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NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

565

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

1. Name of Property

historic name Great Saltpetre Cave

other names/site number RK-5; 15Rk84; Kincaid's Cave, The Great Cave on Crooked Creek

2. Location

street & number 237 Saltpetre Cave Road | NA | not for publication

city or town Mt. Vernon | NA | vicinity

state Kentucky code KY county Rockcastle code 203 zip code 40456

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this _X_ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property _X_ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide _X_ local

Craig A Potts 6-6-13

Signature of certifying official/Title Craig Potts/SHPO Date

Kentucky Heritage Council/State Historic Preservation Office

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

✓ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Joe Echson M. Beall 7-30-13

Signature of the Keeper Date of Action

Great Saltpetre Cave
Name of Property

Rockcastle County, KY
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply.)

- [X] private
- [ ] public - Local
- [ ] public - State
- [ ] public - Federal

Category of Property
(Check only one box.)

- [ ] building(s)
- [X] district
- [ ] site
- [ ] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
0	3	buildings
0	0	district
1	0	site
0	1	structure
0	0	object
1	4	**Total**

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

none

6. Function or Use

Historic Functions
(Enter categories from instructions.)

LANDSCAPE / natural feature
INDUSTRY/PROCESSING/EXTRACTION / extractive site
INDUSTRY/PROCESSING/EXTRACTION / processing site

Current Functions
(Enter categories from instructions.)

LANDSCAPE / natural feature
RECREATION AND CULTURE / outdoor recreation
LANDSCAPE / unoccupied land

7. Description

Architectural Classification
(Enter categories from instructions.)

Not Applicable

Materials
(Enter categories from instructions.)

foundation:
walls:
roof:
other: Limestone cave with sandstone sediments

Narrative Description

Summary Paragraph

Great Saltpetre Cave (RK-5) Preserve is northeast of Mt. Vernon, Kentucky in the Appalachian hills. It is approximately 9.1 miles from the intersection of KY 25 and I-75 on 1004. Great Saltpetre Cave Preserve is a 306-acre tract of land along Crooked Creek near Mt. Vernon, Kentucky that contains the primary entrance to Great Saltpetre Cave as well as a few other smaller caves. It has long been a landmark in the Euro-American community, starting as a primary site for the production of saltpetre between 1799 and 1815. Between 1938 and 1980, it was operated as a commercial tourist site, with a campground, and occasionally performed as a site for the Renfro Valley Barn Dances. The Preserve covers the south half of the ridge through which Great Saltpetre Cave runs, and across Crooked Creek to the Laurel Spur (an old wagon road known to a few local people). The south entrance is on the Preserve, the north entrance is under private ownership, by a neighbor who is the daughter of Richard Mullins, the site's care-taker until the 1970s. The area proposed for entry on the National Register includes both Cave entrances and the hillside down to Crooked Creek on both sides, an area of approximately 53.72 acres.

Geology

Great Saltpetre Cave runs through a ridge in the St. Genevieve member of the Newman Limestone formation deposited approximately 350 million years ago. Crooked Creek has cut a winding channel down through the limestone, leaving this ridge, and is currently 60 to 90 feet lower in elevation than the cave. Different hydrological processes formed two distinct kinds of passage types in the cave. These phreatic and vadose passages intersect at the largest room in the cave, Echo Auditorium. The sediments in the cave that were mined for calcium nitrates were washed into the cave from the sandstone and conglomerate deposits that overlie the Newman Limestone. This occurred during numerous events between 950,000 and 20,000 years ago.

Ownership and Management

Great Saltpetre Cave Preserve is currently owned by Rockcastle Karst Conservancy, Inc. (RKC) a 501(c)(3) non-profit organization, dedicated to preserving the unique geological, hydrological, biological, and recreational resources associated with caves and karst in the Rockcastle County, Kentucky region through education, land acquisition and resource management. Great Saltpetre Cave Preserve is the first preserve acquired by RKC. Since 1989 the property has been cared for by the GSP Management Committee. This was done on behalf of the previous owner, the Felburn Foundation. The mission of the Great Saltpetre Cave Preserve Management Committee is to preserve and protect the natural resources of the Great Saltpetre Cave Preserve, maintain and restore those buildings and structures that are important or historically significant and in so doing, provide a pleasant and convenient haven for cavers while protecting a vital part of Kentucky history and landscape. The GSP Management Committee is comprised of eight volunteer members from three area caving clubs - Greater Cincinnati Grotto, Blue Grass Grotto, and Dayton Underground Grotto. The Committee, with help of cavers from each Grotto, has been maintaining the Preserve and steadily improving the infrastructure inside and outside the Great Saltpetre Cave with an eye towards enhancing the natural setting. Our work was so successful, that the Felburn Foundation offered to give us the Preserve if we would continue and expand our work – which was the impetus to form Rockcastle Karst Conservancy. Since 2004, the GSP Management Committee has continued this tradition of stewardship under RKC.

Some of the cavers involved with GSP, RKC, or one of the managing Grottos first visited Great Saltpetre Cave in the 1970s or 1980s when it was still a tourist attraction and campground. A few visited with their parents. Later more cavers used the campground as a base of operations to explore many of the wild caves in Rockcastle County. When the Bluegrass Grotto and the Greater Cincinnati Grotto were approached by the Felburn Foundation to manage the property, they were glad to join forces and support the place that had come to mean so much to many of them. The effort continues to this day. In 1991, the Committee started the annual tradition of Open House on the weekend after Mother's Day. This event brings visitors who all want to tour the Cave. Some are senior citizens who remember coming to the cave on hot August nights for dances when they were younger. Some are students who want to show their parents what they learned on a recent field trip. Cavers volunteer to lead the tours which focus on the history of the Cave, but also incorporate some geology and environmental issues.

Description of the Cave

Both entrances to the cave are secured with gates. The main passage between the two entrances is walkable. The passage is smooth, however there is a significant hill (Bunker Hill) to cross over. Both the width of the passage and the ceiling height vary throughout the Cave. Side passages may be only two or three feet high and a similar width. In contrast, Echo Auditorium is 35' high x 68' wide (at the widest spot) x 160' long.

Three zones in the Cave currently have artifacts or displays relating to the saltpetre mining. The Main Trunk, which runs from Echo Auditorium to the North Entrance, has evidence of the use of v-vats, as well as buried piping for transporting water and/or leachate. The Museum Section, which is immediately adjacent to Echo Auditorium, has a reconstructed v-vat as well as a reconstructed rectangular hopper. This area also has rectangular floor depressions where the hoppers were located. From this area and down into Richard's Run more rectangular vat depressions show the evolution of the vat design through time.

The approach to Russian Dome and the pathway through the Devil's Racetrack were improved for Tourists. There is historical graffiti throughout the cave, concentrated in Signature Alley and sporadically in the Main Passage.

One approaches the Cave by walking on a narrow gravel road that runs level along the steep hillside. This road widens out to about 40' near the Ticket House. To the left, the limestone rock around the entrance becomes visible. The entrance is secured with a solidly constructed double steel gate, 7'-6" wide x 8'-0" high, anchored into a laid stone wall that seals against the limestone walls and ceiling of the Cave entrance. This gate came from the Mt. Vernon jail, and was installed in 1968 or 1969.

Once through the inswinging gates is the entrance room. The ceiling is predominantly just above the gate upon walking in, a small barrel vault rises to about 10'. The floor slopes down about a 3.5' over 70' until reaching an intersection and some harder limestone projecting above shoulder height. This was sculpted by the water which formed the cave and is the first glimpse a visitor has of the wonderful shapes visible inside. There is a side passage to the east which is one foot up from the sediment-packed floor, and a small crawling upper passage to the west. The upper passage and the sculpted forms are both illuminated by electric lights and catch the visitor's attention. Daylight reaches into this room, but no further.

Beyond the sculpted intersection there is a continually-moist section along the east wall with a short rock barrier around a depression in the floor. A bit of flowstone has formed high on the wall. This was marked on DuFour's 1805 map as "Waterfall" and could have been one of the in-cave water sources for the miners, although the flow of water is minimal these days.

Proceeding forwards, one approaches another intersecting room to the west. At this point the ceiling rises quickly to about 30'. The smooth sediment-packed floor rises gently, almost imperceptibly. Turning into this room, one notices the horizontal grooves of the sedimentary limestone laid down in multiple events showing the heaving and erosion that happened over the ages. This is the antechamber to Russian Dome (or the Warm Room) and Pig Pen (or Scots Hole). One bat likes to sleep on the wall at about 10' off the floor. Occasionally a few other bats are noticed in other ceiling areas or crevices, but not many live here. This space is known on some maps as Bougher (pron. booger) Branch.

From this antechamber, one goes down a slope about 4' to a bridge over an intermittent stream. In the early 1970s Gilmer Prewitt constructed a replica moonshine still for John Lair just above the stream. It has fallen apart, but there are plans to reconstruct it and improve the lighting in this area. Crossing the wooden bridge to Russian Dome, one notices a low ceiling overhead and stone steps ascending about 10'. At the top of the steps it becomes clear one is in the Warm Room. As the air flows through the cave, the warmest air rises to the highest ceilings and gets captured here with a ceiling height of about 30'. This is an area of active formations with water running down flowstone into a pool. There are a few smaller flowstone formations which are all a vanilla-caramel color dripping over the darker soot-covered blocky limestone. The visitor who watches her feet will avoid stepping on 4" high stalagmites that are trying to grow.

The other passage off the antechamber is tight and requires scrambling and crawling to get through. This is called Pig Pen. There is a story that people made moonshine in the Cave. In order to conceal the corn mash from the "Revenuers", pigs were kept in the Cave and fed the corn mash. The pigs were said to have been kept in Pig Pen. The more likely source of the name was the ancient flat-headed peccary bones sent by Dr. Sam Brown to Thomas Jefferson in 1806.

Returning to the main passage and continuing north into the Cave, the visitor will notice that he is walking up a hill. The rock shelves along the passage walls seem to be diving into the floor, but they are generally level, as is the ceiling. Part-way up this hill, where the passage turns to the right, a tour guide will point out a mound of sand and gravel against the wall of the cave. With a good light, standing at a distance away from the mound, one can see the bands of colors indicating many depositional events that filled this passage with the sediments the miners were after. The tour guide will

also call your attention to pick marks, the general orange staining on the walls of the Cave and some ledges 12' off the floor with more of this sand and gravel. All this is evidence that the miners moved a LOT of this sediment during the mining operation.

