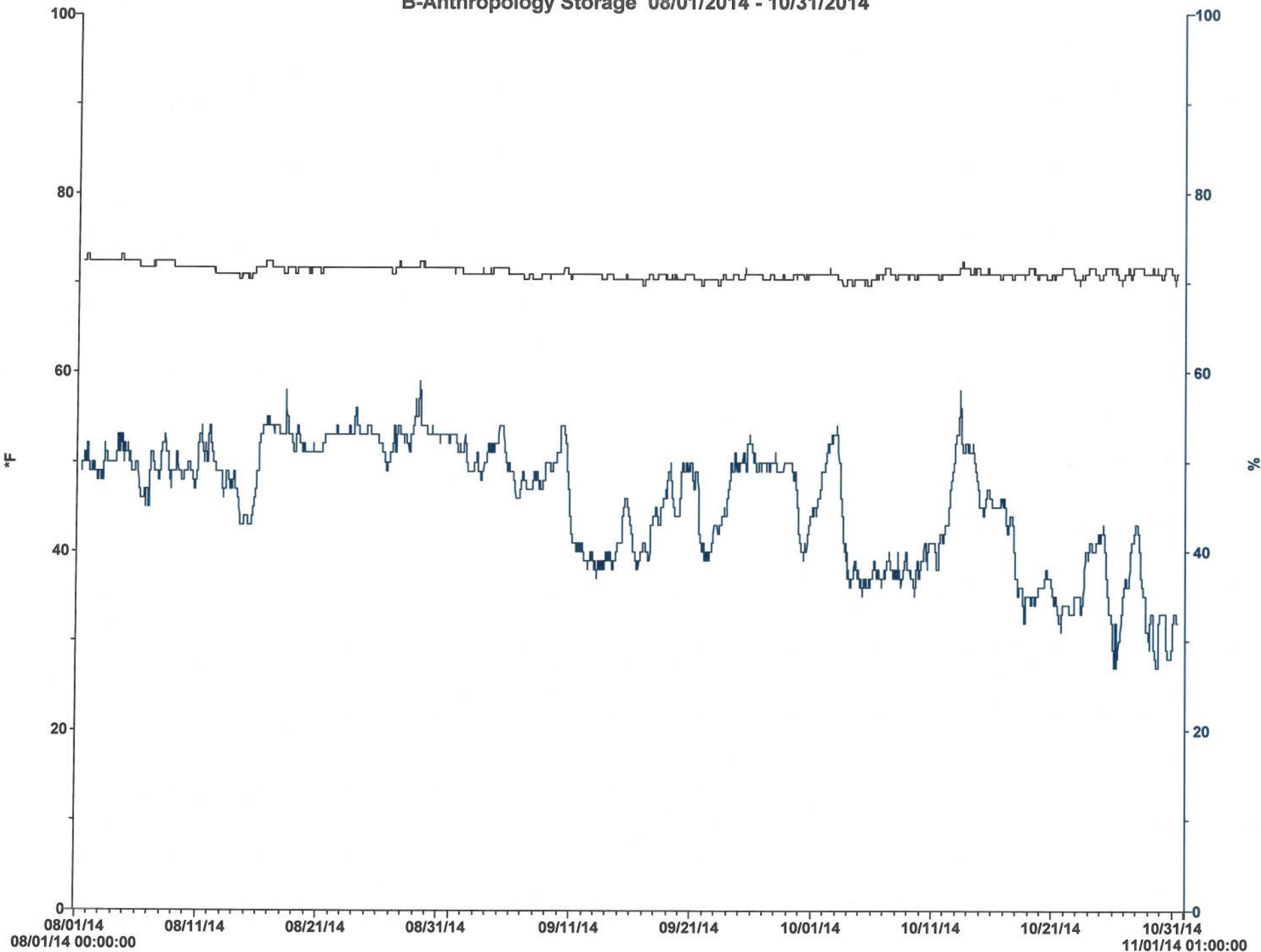
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B-Anthropology Storage 05/06/2014 - 08/01/2014



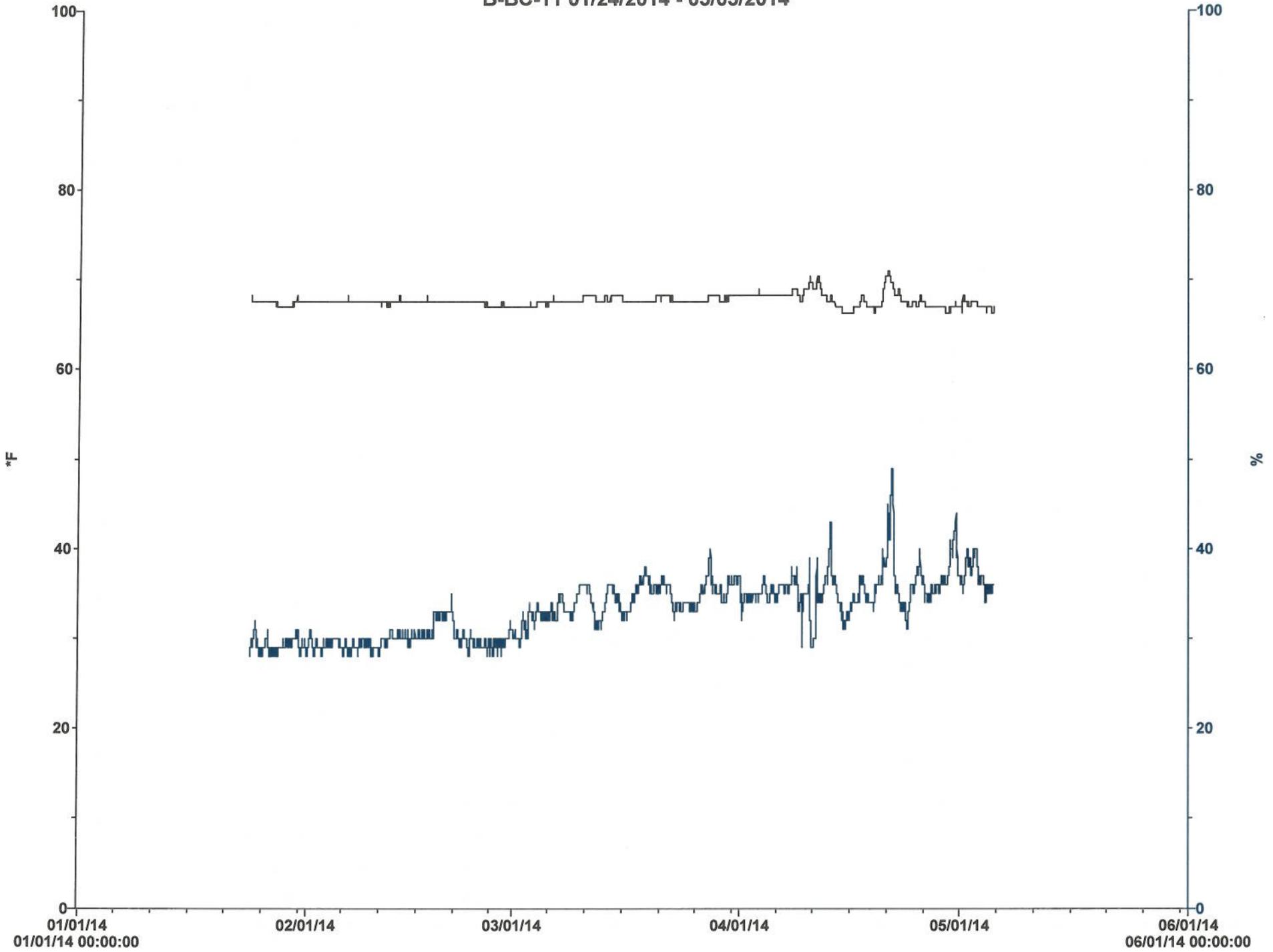
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B-Anthropology Storage 08/01/2014 - 10/31/2014

