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**Date:** 3/3/06 2:56PM  
**Subject:** Docket 70-7004, New Discovery of Earthwork Adjacent to Main Gate of USEC Project

To: The Commissioners, Secretary, Atomic Safety and Licensing Board, Federal Preservation Officer and Staff, US Nuclear Regulatory Commission  
From: Geoffrey Sea  
Regarding: New Information, USEC Inc. ACP Project, Docket Number 70-7004  
Cc: USEC, Advisory Council on Historic Preservation, National Park Service, Ohio Historic Preservation Office, Federal Preservation Officer of the Department of Energy, National Trust for Historic Preservation, Heritage Ohio, Ohio Preservation Alliance, Archaeological Conservancy, National Association of Tribal Historic Preservation Officers, Absentee Shawnee Tribe, Native American Alliance of Ohio, Ohio Historical Society, CERHAS, Thomas King, Jarrod Burks, Robert Horn, Kathy and Richard Southworth, Charles Beegle and others.

Date: March 3, 2006

The location of a famous prehistoric earthwork in Sargents has been rediscovered, immediately adjacent to the main entrance to the DOE reservation where USEC proposes to locate its new uranium enrichment plant. This letter is to inform the Commission, the Licensing Board, the NRC Staff, the NRC Federal Preservation Officer and other parties of this major new finding and of new contentions pending submission based on that finding.

The earthwork is a unique structure that was identified and described by Ephraim Squier and Edwin Davis in their 1848 publication, Ancient Monuments of the Mississippi Valley. Its location on the ground was lost in the mid-twentieth century, with construction of the gaseous diffusion plant. The finding has been reviewed by archaeologists who believe that most of the structure is intact subsurface and will be fruitful for archaeological investigation and possible reconstruction.

The site is immediately threatened by road work scheduled by the Ohio Department of Transportation. Actions by NRC are needed to protect the site as will be discussed herein.

### The Earthwork

In the text on pages 66-67 and in a drawing that accompanies Plate XXIV, Squier and Davis described a "unique" and "remarkable little work" with a shape unlike any other known construction in the hemisphere, which they labeled "Supplementary Plan N." (The nearest works of comparison are located in Sweden, according to Squier and Davis.) It consisted of a wall following the outline of a near-perfect circle, 240 feet in diameter, cut by an open-ended tube that protruded from each end of the circle, making the entire work 360 feet in length, with each open gateway 90 feet wide. The word "little" was a relative term, for this work was fully half the length of the great Serpent Mound. A large conical mound was immediately adjacent to the structure to the north (possibly of older construction). When surveyed in 1846, the earthen walls were about four feet high.

Charcoal deposits and layers of white mollusk shells have been found on the property, which can now be taken as evidence that excavation will likely

produce charcoal that can be carbon-dated. The geometric character of the structure and its alignment with the nearby Barnes Works (Seal Township Works) suggest that it is from the Hopewell period, between approximately 100 BC and 300 AD. This work had not been given a modern name. Because its shape resembles that of an old alchemical vessel, owners of the property have decided to call it "The Alembic."

Squier and Davis did not give any precise description of its location, saying only that it was "about one mile to the northward" of the larger circle and square.

Even without knowing its precise location, Roger Kennedy called attention to the structure in his 1994 book, *Hidden Cities: The Discovery and Loss of Ancient North American Civilization*. Kennedy is former director of the National Park Service and director emeritus of the National Museum of American History. Following the suggestion of Squier and Davis that the open ends connected to "avenues," Kennedy interpreted this work as a way station along a major roadway, implying that the "Great Hopewell Road" extended south from Chillicothe at least as far as Portsmouth. Kennedy called this a "herradura" on analogy to the Stations of the Cross on Christian pilgrimage routes. (*Hidden Cities*, pages 53, 57 and note 29 on page 305.)

Kennedy's hunch is vindicated by the fact that the Alembic turns up right alongside Wakefield Mound Road, which is thought to follow the approximate path of the Great Road (whatever we choose to call it) in this area. At various times, the road has been called Warriors Path, Zanes Trace and the Scioto Trail.

One thing already learned from the Alembic is how important these earthworks were to the first Euro-American settlers of the Scioto Valley. The town of Sargents grew up around this particular structure. The Sargent Home was located just to the east of the structure, on a rise giving house residents a clear aerial view of it. The Rittenour Home was located just to the west, with a linear sight-line between it and the Sargent Home across the Alembic. The Sargents Railway Station, which later became the town grocery store, was placed just to the south. (The town of Sargents was effectively obliterated with construction of the A-Plant and its associated roadways in 1952.)

Thus all three of the founding families of Sargents built their homes in association with the geometric earthworks, with the Barnes Home overlooking the larger circle and square. This fills out the story of Abraham Lincoln's visit. He came in 1848 as a guest of the Sargent family, but stayed in the Barnes Home where he could better view the larger works.

