

Silver Cliff's Geyser Shaft: Legitimate Exploration Project or Stock Promotion Scam?

By James B. Copeland

Numerous promotion and stock scams involving mining properties occurred during the expansion of the mining industry in the western United States. One such potential scam which merits close examination is that of the Geyser Shaft project, located at the small town of Silver Cliff, in central Custer County, Colorado.

There are a number of things which set the Geyser Shaft apart from other possible Colorado mining scams. First, work on the shaft project, which began in 1887, continued for at least twenty-four years. Second, the project was operated by three different companies controlled by three basically different groups of investors. Third, the shaft ultimately reached a depth of 2,640 feet below the collar by 1900, making it the deepest shaft in Colorado at the time. The shaft had a large hoist, a compressor plant powered by seven steam boilers, and a well-equipped assay office. Although there had been attempts in 1880 and 1881 to construct an effective mill, apparently no effort to build a new mill or rebuild one of the old forty-stamp mills occurred after 1888.

Was the Geyser Shaft a legitimate exploration project or simply a stock promotion scam? How much money was spent on the project over the years? How much ore was produced? What was the rationale behind expending so much time and money on a project which, according to available records, produced so few encouraging results? Probably concrete answers to most of these questions can only be found in undiscovered company reports or records.

The Geyser Shaft was the mainstay of the Silver Cliff economy between 1890 and 1900, offering steady employment to many local miners and a steady income to local merchants. Thus, although the company's stockholders footed the bill for the project's operation, it provided eco-

conomic stability for a community. Silver Cliff's population had great faith in the Geyser Shaft project and every time it shut down they anticipated that work would resume in the near future.

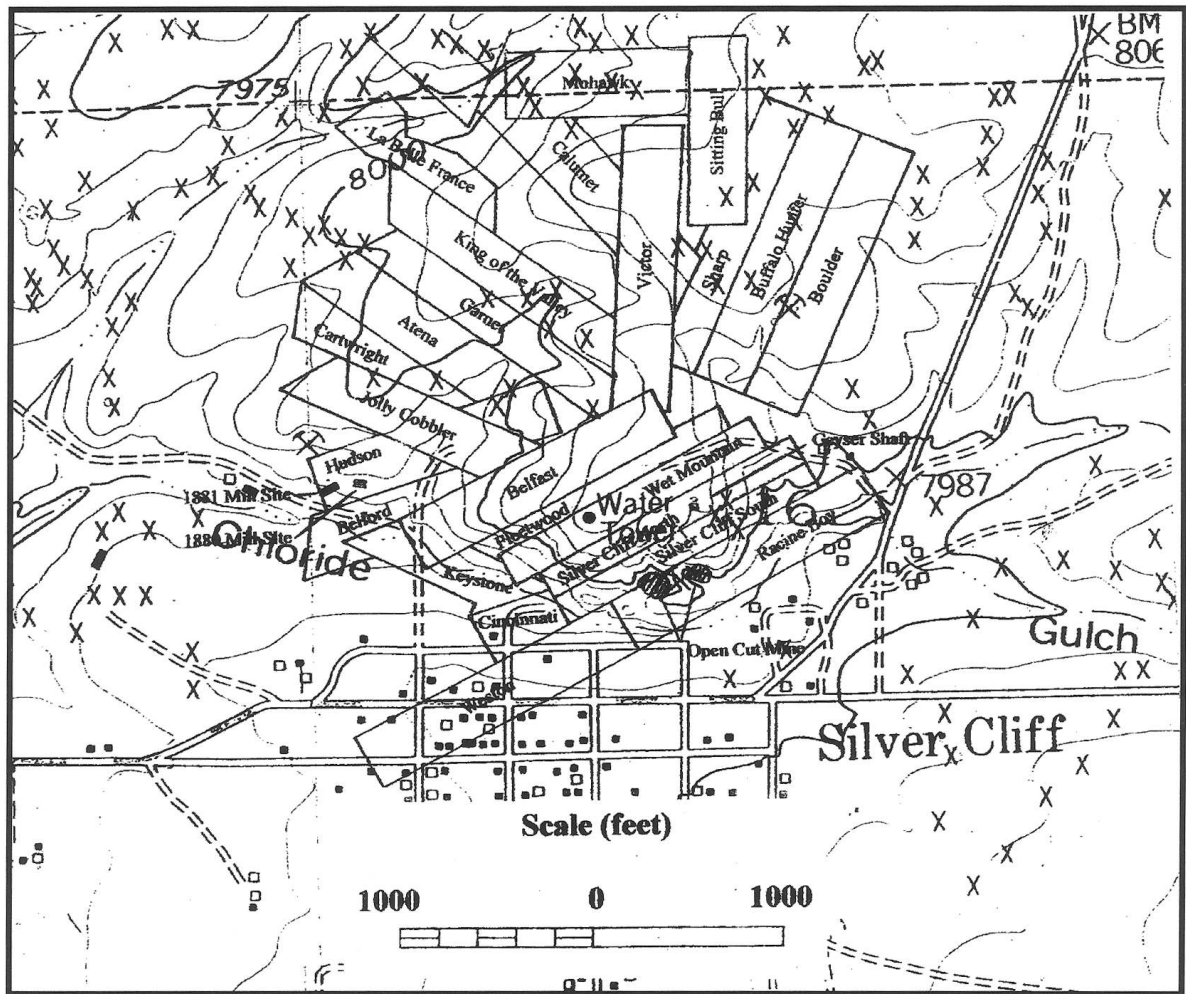
This paper will present the facts known, but will leave it to the reader to decide if the Geyser Shaft project was legitimate exploration or a stock promotion scam. In the writer's opinion the truth lies between these two extremes.

