

## The Caves of Soda Dam

Among the many wonders of Soda Dam are the caves found beneath the ridges and domes of travertine blocking and spanning the Jemez River. Two of these caves are visible today, but another large cave is now buried and out of sight. Most visitors to Soda Dam see the beautiful grotto on the south side of the dam, immediately west of the waterfall. Some people look upward to the west side of the canyon and see the mouth of Jemez Cave. This large cave is beneath the massive travertine deposits of the oldest and largest dam, which formed about 280,000 to 500,000 years ago.

The small grotto on the south side of the dam, so named because of its size and possible origin, is very wet, with active spring flows out of the opening. A single pillar bisects the entrance, and a beautiful travertine basin overflows with spring waters in the back corner. Blue and green algae grow on the rippled travertine ceiling and walls.

The visible caves are interesting enough, but almost no one is aware that there is a large hidden cave under the north side of Soda Dam and that it was accessible during the late 1800s and mid-1930s. I first learned of this cave when I read an account by J. K. Livingston of his family's horseback camping trip to Jemez Springs in the summer of 1886 (see chapter 7). This excerpt is from Livingston's article in the *Santa Fe New Mexican* in July of that year, describing Soda Dam, where his family camped:<sup>1</sup>

It is an absolute fact, that within one hundred feet of camp there were not less than forty-seven distinct hot springs, and that each member of the party, even to the 2-years old baby, had a private bath tub, chiseled by nature in the rocks, and filled at all times with sparkling soda or sulphur waters, of just the right temperature for bathing; that we frequently took natural vapor baths, by visiting a certain grotto on the *north side of the dam* [emphasis added], within the walls of which we

also enjoyed copious morning draughts of a most delicious hot mineral water, very similar in action, if not in taste, to that of Saratoga's most popular spring, the "Hawthorn," where the waters of the latter are heated artificially, and so furnished visitors when desired; and lastly, that twelve feet above our canvass domicile, and easily reached by steps cut out of the rock, we fitted up a library and reception room, or rather, nature fitted it up, in the solid rock; of dimensions thirty feet long, ten wide and thirteen feet high; with an entrance twelve feet wide, and a window (overlooking the cataract) three by four feet, whose embellishment of halls ceiling and pillared portico, were in pure bi-carbonite of soda, with some adulteration of lime and alum-after the fashion of all baking powders, if we are to believe certain rival advertisements!

Today, there are no visible caves on the north side of Soda Dam that match this description. Another mention of this cave is in a report on the archaeological excavation of Jemez Cave from 1934 to 1935 by H. G. Alexander in *El Palacio* magazine: "It is peculiar that the upper cave [Jemez Cave] should ever have been used when there are caves so well situated closer to the water supply, warmed by the hot mineral springs which have formed them, and also as well protected from the weather. They are used throughout the winter by our workmen as ideal camping sites."

The workmen Alexander refers to are the men who helped excavate Jemez Cave throughout the winter of 1934 to 1935. Remarkably, the caves under the north side of Soda Dam were "ideal camping sites"—warm, dry, and with enough room to accommodate wintertime shelter for four men.<sup>3</sup> Again, the smaller and very wet grotto on the south side does not fit this description.

Alexander explains that Jemez Cave seemed to have been utilized by the Hemish people until a specific time in the remote past. He suggests that the Hemish might have shifted their ceremonial activities to the lower "caves" (note the plural) below Soda Dam when they were formed and became accessible. He mentions that the archaeologists were informed about a Jemez legend that describes this transition. In response to a request from an elder Hemish man who visited them, the archaeologists refrained from excavating the lower caves.

From the historical descriptions and likely location of the north-side cave, I suspect that it was created, buried, and uncovered multiple times

during the past five thousand years, which geologists estimate is the age of the modern Soda Dam. Here is a theory about the hidden cave (or caves):

Upstream of Soda Dam, the Jemez River heads directly south toward the far western end of Soda Dam. At the base of the dam the river makes a hard left turn toward the east and flows down the length of the dam, where the waterfall plunges under the domes on the eastern end. Many centuries ago a massive flood broke off and washed away the travertine over the eastern end of the dam. This break in the dam is visible today as a zone of sheared-off travertine on the central fissure ridge just west of the cascade domes. The cascade domes over the river formed since this great flood.