## The Rediscovery

Given the prior description of the structure as "about one mile to the northward" of the Barnes Works, and given the tendency of these works to follow riverbanks, I at first interpreted Squier and Davis to mean one mile north along the river, which angles to the northwest as one goes upstream. I therefore had looked for this work on or near the riverbank property on which DOE has sited its well field to support the centrifuge plant. Owing to a few conversations with local residents familiar with the terrain in January and February (2006), I began to think that "northward" might mean true north. In January, I went to the Pike County Office of Soil and Water Conservation to obtain aerial photographs of the area we might call "central Sargents." The earthwork appears clearly on the 1938 aerial, shaped and angled exactly as Squier and Davis had depicted it, one mile true north, just as they said. Part of the reason I did not look in this area earlier is that I assumed that DOE, USEC or NRC surely would have found it already if it was right at their main gate.

Route 23 and the A-Plant ramp and bridge network did not exist in 1938, and the local configuration of unpaved roads was entirely different. It was

therefore beyond my capability to locate the structure on the ground. I enlisted the aid of three groups of experts -- the team at the Center for the Electronic Reconstruction of Historic and Archaeological Sites at the University of Cincinnati; the team of Ray Hively and Robert Horn at Earlham College, who had discovered the archaeoastronomical alignments of earthworks at Newark, Ohio; and Jarrod Burks, an archaeologist who specializes in the mapping and geophysical detection of earthworks.

In mid-February, Dr. Burks gave me approximate indications of where I could expect the structure to be located. Dr. Horn visited on February 13, and we visited the site to see if we could find visible remnants. Subsequent to his visit, Dr. Horn found aerial photographs of the structure taken by Dache Reeves of the US Army Air Corps in 1938 (or thereabouts), part of a famous archive of aerial surveys of the earthworks that Reeves conducted. On Saturday, February 18, Dr. Burks visited and surveyed the site with a GPS meter for the purpose of mapping the aerial photographs to modern-day property lines and landmarks. Over the next two weeks, Dr. Burks produced drafts of a map based on this survey. A copy of the final map is attached to this e-mail.

Only after knowing how the structure mapped to current property lines could we go about contacting property owners. The main property on which most of the Alembic is located is occupied by a church, the Liberty Life Sanctuary. A small part of the southern end of the earthwork extends over the property line onto unpaved land occupied by a heavy-equipment sales company. A sliver of the northeast part of the earthwork appears to extend onto the ODOT right-of-way for the ramp that carries traffic from Route 23 into the atomic reservation.

Dr. Burks and I met elders of the church when we took the GPS readings on February 18. I subsequently contacted Pastor Trenton Brown of Liberty Life Sanctuary, who explained that the current deed-holders are Kathy and Richard Southworth, who have contracted to sell the land to the church on an extended schedule. I learned later that the Southworths also own the adjacent property that they lease to the heavy-equipment company.

I contacted the Southworths on February 18 and 19, though I was already acquainted with them, because Richard Southworth is a cousin of the boy who shot the last wild passenger pigeon in Sargents in 1900. I had spoken to them previously doing genealogical research.

Neither the Southworths nor any other resident or recent owner of the property had any idea about the presence of an earthwork on the site. On Monday night, February 27, we held a community meeting at the Liberty Life Sanctuary, announced in the county newspaper, to inform community residents and congregation members about the discovery. The Southworths were present, as was Charles Beegle, who owned the property between the 1950s and 1970s. Dr. Beegle also owns the Rittenour Home and the Sargents Railway Station. Pastor Brown and many Liberty Life congregants were also present, along with one Pike County commissioner.

It is fair to say that the congregants of the Liberty Life Sanctuary regard the discovery of a major 2000-year-old earthwork on their property as highly significant.

### The Immediate Threat

When I contacted them, the Southworths informed me that major work on the ramp and bridge was scheduled to start on March 6 (this coming Monday). Monday the 20th was Presidents day, so all government offices were closed. On Tuesday, February 21, we began to contact government agencies that could inform us about the impending work, and that could help us achieve immediate protection status for the Alembic.

Over the last ten days we have had numerous communications by phone and e-mail with the following agencies: ODOT (Ohio Department of Transportation),

FHWA (Federal Highway Administration), OHPO (Ohio Historic Preservation Office), ACHP (Advisory Council on Historic Preservation), NPS (National Park Service). We are informed by OHPO that they have contacted the Department of Energy about this issue.

In these matters, the Southworths, Charles Beegle, myself and other owners of historic properties in Sargents are acting together as the Sargents Historic Preservation Project. We are coordinating our activities with the Liberty Life Sanctuary.