At the top of Bunker Hill, the ceiling which has been level is now 14.5' above the floor. Descending towards Echo Auditorium and the Museum Section, the visitor can see projecting anastamosis on the east wall of the passage and rock shelves at various levels along both walls. This is a vadose passage, one that was formed by water flowing at the bottom of a canyon-like passage, slowly cutting its way down through the layers of rock. Much later, after the void in the rock was created, water from the surface brought the sandstone sediments in and deposited them throughout the Cave.

It is these interestingly-shaped walls that frame the next feature. When electric lights were first placed throughout the Cave, it took trial and error to get the features properly illuminated. At one point, a light was placed on an upper ledge to shine on the opposite wall. The next time Michael McGuire, a tour guide who still lives nearby, took a group through the Cave, he saw the silhouette of Abraham Lincoln in the shape of the passage. This was due to a fortuitous placement of a light fixture, and the imagination of the observer.

At the base of the hill, the visitor's attention is caught by the artifacts in the Museum Section, and the height and expanse of Echo Auditorium to the left, at the other side of Atlas Pillar. Echo Auditorium is a continuation of the vadose passage, no doubt enlarged by the massive quantities of water flowing through the intersecting phreatic tubes. The Museum Section, Richard's Run (back off to the south-south east), and the Main Trunk passage leading north west are all phreatic tubes, formed by the dissolution of rock by water flowing full in these conduits. The water fills a passage wall to wall, floor to ceiling; it dissolves the rock evenly from all surfaces resulting in an oval shape to the passage. This is also a very strong shape, as the compression forces above are transferred outward and downward to the rock below.

In contrast, vadose passages such as Echo Auditorium are likely to have "breakdown", which are slabs of rock that have fallen from the ceiling or upper wall when water has eroded away the rock layers beneath so that they are incapable of supporting the upper layers. Think of how brick corbels out from a wall or pilaster to an overhang. A mason will not step each higher layer of brick out more than 1/8 to 1/6 of a brick width, thus limiting the arch that can be formed by corbelling. These limestone rock layers do not have a consistent size due to the original deposition and subsequent moving of the earth cracking the brittle rock both horizontally and vertically. Thus the under-supported rock falls to the floor and cavers encounter piles of breakdown in large vadose rooms. The early explorers and miners found much breakdown in Echo Auditorium (or Church as it is called on DuFour's map). In 1966, Dr. Wayne R. White, a geography professor at Eastern Kentucky University at the time, surveyed the Cave and recorded his observation about the vat sites, dump sites, piles of breakdown, and ceiling heights. This clearly shows a significant amount of breakdown in Echo Auditorium with a ceiling height of 45'. In August of that year, J. R. French [1] was hired to level the floor in that room, construct the stage, and make the passageway from the south entrance to Echo Auditorium easier to walk. In so doing, he obscured all indications of vats and the mining process in Echo Auditorium, Bougher Branch and the main passage adjacent to Bougher Branch. The floor in Echo Auditorium was raised by 5' to 10', and the floor in Bougher Branch was raised by 3' to 5'.

Leaving Echo Auditorium, the visitor enters a wide phreatic tube leading northwest. It is approximately 8' high until it reaches a bend. Here the passage is enlarged with a higher ceiling, and is known as the Chapel. The floor becomes irregular here due to the vat sites and dumps. Turning to the north, the ceiling drops back down and the visitor is in the Main Trunk Passage. There are high mounds of dirt (the spent petre-dirt), low mounds and piles of limestone rock throughout this passage. Approximately 300' from the Chapel the visitor can see a log pipe that was used to transport water or leachate for the processing of the sediments. Research has revealed that tall straight poplar trees were cut in 18' to 20' lengths, augered out from each end, and shaped to fit one inside the other to form a watertight seal. One of these joints is also visible. Please see the Narrative Statement of Significance for an explanation of how the miners processed the sediments in the Cave into saltpetre and the importance of water to this process.

At the north end of the Main Trunk, there are two v-vats still in their original location. It is possible that the wood of these vats was protected from scavenging or vandalism by being completely covered by sediments. In 1995, cavers carefully excavated to expose one v-vat down to the collection trough. The other v-vat has about 18" of its side slats projecting above the sediment. At this point the phreatic tube turns to the east and the ceiling gets progressively lower. DuFour's map calls it Baker room, no doubt after the discoverer of the Cave. Recent maps label it the Civil War Hospital. That may have been more promotion than truth, with the belief that claiming an association with the Civil War would bring tourists. This Cave is too far away across difficult terrain to have been used for convalescing soldiers after the Battle at Wildcat Mountain. Plus, there is no mention in any Civil War documents or letters from soldiers to people back home of this Cave or its features.

It is at this bend that the phreatic tube passage once again connects with a vadose passage which leads to the north entrance. This is also closed with a gate from a jail, Livingston Jail this time. The gate is normally locked. The passage to

the north entrance goes up hill about 8'. Passing through the gate, one continues upwards another 6' to a crest. At this point, the hillside slopes steeply down 80' to Crooked Creek. This north entrance is the one supposedly discovered by Robert Baker. Then it would have been a much smaller typical cave entrance that he would have had to scramble down into. As miners started using this Cave they moved rocks and dug out the entrance to be able to move men and materials through it more easily.

During the ten years of major production, the miners needed to get water up to the Cave from the creek. This was probably accomplished with two pumping lift stations on this hillside. Once inside the Cave, gravity helped the water in the pipelines flow downhill towards the Museum Section and Richard's Run where most of the processing was done. It is suspected that there might be a second pipeline to carry the leachate back to the north entrance so that the boiling and concentrating could be performed outside. This is still under investigation, and is supported by the direction of the recently uncovered pipe joint and the presence of two pipes in Mammoth Cave whose system design was based on that of GSP.

The Museum Section contains most of the reconstructed or collected artifacts to explain the saltpetre mining and processing operation. There is a reconstructed rectangular hopper backed up to Atlas Pillar. Its base is at the same level as the walking surface around it, allowing the visitor to see its construction. On the opposite wall are rectangular depressions showing where the hoppers were actually located. There are some remnants of the leachate collection pipe against the back wall. The reconstructed hopper is an interlocked log construction over an imbricate filter. The imbricate filter is a series of log pipes cut lengthwise, with the top halves shifted halfway onto another pipe so that leachate runs down into the lower half pipes and out into the collection trough. Also there is an oxcart to show the method of transporting the sediments from other parts of the Cave to this area and dumping it into the hoppers. Research by Angelo George into saltpeter mining has revealed that this ox cart on display has too large of wheels and the tread is too wide. [2] Next to that is a replica v-vat. These were used by small groups of miners usually in smaller sections of passage or before and after the time of major production. There is a grist mill to show what was required to grind flour and corn to feed so many people living and working at the Cave. A lye hopper, of the kind used to soften corn into hominy is on display. There are also a number of troughs collected from nearby smaller saltpeter caves. Although they have been removed from their original locations, they have been saved from scavengers of firewood or vandals, and are able to be seen by many more people than if they had remained in their original place.

Running along both sides of the phreatic tube passage from the Museum Section to Richard's Run are depressions from more rectangular hoppers. Research has revealed that the design of these vats evolved over time. No doubt the driver of one of these changes was the series of tremors known collectively as the 1812 New Madrid earthquake. This must have liquefied the loose sediments below the vats and allowed them to sink and twist as it did to the Mammoth Cave operation.[3] In the first portion of Richard's Run, along the north wall are the forms from nine rectangular hoppers. Impressions from the logs can be seen on the sides and back and there are indications of a connecting pipe in the rear. These hopper impressions are about 6' high, the same height as the unexcavated sediments further down the passage. On the South side of that passage are indications of mining excavation. Pick axe marks are visible on the wall and staining goes up 7' to 8' on the wall. White's map indicates there were additional hoppers on that side, but evidence of that was eradicated when the bulldozer leveled this area for the dance floor.

The final passage is called the Devil's Racetrack and includes Signature Alley & Fat Man's Squeeze (aka Fat Man's Misery or Pinch Em Tight Alley). The floor of this narrow sinuous passage starts down a slope from the lowered floor of Richard's Run. Short lines of carbon black very high on the wall, and a late 1700s date, indicate that the floor was significantly higher when the Cave was first occupied. The soot on the ceiling combined with the carbon black marks suggest that people came into this passage with torches, and knocked them against the wall to dislodge the ashes and allow the flame to flare up. Today the illumination is from rope lights along the floor. This passage is characterized by undulating wall surfaces, averaging 4' wide above a person's waist and belling out at the floor, with a wider section within 2' of the ceiling. Some 60' into this passage the floor slopes up and there is a limestone arch over the passageway with a keyhole-shaped opening to walk through. Visitors stop and look in the few alcoves which are richly decorated with historical graffiti. Some of this appears to be older Indian scratch drawings in the soft limestone, frequently overwritten with signatures of visitors from the 1800s and early 1900s. This area contains a record all along the walls of many of the families living in the area as well as visitors who traveled from distant parts of Kentucky and southern Ohio. Although people continue to visit and thoroughly enjoy this part of the Cave, no one is allowed to add any markings. They are encouraged to not touch the walls or even allow their shoulders to rub against the surfaces, as this would obscure the markings for future visitors.

Halfway through this passage, one goes down a few steps carved into the sediments to the level of a small cave stream. There is a bridge of sorts across the water (or moist gravel according to the time of year). The bridge is a pair of heavy timbers, about 18" wide total, spanning about 8'. Water from a small waterfall ahead has clearly carved into the sediments, creating a channel for the stream. The passage takes a bend at the bridge and it enlarges into a room corresponding with the channel under the bridge and leading out. After a few feet the passage above waist height narrows again and the

historical graffiti is greatly reduced. There is a second bridge of sorts over a pool of water at the base of the waterfall. This is constructed of similar heavy timbers placed perpendicular to the path of travel supported on rocks and is not more than 24" wide.

Beyond the second bridge one encounters stalagtites. The visitor is encouraged to follow the pathway of flat rocks (laid flagstone style) to avoid hitting his head against the formations. It is in this area that the Egyptian Queen, as shown in Owen & Lair's early tourist brochure, is located. Most people do not notice a small crawlway that leads off to the south-southeast from a belled out portion near the floor. This contains more historical, dated signatures.

A little further on is the final section of the Devil's Racetrack: Pinch-Em-Tight Alley. As John Lair said – "... you will have to turn sideways to get through some of the tight spots, so if you don't have a 'sideways,' better not try it." [4] The ceiling remains high, and the floor slowly rises. The passage is very sinuous and gets down to 15" to 18" wide at spots. There are no signatures in this section of passage, which is good because one cannot help but brush up against the walls. After about 50' of this, the passage widens out again and there is a natural step up. Ten feet further and one is in the entrance room. This is the passage to the right which was unremarkable when first entering the Cave.