During that flood, or a subsequent one when the dam could not hold back waters or sediment, the travertine ridge on the western end of Soda Dam was undermined by the fast-moving waters, exposing a large cave beneath the dam on the north side. That cave was apparently open and accessible during the late 1800s and mid-1930s, until the floods of the twentieth century. The 1941 floodwaters, which backed up behind and overtopped Soda Dam, deposited large amounts of sediment on the north side, effectively burying the large cave. Then, in 1961, the western end of the dam was dynamited to level and pave the road. Some of the debris was bulldozed over onto the north side, completely covering the entrance of the large cave (see chapter 24).

Similarly, Jemez Cave may have originally been carved out by the ancestral Jemez River when it was about one hundred feet above the current river level. Jemez Cave is essentially a deep cavity with an overhanging roof beneath the largest and oldest travertine deposit. Thousands of years ago, a flooding Jemez River probably undermined that dam, creating Jemez Cave.

Given this history, it is not surprising that stories have long been told about a hidden cave under Soda Dam. One of those stories is recounted by Roland Pettit in his 1975 book, *Exploring the Jemez Country*:<sup>4</sup> “Not only is Soda dam a geological wonder, it was also an archeological storehouse. For many years, stories were told of a dry cave under the dam, accessible only by an underwater passage. One of the valley’s early settlers, Moses Abousleman, successfully found the entrance and retrieved many Indian artifacts from it, including several handwoven blankets.”

Moses Abousleman died in 1934. This suggests that if the story is true, and the cave was the same one used by workmen from 1934 to 1935, then

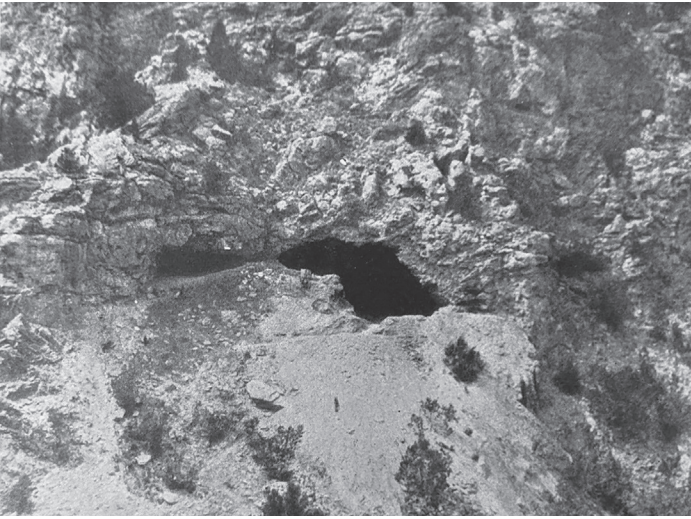


Figure 25.1A–B. Jemez Cave in 1935 after excavation by Alexander and Reiter and corn cob fragments collected from the southeastern area of Jemez Cave by archaeologists in 2013. (Cave photo from Alexander and Reiter, *Report on Excavation of Jemez Cave*; corn cob image from Adler and Stokely, *Jemez Cave Condition Assessment*)

the main entrance had previously been buried when Abousleman found his way into it via “an underwater passage” some decades before.

Finally, although many photographs of Soda Dam were taken before the 1930s, I have yet to find one that shows the north side of the dam. Visitors with cameras are most impressed by the beautiful and strange forms on the south side with the long travertine ridge, pretty grotto, domes, and waterfall. Someday, if a pre-1940s photo of the north side shows up, we just might see the hidden cave.