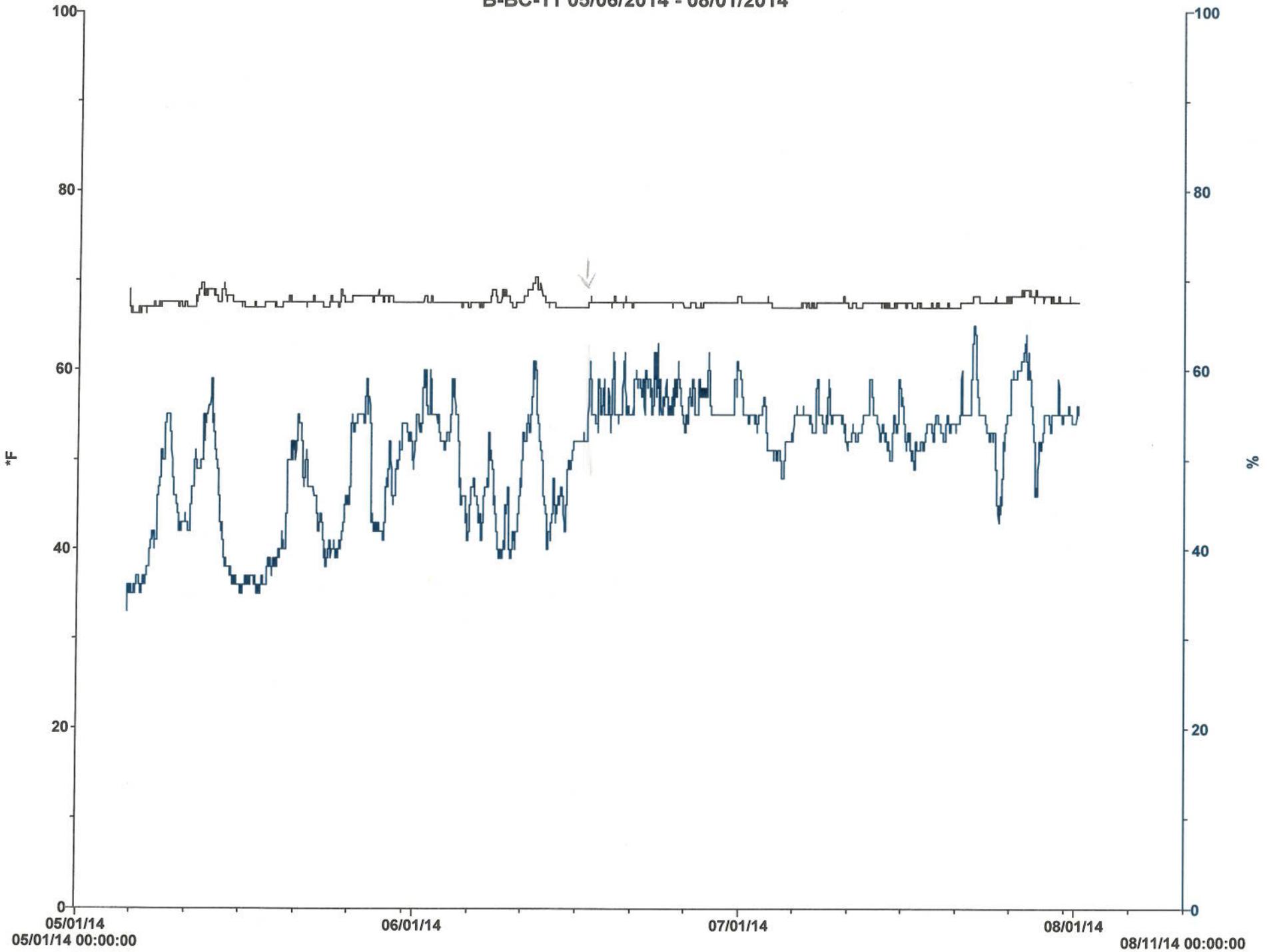


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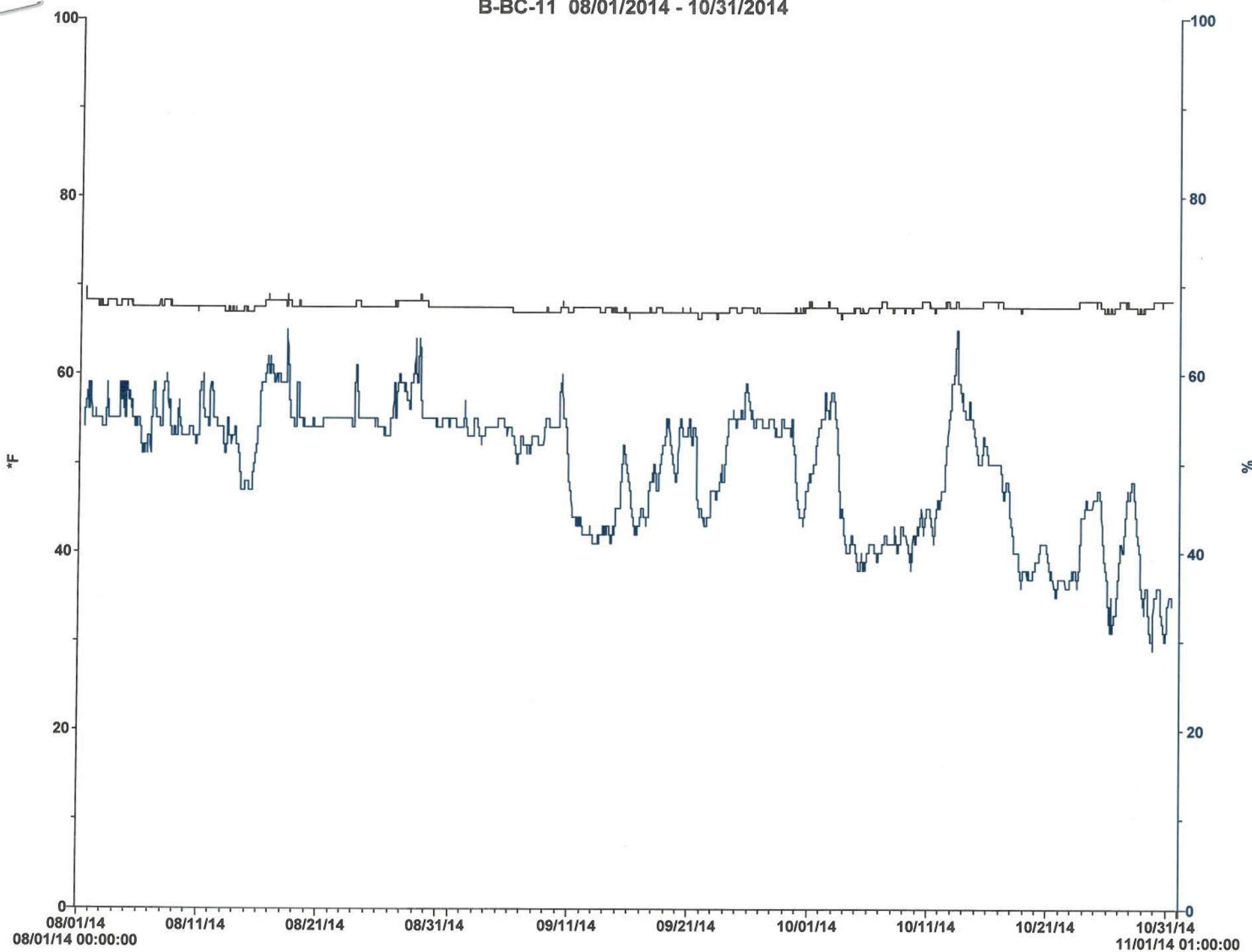
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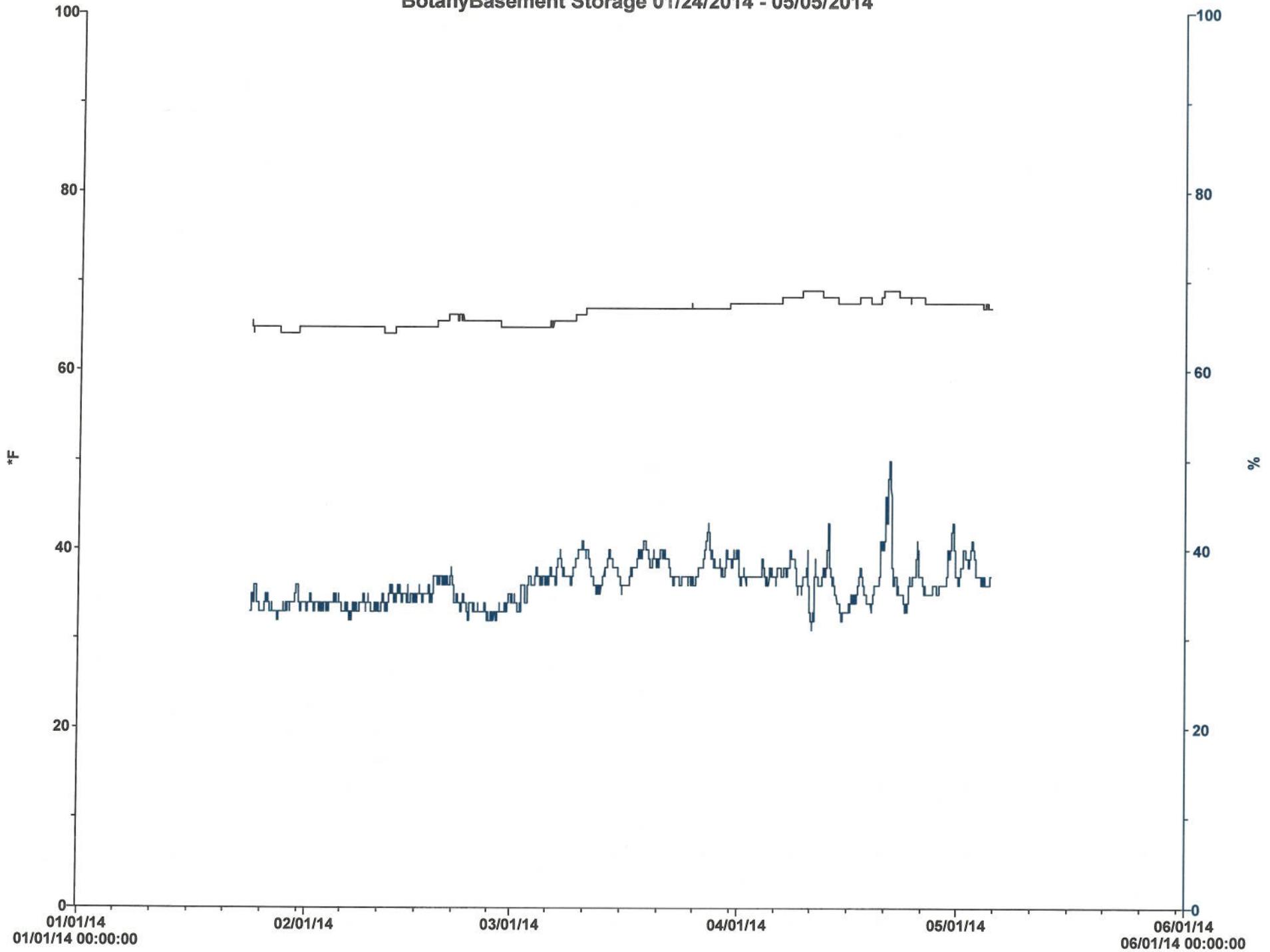


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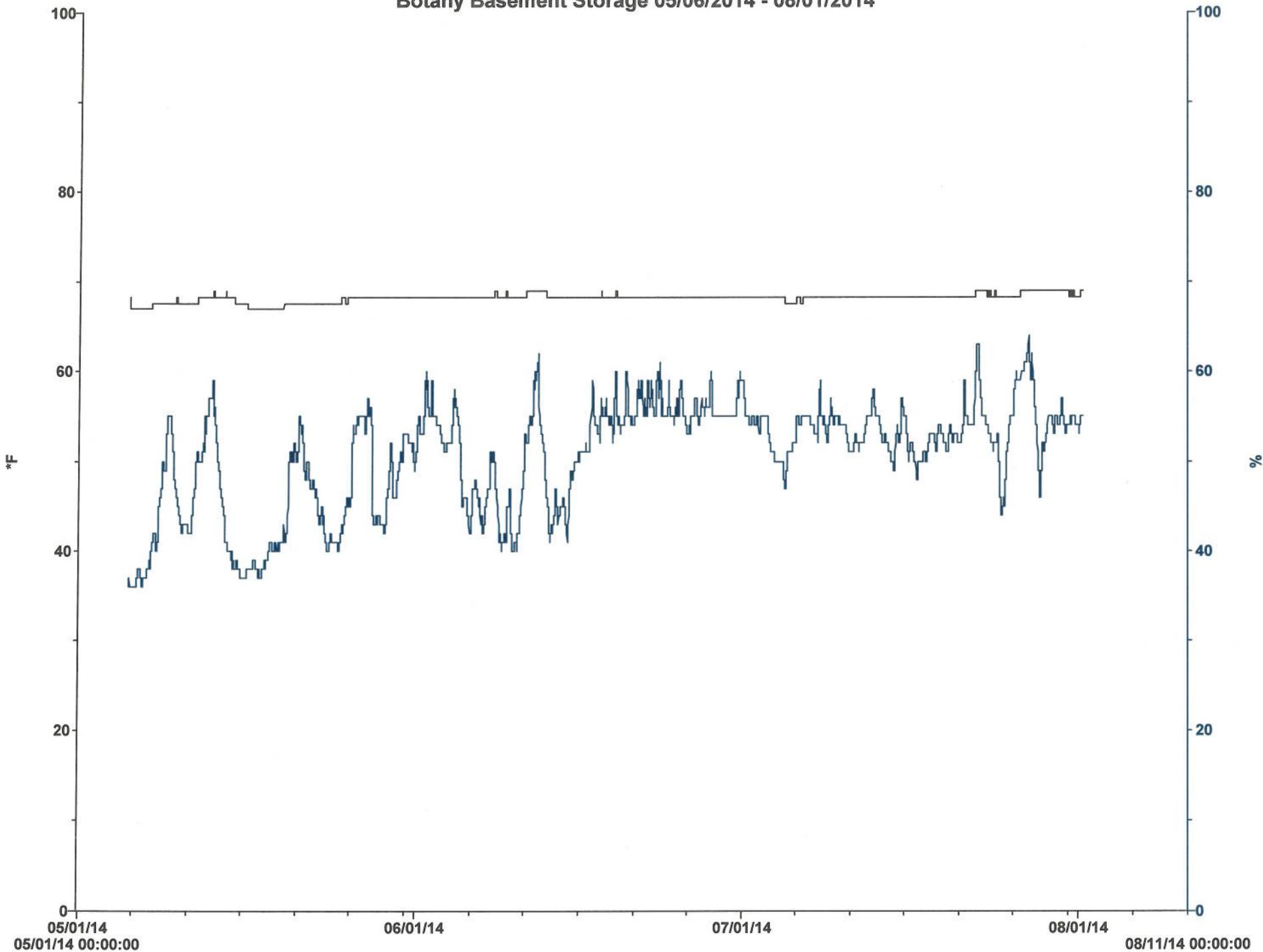


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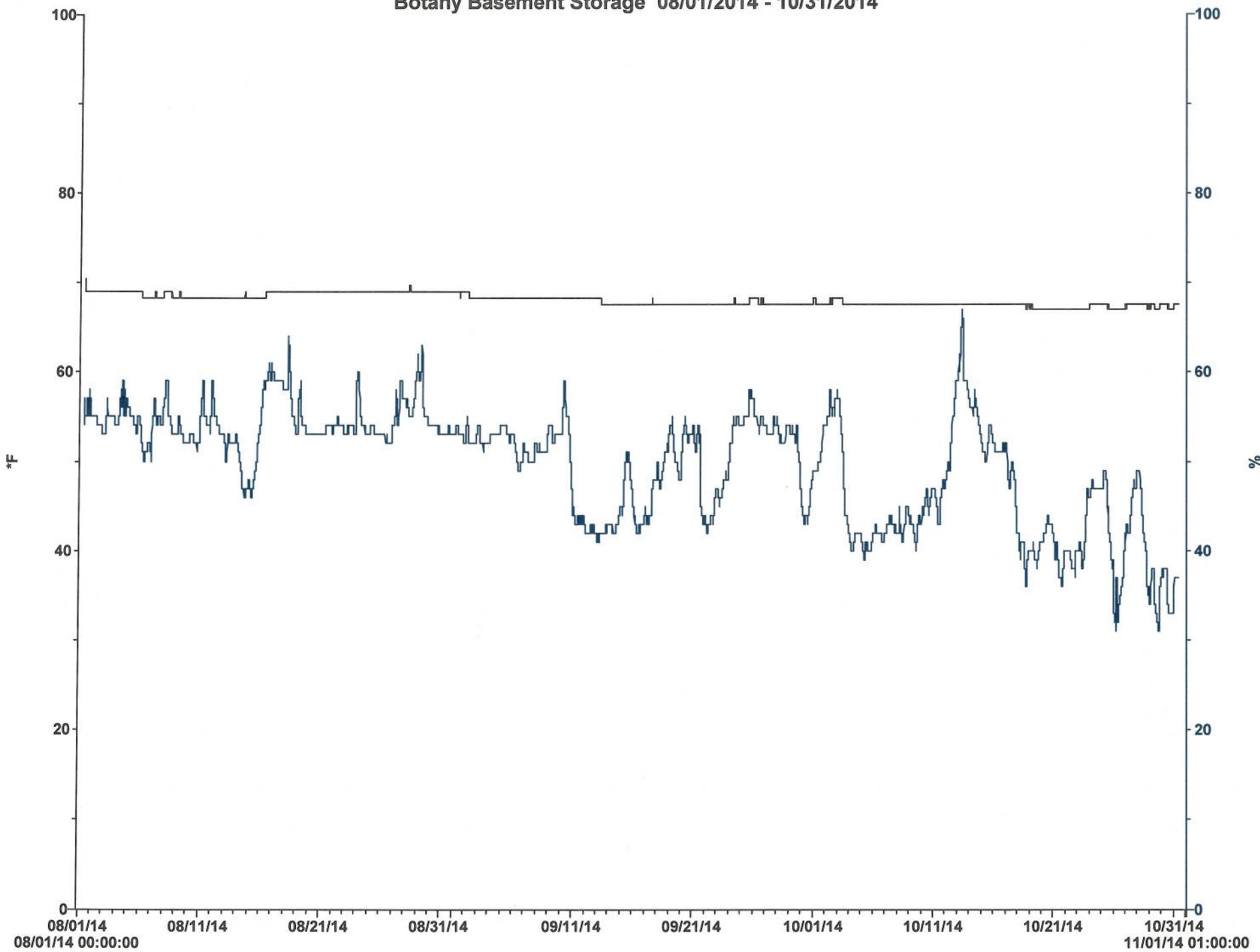


Botany Basement Storage 05/06/2014 - 08/01/2014



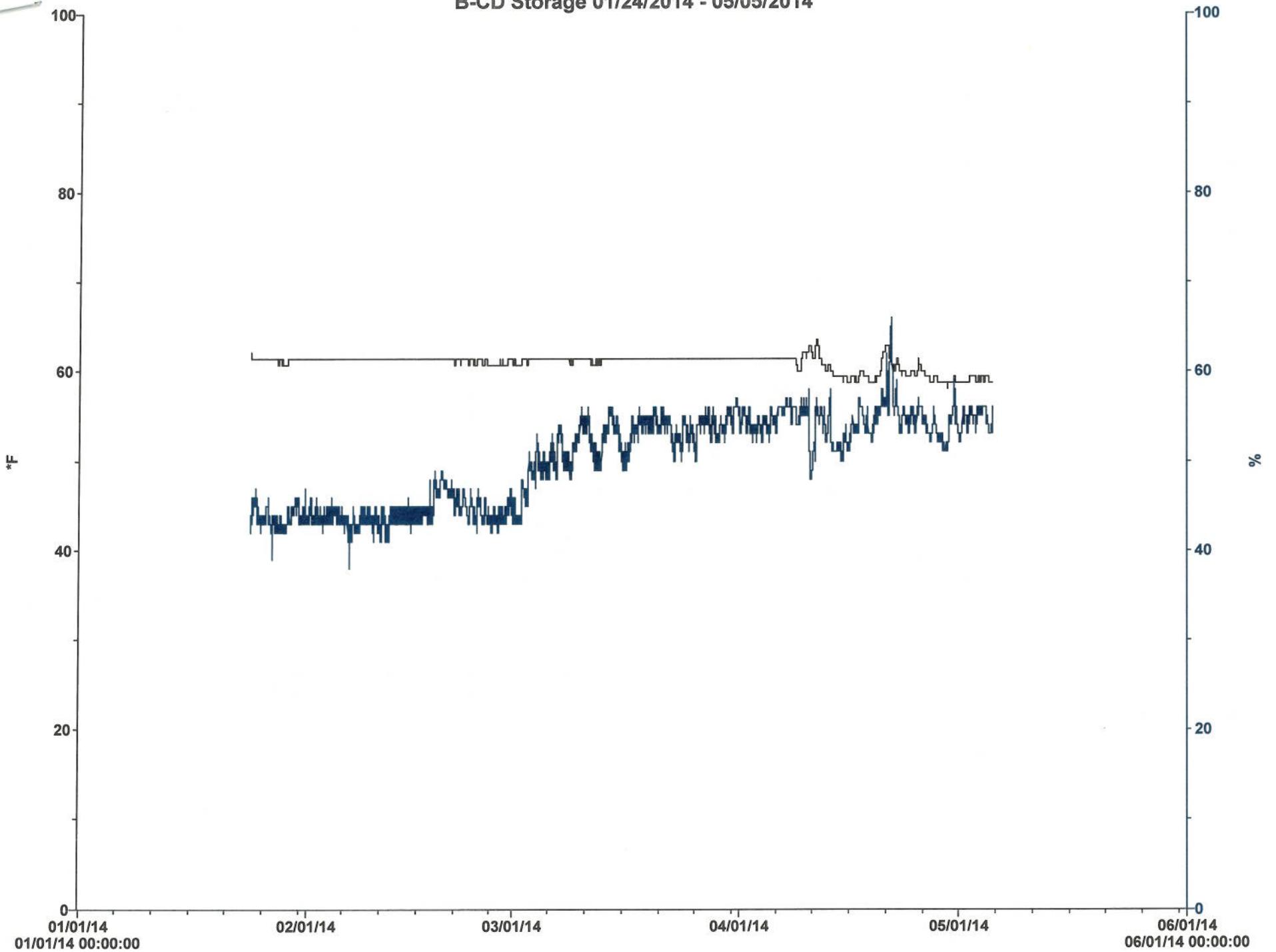
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Botany Basement Storage 08/01/2014 - 10/31/2014