Non contributing resources also within the district boundary:

- The **Ticket House** was constructed in 1968 for John Lair by Bill (William Ruby) Bostick and a team of masons. The walls are coursed, rough cut limestone. The lintel over the main door and front window are heavy timber with angle cuts at each end. It has a gable roof, with heavy timber collar tie and kingpost facing the approach road. The south or down hill side wall has deteriorated due to its construction on insufficiently compacted fill placed when the approach road was widened in 1965.
- Along the road is a composting toilet facility known as the **Green Latrine**. It was first available for use in March 2012.
- The **Shelter** is straight down the hillside from the Cave entrance and the Ticket House, near the Creek. It was constructed approximately 1967. The cavers who manage the Preserve consider the site of the Shelter to be significant, as old-timers remembered this to be a spot where nothing would grow. Thus the cavers have concluded that this was the toxic waste dump site (see further explanation in the Statement of Significance).
- The **Tractor Barn** was constructed in 1997 on the site of a house that was lost due to arson. The house (and its predecessor on the same site) was the residence of the caretaker from the late 1930's until July 1993.

Great Saltpetre Cave
Name of Property

Rockcastle County, KY
County and State

8. Statement of Significance

Applicable National Register Criteria

- [X] A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B Property is associated with the lives of persons significant in our past.
- [ ] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

Property is:

- [ ] A Owned by a religious institution or used for religious purposes.
- [ ] B removed from its original location.
- [ ] C a birthplace or grave.
- [ ] D a cemetery.
- [ ] E a reconstructed building, object, or structure.
- [ ] F a commemorative property.
- [ ] G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance

Industry

Entertainment/Recreation

Periods of Significance

Saltpetre Mining: 1798-1815

Tourist Cave: 1938 – 1963

Significant Dates

1805 – first cave survey prepared with surveying equipment (John James DuFour)

1938 – Opened as Tourist Cave

Significant Persons

(Complete only if Criterion B is marked above.)

NA

Cultural Affiliation

N/A

Architect/Builder

DuFour, John James – surveyor, engineer

Period of Significance: 2 periods

The cave played a vital role in the production of gunpowder, from its Euro-American discovery in 1798 until 1815, the end of the War of 1812.

Tourism in America rose, as Automobile sales increased and better roads were built. The cave was promoted and became an important part of regional tourism, from 1938-1975. The Period of Significance ends at the conventional point, 50 years prior to the nomination.

Criteria Considerations: NA

Statement of Significance

Summary Paragraph

Great Saltpetre Cave (RK-5) meets National Register Criterion A, of importance for two uses, each spanning two different Periods of Significance. The Cave served 1798-1815 as an important site of extraction of saltpeter, a necessary ingredient of gunpowder. At the turn of the 19th century, purchasing gunpowder from England was less expensive than producing it in the United States, but efforts were made to become more self-sufficient and to compete with the British prices. Three primary sites in Kentucky, the Great Saltpetre Cave, Mammoth Cave in Edmonson County, and Saltpetre Cave in Carter County, became places of enormous expenditure of capital and labor in an effort to extract the named substance from these caves' floors [5]. The product of these places became especially vital when the U.S. re-entered war with England in 1812. Once that conflict ended, purchasing gunpowder from England again became more economical than producing it stateside, and these caves ceased to be important industrial facilities. The property's second period of importance began with its purchase and establishment as a significant tourist attraction in 1938, a use that continued through the 1970s. This nomination uses information from both of the cave nominations named above in constructing its historic context narratives. The nomination of Mammoth Cave claims only Criterion A, and provides information on both of the Great Saltpetre Cave's Periods of Significance. The nomination of Saltpeter Cave in Carter County approaches that resource as an archaeological site, claiming both Criteria A and D. All three caves have retained many features, both on the ground and below-ground, from their use as industrial facilities. These caves' promoters pointed to these features when turning them into tourist sites. Because Great Saltpetre Cave's archaeological exploration has been sporadic, its eligibility for Criterion D is conceivable, but not yet sufficiently explored to support this nomination under that Criterion.

Historic Context: Use of Caves in Kentucky in the Production of Saltpeter, 1795-1815

The saltpeter industry has been generally overlooked in the history of the Commonwealth. Great Saltpetre Cave employed large numbers of people during its last ten years of industrial production, making the substance an important export commodity for the developing state. This brought cash into Kentucky, helping to develop its economy.

The sediments in the cave contain calcium nitrates. The miners gathered these sediments and processed them in one of two ways to obtain potassium nitrate (saltpetre). Both methods begin with the miners placing the sediments in leaching vats lined with straw. Water was poured over the dirt and the leachate (also known as ley, liquor or beer) collected in a series of troughs below. This leachate was a solution of calcium nitrate in water. At this step the two methods diverge. Some miners poured water over ashes to obtain a solution of potassium carbonate in water (also known as lye and commonly used to make soap). These two solutions were combined and a chemical reaction occurred – the calcium from the cave nitrates was exchanged for the potassium and bonded as potassium nitrate in solution and a curd of calcium hydroxide which would settle to the bottom of the pot. The other method involved pouring the calcium nitrate leachate over a vat full of ashes. The resulting solution would be the same potassium nitrate in water with calcium hydroxide settling out in the collection pot. This saltpetre, still in solution, was boiled down until crystals of saltpetre started to form along the inside walls of the kettle. To further purify the saltpetre, the wood ash operation and concentration by evaporation was repeated at least twice. The crystals of purified saltpetre were scraped out, bagged and shipped to the gunpowder mills. The miners were able to produce about one pound of saltpetre from a bushel of soil. The calcium hydroxide was a toxic waste by-product and was discarded. The cavers who now manage the Great Saltpetre Cave Preserve have concluded that the toxic waste dump site is where the Shelter is located. Former residents and caretakers have said that nothing grew there, which made it a good location for a Shelter.

The Earthquake of December 1811 with its epicenter at the New Madrid Fault shook Kentucky and into Cincinnati, Ohio. The aftershocks continued for a few months. Some of the pumping and liquid transport facilities in Mammoth Cave and possibly even in GSP were damaged or destroyed by this quake. Furthermore, the miners at Mammoth refused to enter the cave for a significant length of time, thus Great Saltpetre Cave was relied on to fill the orders once it was operating again.

America declared war against Great Britain on June 18, 1812 due to a number of reasons including trade restrictions due to Britain's ongoing war with France, the impressments of American merchant sailors into the Royal Navy, British support of American Indian tribes against American expansion, and possible American desire to annex Canada. Unfortunately, Great Britain was the source of most manufactured goods purchased by America, gunpowder included. Once the country

was at war, Great Britain stopped selling the US gunpowder and the nation had to rely on domestic sources for all its needs.

The growth of the saltpetre market in America had really started with the Embargo Act of 1807, further stimulated by the Non-Intercourse Act of 1809 and dramatically expanded during the War of 1812. Retail prices for saltpetre went from 15 cents a pound in 1805 to $1.00 per pound in 1814 and back down to 15 cents a pound after the war. There were excess stockpiles of gunpowder ingredients once the conflict ended, plus the Eastern Powdermills could once again purchase gunpowder from India through Great Britain for cheap. "Buy American" fell out of favor, and the saltpetre mines closed. During the Mexican War and later the Civil War, only small-scale mining was conducted in the cave.

Historic Context: Caves in Kentucky Tourism, 1815-1975

With mass production of the automobile in the early twentieth century, and the development of high-quality road systems, tourism in America became a possibility for many in the middle class. Many Tourist caves in Kentucky opened for visitors in the 1920s or a bit later, as the roadway infrastructure at this time was beginning to be improved, enabling greater ease of visiting their location. Some of these caves remain open today.

Interest in Tourist Caves was spurred by the Floyd Collins incident at Sand Cave in 1925 that made headline news across the country. Collins was trapped, and unable to be removed, in a narrow passage of the cave for nearly 3 weeks. With radio in its infancy, the episode became one of the first media events, heightening people's awareness of cave exploration.

During the Depression, the tourism industry was further enhanced by governmental stimulus programs such as the Civilian Conservation Corps and the Federal Highway Modernization Program. Not only did these programs provide jobs for unemployed Americans who were desperately searching for work, but they also improved access to parks and outdoor recreation.

Tourist Caves are a subset of the tourism industry. Mammoth Cave was the first of these three main saltpetre caves in Kentucky to promote visitation, beginning shortly after the War of 1812. It held the advantage of many methods of transportation available to the visitor – from regular stagecoach service, steamboat service on the Green River, and later to rail and the development of roads for busses and automobiles.

The "cave wars" broke out in the 1920s between the owners of Mammoth Cave and neighboring land owners with caves on their property. Those cave owners saw the amount of visitors to Mammoth, and wanted to capture some of that tourist revenue for themselves. Mammoth Cave is still an active tourist destination, being one of the first National Parks and including many of its neighboring tourist caves within the Park boundary.

The Saltpetre Cave at Carter Caves State Resort Park has also enjoyed a long history of visitation. Since at least the 1840s, tourists had been traveling long distances over rugged terrain in order to explore the caves and experience the natural beauty of the area.[6] Until the early 1900s, the C&O railway not only offered rail service to Carter City (today's Olive Hill, Kentucky), but also offered guided tours through other nearby caves.[7] Conversely, a visitor to today's Carter Caves traveled 8 miles from the Carter City station through a valley on an unimproved trail. The Carter Caves property was purchased in 1890 by Samuel B. Timmons, who constructed trails through Saltpeter Cave as well as X-Cave. In 1924, J.F. Lewis purchased the property and, with nine partners, formed Carter Caves Company, also operating a hotel nearby.[8] What is now known as US 60 was under construction in 1929, enabling tourists in their automobiles to easily reach the caves. Carter Caves State Park was established in 1946.[6] Many improvements were added within the next ten years to improve the visitor's comfort and enhance their experience of the park.

History of Great Saltpetre Cave

James Kincaid was a young soldier in the Revolutionary War. Kincaid's service took him along the Ohio River to the Wabash in western Indiana and down to Boonesborough and Danville, Kentucky. In 1785 he was a chainman on a team that surveyed 29,000 acres on the Rockcastle River for James Remy. Eleven years later, in 1796, Kincaid purchased half of that survey. But when he claimed his land, it was shifted about 2.6 miles west of the original survey. This error was the basis of some of the drama in the area when Samuel Brown and George Hunter came to visit in 1802.