The Silver Cliff Discovery

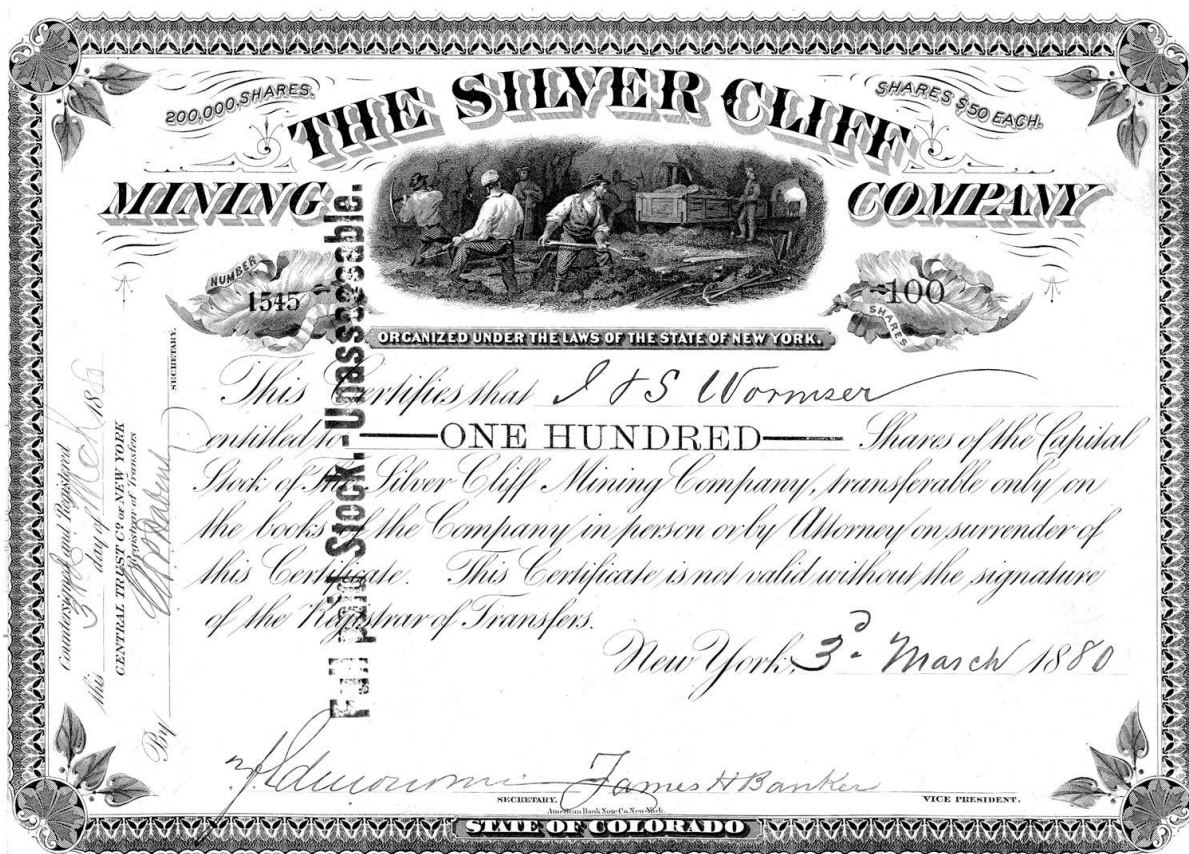
The Geyser Shaft owed its origin to the 1878