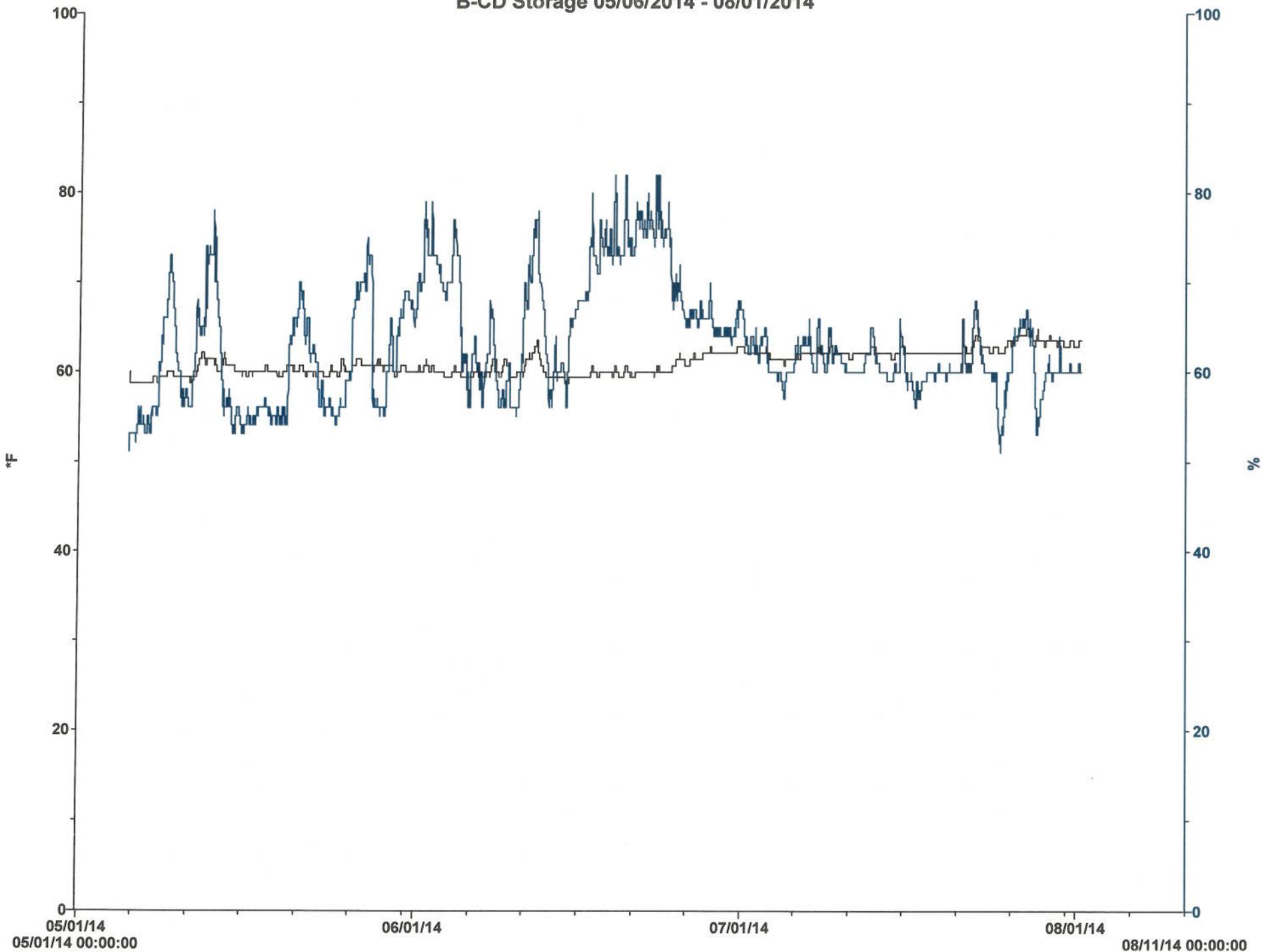


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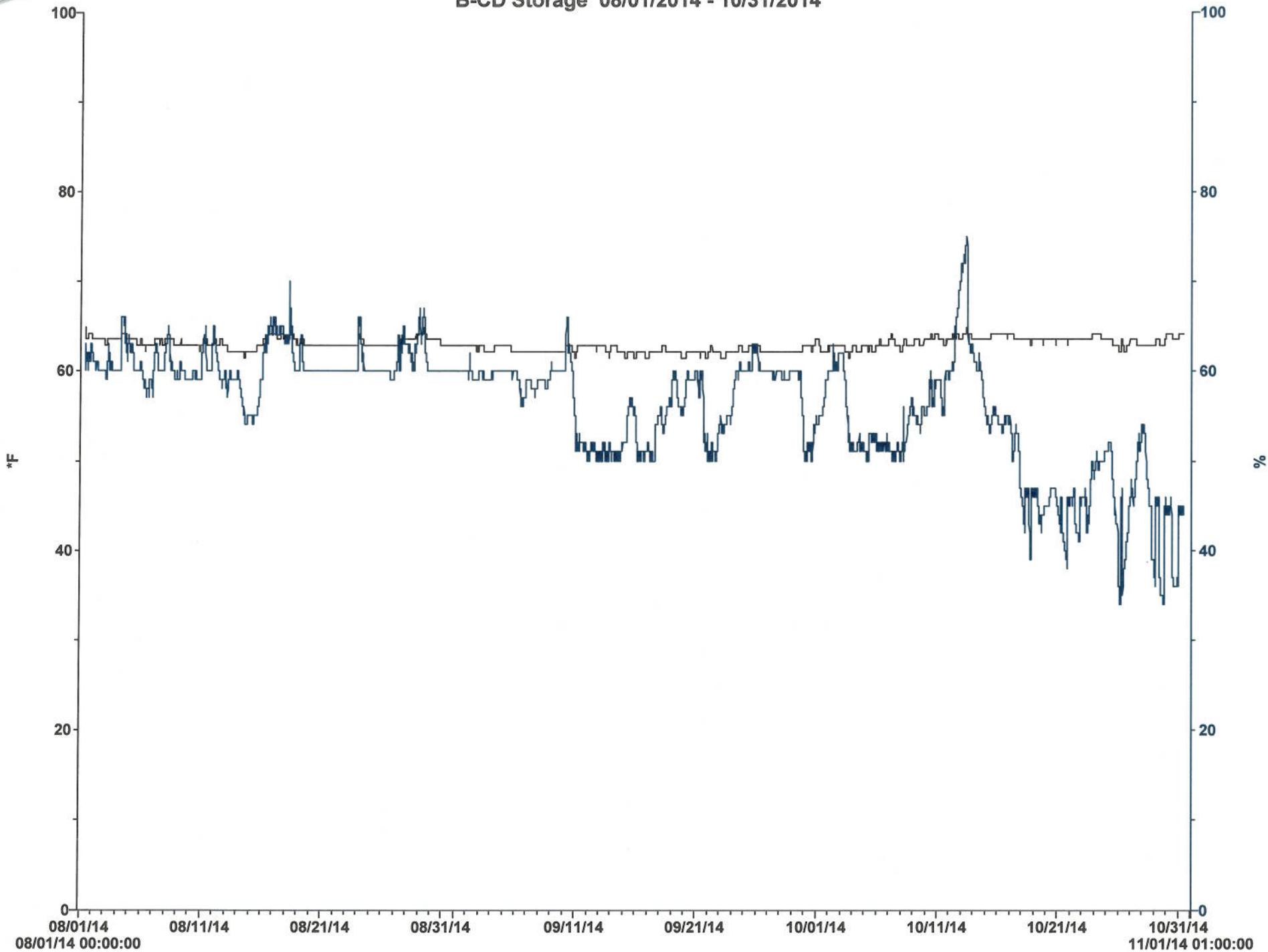
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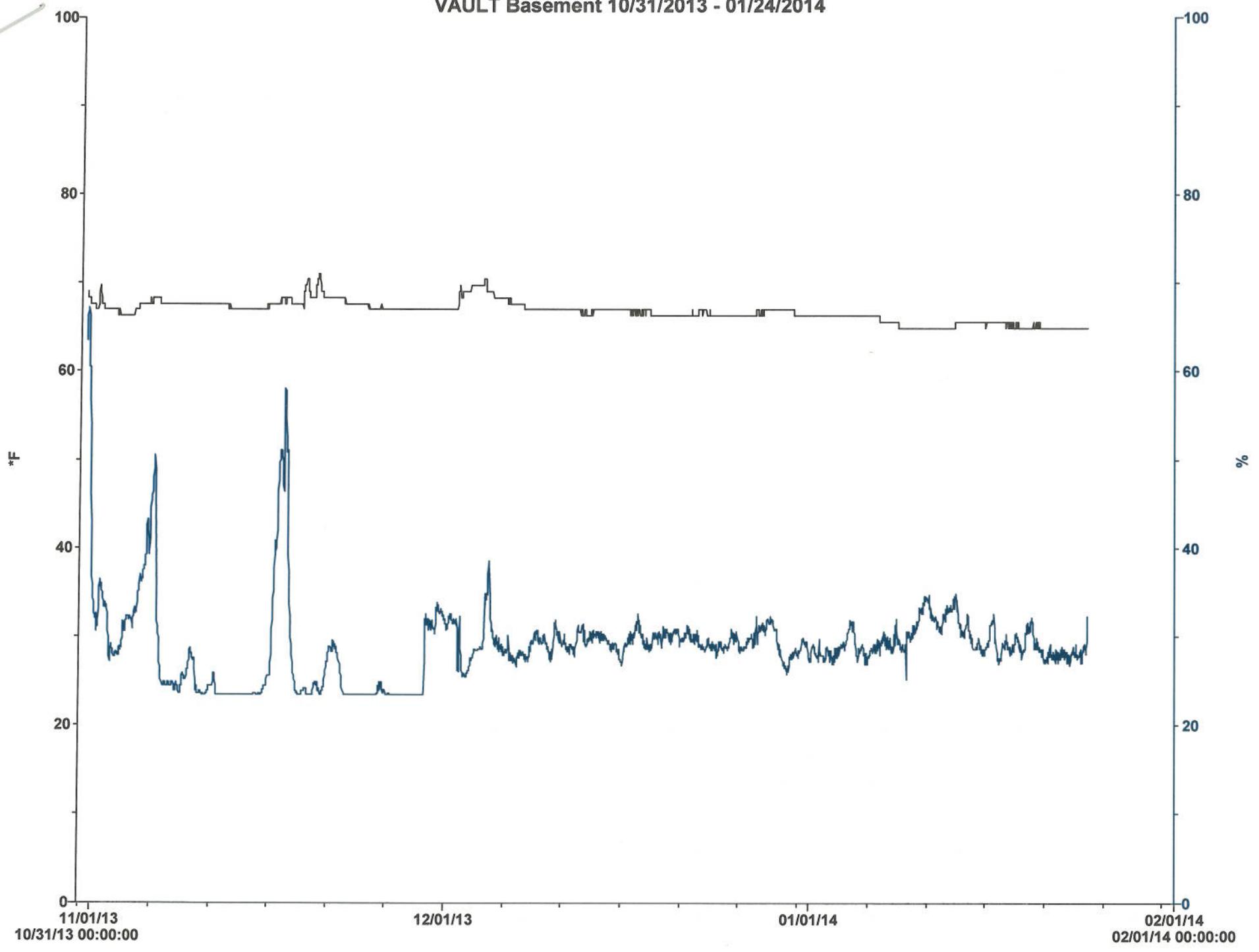


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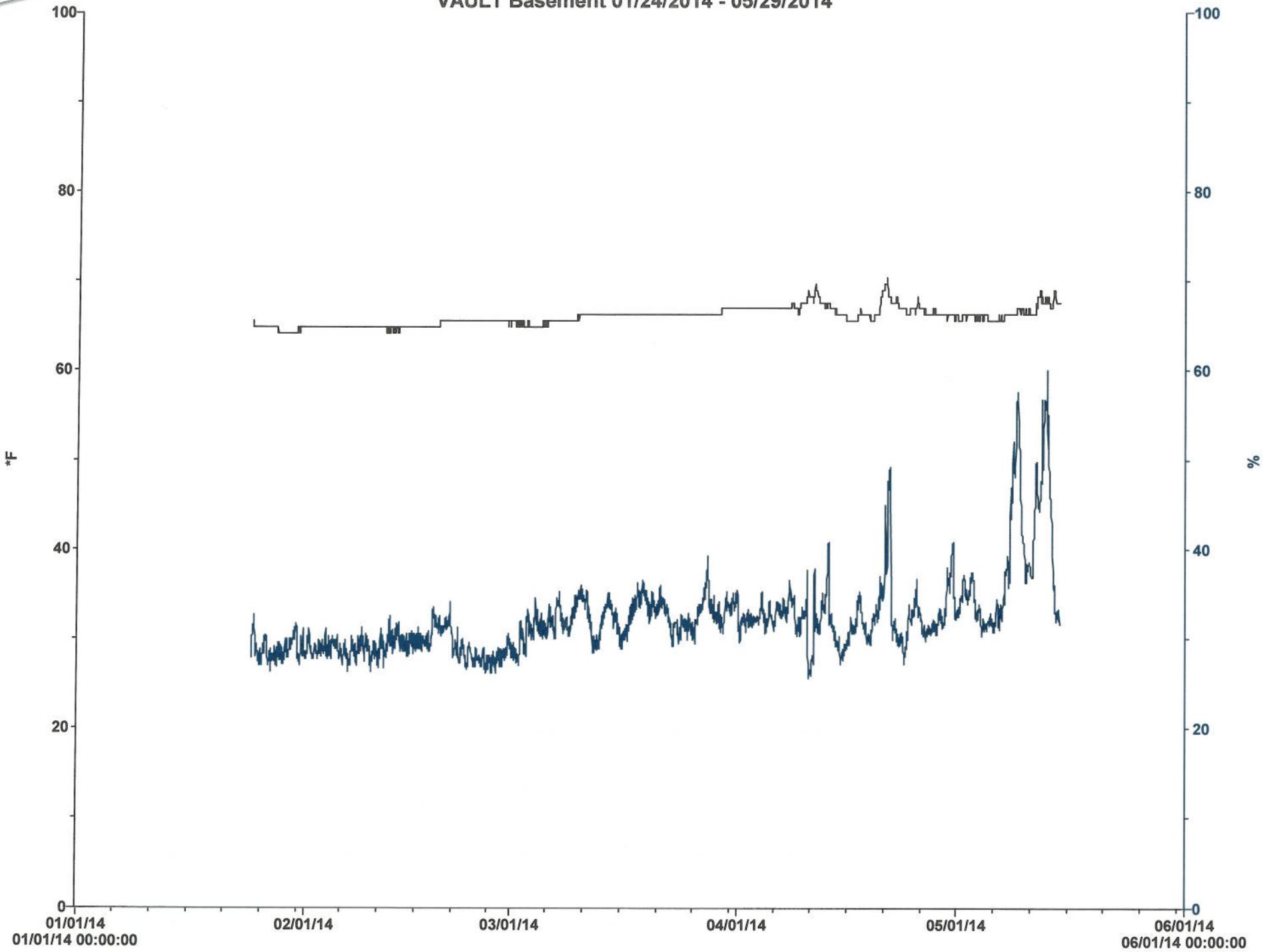
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VAULT Basement 10/31/2013 - 01/24/2014