We first had to determine if ODOT, FHWA or OHPO were aware of the Alembic. They were not, and all the listed agencies have now been provided with the attached map. There has been general consternation over the fact that no agency or organization associated with the atomic site had located this earthwork and informed ODOT about it, so that it could have been factored into the planned work. Though the ramp and bridge are ODOT property, they serve a single user. That is, since 9/11/01, those roadways are closed to public use. All traffic up the ramp and across the bridge passed through the west-portal security gate to the atomic site. A highway sign that points the way to "Centrifuge Circle" is planted immediately above the earthwork on the side of the ramp. The ODOT project about to commence involves "reconstruction" of the bridge and milling and repavement of the ramp. It has been extremely difficult to get an accurate description of this work. On the basis of a consensus reached at our community meeting, we have asked ODOT and FHWA to postpone the work on that ramp and bridge, pending a consultation with all involved parties -- including DOE, USEC and NRC -- that can take the presence of the earthwork into account. As of yesterday, ODOT has decided not to honor this request, in large part because they have no channel of communication with DOE, USEC or NRC. FHWA has decided to defer to ODOT. OHPO, ACHP and NPS may not be happy with this state of affairs, but feel they have little power to alter the agency decision directly. The entire problem stems from the historic failure of DOE, NRC and USEC to take historic preservation concerns seriously and to implement some kind of coordinated action on those concerns.

At issue with the ODOT work is more than the direct impact of the work on the site of the Alembic. The road work is being done in conjunction with a general reconfiguration of traffic patterns on the atomic site, in large part to accommodate the new USEC project, which has not yet been licensed. It appears that the west portal, which includes the bridge and ramp that adjoin the Alembic site, is being converted from the main portal to carry employee automobile traffic to a portal primarily for trucks carrying radioactive cargoes. New lanes to carry automobile traffic have been constructed at the reservation's north portal.

Obviously, the potential impact of truck traffic with hazardous cargo right over a sensitive archaeological site has not been studied (or not revealed to the public). Once studied, it may become clear to all parties that the west portal should be closed permanently, with the bridge and ramps removed. A spill or crash involving hazardous materials off the bridge or ramp could easily require the removal of contaminated soil, including the earthwork itself. Removal of the whole bridge/ramp structure would allow DOE and USEC to route traffic to other portals where there are not sensitive archaeological concerns. And it would allow the Sargents community to preserve and restore the Alembic as a world-class site for tourism and study, without a highway ramp and bridge obstructing sight-lines and views of the sky.

This option could still be implemented. But now it would involve the removal of structures on which \$3 million in federal money has just been spent (plus an unknown amount of state funds). This tragedy can still be avoided with fast action.

Speaking now for the Sargents Historic Preservation Project, we ask NRC to intervene to postpone the road work scheduled to start March 6, until such time as a consultation of affected parties can occur. One way to accomplish this

would be for the NRC to make a request of the National Park Service for an immediate determination of eligibility for the National Register for the Alembic site. This procedure was established specifically for such cases of new discoveries in the face of pending federally-funded projects. NPS is prepared to act on the request, and that would make a Section 106 Review under the National Historic Preservation Act kick in automatically. ODOT and FHWA would have to be told that this process is underway.

We are also asking NRC to request removal of the "Centrifuge Circle" sign over the earthwork by ODOT. NRC should remind ODOT and the applicant that the ACP is not yet licensed and that signage posted in a historic property is therefore inappropriate and unlawful.

### NRC Licensing Action

Three processes now pending are directly affected by this new discovery. First, NRC Staff has requested an opinion from the Advisory Council on Historic Preservation regarding the appropriateness of NRC proceeding with its Section 106 Review of ACP without considering the history of DOE noncompliance with NHPA and other preservation laws. This development shows dramatically that the history of DOE noncompliance weighs heavily on the general compliance of the centrifuge project. If DOE had complied with the law, the Alembic would have been located, property owners would have been notified, roadways would have been changed to avoid impacting the site, and the site would not now be imperiled. NRC must now reconsider its position and help make ACHP aware of the new developments.

Second, the NRC Section 106 Review of ACP must now be extended and expanded to include new consulting parties, and existing consulting parties must be apprised of the new developments. Charles Beegle requested to be a consulting party in a letter to NRC submitted on February 28, 2005, one year ago. Not only has NRC failed to make him a consulting party, NRC never replied to his letter. As former owner of the Alembic site, Dr. Beegle must now be included in the consultation process. The Southworths, the Liberty Life Sanctuary, and affected Native American groups must also be included. This is a textbook case of new information that requires new studies, supported by the federal agency. Further surveys of the Alembic site should be supported by both NRC and DOE.