discovery of horn silver deposits on a low cliff on the east side of the Wet Mountain Valley between the towering, glaciated Sangre de Cristo Mountains and the older, eroded Wet Mountains. Soon after surface mining of these "horn silver" deposits began, a town emerged just below and south of the black-stained cliff. It was called Silver Cliff after these supposedly rich silver deposits.¹

In August 1877, Rowland J. Edwards, a resident of nearby Rosita, traveled past the cliff and, out of curiosity, picked up a random sample of the volcanic rock. Although it assayed 24.75 ounces of silver per ton, Edwards did nothing for a year,



Silver Cliff and vicinity showing the location of the open-pit mine, the Geyser Shaft, the mill sites, and various mining claims. (Drafted by the author from U.S.G.S., "Westcliffe Quadrangle," 1955, with claim lines plotted from a map obtained from Custer County.)



Silver Cliff Mining Company stock certificate no. 1545, issued 3 March 1880. (Author's collection.)

as he thought that the grade was too low for economical mining and smelting. According to legend, a year later Edwards and his two partners were traveling past the familiar black-stained cliff and heated some of the material in a pan over a camp fire. This experiment freed some small globules of metal, which assayed as 75 percent silver. On 9 June 1878, Edwards, Robert Powell, and George H. Hafford located the Silver Cliff and Racine Boy lode claims along the cliff, recording these locations on 12 August 1878. Later the claims were patented through the United States Land Office with Survey numbers 54, 92, and 94.²

This strike became the basis for the ensuing "carbonate rush" to the Silver Cliff area. This local strike was simply one of a series of bonanza silver strikes in 1878, among them the famed carbonate lead-silver bonanzas on Fryer Hill at Leadville. In

fact there were no carbonates at Silver Cliff, but sufficient horn-silver ore existed to cause excitement.

Although some of the initial silver assays ran between 740 and 1,700 troy ounces per ton, Edwards and his partners sold their interest in the claims to J. W. Bailey, J. T. Beck, and R. Curtis. This new partnership began to work the deposit by surface methods and started to ship some ore in September 1878. During the winter of 1878–79, they netted \$70,074 from 708 tons of ore shipped that reportedly cost only \$12,000 to mine. Some of this ore went to Canon City and Denver. One lot of ore weighing eight tons, shipped to the Canon City smelter, netted \$5,800.³

In late May 1879, the *Engineering and Mining Journal* reported the mine sold to a New York firm for \$500,000. Since J. W. Bailey retained a

one-third interest, the cash price was \$333,333.⁴

Silver Cliff Mining Company

The first company to develop the deposits was the Silver Cliff Mining Company, incorporated under the laws of New York with a capitalization of two hundred thousand shares with a par value of fifty dollars each. The company's stock was unassessable. Officers included James R. Keene, president; James H. Banker, vice president; and Isadore Wormser, secretary-treasurer, with the company's offices in New York.⁵ Initially this company owned the Silver Cliff and Racine Boy claims, and purchased the Hudson and Silver World claims as sites for a 40-stamp mill.⁶ Later the company purchased the Wet Mountain claim, just north of the Silver Cliff.⁷

The company published a ten-page prospectus in June 1879 to promote their Silver Cliff property. James D. Hague, a well-respected consultant, described the richness of the deposit based upon very little information. Hague made very flattering, but largely unsubstantiated, claims for the property. He did no exploration, drilling or sampling to validate his figures, but Hague estimated between fifty thousand and one hundred thousand tons of unbroken ore available, plus some thirty-five hundred tons of broken ore on the dump with a grade of at least twenty dollars per ton.