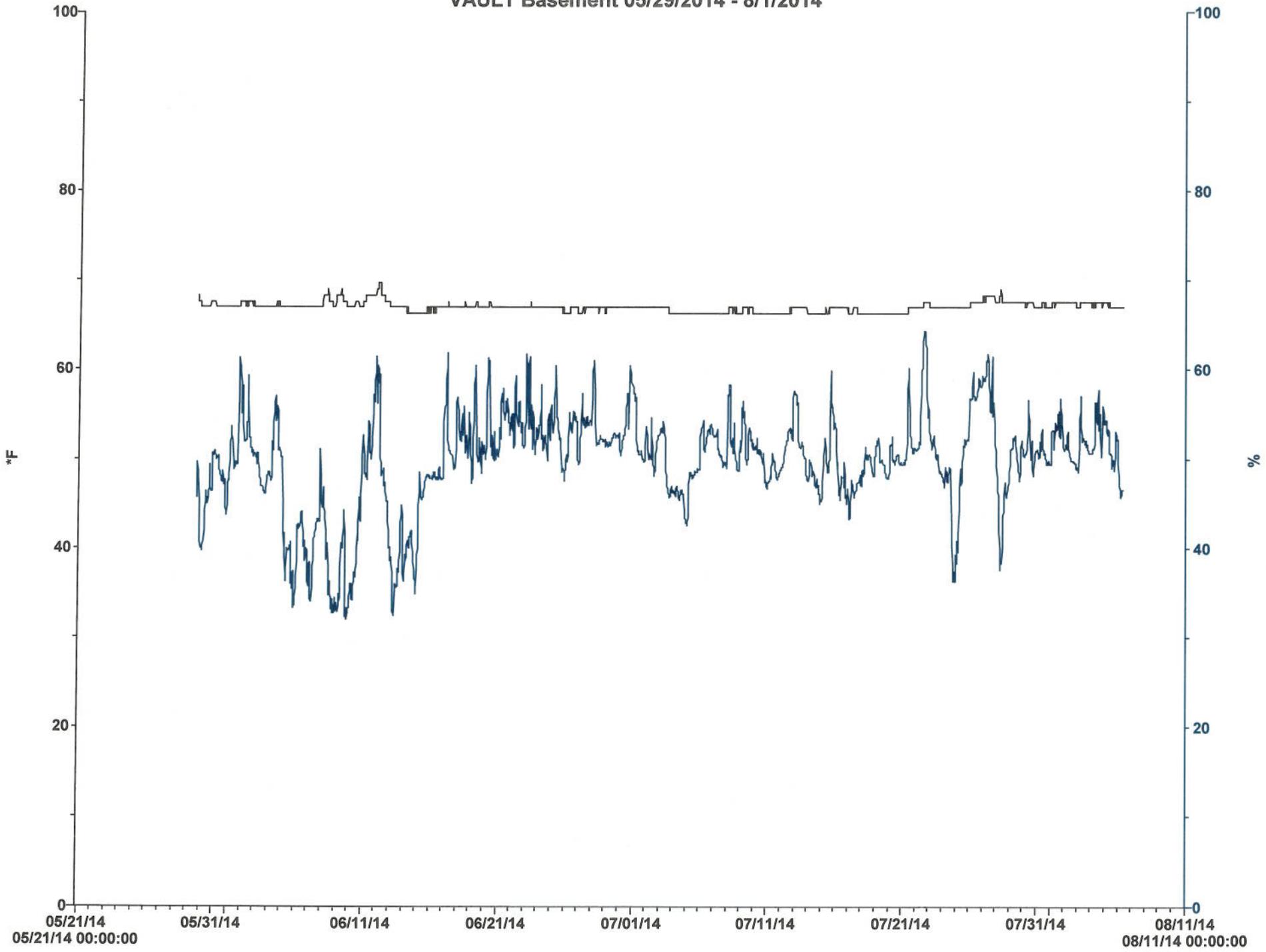
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VAULT Basement 01/24/2014 - 05/29/2014



GRANT11791003 - Attachments-ATT7-1240-appendices.pdf

VAULT Basement 05/29/2014 - 8/1/2014



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**Milwaukee Public Museum (MPM)
Sustainable Policy**

The mission of the Milwaukee Public Museum is to *inspire curiosity, excite minds and increase desire to preserve and protect our world's natural and cultural diversity through exhibitions, educational programs, collections and research*. Implicit in this mission is the commitment of the museum to providing and promoting a healthy and sustainable environment for staff* and visitors through standards and practices based on:

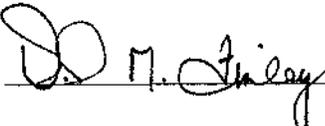
- the use of energy efficient vehicles and equipment
- the reduction or elimination of environmentally harmful products
- the systematic replacement of environmentally wasteful products
- minimization of water use
- enhancement of air quality
- the optimization of recycling and reusing
- daily energy-saving measures employed by staff
- a commitment to lead and educate the community in sustainability practices
- the education of staff and visitors regarding all of the above

Policies

- A. Procurement & Replacement - MPM staff will order and use recycled content and environmentally-friendly products unless such products do not perform satisfactorily and/or are unreasonably priced.
- B. Waste Prevention - MPM staff will incorporate practices into their daily activities to reduce consumption of resources & reuse materials whenever feasible.
- C. Recycling - MPM staff will recycle all materials that the contractor accepts. In addition, MPM staff will reuse signage, exhibit materials, etc. where possible.
- D. Building & Construction - MPM staff will ensure that building and construction are done to LEED standards or other comparably-accepted practices for sustainability, unless unreasonably priced.
- E. Education - MPM staff will be educated on all of the policies and practices contained herein and will educate public of same.

Best practices to meet MPM's sustainability standards are described in the addendum to this document.

The Sustainability Policies of MPM will be applicable to all of its activities. Performance of practices will be reviewed on an annual basis.

Approved by  Date 8/18/09

**the term "MPM Staff" throughout this document is inclusive of staff, volunteers, and interns as applicable*

MPM Sustainability Policy Addendum: Best Practices

- A. Procurement & Replacement Practices – MPM staff should order recycled content and environmentally-friendly products unless such products do not perform satisfactorily and/or are unreasonably priced. Examples:
- a. Printing and writing paper including all imprinted letterhead, envelopes, copy paper and business cards
 - b. Paper products including janitorial supplies, facial tissue, toilet paper, file folders, and other products composed largely of paper.
 - c. Fair-trade coffee and local food products
 - d. Soy ink products
 - e. Recycled content construction products including carpet, tiles, etc.
 - f. Fuel efficient or alternative energy vehicles when possible.
 - g. EnergyStar-rated computers and other equipment.
 - h. Motion-sensor light switches
 - i. Low VOC (Volatile Organic Compounds) products (e.g., paints, glues, wood products, cleaning products) to reduce off-gassing in the building
 - j. Reduce or eliminate pesticides/corrosives use on MPM grounds
 - k. Hepa filtered vacuums
- B. Waste Prevention Practices – MPM staff should reduce consumption of resources by incorporating the following practices into their daily activities. Examples:
- a. Consider durability and reparability of products prior to purchase.
 - b. Conduct routine maintenance on products/equipment to increase the life of use.
 - c. Use duplex features on copiers and printers (if available).
 - d. Create electronic letterhead for use by all departments.
 - e. Ask for electronic documents rather than paper.
 - f. Send and store information electronically when possible.
 - g. Review records retention policies and implement document imaging system.
 - h. Recycle paper printed on one side by using for draft paper, memo pads, fax paper and draft printings.
 - i. Use reusable beverage containers instead of disposable cups.
 - j. Set narrow margins on page layout.
 - k. Turn off lights when not in room for more than 15 minutes
 - l. Take stairs rather than elevator
 - m. Keep doors closed throughout building.
 - n. Reduce particulates in air system
 - o. Other waste prevention practices that further the goals of this policy.
- C. Recycling Practices – MPM staff will recycle all materials that the City of Milwaukee accepts. In addition, MPM staff will reuse signage, exhibit materials, etc. where possible. Examples:
- a. Aluminum
 - b. Plastic (#1 and #2)
 - c. Newspaper
 - d. Mixed paper
 - e. Cardboard
 - f. Florescent light bulbs (mercury)
 - g. Exhibit materials

- h. Computers and other equipment
- i. Toner cartridges
- j. Cell phones
- k. Batteries
- l. Other materials

D. Building & Construction Practices – MPM staff should ensure that building and construction are done to LEED standards or other comparably-accepted practices for sustainability, unless unreasonably prices. Examples:

- a. Choose materials that reflect heat when repaving/reroofing
- b. Install green roofs where possible
- c. Collect water from downspouts
- d. Place light shields on all 50W or over outside lights so they reflect down instead of up
- e. Replace/Install (as feasible) low-flow plumbing fixtures and/or install/adjust sensors on plumbing fixtures – make sure all are working properly
- f. Native, climate-appropriate plants to be used in landscaping
- g. Maximize alternative energies (as feasible) by installing solar panels on roof and possibly wind turbine systems
- h. Contain pollutants during construction
- i. Contain runoff from parking lot so that oil/etc. does not enter sewer

E. Education - MPM staff will be educated on all of the policies and practices contained herein and will educate public of same. Examples:

- a. Staff will receive training on sustainability policy and practices, especially as new practices/procedures are added.
- b. The New Staff Orientation will include training on sustainability policy and practices.
- c. Upon installation of products/equipment or establishment of procedures throughout MPM, signage will be posted to instruct and inform staff and visitors regarding policy and practices.
- d. In addition to individual signage, MPM practices will be clearly posted at staff bulletin board and website; internal policies and procedures will be posted on intranet.
- e. MPM will track our progress toward sustainability and report it to the staff.
- f. Each year, the policy and procedures will be reviewed by the Green Committee to determine if it is current and appropriate.
- g. Sustainability events and programming will be incorporated into MPM plans.
- h. Opportunities for exhibiting/showcasing efforts, and grants and partnerships to enhance sustainability plans will be pursued

Personal Practices - MPM staff are encouraged to incorporate the work practices contained herein within their personal lives. Examples:

- a. MPM promotes the use of bus transport through commuter value program.
- b. MPM encourages carpooling, biking, or walking to work.
- c. Strive for a “no waste” lunch. Pack lunches in reusable containers and sacks. Avoid purchasing items packaged as individual servings.
- d. Request to be removed from mailing lists for any unwanted catalogs (ex. www.cataloguechoice.org) and mail (ex. www.stopjunkmailing.com, www.greendimes.com).

MILWAUKEE PUBLIC MUSEUM
Long-Range Collection Preservation Plan

Updated
September 1, 2003

Submitted by:

Collection Care Task Force

Christine Del Re, Claudia Jacobson,
Carter Lupton, Dr. Alex Barker

Supported in part by Conservation Project Support Grant # IC-70035-97
from the Institute of Museum and Library Services, a Federal agency established by Act of Congress in 1996
to improve museum, library and information services.

MILWAUKEE PUBLIC MUSEUM
LONG-RANGE COLLECTION PRESERVATION PLAN

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MILWAUKEE PUBLIC MUSEUM
LONG-RANGE COLLECTION PRESERVATION PLAN

Introduction

The Collection Preservation Plan that follows is the result of an April-May 1998 assessment of the collections and facilities of the Milwaukee Public Museum (MPM), Milwaukee, Wisconsin by conservators Catharine Hawks (natural science collections, facilities and environments), Sian Jones and Meg Loew Craft (cultural and decorative arts collections, facilities and environments). The assessment included: a review of storage areas, laboratories, exhibits, and all other spaces that might impact collections care; review of environmental monitoring data, collections policies and procedural documents, collections histories, and other written information related to the facilities and collections; extensive interviews with over 30 members of the museum staff and administration; and examination of collections. The project coordinator was Christine Del Re, MPM Senior Conservator and Section Head. She accompanied the consultants during the site visits, along with Claudia Jacobson, Registrar, and Rose Henderson, Collection Care Specialist. Primary funding for the assessment project was provided by a grant from the Institute of Museum and Library Services.

The purpose of the survey was to provide information to be used by the MPM staff to prepare a Long-Range Collection Preservation Plan. A Long-Range Collection Preservation Plan, which complements and enhances the Museum's institutional plans and goals, is essential to help focus MPM's energies on undertaking and completing priority preservation projects and preventative maintenance activities. Cooperation and participation are necessary, especially in an institution as large as the MPM, but with limited staff size and resources.

The goal of the survey was to make recommendations to improve the preservation prospects of the collections through examination of storage and display materials and methods, environmental and facility conditions, and museum collections' policies and procedures. While recommendations were prioritized and outlined in varying detail by the consultants, undertaking the ensuing projects including prioritizing, scheduling, funding and staffing and must be formulated by MPM's staff in the Long-Range Collection Preservation Plan. The surveyor's recommendations are based on the most current and highest standards, which are unfortunately not available from a single source, but are gathered from a variety of printed material and professional and institutional practices. The recommendations are designed to help the MPM develop a staged plan to improve collections care.