John Baker was from eastern Tennessee or western North Carolina. In 1797 he brought his family through the Cumberland Gap & up Wilderness Road. With John were two brothers and John's son Robert and daughter Nancy. Other family members may have also been along. By 1798 the Baker family had arrived in the Crooked Creek area and set up residence or residences on unclaimed land.

In 1798, when Robert Baker was exploring the hillsides around his new home, he found an entrance to a cave. According to Samuel Brown:

> "He entered it by the north mouth but proceeded only a small distance into it. On the succeeding day he brought his wife and two or three of their children to explore it. He carried a torch and his wife a supply of pine. After they had advanced within hearing of this torrent 400 or 500 yards from the north mouth, the only one then known, he dropped his torch and it was completely extinguished. During two days and two nights this miserable family wandered in total darkness, without provisions and without water, though sometimes within hearing of a cataract which they durst not approach. At length Mrs. Baker in attempting to support herself on a rock perceived that it was wet. She conjectured that this was caused by the mud which they had brought in on their feet. Baker immediately ascended the rock, and saw the light of day." [9]

Within a year of this discovery, George Montgomery came to the Crooked Creek Valley with his wife & children. He talked with Robert Baker and arranged to buy the Cave that Baker found (although he had no legal right to sell it). At the same time, Montgomery purchased a house from Meridy Edwards, also on unclaimed land. He moved in and began mining the Cave.

Montgomery may have been unaware of Kincaid's claim when he purchased the land and the Cave from Robert Baker. Kincaid had other property and could have had a primary residence somewhere else. He may have only used the north entrance and mined & processed in the Cave during the winter months when there was sufficient water in the Cave. Anyway, as soon as Kincaid realized that Montgomery was developing a mining operation in "his" cave, Kincaid approached him to formalize an agreement to split the dirt that was mined. Two thirds of it was for Kincaid, and one third was for Montgomery.

By 1801, Kincaid needed to raise additional cash. In January of that year he took out a loan in the amount of 220 pounds (about $1100.00) from George Trotter, Sr. & Alexander Scott. This document lists 9,500 acres of land on the Rockcastle River, saltpetre making equipment, an ox cart, and 12 boiling kettles as collateral for the loan. This transaction was witnessed by William Scott, William Robinson and James Brown, and recorded on September 10, 1801 in Fayette County District Court, Lexington, Kentucky.

That summer George Montgomery got a Certificate of Settlement from Madison County for two hundred acres, authorizing him to have it surveyed. From looking at the sketch which is the survey drawing, this included both the north and south entrance to Great Saltpetre Cave and much of Crooked Creek as it wraps around the hill. By this time, Montgomery knew that Kincaid's claim on the land was questionable, and he wanted to get legal title. In March of 1802 he had the land surveyed and in early April it was recorded. Rockcastle County was formed from parts of Lincoln, Madison, Pulaski and Knox Counties in 1810.

Some time later there was a disagreement. It seemed that Montgomery was taking more than his agreed-upon share of the dirt. So Kincaid took him to court. As part of his deposition, Kincaid included the 1799 agreement. The relevant portion is:

> "... a Saltpetre Cave where the said Montgomery now works & makes saltpetre at on Crooked Creek near where John Baker lives & the said Montgomery by some means or other purchased said cave from Robert Baker who found it, & has openly & made a convenient way for access thereto & by means of an agreement with Meridy Edwards purchased an improvement near said Cave and has settled his family thereon, now it is to be understood seeing said Kincaid hold by Deed sd. Land including said cave as his proper right & Claim and proposes that in & for the consideration as above namely his purchasing it of the man who first found it &c that a third part of all the saltpetre Dirt thereof shall be to his use (the sd. Montgomerys) & benefit his heirs &c forever..." [10]

The joint operation employed about twenty enslaved workmen in the cave, with furnaces and vats at both of the cave entrances. About 1,000 pounds of saltpeter were produced each week. Kincaid foresaw the potential for greatly increased production, and began to seek partners who might have the wealth to expand his operation. Among those who expressed an interest in such a partnership was Dr. Samuel Brown of Lexington, a practicing physician and medical professor at Transylvania University.

In September of 1802, a Philadelphia pharmacist by the name of George Hunter, M.D. was visiting Sam Brown in Lexington. They took a trip to visit James Kincaid and see his Cave. It was a 2½–day trip on horseback. Kincaid's house was said to be 3/4 mile up Crooked Creek from the north entrance and on the opposite hillside.

Kincaid offered to sell the Cave with 1000 acres of his land to Hunter & Brown, but acknowledged that there were several interfering claims that could probably be bought for $400 or less. Hunter & Brown were interested, but wanted Kincaid to bring his ownership documents to some attorneys in Lexington to verify their legitimacy.

Kincaid's outstanding debt at the beginning of March, 1803, remained at 161 pounds. The loan was called and the property that was the collateral was sold on the Fayette County Courthouse steps on April 12, 1804. Alexander Scott (one of the original holders of the loan) bought it for $400.00. Later that year, acting on a motion from Scott, the Madison Court issued an order to build a road from the State Road to the Great Saltpetre Cave.

Scott & George Montgomery, along with William Smith, who had purchased a part of Montgomery's interest in the claim, mined the cave together during 1804. In August of that year, Alexander Scott also purchased a nearby property with another cave and began mining it.

Back in Philadelphia, George Hunter wished to withdraw from this venture, so Sam Brown needed to find other investors. He partnered with Thomas Hart, Jr., a well known Lexington merchant, and Richard Pindell, forming Brown, Hart & Company. They purchased the cave property, about 1,000 acres, from Scott in November 1804.

To turn the saltpeter works into a major operation, Brown hired John James DuFour, a vintner living in Jessamine County to re-engineer and construct an expanded operation. Over a period of a few months, DuFour surveyed the cave, producing the first cave survey in America with survey instruments, and made many improvements and innovations in the mining process. The saltpeter mining operation later built at Mammoth Cave by Charles Wilkins of Lexington was copied from the DuFour designs.

In 1805, Brown wrote a paper on the manufacture of saltpeter and gunpowder and sent a copy to President Thomas Jefferson. This paper describes Great Saltpeter Cave and the method of production, and mentions several other saltpeter caves in the region. His paper was read before the American Philosophical Society in Philadelphia in 1806, and described the cave:

> "The general level of the cave is about 80 feet above the creek. The average height of the arch is ten feet, though in many places it rises to fifty or sixty. The breadth of the passage is generally about forty feet, in some parts it is seventy or eighty feet. The floor has the appearance of a large public road, which has been much frequented. The ceiling is in most places smooth, with but few incrustations or stalactites. In some of the chambers however there are appearances of Gothic rudeness and irregularity which are truly sublime. When these vast chambers are sufficiently illuminated by the torches and lamps of the workmen, they present scenes so uncommon and romantic, that the most stupid beholder cannot contemplate them without expressions of the greatest astonishment." [11]

Brown was caught up in scandal; his family had been involved in Aaron Burr's plot to overthrow the United States government. Brown moved to Alabama and left his several enterprises, including the cave, with his business associates. In other hands, the cave produced saltpeter during the War of 1812, with as many as 60 or 70 workers employed in the operation. In November 1809, Thomas Hart, Jr. passed away. He owned 50% of GSP. Pindell and Brown had smaller shares. The next year, the Fayette County Courthouse pushed to resolve Hart's estate by appointing four men to examine and settle the accounts. One of those men was Charles Wilkins, who had recently purchased an interest in the saltpetre mining operation at Mammoth. When Brown, Hart & Pindell bought into Great Saltpetre Cave, they had twenty men working for them. By the end, there were seventy men. Production at the cave went from 1,000 pounds per week to over 1,000 pounds per day. As part of the settlement of Hart's estate, Great Saltpetre Cave was sold to Robert M. Lewis in late 1813.

History of Great Saltpetre Cave as a Tourist Attraction

In July of 1938 Dr. Walker Owens, a prominent physician in Mt. Vernon, and Mary Alice Barnett, a Mullins and the Deputy Clerk of Rockcastle County, purchased the South Entrance Tract from the mother of the previous property owner who was tragically killed four years earlier. They opened the Cave for tours and had the Gauley Mountain String Band playing in the Cave on Labor Day weekend.

A few months later, John Lair bought Barnett's half interest in the property. He had recently returned to the area and was restoring the Old Renfro Valley Settlement. In November of 1939, John Lair realized his dream and opened the Old Barn at Renfro Valley. Although he had no formal college education in this field, he was a student of history. Lair was fascinated

with the stories of people in the hill country, and carefully documented what he heard. Later he published *Tales from the Hills*, a collection of stories he had gathered from the families in the Mt. Vernon and Livingston region.

The history of Great Saltpetre Cave must have fascinated Mr. Lair. Many typewritten pages have been found tracing the research he collected. Over the years, there were public performances in the Cave merging the musical shows with the natural beauty of the Appalachian hills. A few were broadcast via telephone wires over WHAS radio. He marketed the Cave to the visitors at Renfro Valley, and he advertised the Renfro Valley show to the people who came to tour the Cave. Horseback rides, departing from Renfro Valley would take people to the Cave for the afternoon. Festivals, showcasing activities of daily life in the past, occurred at both sites.

Many Americans were taking road trips with their families once they purchased a car. The highway system was expanding, but at that time a highway might have been a gravel road. Great Saltpetre Cave was off of a local road, part gravel, part dirt. It was challenging to get there but many people still visited. Tourist brochures advertised nature's underground beauties with exotic names, like Frozen Niagra, Hindu Temple, and the Egyptian Queen. There were also vats and hoppers on display harkening back to the Pioneer times. Reference was made to its use as a Civil War Hospital, although no evidence of this has been uncovered.

The South Entrance tract is generally understood to include the primary entrance to the Cave, up to the road on the top of the hill, down to and along Crooked Creek to the south in the valley below the Cave, west including the entrance road, and east partway along what is known as Long Bottom. Loid Mullins was the neighbor to the east, owning the majority of Long Bottom and the hillsides through which the Laurel Spur, a local road—really, not much more than a horse trail—passed. Loid sold his family homestead (excluding the Champ Mullins Family Cemetery) to Owens and Lair in 1948, which increased the total acreage to 306.