Another endorsement in the prospectus came from George C. Munson, superintendent of the nearby Bassick Mine, who stated that the previous owners of that property had shipped ore assaying between 88.1 and 107.9 troy ounces of silver per ton. Munson believed that regular stamp milling methods using amalgamation would recover 87 percent of the silver contained in the ore.

Silver Cliff Company's mining method consisted of several large excavations, or open cuts, with various mining benches, and several underground exploration drifts driven into the side of the mineralized cliff. William A. Farrish, the com-

pany's superintendent, stated that the ore could be mined for less than five dollars per ton.⁸ Nearly all of the statements in the Silver Cliff Mining Company's prospectus would ultimately prove to be untrue, exaggerations, or outright lies.

Eighty men began constructing the first forty-stamp mill in August 1879. Descriptions of the mill by the *Engineering and Mining Journal* provided details of the boiler and engine room, stamp battery building, pan room, breaker building, and retort and melting room. Construction was of stone, brick, and frame. A two hundred horsepower Corliss steam engine provided sufficient power to drop one hundred stamps. The mine fed the mill by means of a rail tramway.⁹

Frank Fossett, an invaluable chronicler of Colorado mining in the early 1880s, provided a better description of the mill. He recorded that two one hundred-horsepower boilers drove a Buckeye-Corliss engine with a flywheel nineteen feet in diameter, and that each stamp weighed 750 pounds. The amalgamation circuit consisted of sixteen pans and eight settlers, or separating pans. The mill required three hundred tons of equipment, three hundred thousand board-feet of lumber, and seventy-five thousand bricks.¹⁰ By February 1880 the mill was reportedly turning out bars of silver bullion.¹¹

The company's 1880 annual report stated that during March the mill treated 927 tons of ore in twenty-nine days. Treated ore assayed 41.09 troy ounces per ton. The net value recovered was \$27,572, or 29.74 troy ounces per ton—a calculated recovery of 72.4 percent. During March and April, the mill only treated an average of thirty-two to thirty-six tons of ore per day,¹² with similar results reported for June, when nine hundred tons were milled.¹³

It is unknown what daily treatment capacity the company planned for the mill. However, it apparently became obvious that, with the mill only producing some thirty-five tons per day, it could not keep pace with mining operations. The blame for this problem was largely attributed to



The new forty-stamp wet mill of the Silver Cliff Mining and Milling Company, completed in 1881, photographed by Charles E. Emery. (Courtesy of the Denver Public Library, Western History Collection, X-60785.)



Miners loading and pushing ore cars in the Racine Boy open cut. Photograph taken by Charles E. Emery, c. 1880. (Courtesy of the Denver Public Library, Western History Collection, X-61726.)

the mill's design as a "dry stamp process." But for some reason, the company decided to build a new 40-stamp "wet process" mill instead of modifying its old mill.

The new mill was to be based upon mills being used in the White Pine District of Nevada, where ores also contained horn silver. Construction started on the new mill in September 1880 and was expected to take five months. Meanwhile, the company continued to operate the old mill, but had recurring problems with broken water supply pipes, so the mill was able to operate only about thirty-five percent of the time. Despite milling problems the company sold about \$275,000 worth of silver bullion and concentrates during 1880.¹⁴

Mining resumed at the open cut in mid-February 1881 with the drilling and blasting of large low-grade pillars. Some time in late February or early March 1881 the just-completed mill began treating ore. The new mill featured a much-improved treatment capacity; it processed at least one hundred tons per day when the ore was available.¹⁵

By July 1881 the mine and mill operated continuously, with fifty men employed at the open-cut mine and thirty at the mill. The mine and mill produced and treated some 120 tons of ore daily. The open cut at the Racine Boy claim covered nearly one acre, and had been mined to a depth of about forty feet. Ore was removed to an ore bin for storage, then reloaded into ore cars hauled to the mill by mules and horses along the company's surface tramway.¹⁶

Apparently the mill closed in late 1881, presumably because of a lack of ore. Only occasional blasting could be heard from the open cut during January 1882. By late March 1882 the mill was running again, milling 130 tons per day, and in April 1882 the mine and mill employed nearly one hundred men.¹⁷