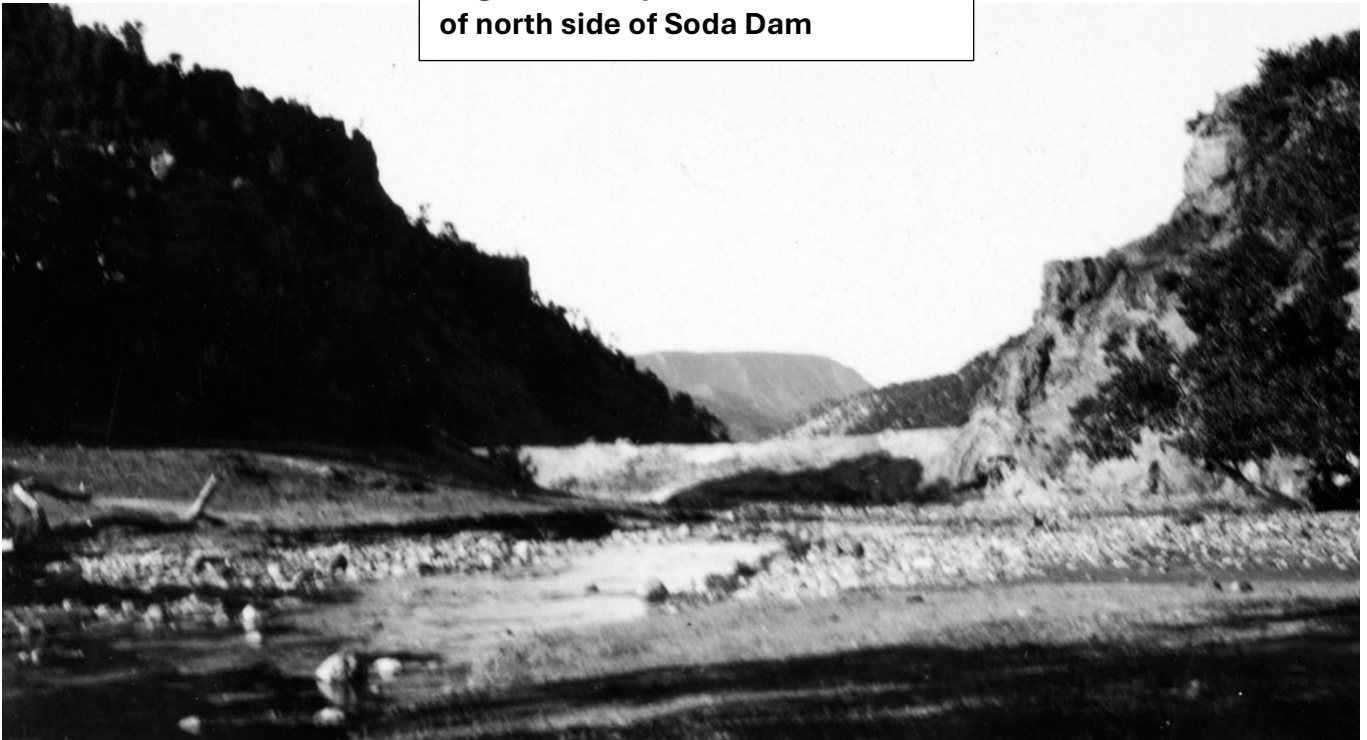
## ADDENDUM to Chapter 25

The preceding text was written in 2024 for the book “The Jemez Mountains, A Cultural and Natural History.” I heard that the final version of the book was sent to the printers for publishing on January 23, 2025. Coincidentally, that same day I saw a photograph of the north side of Soda Dam taken before 1930. The hidden overhang/cave, as well as a small grotto on the far northwest end of Soda Dam shows up in the photograph!

The photo was taken by Edgar Lee Hewett. He was a remarkable academic and early archaeologist in New Mexico (see [https://en.wikipedia.org/wiki/Edgar\\_Lee\\_Hewett](https://en.wikipedia.org/wiki/Edgar_Lee_Hewett) ). He was instrumental in the passage of the Antiquities Act of 1906, which protects archaeological sites throughout the United States. He was involved in excavations of various Hemish ancestral villages in the Jemez Mountains, as well as archaeology field schools for students and others held at what is now Camp Shaver at Battleship Rock. The old photo is not dated, but this collection is generally of photos from the 1910s and 20s.