Dr. Owens health was declining and in 1963, Mr. Lair bought him out and became the sole owner. This gave him the freedom to express his vision of a prime tourist attraction. Over the next few years he made many improvements, including logging the property (some of these timbers were used to construct the Shelter), leveling off & lowering the ground around the South entrance to the Cave, and creating the upper parking lot.

In 1966, Dr. Wayne R. White, Professor of Geography at Eastern Kentucky University, surveyed the Cave and prepared a map showing the locations of the vat sites and dumps. On this map the height of Echo Auditorium is shown as 45'. Later that year, Mr. Lair had a little backhoe and tractor move the piles of breakdown and sediment in Echo Auditorium, making a reasonably level floor and a stage. Now the height of Echo Auditorium is 35'. The ceiling has not changed; the difference is in the floor. As that floor was leveled, the pathway from the south entrance to Echo Auditorium was also smoothed out. This earthwork destroyed evidence of the vats, piping and processing in Echo Auditorium and near Bougher Branch. In addition, the rectangular vat impressions along the south side of Richard's Run were removed to make room for a dance floor and gathering space.

Electric lights were strung and the gates and stone infill installed the following year. The ticket house was constructed in 1968 and the Cave was reopened to the public. In 1970, Richard Mullins became the resident caretaker on the property. The remote location of the cave, however, was its downfall as a commercial enterprise. By 1976, tours of the cave were self-guided. In 1985, the cave property was auctioned off, and the cave was closed to the public. In that same year, John Lair passed away at the age of 91 years and Richard Mullins moved off the property.

Evaluation of the Great Saltpetre Cave within its two historic contexts

Great Saltpetre Cave was the first cave in Kentucky to be commercially mined for saltpetre on a large scale. This was in anticipation of, and throughout the War of 1812. It is also the first cave in America to be surveyed using instruments. Other maps around that time were "eye draughts" which were actually high quality sketches, but without the precision of measurement. From the initial existing conditions survey, John James DuFour engineered a system of pipes to transport process water, leachate, or both through the cave and designed rectangular hoppers which allowed miners to more efficiently process the petre dirt into leachate. His cave maps are in the Archives of the Philosophical Society of America in Philadelphia. This concept was copied for use in Mammoth Cave, where more artifacts from this period were visible and documented through the nineteenth and twentieth centuries. Great Saltpetre Cave was one of the three main producers of saltpetre in Kentucky during the War effort.

During the 1920s in the Appalachian Hills of southeastern Kentucky, people still moved around on dirt trails or one-lane gravel roads. US highway 25 between Livingston and Berea was a two-lane well-packed dirt and gravel road until the early

1940s.[12] As a rural community, life was hard during the depression. The main industries were extractive – timber, limestone in its various forms, and a little coal, which would be transported by rail. One type of "work" for some was scavenging speleothems from eastern Kentucky caves to be sold roadside or to operators of souvenir shops in the Cave City area.

Although Great Saltpetre Cave was known and visited between 1815 and 1938 (as evidenced by the inscriptions in Signature Alley), the transformations in personal transportation throughout America and the lack of infrastructure to support this in the Appalachian Hills kept this cave from being promoted as a Tourist Attraction until 1938.

In the 1960-70s, the Interstate Highways were nearing completion, and attractions along them were taking tourists away from the mom and pop operations along the state highways. The Great Saltpetre Cave was either 7.8 miles or 9.1 miles off US 25 by gravel roads in the Appalachian hills. State Route 1004 (the longer route) was finally paved, albeit still one lane, in 1967. By 1975, tourists had ceased to visit Great Saltpetre Cave regularly, and the operation finally closed.

Evaluation of the integrity of the Great Saltpetre Cave's Significance in its Present Physical Condition

The Great Saltpetre Cave meets a single Criterion, A, and is significant within 2 very different historic contexts. For any property meeting Criterion A, the most important integrity factor is integrity of Association, for Criterion A emphasizes the link between the identity we give places, their values, and the ability of the physical resource to sustain those notions: the "Property is **associated** with events that have made a significant contribution to the broad patterns of our history." Great Saltpetre Cave will have integrity of Association, and thus be eligible, if it continues to have integrity of location, setting, materials, and design.

Great Saltpetre Cave has integrity of **location** because it has not moved. The cave opening locations have not changed in the 200 years of significant activity. The location of the cave is stable, but embedded in the location lies very rich information about the cave's use and both functions. Knowing that this was a saltpeter mining site on the American frontier makes the story of the extractive industry all the more impressive. The great cost of mining saltpeter at this site in the early 19th century confirms the high value placed on that material. The great lengths people would go to obtain a key component of gunpowder, testifies to the role that guns, as well as violence, has played in the American past. The cave's location, relative to tourism travel routes, also gives key information concerning the shifts in tourist interests over time. During the second Period of Significance, the cave's location was acceptable to support its use as a tourist site. After 1975, however, something about the cave location no longer supported its tourist appeal—it was now perceived as being too far from the major travel way; or the short journey across a more primitive road, from the Interstate to the cave, proved too burdensome; or perhaps its demise simply signals changes in tourist tastes after 1975. The consideration of integrity of location calls us to reflect on what part the location played in the cave's success, first in saltpeter mining, and later in tourism, and what place location played in its discontinued use.

Great Saltpetre Cave has integrity of **setting** insofar as the site's rural undeveloped nature remains rather intact. What is frequently not told about the setting during its use as a saltpeter mining site, is that area trees were cut down to use for constructing parts of the operation, for firewood, and to use the ashes in the chemical process. As the years went on, it looked bleaker and bleaker in the Crooked Creek Valley. Men had to travel further to obtain trees and hunt for game. The constant fires produced thick, pervasive smog in the valley. This was an industrial complex, with little of the concerns for the impact of the use on the surrounding people or environment. After 1815 and the discontinuation of the industrial function, the setting could revert to its undeveloped state. As with the location, the intact setting helps reinforce our knowledge of this place, its identity, and its historic value. Its rural setting was a reality which made the effort to make it an early industrial site an enormously complex undertaking; that rural setting also became part of the charm of its role as a tourist site, until 1975, when its setting may have become a liability in maintaining its popularity as a tourist site.

The Great Saltpetre Cave has integrity of **materials** as a site. As with a cave's location, the material walls of a cave are hard to alter. What has changed greatly is the removal or burial of much of the saltpeter mining operation. After the market for saltpetre crashed, the Cave became a place where local residents could make use of its interior in ways that they desired. Some entered it to take advantage of its cool stable temperatures and interesting spaces. Families who lived along Crooked Creek may have scavenged the wood saltpeter mining equipement within the cave for their own cooking and heating needs. During the later years, neighborhood youngsters would play in the cave and build small fires. These activities greatly reduced the artifacts that can be found from the mining times. Today, a fraction of those materials are visible on the surface of the cave floor, and an unknown amount of them remain buried.

When Great Saltpetre cave was transformed into a Tourist Attraction, additional modifications were made. Artifacts were brought in from neighboring saltpetre caves. A wooden gate was installed as well as an enclosure around the south entrance complete with benches where visitors could wait for the next tour. Visitors were allowed to add their names to the walls of Signature Alley. During the second phase of improvements in the 1960s, the floor near the south entrance was excavated by 4' so that masons could install a salvaged metal gate. A matching gate was installed at the north entrance. The floor was modified from the south entrance through Echo Auditorium, erasing the evidence of the vats and hoppers in these areas, but providing a more suitable space for performances. Electric wires were strung along the ceilings with bare bulbs to provide illumination. Brochures on Great Saltpetre Cave as a Tourist Attraction evolved through the years from a black & white tri-fold to a color pamphlet.

In recent years, cavers have improved the security of the Cave gates, rewired the cave to conceal the wires and light sources as well as to improve the level of illumination, installed barriers to protect artifacts in the Museum section and the wooden pipes in the Main Trunk Passage. In addition, they have established certain rules about the use of the Cave and work to protect the historical graffiti by educating visitors about their importance and how they are erased. Archaeological investigations are required to comply with Kentucky State Laws regarding historical artifacts. Permits are obtained and reports are required that can add to the body of knowledge about this Cave as well as saltpetre mining in general.

The value of the Cave as an archaeological site is not hard to conceive. Vat & hopper casts, piles of spent petre dirt, soot marks on the ceiling – particularly beginning of Richard's Run and beginning of Signature Alley, some wooden piping and troughs in-situ near the vat & hopper casts are visible above the surface of the sediments. Two v-vats in-situ have been partially exposed. The extent of the wooden piping below the surface in the Main Trunk passage and elsewhere is just a guess at this time.

The most recent discovery in the cave occurred in October 2012 in an investigation led by V. Camille Westmont, a student at the University of Kentucky pursuing a Bachelor of Arts degree in Anthropology. A joint between two sections of wooden pipe in the Main Trunk Passage was exposed showing how one pipe was shaped to fit into the other and a metal band was used to prevent splitting. What was surprising is the direction of flow in this pipe indicated by the orientation of the joint. A paper on the investigation is anticipated sometime in 2013 and will be available at the William S Webb Museum in Lexington, KY.

Because the cave has integrity of location, setting, and materials, its physical presence supports our **associations** between its identity and its significance. It is eligible for listing.

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Great Saltpetre Cave
Name of Property

Rockcastle County, KY
County and State

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67 has been requested)
____ previously listed in the National Register
____ previously determined eligible by the National Register
____ designated a National Historic Landmark
____ recorded by Historic American Buildings Survey #_____
____ recorded by Historic American Engineering Record # _____
____ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

____ State Historic Preservation Office
____ Other State agency
____ Federal agency
____ Local government
____ University
__X__ Other
Name of repository: Personal library of Werner G. Jud, NSS # 15377 FE, GSP Treasurer

Historic Resources Survey Number (if assigned): RK-5

10. Geographical Data

Acreage of Property 53.72 acres

UTM References
Livingston Quad

	Zone	Easting	Northing		Zone	Easting	Northing
1	16	747509	4139631	3	16	747877	4139644
2	16	747525	4139036	4	16	747891	4139053

Verbal Boundary Description

The area proposed for entry on the National Register for Great Saltpetre Cave is shown on the accompanying site plan entitled Site Plan Great Saltpetre Cave Rockcastle County, Kentucky. This boundary encompasses the entire cave and hillside down to Crooked Creek on both sides.

Boundary Justification

This area proposed for National Register listing has the greatest associations due to its intactness of location and setting. The early miners used areas outside the cave for processing during certain time of the year, and water was pumped to the Cave from the Creek for use in the leaching portion of the processing. This boundary is also an easily described boundary as was required of the early surveyors.