By the end of 1882 company indebtedness had risen from \$150,000 to \$250,000 and seemed to be accelerating. In mid-March 1883, the mill

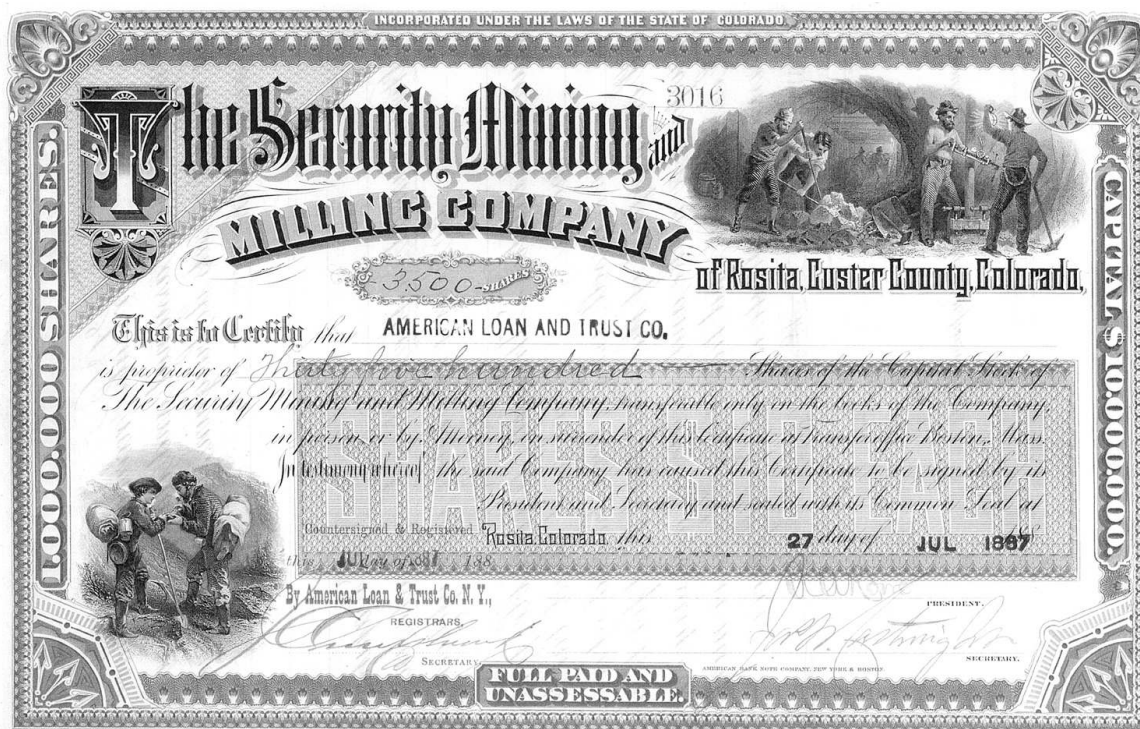
closed again and attachments were filed against the company in court. The 12 April 1884 issue of *Engineering and Mining Journal* summarized the financial condition of the company. The stock, which had a par value of fifty dollars per share and had sold in the past for as high as twelve dollars, had sunk to a low of five cents per share. By then total indebtedness was estimated as \$192,000, and the stockholders had authorized Mr. Keene, the president, to appoint a three-man committee to prepare a reorganization plan.¹⁸

In June 1884 the company sold the Racine Boy claim to an unnamed syndicate. Since the Racine Boy had been its major producer, the Silver Cliff Mining Company probably simply closed down and went out of business after that sale, disappearing into history.¹⁹

Security Mining and Milling Company

The Security Mining and Milling Company incorporated under the laws of Colorado on 18 October 1884. The company was capitalized at one hundred thousand shares, each with a par value of ten dollars. Company incorporators included R. C. Flowers, Augustus A. Rowe, James W. Cartwright, C. C. Manfield, and John S. Manfield. All of these men lived in Boston except for C. C. Manfield, who lived in Rosita, Colorado. They organized the company for the purpose of owning and operating mines in the Rosita area, most notably the Leavenworth, Plymouth, and Julian. C. C. Manfield became the company's general manager. By late June 1885 the company was milling thirty tons of ore per day from the dumps and mines that it operated in the Rosita area.²⁰