Third, the Commission has not yet ruled on my appeal of the decision of the ASLB regarding the inadmissibility of my original contentions. Much of the logic regarding the ASLB's rejection of my contentions regarded their finding that I had not submitted sufficient evidence of potential impact on historic properties. Discovery of the Alembic site right under the main gateway to the proposed project, shows not only that large potential impacts are present, but also supports my assertions that the whole area is chock full of archaeological riches awaiting discovery, hidden by the history of DOE negligence. We now know that a great ancient road, following the approximate path of Wakefield Mound Road, connected these geometric earthwork sites. This changes previous archaeological assessments that were based only on study of the footprint under the ACP buildings. It changes assessments of impact on the southwest access road, next to the Barnes Home, as well. This too raises a set of issues requiring more study. The Commission should take these developments into account when ruling on my appeal, and I will be submitting new contentions based on the new information.

### Compliance Issues

In a letter to USEC dated May 20, 2004, Dr. Mark Epstein of the Ohio State Preservation Office, wrote the following:

"As you are aware, private citizens have raised concerns about the potential

for this project [ACP] to affect historic properties, including prehistoric archaeological sites. The National Historic Preservation Act strongly encourages federal agencies to include comments and concerns from the public throughout the Section 106 review process.... [w]e believe that it is an important responsibility to listen carefully to public concerns and to provide thoughtful and sensitive responses."

This letter was contained in Appendix B of USEC's Environmental Report for the American Centrifuge Plant. However, the letter was withheld from public release with the originally circulated copies of the Environmental Report, apparently due to an error by NRC Staff. It should be noted that Dr. Epstein did not have me in mind when he wrote the letter, because I had no contact at all with OHPO before August of 2004.

It is now clear that neither USEC nor the two federal agencies involved have taken Dr. Epstein's remarks to heart, and with dramatic effect. USEC, DOE and NRC should have taken steps to locate historic and prehistoric sites potentially affected by the project. Had they done so, they would have located the Alembic immediately, because it was loudly advertised by Squier and Davis, and I put Squier and Davis's Plate XXIV in front of them. I also submitted my essay, "A Pigeon in Piketon," that talks at length about the historic properties surrounding the main gate at the west side of the reservation. Other archaeologists are now kicking themselves that they did not find this structure, and the only reason they didn't is that they assumed DOE or NRC would have found it if it were where it is.

Failure by USEC, DOE and NRC to find the Alembic led to its partial destruction. Since the Southworths and the church had no idea what was there, the church graded a parking lot on the property, just a few months ago. Luckily, the parking lot disturbed only a small portion where the wall of the ring was located. But this destruction was completely avoidable, if the agencies and USEC had taken Dr. Epstein's warnings and mine to heart. If DOE and AEC before it had located the Alembic and informed Charles Beegle, he never would have sold the property and he never would have leased some nearby land to quarry companies. The whole area could have been preserved and restored, as intended by passage of NHPA.

It would be nice if I could send a similar letter as this one to the Department of Energy. I can't, because DOE has erected an impregnable wall against any preservation concerns at the Piketon site. In 2004, I began to approach DOE, merely to ascertain a point of contact for NHPA concerns at Piketon. I started with their Federal Preservation Officer who is also the DOE historian. It was explained by that office they don't actually handle NHPA issues, as all such matters are handled at the field office level. I was referred to Oak Ridge, because they didn't even know what field office had jurisdiction over Piketon.

I did speak to the culture resource coordinator at Oak Ridge, who was helpful in explaining the situation. Oak Ridge had begun to implement a cultural resource plan for Piketon, but then Piketon was removed from Oak Ridge's jurisdiction in 2003, and placed under the new field office in Lexington, Kentucky. Lexington has hired no cultural resource coordinator, last I was informed, so they refer all NHPA concerns either back to Washington or to the Piketon site.

The Piketon DOE office does have a woman charged with cultural resource matters, Christie Wheelie, but she has been instructed not to discuss any matter that may be the subject of litigation with any outside party, including especially me. Since all NHPA matters are now the subject of potential litigation at Piketon, no one in the community here has a DOE point of contact. Bill Murphee, the Lexington field office manager, was "volunteering" to discuss such issues at his semiannual public environmental review meetings. But after I raised NHPA issues at the last meeting, subsequent "semiannual"

meetings were canceled. When backed against a wall to explain why DOE has initiated no 106 review of any activity that involves actual consultations with affected parties, DOE officials say that the 106 review for ACP is being handled by the Nuclear Regulatory Commission. NRC meanwhile claims it has no jurisdiction over DOE, and no interagency agreement between NRC and DOE on NHPA compliance has been filed.

Thus the circle of nonresponsibility is complete. This is the situation that must be rectified, and that I seek to rectify it as a consulting party in the NRC Section 106 review and as an intervenor in the licensing process. This latest discovery raises the urgency of doing so.

Sincerely,

Geoffrey Sea

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Attachment: Map of Alembic site by Jarrod Burks, Ph.D..

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