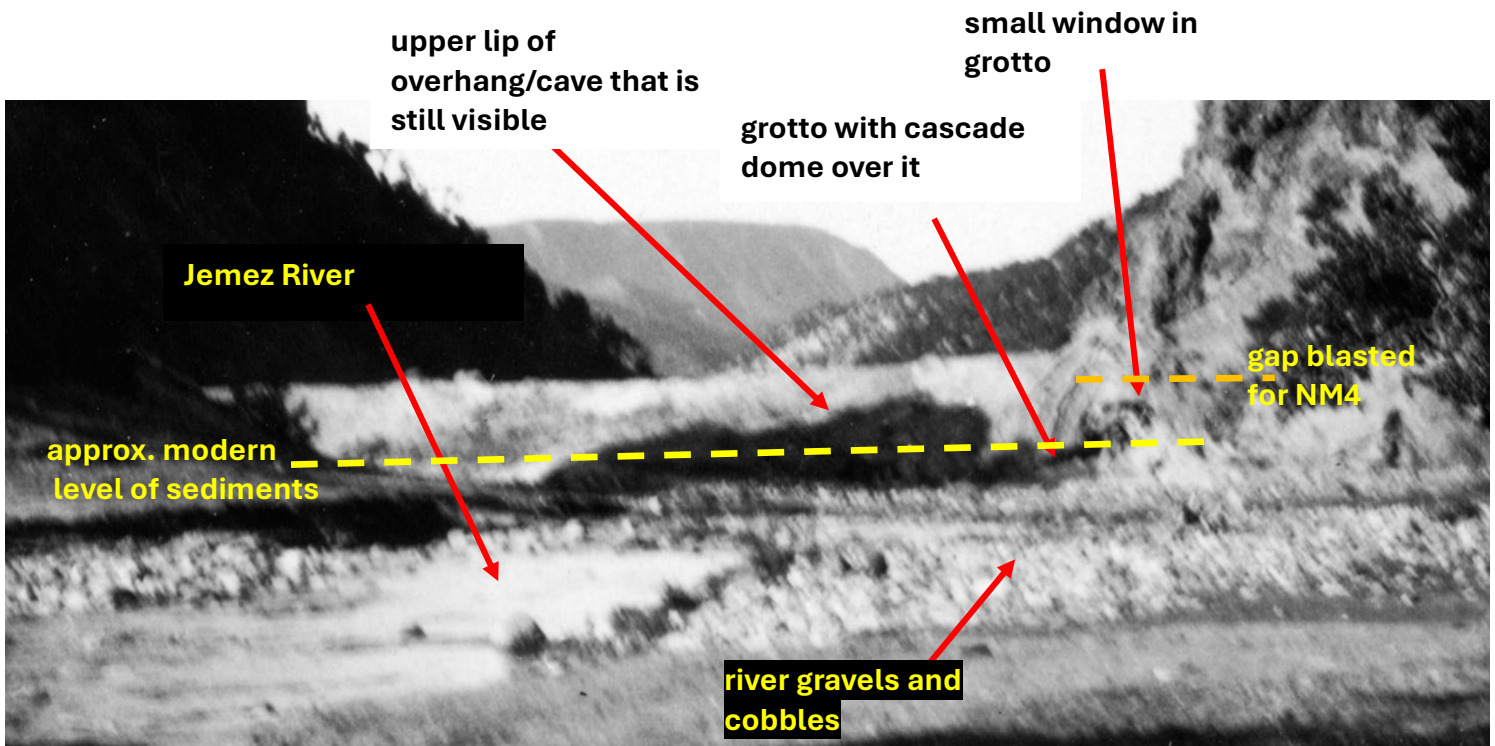
I was able to find this photo because Hewett’s photographs and documents held in Santa Fe were recently scanned and made available online by the New Mexico History Museum.

**Edgar Hewett photo from 1910-20s  
of north side of Soda Dam**



(Hewett, Edgar L. “Unidentified Waterway, New Mexico”. Photographs, photographic prints. Edgar L. Hewett Collection - Photographs of the Southwest. PAAC.056.0198. New Mexico History Museum. Accessed January 25, 2025.