11. Form Prepared By

name/title Neena Jud
organization Great Saltpetre Cave Preserve Management Committee date March 1, 2013
street & number 1044 Vacationland Dr telephone 513-521-2670 or 300-9811
city or town Cincinnati state Ohio zip code 45231
e-mail harmony@one.net

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location.
  attached

  A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
  see attached site plan entitled Site Plan Great Saltpetre Cave Rockcastle County, Kentucky.
  see attached cave map entitled Great Saltpetre Cave with locations of photographs indicated.
- **Continuation Sheets**
- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Great Saltpetre Cave
City or Vicinity: Mt. Vernon
County: Rockcastle **State:** Kentucky

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: South Entrance as viewed from outside.
Photograph number: 01 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: South Entrance as viewed from inside.
Photograph number: 02 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Entrance room looking into cave passage.
Photograph number: 03 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Looking towards Bougher Branch.
Photograph number: 04 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Bridge & steps to Russian Dome, as viewed from Bougher Branch. Note lowered ceiling which allows heat to be captured in dome.
Photograph number: 05 **of** 30.
Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Formations in Russian Dome.
Photograph number: 06 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Looking into Pig Pen.
Photograph number: 07 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: View up the slope to Bunker Hill. Note the mound of sediments behind people.
Photograph number: 08 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Top of Bunker Hill.
Photograph number: 09 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: View South from Bunker Hill.
Photograph number: 10 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Lincoln's silhouette as viewed from Bunker Hill.
Photograph number: 11 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Echo Auditorium looking North towards stage.
Photograph number: 12 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Echo Auditorium looking South from stage. Compare height of vadose and phreatic tube passages.
Photograph number: 13 **of** 30.

Photographer: Rob Coomer **Date Photographed:** June 23, 2007
Description of Photograph: View of Main Trunk Passage with saltpetre tailings (spoil piles) on both sides.
Photograph number: 14 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Wooden pipe joint, indicates flow towards north.
Photograph number: 15 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Wooden pipe in floor of Main Trunk Passage, protected with rock barrier and wire mesh. The phreatic tube shape of the passage is visible beyond.
Photograph number: 16 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Historical signature on ceiling in Main Trunk Passage. C.A.Stewart Wildie, Ky 8.19.1802. This name can be seen in several places with various dates.
Photograph number: 17 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: V-vats in situ near north Entrance.
Photograph number: 18 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: North Entrance passage.
Photograph number: 19 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: North Entrance as viewed from outside.
Photograph number: 20 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Museum Section as viewed from Lincoln's silhouette.
Photograph number: 21 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Replica Wagon in Museum Section.
Photograph number: 22 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Replica v-vat and grinding wheel on display in the Museum Section.
Photograph number: 23 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Rectangular hopper recess showing the impressions left by the logs. Spoil pile adjacent.
Photograph number: 24 **of** 30.

Photographer: Rob Coomer **Date Photographed:** June 23, 2007
Description of Photograph: View towards Richard's Run with hopper recesses and spoil piles on both sides, as seen from the Museum Section.
Photograph number: 25 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Later rectangular hopper recesses in Richard's Run. Note height of unexcavated sediments on right.
Photograph number: 26 **of** 30.

Photographer: Bob Bagley **Date Photographed:** April 27, 2007
Description of Photograph: Limestone arch carved by water in Signature Alley portion of the Devil's Racetrack.
Photograph number: 27 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Niche with signatures in the Signature Alley portion of the Devil's Racetrack.
Photograph number: 28 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Local family signatures in Signature Alley: Mullins, Cummins, Ponder.
Photograph number: 29 **of** 30.

Photographer: Bob Bagley **Date Photographed:** February 16, 2013
Description of Photograph: Waterfall and pool in Devil's Racetrack.
Photograph number: 30 **of** 30.

Great Saltpetre Cave
Name of Property

Rockcastle County, KY
County and State

Property Owner:

(Complete this item at the request of the SHPO or FPO.)

name Rockcastle Karst Conservancy c/o Mary Gratsch, Chair

street & number 3739 Quante Ave telephone (513) 662-5411

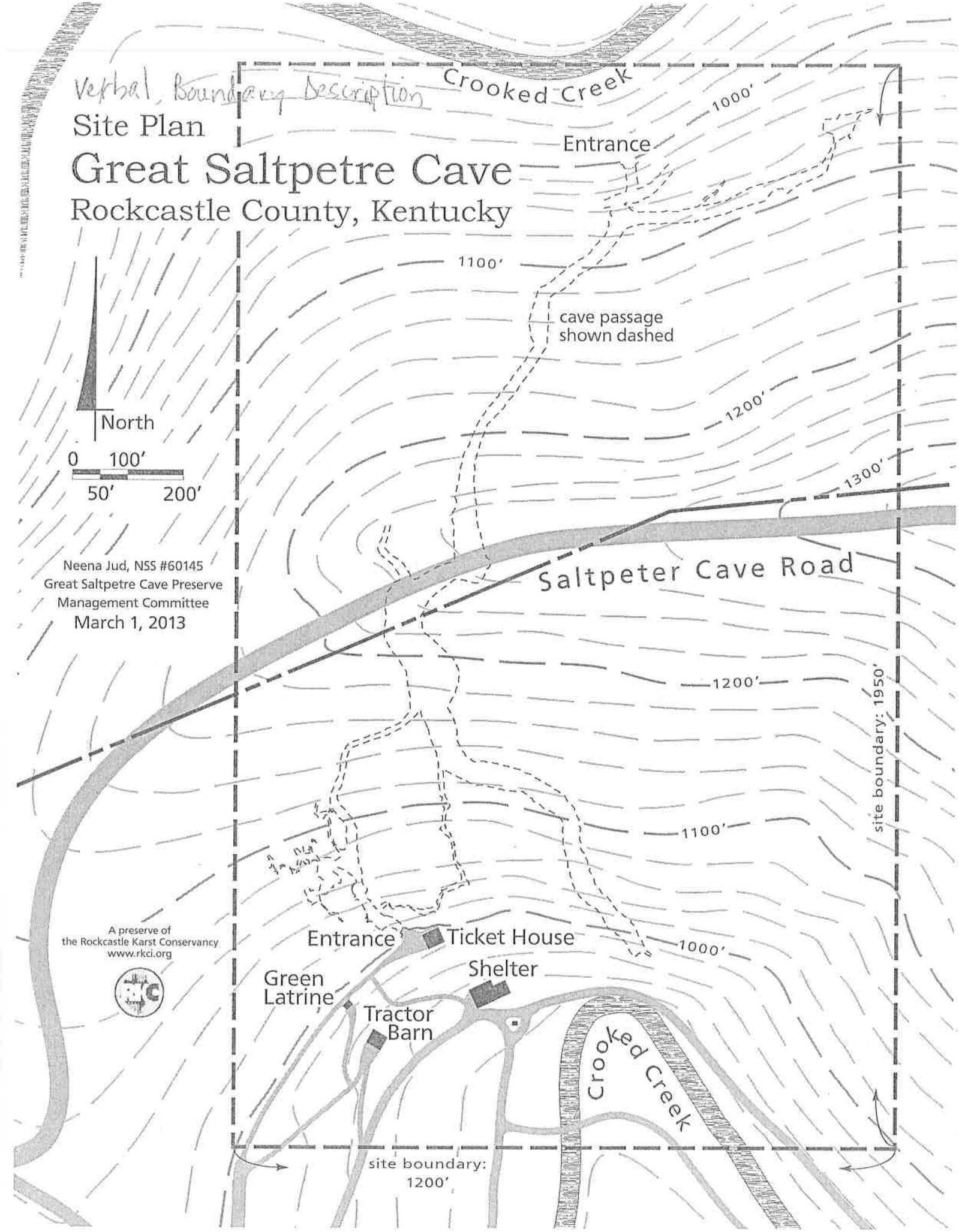
city or town Cincinnati state Ohio zip code 45211

name Lyla Mullins Powell & Ralph Powell

street & number P.O. Box 143 telephone

city or town Livingston state Kentucky zip code 40445

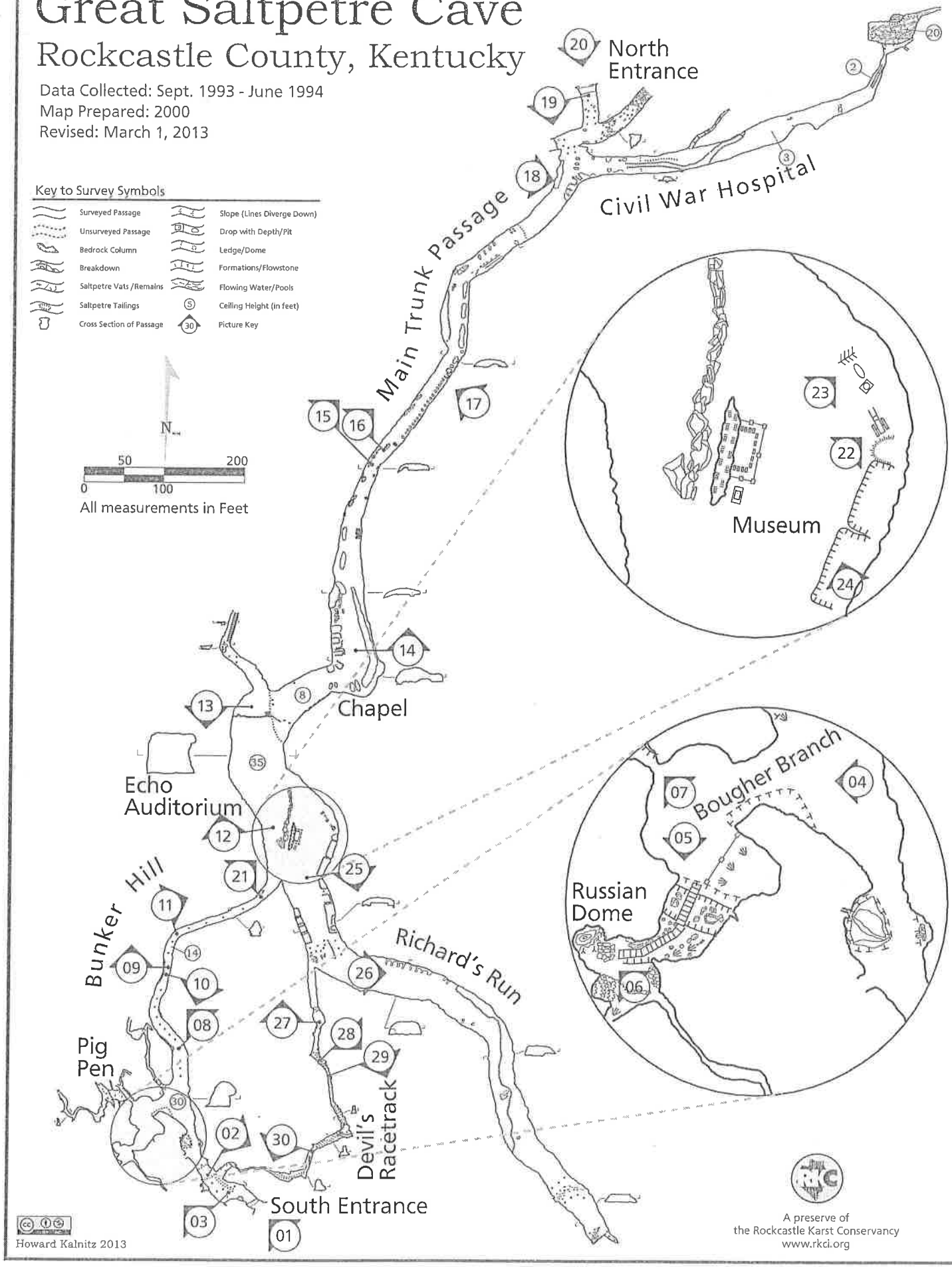
Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).
Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management. U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.