The Long-Range Collection Preservation Plan is critical for seeking funds from granting agencies and foundations to support preservation activities. Both the Institute of Museum and Library Services (IMLS) Conservation Support Program and the National Endowment for the Humanities (NEH) National Heritage Preservation Project require or highly recommend inclusion of a Long-Range Collection Preservation Plan and/or conservation surveys when applying for funds for conservation projects for preservation and stabilization of material culture collections. Such agencies increasingly ask for information to ensure that their limited funds will be wisely invested on priority projects benefiting the recipient's collections and facilities.

MILWAUKEE PUBLIC MUSEUM
LONG-RANGE COLLECTION PRESERVATION PLAN

Long-Range Collection Preservation Plan

Collections Preservation Mission Statement

- MPM's institutional mission statement states that the museum "holds its collections as a public trust and is dedicated to their preservation for the enrichment of present and future generations." This firmly acknowledges the museum's responsibility for collection preservation. In addition, the museum has developed a Strategic Agenda, one goal of which focuses on collections and research, and incorporates a critical review of current levels of collections management, planning, care and preservation.
- One of MPM, Inc.'s goals is to collect, preserve, and study those objects which enhance understanding of nature and culture.
- Towards this end, MPM is committed to insuring the highest level of care for all of the collections entrusted to its custody. Implementation of the Long-Range Collection Preservation Plan (LRCPP) will provide the safeguards necessary to guarantee the integrity, longevity and accessibility of the collections.
- Preventive conservation methods will be considered prior to interventive treatment. Priority for collection care initiatives will be given to projects which impact the largest number of specimens with the available resources. Consideration will also be given to the urgency of a problem or the need for preliminary steps prior to instituting major changes.

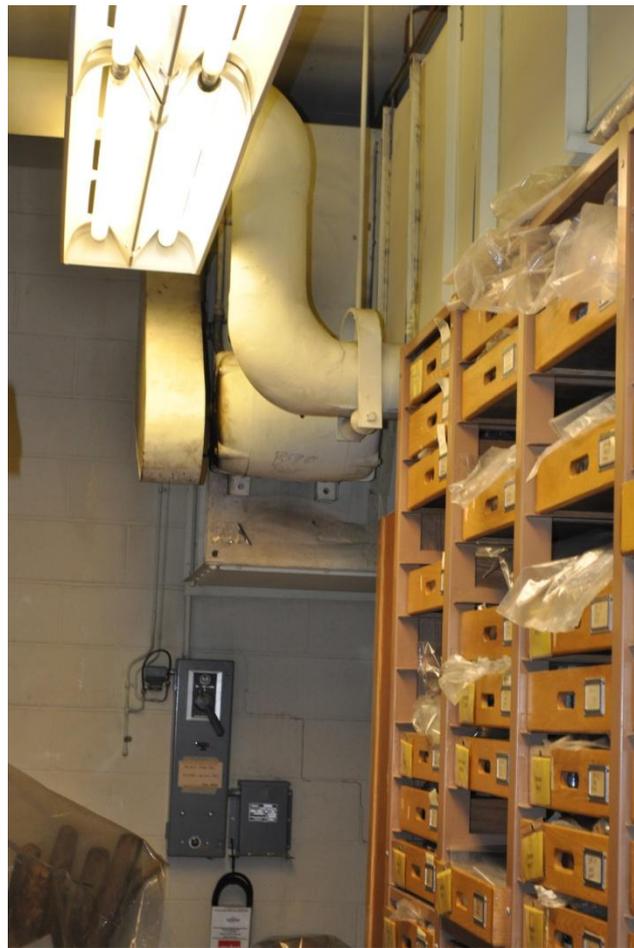
Collection Preservation Goals

- Institutionalize collection preservation planning
- Improve storage of collections
- Facilitate access to collections
- Provide optimum environmental conditions for collections
- Improve preservation and care of collections
- Develop and implement exhibition conservation standards
- Improve preservation of the building
- Obtain funding for collection preservation
- Provide comprehensive conservation service for all collections
- Promote education in the preservation of natural and cultural history materials

Strategies for Achieving Goals

- Develop a long-range collection preservation plan for MPM's collections
- The LRCPP should emphasize projects that will have a bearing on collection preservation throughout the museum. It should incorporate quantitative in-house assessments of the status of each collection as a means track progress over time. The LRCPP should have goals that are tied to dates and realistic estimates of resources.
- A Collection Preservation Planning Committee (CPPC) will be formed that will advocate, coordinate and help secure funding for collection preservation activities.
- There will be an annual sectional review of the LRCPP in conjunction with the budget preparation process. Prioritized sectional collection preservation needs for the fiscal year will be submitted to the Committee.
- The Committee will review sectional and institutional needs, establish institutional priorities, and update the Preservation Plan. Funding for collection preservation initiatives will be investigated in conjunction with the Development Department. The Committee will submit recommendations for annual initiatives and funding to MPM's Senior staff for final selection.

Pipes and Air Intake



Pipes in collection areas



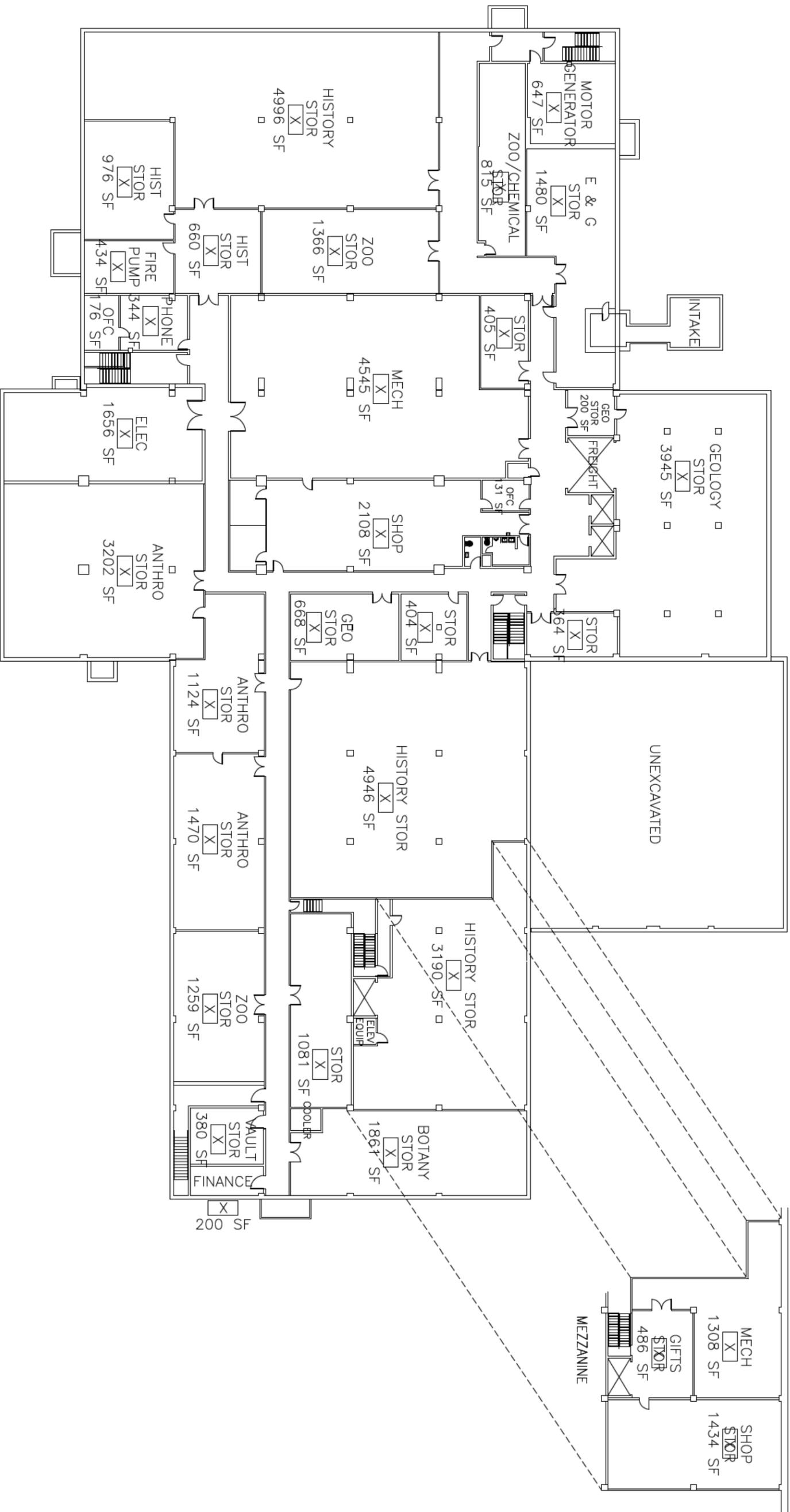
Wooden storage



Plastic Wrapping and Draping



BASEMENT



ELLEN J. CENSKY, PH.D.
Milwaukee Public Museum
800 W. Wells, Milwaukee, WI 53233

Work: 414-278-2786

Censky@mpm.edu

Cell: (b) (6)

NATURAL HISTORY MUSEUM DIRECTOR/SENIOR ADMINISTRATOR

Fifteen years of experience as a senior administrator (ten as executive director) of natural history museums with broad and deep knowledge of museum operations. Background includes successfully managing a \$5.5M operating budget, overseeing strategic planning for two museums, raising funds in excess of \$7M for building projects as well as exhibits, programming and endowment, working with government officials to gain support, collaborating with professionals and community leaders to achieve shared goals.

EMPLOYMENT HISTORY

Thirty-three years of employment in numerous capacities at natural history museums.

- Senior Vice President, Milwaukee Public Museum, 2008-present.
- Executive Director, Sam Noble Oklahoma Museum of Natural History, University of Oklahoma, Norman, OK; 2003 – 2008.
- Professor, Department of Zoology, University of Oklahoma, Norman, OK; 2003 – 2008.
- Executive Director, Connecticut State Museum of Natural History, University of Connecticut, Storrs, CT 06269; 1998 – 2003.
- Chairman, Division of Life Sciences, Carnegie Museum of Natural History; 1996-1998.
- Head of the Section of Amphibians and Reptiles, Carnegie Museum of Natural History; 1993-1998.
- Assistant Curator, Section of Amphibians and Reptiles, Carnegie Museum of Natural History; 1994-1998.
- Collection Manager, Section of Amphibians and Reptiles, Carnegie Museum of Natural History; 1985-1994.
- Curatorial Assistant, Section of Amphibians and Reptiles, Carnegie Museum of Natural History; 1980-1985.
- Scientific Preparator, Section of Birds and Section of Amphibians and Reptiles, Carnegie Museum of Natural History; 1979-1980.
- Scientific Technician, Invertebrate Zoology, Milwaukee Public Museum; 1978-1979.

EDUCATION

University of Pittsburgh, PhD, 1994. Biological Sciences. Dissertation Title: The evolution of sexual size dimorphism in the lizard *Ameiva plei*: a test of alternative hypotheses.
University of Wisconsin-Milwaukee, B.S., 1979. Major: Zoology.

AWARDS AND PROFESSIONAL ACTIVITIES

- Member, Education and Outreach Committee, Wisconsin IceCube Particle Astrophysics Center, UW Madison, 2012-present.
- Member, Greene Field Station Advisory Committee, Carroll University, 2012-present.
- Executive Committee, Green Energy Summit, 2009-2012.

- Board Member, American Institute of Biological Sciences, 2008-2010.
- Member, Director's Roundtable, 2005-2010..
- National Ecological Observatory Network Design Consortium, member of Education Committee, 2004-2005.
- Vice President, Association of Science Museum Directors, 2004-2007.
- International Biodiversity Observation Year, Biodiversity Day committee, 2003.
- Board of Governors, American Society of Ichthyologists and Herpetologists, 1998-2002.
- Board of Trustees, Herpetologists' League, 1998-2000.
- NSF Research Collections in Systematics and Ecology Advisory Panel, 1996.
- Editorial Committee, *Journal of Herpetology*, 1997-2000.
- Secretary, Society for the Study of Amphibians and Reptiles, 1996-1999.
- Henry S. Fitch Award Student Committee, ASIH/HL meetings, New Orleans, LA, 1996.
- Stanton C. Crawford Award for Good Teaching, University of Pittsburgh, 1992.
- Long Range Planning and Finance Committee, The Herpetologists' League, 1987-1993. Chairman 1990-1993.
- Finance Committee, Society for the Preservation of Natural History Collections, 1988-1991.
- Treasurer, The Herpetologists' League, 1987-1988.
- Publications Secretary, The Herpetologists' League, 1984-1997.
- Editor, Geographic Distribution Section of *Herpetological Review*, 1983-1987.

SELECT RESEARCH/EDUCATION GRANTS

- Beyond the Veil: Dress, Identity and Tradition through the Eyes of Muslim Women. 2013. Wisconsin Humanities Council, \$10,000.
- Creating Relevant Education in Astronomy through Experience, 2012-2015. NASA, \$588,467.
- Green Roof project. 2011. Milwaukee Metropolitan Sewerage District, \$119,000.
- Proposing Holograms as an Innovative Exhibition Technology for Egyptian Mummies. 2011. National Endowment for the Humanities, \$24,632.
- Renovation of the Herpetological Collections at the Carnegie Museum of Natural History, 1997. National Science Foundation RCSE, \$49,727.
- Cryptic coloration in Caribbean lizards: A test of natural selection. 1996. Edward O'Neil Research Grant, \$3,345.
- Herpetological Educational Curriculum for the State of Pennsylvania. 1995-1996. Wild Resources Conservation Fund, \$30,069, with T. Rohall and P. McShea.
- Natural History of Hispaniola Herpetofauna. 1995. National Science Foundation REU. Subcontract, \$9,000.
- The evolution of sexual selection in Teiid lizards. 1990, National Geographic Society, \$13,050.

PUBLICATIONS

- Forty-three scientific publications and three books.

RESUME: Larry N. Bannister

Milwaukee Public Museum

Milwaukee, Wisconsin

Director of Facilities and Operations

2002 to Present

My career accomplishments have given me a diversified background of disciplines as a degreed professional with over 30 years experience in the Facility Maintenance and Construction Management. Currently as Director of Facility and Security Operations at Milwaukee Public Museum my role is to provide managerial leadership to the Facilities and Security Departments. The essential responsibilities of my position are to coordinate: facility construction projects, security, environmental services, plant maintenance, safety, and utilities. I also provide strategic direction for all major facility projects and direct day-to-day operations to ensure long-term durability of the Museum's facilities. Design and execute an effective system of internal controls, which provide reasonable assurance that operations; complying with all laws, regulations, policies, and procedures. Assist in capital project management processes to enable the institution completes projects on time and within budget. Effectively protect institutional interests in capital projects and, working collaboratively with colleagues in the finance function, ensure appropriate fiscal controls for capital projects for presentations to the Senior Staff, and Museum President /CEO.

Miller Engineering Inc.