<https://archives.newmexicoculture.org/unidentified-waterway-new-mexico-0> )



Although the Hewett photo of Soda Dam is slightly out of focus, the large overhang/cave on the north side is obvious. As I surmised, floods after the 1930s (e.g., 1941 and 1958) deposited a large amount of sediment against the north side of the Dam, effectively burying the large cave. The Jemez River course seems to have changed as well. Today it runs just underneath the upper lip of the cave about in middle of the opening in this photo. See the modern photos that follow.

There was also apparently a small grotto on the west end, with a cascade dome over it. A trickle of spring water can be seen coming down the dome. This is consistent with old reports of a spring on the west end of Soda Dam before the blasting. This grotto may be the cave that Moses Abousleman accessed sometime earlier via an underwater passage.

Perhaps before the photo was taken there was sediment burying the overhang/cave for some time, or the river was flowing through the overhang, and that is when Abousleman accessed the grotto through the river. Then, floods that occurred sometime before the Hewett photo cleared out sediments, or the river course moved left (eastward), as it is in this photo. The flood plain on the north side appears scoured, and the riverbanks eroded, as if a bed-degrading event had occurred not long before.

Modern photos, next page:

Original Photo, uncropped:



Drone view, 01/06/25, around noon



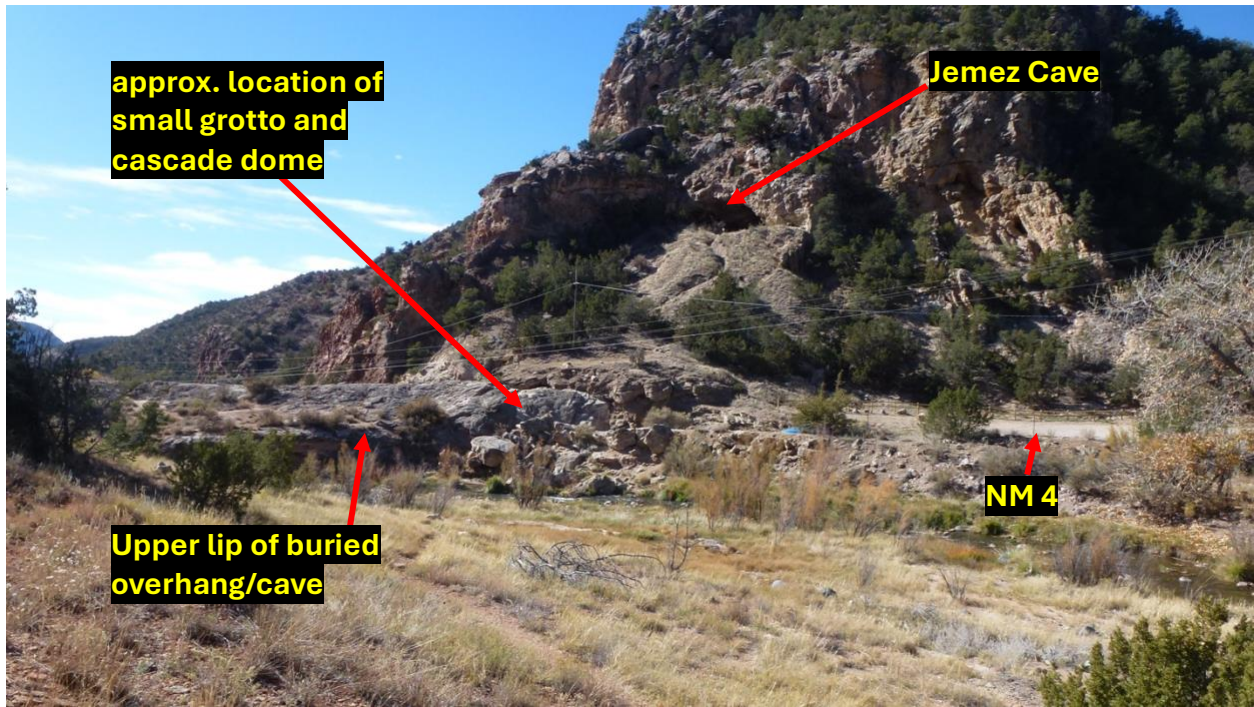


Photo taken in 2011:





Buried northside cave, photo by Ted Greer, January 30, 2025