Verbal Boundary Description
Site Plan
Great Saltpetre Cave
Rockcastle County, Kentucky
Crooked Creek
1000'
Entrance
1100'
cave passage
shown dashed
1200'
1300'
North
0 100'
50' 200'
Neena Jud, NSS #60145
Great Saltpetre Cave Preserve
Management Committee
March 1, 2013
Saltpeter Cave Road
1200'
site boundary: 1950'
1100'
A preserve of
the Rockcastle Karst Conservancy
www.rkci.org
Entrance
Ticket House
1000'
Shelter
Green
Latrine
Tractor
Barn
Crooked Creek
site boundary:
1200'

Great Saltpetre Cave

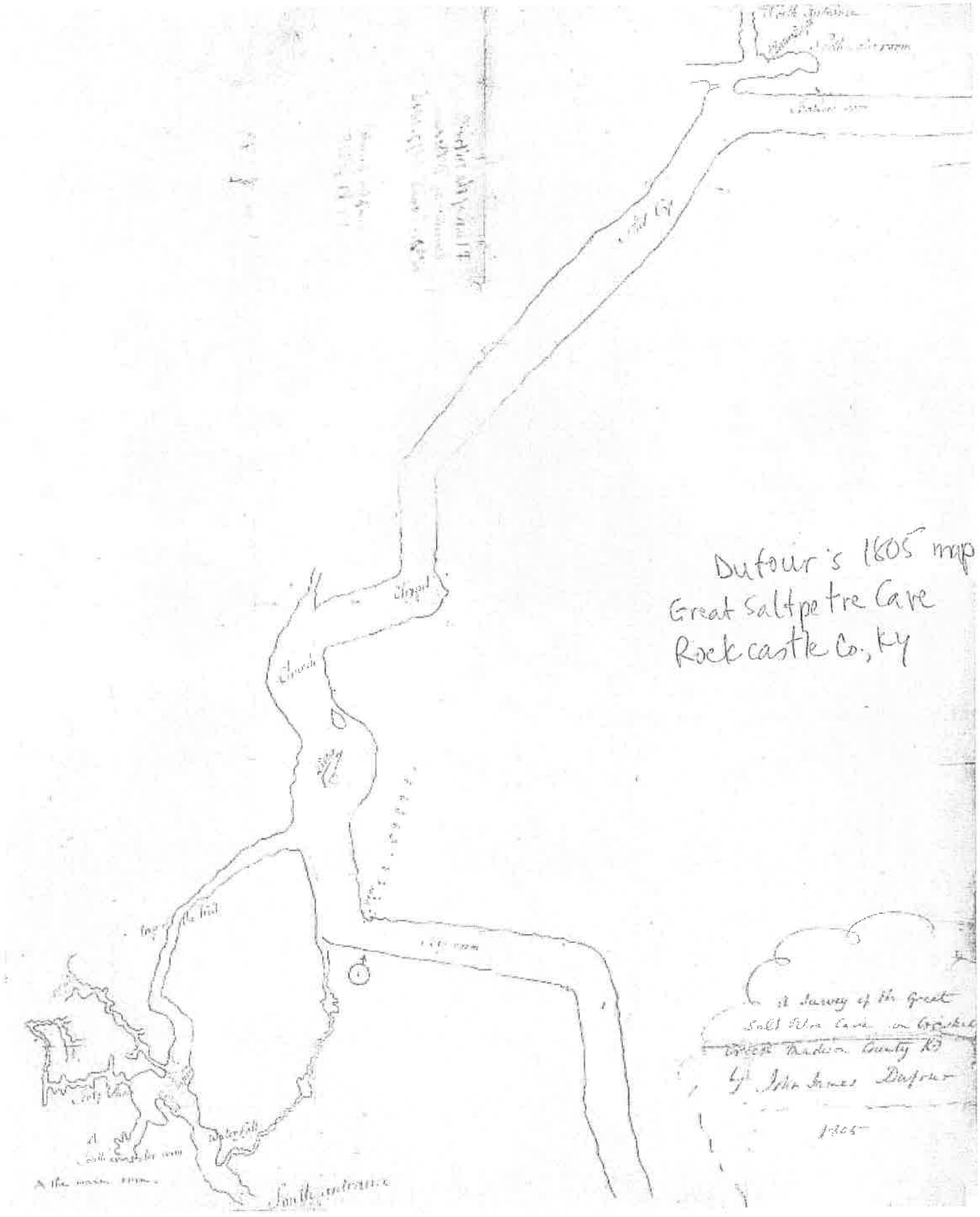
Rockcastle County, Kentucky

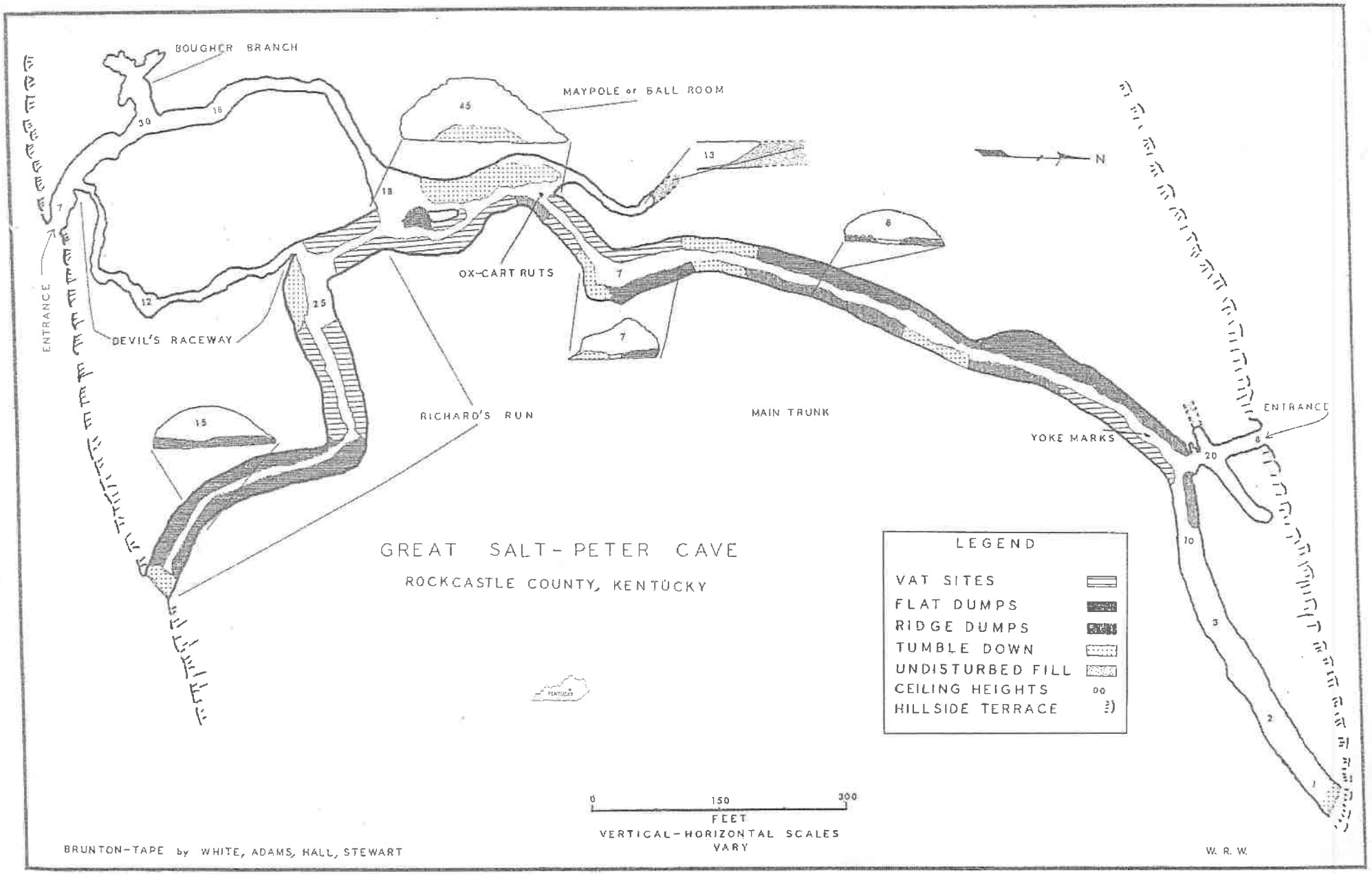
Data Collected: Sept. 1993 - June 1994
Map Prepared: 2000
Revised: March 1, 2013



Howard Kalnitz 2013

A preserve of
the Rockcastle Karst Conservancy
www.rkci.org


Dufour's 1805 map
Great Saltpetre Cave
Rockcastle Co., KY
A Survey of the Great
Saltpetre Cave on Crooked
Creek Madison County KY
by John James Dufour
1805
South entrance