Milwaukee, Wisconsin

Senior Designer/Project Manager

2000-2002

Senior Designer and Project Manager at Miller Engineering, I use my experience as Registered Electrical Systems Designer and Licensed Master Electrician to participate in various projects that revolve around critical power systems and general project management. Our clients include US Bank Commercial Properties, Aurora Health Care, Metavante, TMP Worldwide and SBC Ameritech.

Quest Systems Inc.

Milwaukee, Wisconsin

Principal, Partner/General Manager

1998-2002

Electrical Contractor, Specializing in controls and power distribution systems
Technical Training Service Provider for: YWCA, Milwaukee Area Technical College, Milwaukee Public Schools and Various Milwaukee Charter Schools. The mission of Quest Systems provided on the job training, pre-apprenticeship mentoring and guidance in pursuing a career as a trades person or contractor. The business plan of Quest Systems was carried out through its corporate structure as an Electrical Contractor.

Children's Hospital of Wisconsin

Milwaukee, Wisconsin

Manager of Facilities/Operations

1993 - 1998

I my position as Facilities Manager at Children's Hospital of WI, I participated in all building maintenance aspect for the over 750,000 sq. ft. 500 bed hospital and clinic space at multiple sites. I managed the daily activities of the Facilities/ Operations Department and contractors that provided technical support to the hospital on a multi-million dollar operations budget. All facilities were maintained to the highest-level compliance of: JCAHO, OSHA, NFPA, and State/Local codes using IBC standards. Children's Hospital highlights my exposure to HVAC and Mechanical Systems. The HVAC system in a hospital setting is one of the most critical support systems. The regulation of temperature, humidity and positive building pressure are not for comfort alone. Monitoring of the system's operation is critical to infection control and surgical procedures. The hospital used the Johnson Controls Metasys System to control the environment and monitor mechanical and electrical systems. My comprehensive understanding of air handlers, chillers, compressors and heat exchangers has been challenged to the highest degree in this hospital setting.

General Education

- Cardinal Stritch University
November 1987 to May 1989
Bachelor of Science Degree BSM, May 1989
Milwaukee, Wisconsin
- University of Wisconsin-Milwaukee
January 1982 to September 1985
General Studies: Engineering and Organizational Communication
Milwaukee, Wisconsin

Technical Education and Training

- Milwaukee Area Joint Apprenticeship Electrical Training
Milwaukee Area Technical College
State of Wisconsin Indentured Electrical Apprenticeship
August 1974 to August 1978
Milwaukee, Wisconsin

Other Training:

- University of Wisconsin-Madison
Wisconsin 2014 NEC code refresher course
Madison, Wisconsin
- University of Wisconsin-Madison
Physical Plant Engineering Design and
Management/AFE-CPE Review Course, 2010
Madison, Wisconsin
- University of Wisconsin-Madison
Wisconsin 2009 Commercial Building Code/IBC refresher course
Madison, Wisconsin
- Johnson Controls Inc.
Metasys training course for Managers, 2011
Milwaukee, Wisconsin

Licensure and Certification

- State Registered Designer of Engineering Systems, July 1993
- State of Wisconsin Certified Master Electrician, February 1987

Memberships and Affiliations

- Wisconsin Healthcare Engineers Association (Former)
- Curriculum Review Committee for Maintenance Mechanics at Waukesha County Technical College
- International Association of Museum Administrators (Former Secretary, Board of Directors)
- International Association of Electrical Inspectors

RESUME

Claudia L. Jacobson
Registrar, Milwaukee Public Museum

Education

- 1970 B.A. (with high distinction), University of Arizona, Tucson. Major: Anthropology (Honors). Minor: Art.
- 1971 M.A. University of Arizona, Tucson. Major: Anthropology, specialization in archaeology.

Additional Training (Selected)

- 1987/88 Training Course in Collections Care and Maintenance (6 weeks), University of Arizona; National Institute for Conservation of Cultural Property and the Bay Foundation.
- 1993 Art in Transit Workshop, Chicago, Illinois; March 18-19, Chicago, Illinois. Sponsored by National Gallery of Art.
- 1995-2012 Multiple Workshops on Emergency Planning and Response

Professional Organizations

- American Association of Museums
- Registrars Committee of the American Association of Museums
 - Secretary and Executive Board, 1996-2000; Education Committee 2000 - Present
- Association Registrars and Collections Specialists
- Midwest Registrars Committee
- Association of Midwest Museums
 - Council Member (Wisconsin Representative) 1994-96; Program/Services Committees, 2007-2014
- Wisconsin Federation of Museums
 - Advisory Council 1994-1998; Vice President 2002-2009; Board Member 1998-Present
 - Workshops Chair (1996-Present) and Newsletter Editor (2012-Present)

Professional Experience (Most Recent)

Milwaukee Public Museum:

- 1979-86 Collections Management. Anthropology Section. Supervision departmental registration procedures, loans, and collections care and maintenance; work study, student, volunteer projects; facilitate collection use; curatorial research support. Developed multiple special exhibits and programming including MPM Centennial Exhibits.
- 1986-88 Co-Investigator and Inventory Project Supervisor. Inventory and storage improvement of North American Ethnology Collection. National Science Foundation Grant: Improvement of Systematic Collection in Anthropology – North American Ethnology, 1986-88 BNS-8604278 . Plan, develop protocols; train and supervise staff for inventory, collection survey, and storage improvement of North American Ethnology collections.
- 1988-89 Conservation and History Sections. Conservation Assistant: Develop collection care policies and procedures. Data management and specimen preparation for loans and temporary exhibits. History Assistant: Program development with Milwaukee's ethnic community.
- 1989-90 Exhibit Programming. Research and acquisition of copyright permissions for graphic materials for Milwaukee Public Museum exhibit: "Temples, Tells and Tombs".
- 1990-Curr. Registrar (Section Head Registration). Pan-museum collections registration and records management; arrange loans to and from Museum including packing and shipping; and oversee collections permits and collections insurance issues. Collections management for special exhibits. Chair of Exhibits Expediting Committee and Safety Committee, member Exhibit Planning and Union/Management, Events Coordination, and Museum Studies Committees. Chaired Collections Policy and Ethics Policy Committees for drafting new policies. Coordinator, AAM Re-Accreditation Self-Survey (2002-08) for Museum.
- 1993-96 Acting Section Head Conservation. Managed and supervised Conservation functions, arrange contract conservation, monitor museum environment, liaison for Museum construction projects
- 2011-Curr. Section Head Library and Photo Archives . Management and oversight Museum Library and Photo Archives. Rights and Reproduction and Digitization of Collections.

Consultant and Other Professional Experience

- 1988-97 Consultant. Collections Management and Curation.
- 2000 Advisory Committee, "Institute for Legal and Ethical Issues in the New Information Era: Challenges for Libraries, Museums and Archives". University of Wisconsin-Milwaukee.
- 2003 General Co-Chair, Association of Midwest Museums Annual Meeting 2003, Milwaukee.
- 2008 Program Committee, Association of Midwest Museums Annual Meeting 2008
- 2012-14 WFM representative and Advisory Panel for Wisconsin "Connecting to Collections" grant

Teaching Experience

- 1985-Current Instructor and Lecturer. University of Wisconsin-Milwaukee, College of Letters and Science. Anthropology Department, Museum Studies Program (Graduate College). Museum Curation and Museum Exhibition courses (selected years), Museum Collections Management (yearly), and special topic lectures and workshops.

Research Grants

- 1981 Wenner-Gren Foundation for Anthropological Research, Inc. "Investigation of the Papers of Samuel A. Barrett at the Lowie Museum of Anthropology, Berkeley, CA".
- 1986 National Science Foundation, Anthropology Program, "Improvement of Systematic Collection in Anthropology - North American Ethnology". Grant No. BNS 8604278. Co-investigator.

Presentations (Selected)

- 1987 "Counting Your Chickens: Collections Inventories." Paper, Midwest Museums Conference, Grand Rapids, Michigan.
- 1988 "The Collections Management Dilemma: Use, Don't Use." Paper, American Anthropological Association Annual Meeting, Phoenix, Arizona.
- 1993 "Different Methods for Different Needs - Risk Assessment" Soft-Packing Workshop, Midwest Museums Conference, St. Louis, MO.
- 1996 "Making the Big Move." Seminar, Wisconsin Federation of Museums, Madison, WI
"Working with Study Collections." Session, Wisconsin Federation of Museums Annual Meeting, Baraboo, WI.
- 2001 "Happy New Year! Or Is It?" Session, Association of Midwest Museums Annual Meeting, Rockford, IL.
- 2002 "Collections Drift: New Homes for Old Collections". Session, Wisconsin Federation of Museums Annual Meeting, Madison, WI.
"Ethics, the Law and Your Collection: What You Need to Know: Natural History Collections". Session, Association of Midwest Museums Annual Meeting, Minneapolis, MN.
- 2004 "Collections Forum: New Ideas, Current Issues." Panel chair and presenter, Association of Midwest Museums, Grand Rapids, MI.
- 2006 "Great Expectations: Travelling Exhibits from Exhibitor's and Lender's Perspectives", Workshop on Travelling Exhibits, Association of Midwest Museums, Chicago, IL
- 2007 "Registrar's Outrigger: Resources for Connecting the Islands", Presenter, Association of Midwest Museums, Mackinaw, MI.
- 2010 "Adding and Subtracting – Collections Acquisitions and Disposals", Session Wisconsin Federation of Museums Annual Meeting, Oshkosh, WI
- 2011 "Collections Storage and Box Making", Workshop, "Convening Culture Keepers" program of UW-Madison School of Library and Information Studies for Wisconsin tribal libraries and museums. Keshena, WI
"Museum Metadata: From Cephalopods to iPods", co-presenter, Wisconsin Library Association Annual Meeting, Milwaukee, WI.

Publications (Selected)

- 1997 "Milwaukee Public Museum Collection Policy: Deaccession Policy" (editor) in The Deaccession Reader, Stephen E. Weil, American Association of Museums.
- 1998 "Object Preparation", The New Museum Registration Methods, American Association of Museums,
- 2010 "Object Preparation", MRM5: Museum Registration Methods, 5th Edition, American Association of Museums, (Revision)

DAWN SCHER THOMAE

Milwaukee Public Museum, Anthropology Department
Milwaukee, Wisconsin 53233
thomae@mpm.edu
(414) 278-6157

EDUCATION

University of Wisconsin-Milwaukee, Master of Science in Anthropology, May 1994
Beloit College, Bachelor of Arts, Anthropology and Museum Studies, May 1986

RELEVANT MUSEUM EXPERIENCE

Milwaukee Public Museum (Wisconsin)

Curator of Anthropology Collections

2014-Present

Collections Manager/Associate Curator, Anthropology Department

1993 - 2014

Primary duties include the care, maintenance and interpretation of over 120,000 ethnographic and archaeological artifacts from the Americas, Africa, Oceania, and Europe

- Conduct artifact research on and interpretation for ethnographic and archaeological artifacts
- Produce and maintain associated artifact and collection documentation
- Develop and implement collection re-housing and inventory projects
- Responsible for all phases of Native American Graves Protection and Repatriation Act (NAGPRA)
- Supervise, train and manage all department employees, volunteers, work-study students, and interns (over 400 to date)
- Answer over 300 public and professional inquiries per year
- Provide artifact identifications for the public
- Develop and present educational programs related to department collection concentrations
- Develop, renovate and maintain exhibits
- Expedite internal and external loans from the Anthropology department collections
- Facilitate access to collections for visiting scholars and tribal representatives
- Develop department policies and procedures
- Participate in museum strategic planning
- Produce and maintain departmental budget
- Write and review grants for research, programs, and projects

Collections Manager, "A Tribute to Survival" Exhibit Project

1990 - 1992

Provided collections care and documentation for project. Prepared over 800 objects for exhibit and storage, assisted with artifact selection, researched objects and photographs, trained docents, edited labels, and worked closely with American Indian community, conservators and exhibit personnel on all phases.

Curatorial Assistant, Anthropology Department

1987- 1990

Duties included day-to-day collections care, maintenance, documentation, general collection research, intern and volunteer training and supervision.

ACADEMIC EXPERIENCE

University of Wisconsin-Milwaukee (UWM)

January 1994 - present

Coordinator of Museum Studies Program and Senior Lecturer, Anthropology Department

Museum Studies Certificate Program, a two year (15 credit) collaborative graduate program with MPM and UWM. Position also includes extensive management of the program, student advisory and mentoring responsibilities, program and workshop development and coordination, assistance with and review of theses as well as serve on thesis committees.

- Coordinator of the Museum Studies Program 1994- present
- Chair of Museum Studies Program Committee 1994- 2012 (still on Committee)
- History and Theory of Museums (720) course 1994- present
- Exhibit Practicum (722) course 1994-1997; 2007-present
- Native American Material Culture course 2005

AWARDS AND GRANTS

2012	MPM Employee Recognition Award for Excellence (August)
2005-2008	Institute of Museums and Library Services Museums for America grants facilitator
2005	MPM Employee Recognition Award for Excellence (August)
2005	Wisconsin Humanities Council Mini-Grant (Wisconsin Museums Week)
2004	MPM Employee Recognition Award for Excellence (July)
2003	Association of Midwest Museums Scholarship
2002	Wisconsin Humanities Council Mini-Grant (Young Collectors Weekend Program)
2002	Wisconsin Federation of Museums Professional Residency Grant (Portland Art Museum)
1993	Albert Fuller Award, Milwaukee Public Museum, for outstanding staff contributions to the Milwaukee Public Museum.
1991	Robert Ritzenthaler Award, University of Wisconsin-Milwaukee, for outstanding contribution to the field of museum studies.

PROFESSIONAL SERVICE AND ACTIVITIES

- *Waukesha Co. Historical Society and Museum, Board of Advisors, 2000 - 2012*
- *National Endowment for the Humanities, Stabilizing Humanities Collections grant reviewer, 2008*
- *Wisconsin Federation of Museums, Developer of Wisconsin Museums Week and Coordinator of International Museum Day activities, 2005- 2008*
- *Urban Anthropology, Board of Directors , 2007 – 2009*
- *Wisconsin Historical Society Museum Exhibit Awards Committee, 2006*
- *Association of Midwest Museums conference coordinator (2003), Milwaukee, 2001-2003*
- *Center for Great Lakes Culture, Regional Advisor, 2000 - 2001*
- *National Geography Bee state site organizer, Milwaukee Public Museum, 1999-2001*
- *Wisconsin Federation of Museums, Membership Coordinator, 1995- 1999*

PROFESSIONAL AFFILIATIONS

- American Alliance of Museums
- Archaeological Institute of America – Milwaukee chapter
- Association of Midwest Museums
- Committee on Museum Professional Training (AAM)
- Wisconsin Federation of Museums

CHRISTINE DEL RE
Collection Care and Conservation Consultant
Fellow of the American Institute for Conservation

(b) (6) ([REDACTED]
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) [REDACTED]
([REDACTED]
6 [REDACTED]

Education

- 1980 **B.Sc. in Archaeological Conservation and Materials Science. Research projects: Vegetable fibers; Ivory**
Institute of Archaeology, University of London, London, England
- 1975 **BA in Classical Civilization, specializing in Ancient Art and Archaeology**
University of Illinois at Chicago, Chicago, IL

Employment

- 2013- ***Collections Care and Conservation Consultant***
Scottsdale, AZ.
- 1997 - 2013 ***Senior Conservator and Section Head***
Milwaukee Public Museum, Milwaukee, WI
Supervisor: Dr. Ellen Censky, Vice-President for Museum Programs and Academic Dean
- 1994-1991 ***Del Re Objects Conservation Services***
Oak Park, IL
- 1988-1994 ***Associate Conservator***
Field Museum of Natural History, Chicago, IL
Supervisor: Catherine Sease, Head of Conservation
- 1991-1992 ***Archaeological Field Conservator (summers only)***
Mochlos – Crete (Greece)
Supervisor: Archaeologist Jeffrey Soles
- 1987-1988 ***Conservator***
Milwaukee Public Museum, Milwaukee, WI
Supervisor: Ron Harvey, Head of Conservation
- 1984-1987 ***Associate Conservator***
University Museum, University of Pennsylvania, Philadelphia, PA
Supervisor: Virginia Greene, Head of Conservation
- 1982-1984 ***Assistant Conservator***
University Museum, University of Pennsylvania, Philadelphia, PA
Supervisor: Virginia Greene
- 1987 ***Archaeological Field Conservator (summers only)***
1982-1984 ***Isthmia Museum, Kyras Vrysi, Korinthias, Greece***
1980 ***Supervisor: Archaeologist Dr. Elizabeth R. Gerhard***
- 1981-1982 ***Assistant Conservator***
Mississippi River Museum, Memphis, TN
- 1980-1981 ***Assistant Conservator***
North Carolina Museum of Art, Raleigh, NC

Grants Awarded

- 2009 **Institute of Museum and Library Services – Conservation Project Grant**
Funding for "Decontamination and Preservation of MPM's Dietz Typewriter Collection" at MPM, \$113,979.
- 2006 **Institute of Museum and Library Services – Conservation Project Grant**
Funding to complete the re-housing and digital scanning of Huron Smith Wisconsin Indian EthnoBotany Collections at the Milwaukee Public Museum, \$ 75,706.
- 2003 **Institute of Museum and Library Services – Conservation Project Grant**

Grants Awarded (continued)

- Funding to complete a photographic holdings general condition survey to determine long-term preservation needs, and develop an integrated plan for their preservation and access at the Milwaukee Public Museum, \$22,491.*
- 2002 Wisconsin Federation of Museums Grant**
Wrote, funded and implemented "Collection Profiling for Museum Professionals" Training Workshop at MPM. \$500
- 2001 Institute of Museum and Library Services - Conservation Project Grant**
Funding to complete an environmental systems assessment at the Milwaukee Public Museum, \$38,400.
- 1997 Institute of Museum and Library Services - Conservation Project Grant**
Funding to do a general conservation survey at the Milwaukee Public Museum, \$26,000.
- 1994 Samuel H. Kress Foundation, Conservation Fellowship Program**
For tuition to attend the Pest Management and Control for Museums. Getty Conservation Institute, LA, CA.
- 1991 Samuel H. Kress Foundation, Conservation Fellowship Program**
For tuition to attend the "Microchemical Analysis for Objects Conservators" course at the Campbell Center in Mount Carroll, IL.
- 1987 Samuel H. Kress Foundation, Grants for Training and Research in the Conservation of Works of Art**
For an assistant to help with the National Museum Act project described below.
- 1986 National Museum Act, Grants for Special Studies and Research**
For research on the long-term effectiveness of treatments commonly used in the field to stabilize archaeological bronzes.
- 1978-1980 Samuel H. Kress Foundation, Grants for Conservation Studies**
For two years of study at the Institute of Archaeology in London.
- 1976 University of Illinois at Chicago Research Board**
For work on the Catalogue of Antiquities from the Isthmian Sanctuary of Poseidon, Corinth, Greece.

Professional Presentations and Activities

- 2013 Grant Panelist, Washington, D.C. – Institute of Museum and Library Services Conservation Project Support Grants.
- 2007-2012 Co-editor - American Institute for Conservation Objects Specialty Group Meeting Postprints 2008-2012
- 2007 Field Reviewer – Institute of Museum and Library Services Conservation Project Support Grants.
- 2006 Co-editor - American Institute for Conservation Objects Specialty Group Meeting Postprints.
Field Reviewer – Institute of Museum and Library Services Conservation Project Support Grant
- 2004 Internship Supervisor for Intern Julia Day of Buffalo State College Art Conservation Department.
Moldy Mammals in Milwaukee, professional paper presented at the Society for the Preservation of Natural History Collections Annual Mtgs in New York, New York (http://museum-sos.org/htm/strat_moldy_mammals.html)
Moldy Mammals in Milwaukee, professional paper presented at the American Institute for Conservation Annual Mtgs in Portland, Oregon.
Field Reviewer – Institute of Museum and Library Services Conservation Project Support Grants.
- 2002 Field Reviewer – Institute of Museum and Library Services Conservation Project Support Grants.
- 1999 Panelist – Institute of Museum and Library Services Conservation Project Support Grants.
- 1998 Panelist – Institute of Museum and Library Services Conservation Project Support Grants.
Papers presented at AAM Annual Meetings in Los Angeles: "Active and Passive Environmental Control in Exhibition Cases", and "From Here to Eternity?: How What We Say and What We Do Impact Collection Care".
- 1997 Panelist – Institute of Museum and Library Services Conservation Project Support Grants.
Conservation Assessment Program Survey at the Fabian Villa, Geneva, IL. Funded by National Institute for Conservation.
Reviewer Journal of the American Institute for Conservation.
- 1996 Conservation Assessment Program Survey at the Downers Grove Museum, Downers Grove, IL. Funded by the National Institute for Conservation.
Paper presented during Midwest Museums Conference Annual Meeting, session "Environmental Control in Exhibition Cases-Yes, It Can Be Done!"
"How and Why a Conservator Looks at Objects" professional paper presented at *Care of the Historic Site: Assessing Needs and Implementing Solutions*, a Workshop sponsored by the Illinois Heritage Association and the National Institution for the Conservation of Cultural Property.
Field Reviewer for Institute of Museum Services Conservation Project Support Grants.

References

References will be furnished upon request

November, 2014



Throughout his twenty year career as a mechanical engineer, David Brooks has earned a reputation as a leader in the design of building systems and infrastructure. Often involving complicated infrastructures and coordination between multiple stakeholders, David is able to facilitate engineering strategies that strike the perfect balance between complexity, cost, and performance.

David's commitment to understanding the full scope of engineering challenges empowers his clients to make educated decisions that lead to exceptional long term results. His working philosophy is to design the simplest, most efficient solution and he continues to refine the design until the client's expectations are met.

EDUCATION

M.S. Petroleum Engineering
Louisiana State University,
Baton Rouge, LA

B.S. Mechanical Engineering
University of Michigan,
Ann Arbor, MI

REGISTRATIONS

Professional Engineer: Illinois,
Maryland, Minnesota, Missouri,
Nebraska, New York, Ohio,
Texas, West Virginia,
Michigan, North Carolina

AFFILIATIONS

American Society of Heating, Refrigerating and Air Conditioning
Engineers (ASHRAE)

Large Building Air Conditioning Applications Technical Committee
(ASHRAE)

American Association of Museums

International Association of Museum Facility Administrators (IAMFA)

AWARDS

Illinois Chapter of ASHRAE - 2006 Excellence in Engineering Award for the
Collections Resource Center at The Field Museum

Illinois Chapter of AHSRAE - 2009 Excellence in Engineering Award for The
Museum of Science and Industry Central Cooling Plant Phase 1

Illinois Chapter of ASHRAE - 2011 Excellence in Engineering Award for Walsh
Headquarters

EXPERIENCE

The Art Institute of Chicago

Chicago, IL

1 Museum Park East

Chicago, IL

Union League Club of Chicago

Chicago, IL

The Field Museum

Chicago, IL

Museum of Science and Industry

Chicago, IL

Wake Forest University

Winston Salem, NC

Lycee Francais

Chicago, IL

John Marshall Law School

Chicago, IL

Columbia College

Chicago, IL

Iron Mountain

Multiple Locations

PRESENTATIONS

"Museum and Critical Storage Design," ASHRAE Specialty Environment Design Conference. Chicago, IL, March 2014.

PUBLICATIONS

"In the Know With Green Technology", American School & University Magazine, October 2013

ANTHONY B. MCGUIRE, P.E.

FOUNDER



As founder of McGuire Engineers, and with over 40 years of experience in the design, installation and operation of building systems, Tony Sis actively involved in all aspects of the business from mentoring staff, building and maintaining strong client relationships, to providing expertise and advice on projects. While much of his career has focused on laboratories, hospitals and airport designs with a strong emphasis on energy conservation, Tony has been active in recent years in expanding the business in new areas including existing building expertise, museums, archival and library projects as well as consultation and expert opinion services. Tony is well recognized and respected in the industry and was elected into ASHRAE's College of Fellows by his peers in 2000.

EDUCATION

B.S. Engineering
Manhattan College

American Society of Plumbing Engineers
International Association of Museum Facility Administrators (IAMFA)
Chicago Building Congress
International Code Council

REGISTRATIONS

Professional Engineer: Illinois,
and 20 other states

AWARDS

President's Award, ASHRAE, 2002
Fellow, ASHRAE, 2000
Energy Conservation Award, ASHRAE, Abbot Laboratories
Energy Conservation Award, ASHRAE, Delta Airlines Terminal, O'Hare
International
President's Award, St. Ignatius College Prep
Award of Merit, ASHRAE, 1975
Young Engineer of the Year, Indiana Society of Professional Engineers, 1976

AFFILIATIONS

American Society of Heating,
Refrigerating and Air
Conditioning Engineers
(ASHRAE)

PROFESSIONAL ACTIVITIES

- Chairman, City Of Chicago, Mechanical Code Committee
- Member, City Of Chicago, Committee on Standards and Tests
- Member, City Of Chicago, Energy Code Committee
- Past President, ASHRAE, Illinois Chapter
- Co-Chairman, 1993 ASHRAE International Meeting
- Past Chairman, Energy Management Committee, ASHRAE, Illinois

PROPOSAL NO. 2721 (REVISED)



300 SOUTH RIVERSIDE PLAZA, SUITE 1650, CHICAGO, IL 60606 312.876.9240 MEPCINC.COM

12.1.2014

Mr. Larry Bannister
Director of Facility and Security Operations
Milwaukee Public Museum
800 West Wells Street
Milwaukee, WI 53233
E-Mail: Bannister@mpm.edu

ENGINEERING SERVICES FOR: Milwaukee Pubic Museum - NEH Grant Master Plan Study

We are pleased to submit our proposal to develop a master plan study for the collections stored in the basement of the Milwaukee Public Museum (MPM). The study will include the following:

1. Review past studies and changes to building envelop since the last report.
2. Establish realistic environmental criteria on a room-by-room basis throughout the basement.
3. Develop a conceptual program for improvements to the building envelop based on the actual environmental needs of specific collections.
4. Consider the actual heating, cooling, humidification and ventilation requirements throughout the basement as a BOD (Basis of Design) in planning future collection storage.
5. Evaluate the existing HVAC system and make recommendations for changes to the existing systems and/or that new equipment that will lead to better environmental control.
6. Develop a five-to-ten year schedule for implementing changes.
7. Provide a conceptual BOD for future NEH Sustaining Cultural Heritage Collections grant proposals to address the most immediate engineering issues of the museum basement collection space.

McGuire Engineers will collaborate with MPM's curator team on the following:

- Determine how collections with similar environmental needs could be co-located in the building.

MPM's curator team shall be responsible for researching and determining the best storage furniture for collections based on environmental needs and space.

The study will be in a report format and will include site meetings, drawings, calculations and referenced documents to support the findings and recommendations.



The Client shall compensate McGuire Engineers for the engineering services referred to hereinabove for a not-to-exceed fee of **TWENTY FIVE THOUSAND FIVE HUNDRED DOLLARS (\$25,500.00)**.

In addition, MEPC shall be reimbursed, at cost plus 10%, for all incidental expenses incurred in performing these services, including printing, messenger service, local travel and travel outside the Chicago Metropolitan area, if any.

NOTE: FACSIMILE, PHOTOCOPIES, POSTAGE AND LONG DISTANCE PHONE CALLS, ETC. ARE INCLUDED IN OUR OVERHEAD AND NOT CONSIDERED AS REIMBURSEABLE EXPENSES.

Please call if you have any questions concerning the above.