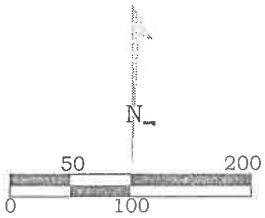


Great Saltpetre Cave
Rockcastle Co., Ky

Great Saltpetre Cave

Rockcastle County, Kentucky

Sept. 1993 - June 1994



All measurements in Feet

Key to Survey Symbols

- Surveyed Passage
- Unsurveyed Passage
- Bedrock Column
- Breakdown
- Formations/Flowstone
- Saltpetre Trailings
- 15 Distance Above/ Below Datum
- 5.01 Picture Key
- Slope (Lines Diverge Down)
- Drop with Depth/Pit
- Ledge/Dome
- Flowing Water/Pools
- Cobble/Sand
- Saltpetre Vats /Remains
- Ceiling Height (in feet)

Utter Delight

North Entrance

Utter Drag

'Civil War Hospital'

Shoring Timbers and Oxecart Tracks

'31 Soldier Graves"

Pipeline

The Chapel

Echo Auditorium

Museum & Atlas Pillar

Bunker Hill

Richards Run

Pigpen

Devils Racetrack

Russian Domes

South Entrance

Great Saltpetre Cave is owned and managed by the Rockcastle Karst Conservancy

Howard Kalnitz 2013

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GREAT SALTPETRE CAVE
ROCKCASTLE CO., KY.
3/1/2013

STATE OF KENTUCKY
KENTUCKY GEOLOGICAL SURVEY
UNIVERSITY OF KENTUCKY

LIVINGSTON QUADRANGLE
KENTUCKY
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 LIVINGSTON 15' QUADRANGLE

Great Saltpetre Cave
Rockcastle Co, KY
Livingston Quad
Zone 16

NAD 27
Easting / Northing
1) 747 891 / 4139 644
2) 747 895 / 4139 058
3) 747 536 / 4139 053
4) 747 536 / 4139 643

NAD 83
1) 747 885 / 4139 849
2) 747 889 / 4139 262
3) 747 530 / 4139 258
4) 747 530 / 4139 847

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1950. Field checked 1953. Revised from aerial photographs taken 1969. Field checked 1969

Polyconic projection. 1927 North American datum
10,000-foot grid based on Kentucky coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue

UTM GRID AND 1969 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
KENTUCKY GEOLOGICAL SURVEY, LEXINGTON, KENTUCKY 40506,
AND KENTUCKY DEPARTMENT OF COMMERCE, FRANKFORT, KENTUCKY 40601
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

KENTUCKY
QUADRANGLE LOCATION

ROAD CLASSIFICATION

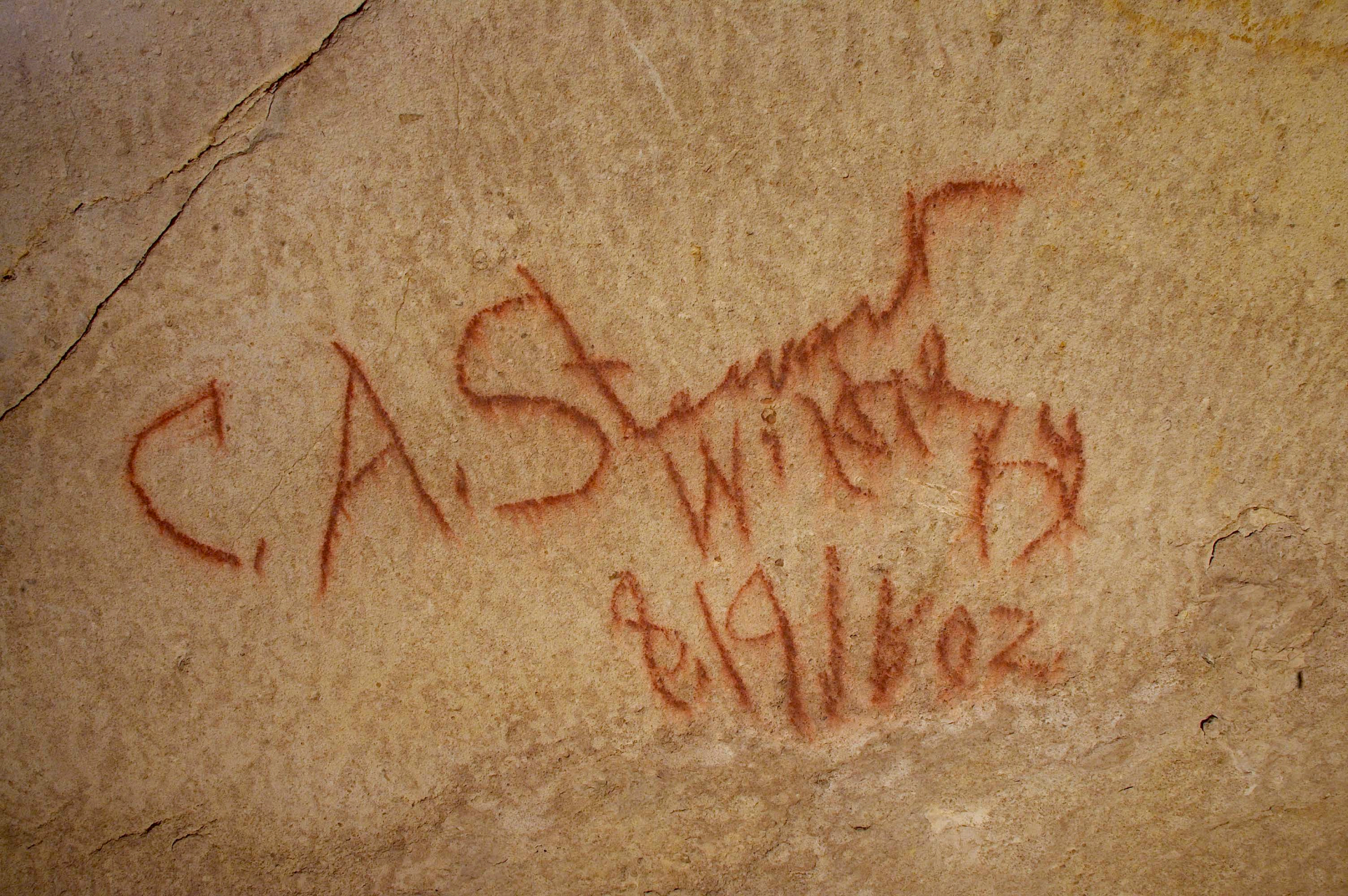
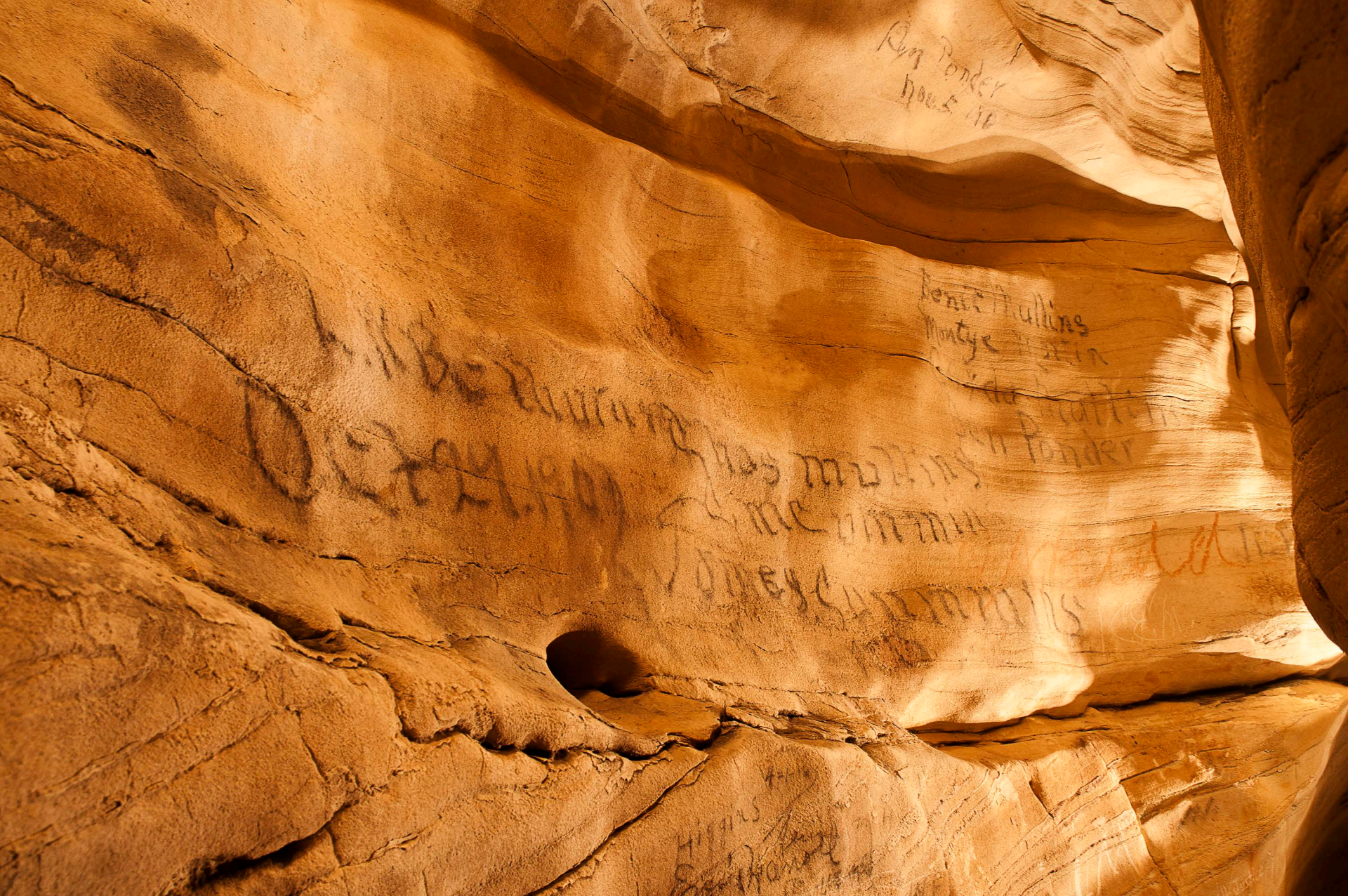
Primary highway, all weather, hard surface	Light-duty road, all weather, improved surface
Secondary highway, all weather, hard surface	Unimproved road, fair or dry weather

Interstate Route · U. S. Route · State Route

LIVINGSTON, KY.
SW/4 LIVINGSTON 15' QUADRANGLE
N3715—W8407.5/7.5

1969

AMS 4158 I SW—SERIES V853

USGS
Historical File
Topographic Division

JUL 12 1977
4400