Very truly yours,

McGuire Engineers / MEPC

David M. Brooks, P.E.
Senior Vice President

APPROVED AND ACCEPTED
MILWAUKEE PUBLIC MUSEUM

BY: _____
TITLE: _____
DATE: _____

DMB/smw

*Xc: Anthony B. McGuire/MEPC
William J. Stangeland/MEPC
David P. Callan/MEPC*

EXHIBIT A: TERMS AND CONDITIONS

1. **Time of Performance.** Engineer will use its best efforts to perform its services with reasonable professional promptness and in accordance with deadlines or schedules mutually established. If Engineer is delayed or prevented from performing services for any reason beyond Engineer's control, Engineer shall be granted an extension equivalent to the period of delay in which to complete Engineer's services. Client agrees to render decisions timely as necessary for Engineer to provide services.
2. **Standard of Care.** The standard of care for all engineering services performed by Engineer under this agreement will be the care and skill ordinarily used by members of Engineer's profession practicing under similar circumstances at the same time and the same locality.
3. **Invoicing and Payment.** Invoices shall be submitted monthly for services and reimbursable expenses and are due within 40 days (based on a 25 day approval period plus a 15 day process period). As required by the Illinois Contractor Prompt Payment Act of 2007 "the Act", if Engineer "has performed in accordance with provisions of (this contract) and the payment application has been approved by (Client), the (Client) shall pay the amount due to the (Engineer) pursuant to the payment application not more than 15 days after the approval. The payment application shall be deemed approved 25 days after the (Client) receives it unless the (Client) provides, before the end of the 25-day period, a written statement of the amount withheld and the reason for withholding payment. If the (Client) finds that a portion of the work not in accordance with the contract, payment may be withheld for the reasonable value of that portion only. Payment shall be made for any portion of the contract for which the work has been performed in accordance with the provisions of the contract." If Engineer is performing services as a sub-consultant, Engineer is to be paid within 15 calendar days of the consultant's receipt of payment for sub-consultant's services. "If a payment due pursuant to the provisions of the Act is not made in a timely manner, the delinquent party shall be liable for the amount of the payment, plus interest at a rate equal to 10% per annum." If Engineer is "not paid as required by the Act, (Engineer) may, after providing 7 days' written notice...suspend performance...without penalty for breach of contract, until the payment required pursuant to the Act is made." Client shall reimburse Engineer for all reasonable costs of collection, including reasonable attorney's fees, on invoices unpaid as described in this agreement.
4. **Basic Design Services.** The design and engineering services are as set forth in the Engineer's Proposal Letter in which these Terms and Conditions are incorporated by reference. Design and engineering services not set forth in the Engineer's Proposal Letter nor in any written amendment or modification to the Engineer's Proposal letter agreed to by the Engineer and the Client shall be considered as Additional Services.
5. **Construction Administration.** If construction observation services are included in the scope of Engineer's design and engineering services, Engineer shall not have control or charge of and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the construction work, for any defects, deficiencies or other acts or omissions of the contractor, or any other persons performing any of the construction work, or for the failure of any of them to carry out the work in accordance with the plans and specifications, or for any asbestos or hazardous or toxic materials. In particular, Engineer shall have no responsibility for or oversight of erection procedures, temporary bracing or other temporary conditions. The Engineer shall visit the site at intervals agreed by the Client and Engineer in writing. Engineer's visits to the construction site, if any, shall be for the purpose of becoming generally familiar with the progress and quality of the construction work within Engineer's scope and to determine in general if the work when completed will be in accordance with the plans and specifications. Engineer is not authorized to stop the construction work or take any other action relating to jobsite safety, which are solely the contractors' right and responsibility. Engineer shall review and approve or take other appropriate action upon contractor submittals such as shop drawings only for the limited purpose of checking for conformance with information given and the design concept, but not for determining accuracy or completeness of other details such as dimensions or quantities or for substantiating instructions for installation or performance of equipment or systems. Engineer's review shall not be for the purpose of approving any safety precautions or temporary arrangements, and Engineer may review without approving submittals outside the scope described herein. If Engineer requires a contractor to retain a design professional to submit stamped and sealed calculations, certifications or other instruments of service, Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of such stamped and sealed certifications, services or approvals
6. **Additional Services.** Client may request or it may become necessary for Engineer to perform Additional Services in order to further the objectives of the project, and such charges shall be paid by Client above and beyond any charges for Basic Services set forth in the Engineer's Proposal Letter. Engineer will promptly notify Client in advance and in writing of the nature and extent of the particular Additional Services that Engineer has been requested or

intends to perform. Client shall approve or disapprove all such Additional Services in writing within three (3) business days of Client's receipt of Engineer notice to Client as provided for above. Client's failure to approve or disapprove the Additional Services in writing within three (3) business days of the receipt of the notice from Engineer shall be deemed to constitute Client's approval of the Additional Services identified in the notice. Notwithstanding any other description of Basic or Additional Services in the Proposal, the following will constitute additional services unless caused by the Engineer: 1) any services not previously provided for which Client requests Engineer to perform after final payment has been made to the contractor(s) or more than thirty (30) days after the project has been certified to be substantially complete; 2) material modifications or changes requested by Client inconsistent with Client's prior approval(s), including the evaluation of substitutions proposed by Client or Client's contractor after Client's acceptance of the Engineer's Proposal Letter; 3) services necessitated because of an error or omission in any drawing or other information supplied by Client; 4) material changes to previously prepared plans, drawings, equipment schedules, specification or other documents or instruments prepared by Engineer or at its direction because of the enactment or revision of codes, laws or regulations or official interpretations or assistance in requests for building code variances; and/or 5) services provided as a result of the failure of performance on the part of the Client, Client's consultants or contractors.

7. **Claims.** Client and Engineer each agrees to waive any and all claims for consequential damages against the other. Client acknowledges that Engineer is a corporation and agrees to make any claim arising out of or relating to the project

against Engineer only, and not against any of Engineer's directors, officers, employees or agents.

8. **Termination.** Either party may terminate this agreement upon at least ten days' advance written notice to other, should the other party fail substantially to perform in accordance with the terms of this agreement through no fault of the party initiating the termination. Client may terminate this agreement for convenience upon at least ten days' advance written notice. In the event that Client terminates the agreement without fault of Engineer, Client shall compensate Engineer for all services provided and reimbursable expenses incurred to and including the date on which Engineer received the notice of termination plus any actual out-of-pocket expenses incurred by Engineer due to premature termination of the project.
9. **Insurance.** Engineer shall keep and maintain its current insurance policies, including professional liability, commercial general liability, automobile liability and workers' compensation insurance as set forth in the Engineer's Proposal Letter for three years following the completion of the project. Certificates evidencing such coverages shall be issued upon contract execution. If Client desires additional insurance, Engineer shall use its best efforts to obtain the additional insurance, but Client shall reimburse Engineer for any actual additional premium that Engineer incurs. Client will endeavor to have the construction contractor(s) and subcontractors (i) name Client and Engineer as additional insured's on their general liability and workers compensation insurance policies on a primary and non-contributory basis and include a waiver of subrogation, and (ii) agree to indemnify Client and Engineer in language reasonably satisfactory to both Client and Engineer.

10. **Ownership of Documents.** All documents including calculations, computer files, drawings and specifications prepared by Engineer for the Project described in the Engineer's Proposal Letter are instruments of professional service, all aspects of which are owned by Engineer. The Engineer shall have all common law, statutory and other reserved rights, including the copyright, with respect to standard details regularly issued by the Engineer in the ordinary course of its engineering practice.

11. **Hidden Conditions.** Client acknowledges that there may be hidden conditions that are concealed by existing finishes or not susceptible to reasonable visual observation. If such a hidden condition requires a change in the design or construction work, the costs of such a change are solely Client's, and Engineer shall have no responsibility for any resulting design or construction costs or damages. Engineer acknowledges that the project includes possible re-use and re-work of the existing tenant construction and Engineer will endeavor to uncover and identify the appropriate scope of work via conducting field surveys and reviewing the existing design documentation.

12. **Miscellaneous.** To the extent within Client's control and with Client's prior written notice, Engineer shall have the right to take photographs and make other reasonable promotional use of the project, and Engineer shall be given appropriate credit on all construction signs or other promotional materials concerning the project. Client may accept Engineer's Proposal only by signature. If this Proposal is not accepted as described above, it shall expire after 30 days. This agreement shall be governed by the laws of the State of Illinois.

Christine Del Re
Collections Care & Conservation Consultant

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November 24, 2014

National Endowment for the Humanities
Office of Sustaining Cultural Heritage Collections Grants
Division of Preservation and Access
1100 Pennsylvania Avenue, NW
Washington, D. C. 20506

Dear Sustaining Cultural Heritage Collections Grant Committee:

I am pleased that the Milwaukee Public Museum is pursuing developing a master plan that would include upgrades and replacements its aging HVAC system as part of its planned major collection renovation storage project. As the largest natural history serving Wisconsin and one that consistently shows world-class collections and exhibitions, this sorely needed renovation of their collection facility is extremely important. The old and outdated system currently in place does not allow the Museum to properly care for its collections

As you know climate control is a particularly critical conservation issue and new equipment as well as new storage cabinets will address current conservation issues, and create proper facilities for the long-term stewardship of the Museum's collections in a sustainable way. I fully support the Museum's search for funds to undertake this important project and look forward to working with the Museum to advise on conservation standards and best practices as part of the project team.

Thank you for your consideration of this application.

Sincerely,

Christine Del Re
Conservator

November 24, 2014

Dr. Ellen Censky
Milwaukee Public Museum
800 W Wells St.
Milwaukee, WI 53233

Robert J. Jeske
Professor

Sabin Hall 275B
3413 N. Downer
PO Box 413
Milwaukee, WI 53201
414-229-4175 (o)
414-229-5848 (f)
jeske@uwm.edu

Dear Dr. Censky:

Please accept this letter of support for the *NEH Sustaining Cultural Heritage Collections Planning Grant* submitted by the MPM. My students and I have benefitted greatly thanks to the relationship between the UWM and MPM anthropology departments. Since 1997, I have served as an advisor for three doctoral students and four master's students who relied in whole or in part on MPM collections for their data. I have been a reader on at least as many other Ph.D. and M.S. committees where students successfully used the collections at MPM. Several of these students have subsequently published their research in archaeological journals, including several articles on Late Woodland Effigy Mound ceramics.

My personal research has been enhanced through access to the collections housed at MPM. Data from the MPM has been presented at numerous national and regional meetings, and has resulted in publications in such journals as *American Antiquity* and *Wisconsin Archeologist*. This research covers diverse topics including radiocarbon sequences, maize agriculture and Late Prehistoric settlement patterns. Publications in progress that rely upon MPM data include one on the sourcing of copper artifacts from Aztalan and another on evidence for violence in Oneota groups circa A.D. 1050-1400.

I am only one of many researchers who can tell the same story: The archaeological collections at the MPM have made possible substantial contributions to our archaeological knowledge of both North America and Europe, as well as allowing us to rethink archaeological method and theory.

I strongly support your request for funds to maintain and upgrade the facilities housing the Cultural Heritage Collections. This money will be well spent as it will enable another generation of students to make increasingly important contributions to our knowledge. If I can be of any further assistance, please do not hesitate to contact me. My email is jeske@uwm.edu.

Sincerely,



Robert J. Jeske, Ph.D.
Director, Archaeological Research Laboratory
Adjunct Curator of Anthropology, Milwaukee Public Museum

To: Dr. Ellen Censky, Senior Vice President and Academic Dean, Milwaukee Public Museum

From: Professor Bettina Arnold, Department of Anthropology, University of Wisconsin-Milwaukee, Sabin Hall 390, 3413 N Downer Ave., Milwaukee, WI 53211

Re: Letter in Support of MPM's Application for an *NEH Sustaining Cultural Heritage Collections Planning Grant*

Date: November 27, 2014

The Milwaukee Public Museum's European and Near Eastern archaeological collections have been an integral and important element in the graduate program in Old World archaeology in the Department of Anthropology at the University of Wisconsin-Milwaukee in the past 15 years, with twelve Masters or PhD theses completed on topics ranging from the Neolithic and Bronze Age Swiss lake dwelling material to beads and ceramics from the Bronze Age site of Tell Hadidi in Syria. The close collaboration between the MPM and the UWM Anthropology Departments, facilitated by Curator of Anthropology Collections/Senior Collections Manager Dawn Scher Thomae, has made it possible to re-contextualize several of the 19th century collections that had been lost or were insufficiently documented, so that these materials can now be used in exhibits and research. Digitizing records and photographing objects in the course of this thesis-related research means that these collections are now accessible to scholars overseas as well, especially in Europe, where interest in virtually reassembling material from well-known sites is considerable. As a direct result of the connections established through the dissemination of this thesis research, European scholars from Germany, Hungary, Austria and Croatia have visited the MPM in the past decade to examine some of this material first hand.

The most important recent discovery to emerge from research conducted in the context of two Masters theses completed in 2011 (Caywood MS thesis *The Choice of Legions*) and 2013 (Arnold MS thesis *Fire on the Mountain*) has been the fact that one of the earliest collections acquired by the MPM was the result of actual excavations conducted by MPM founding member and Milwaukee businessman William Frankfurth in the late 19th century in Germany, Austria and Italy. The Roman and pre-Roman Iron Age material in the MPM's collections represents the largest assemblage of this cultural context in the United States and as further research identifies more of the sites where the artifacts were excavated, publications showcasing Frankfurth and the MPM will increase overseas awareness of the institution and its holdings.

One publication featuring the MPM's European collections has already appeared: Bettina Arnold 2013 The lake dwelling diaspora and natural history museums: identity, collecting and ethics. In Francesco Menotti and Aidan O'Sullivan (eds) *The Oxford Handbook of Wetland Archaeology*, pp. 875-891. Oxford: Oxford University Press. Another is in press: Bettina Arnold and Harald Stadler, forthcoming. "Das Geheimnis von Sammlung 213: Milwaukee, USA. Der Hobbyarchäologe William Frankfurth in den Alpen. In *Graben, Entdecken, Sammeln: Laienforscher in der Geschichte der Archäologie Österreichs*, edited by Florian Müller and Harald Stadler. Innsbruck: Institut für Archäologien.

Several of the Old World collections are currently stored in ways that make them difficult to access (this is especially true of the Tell Hadidi material, currently in basement History storage),

while other material has yet to be cataloged (some of the Tell Hadidi material as well as a number of other Old World collections). The Frankfurth material currently in Archaeology storage includes a large number of Roman terra sigillata fragments that have not yet been cataloged or studied as well as a significant collection of iron artifacts, some prehistoric, some early historic, that require additional study before they can be cataloged; several large scale oil paintings by WPA painter Albert O. Tiemann featuring scenes of trade in the ancient world that are in basement storage could be part of future exhibits once retrieved and restored and space to work on all of this material is sorely needed. The unstable humidity and infrastructural issues in basement storage are an ongoing problem, especially for the metal objects and those made of organic material. This is a world class collection of archaeological artifacts from various Old World contexts and time periods that has gradually been emerging into the light of international scholarship and I wholeheartedly support the MPM's efforts to facilitate that process through an *NEH Sustaining Cultural Heritage Collections Planning Grant*.

Bettina Arnold, Professor
barnold@uwm.edu
414-229-4175

Sabin Hall
P.O. Box 413
Milwaukee, WI
53201-0413
414 229-4175 phone
414 229-5848 fax

December 1, 2014

Re: NEH Sustaining Cultural Heritage Collections Planning Grant

To whom It May Concern:

The Milwaukee Public Museum (MPM) houses archaeological and ethnographic collections that are critical to ongoing research throughout North America. My own research focuses on late prehistoric cultural dynamics in the western Great Lakes region and would not be possible without access to the collections housed at MPM. The collections include materials from some of the most famous Middle Mississippian, Late Woodland, and Oneota sites known. In addition to my own research I have directed or served as advisor on 32 student thesis and dissertation projects based wholly or in part on MPM collections. Many of these students were enrolled in the Museum Studies program jointly offered by the MPM and University of Wisconsin-Milwaukee. This program is nationally known as a consistent producer of well-trained museum professionals and a fundamental part of the program's success is due to the student's hands-on experience with material culture collections.

Continued access to the MPM collections is crucial and an upgrade in facilities, storage systems, and retrieval technology is badly needed to ensure future viability of this unparalleled resource. Consequently, I strongly urge you to support the MPM proposal for a NEH Sustaining Cultural Heritage Collections Planning Grant.

If you have questions or require additional information please do not hesitate to contact me.

Sincerely,



John D. Richards, Ph.D.
Director, Historic Resource Management Services
Associate Director, UWM Archaeological Research Laboratory
Associate Scientist, Department of Anthropology
Adjunct Curator, Milwaukee Public Museum
Dept. of Anthropology, Sabin Hall 221
The University of Wisconsin-Milwaukee