In October 1885, Security Mining and Milling purchased the Silver Cliff Mining Company's former properties at Silver Cliff. These consisted of eight lode claims and the two stamp mills. Although the Silver Cliff Mining Company had run into financial trouble with these surface deposits because of the low grade and erratic nature of the



*Security Mining and Milling Company stock certificate no. 3016, issued 27 July 1887.
(Courtesy of the Robert Kluge Collection.)*

silver ore, the new owner apparently believed that the deposits could be successfully mined. In early January 1886, the company conducted a five-day test run of the mill and, after a few modifications, began continuous milling operations by early February.²¹

Security expanded Silver Cliff's open-pit operation, but results from two groups of sampling done on stockpiled ore, taken in March 1886, showed only six troy ounces per ton of ore. The mill continued to experience recovery problems, supposedly caused by the thin silver chloride stringers that occurred in the ore fractures. Mill concentrates averaged between 107 and 199 ounces of silver per ton, but recovery was reportedly only about 75 percent of the silver in the ores.²²

Clearly, gravity concentration using Frue vaners and amalgamation with pans and settlers were not providing proper recovery for this type of ore. So another series of mill "improvements" were made during the winter of 1886–87, with a

report that the mill might be restarted by mid-January 1887, after a shutdown of two months.²³ The 1886 Sanborn map of Silver Cliff shows the 1881 wet-stamp mill converted to jigs and concentrating tables.

The company's stock was listed for sale on the New York Consolidated Stock and Petroleum Exchange on 10 February 1887.²⁴ Despite this listing, the company was beginning to get a tainted reputation in mining and financial circles. The *Engineering and Mining Journal* of 26 March 1887 reprinted an article that had previously appeared in the *Rocky Mountain Review* of Denver, which said:

In reply to the many inquiries as to the value of the property and shares of the Security Mining & Milling Company, it may be stated in brief terms that the concern is rated in Colorado as a gigantic stock jobbing operation, with little or

nothing to support it. This job was not, be it remembered organized in Colorado, but in Boston, by a Boston financier, who circulates throughout New England, but never in Colorado, if it can be avoided[, t]he most exaggerated accounts of the wealth and production of his mines and thereby catches thousands of customers who are anxious to become suddenly enriched by the glowing venture.²⁵

This bad press notwithstanding, mining continued. In March 1887 the company reported that the orebody was getting thicker. It also reported that it was planning to use some large flat cars on the tramway to remove the large pieces of barren rock, instead of drilling and blasting them, to reduce the cost of mining. Reports in May 1887 stated that mining was being pushed and silver chlorides extracted from every level of the open cut. The company stated: "It is a bonanza."²⁶

But even the local newspapers printed rather scathing articles about the company's reported success. The *Engineering and Mining Journal* quoted Westcliffe's *Wet Mountain Tribune* which editorialized:

We protest, solemnly and earnestly, that what has been done and what now is in sight, and we have seen it, does not justify any such damned lies as are being circulated by some person or persons. Newspaper men were fooled on this same property in 1879 and 1880 by lies told about the value of the ore and it is but natural that those who know the facts then should have suspicions about the stories that are told now.²⁷

Nevertheless, the glowing reports continued. The company stated in early June 1887 that it had recently opened the finest body of silver ore ever discovered at the property. During the first week of July the company shipped six cars of mill con-

centrates. On 10 July 1887 the mine shipped two more cars of mill concentrates—one of 28,000 pounds and one of 39,860 pounds—although the report made no mention of assay value.²⁸

Also, during the first week of July 1887, the company announced plans for a new deep shaft. This shaft would be started from the top of the "cliff," about a hundred feet above the open cut floor. Initial plans called for a depth of one thousand feet. Actual sinking of what would become known as the Geyser Shaft began on 20 July 1887.²⁹

In mid-October 1887 the mill shut down because the easily accessible ore in the open pit had been exhausted. By mid-November the shaft had reached a depth of a hundred feet and had intersected the tunnel, which had been driven north from the floor of the open cut. This first one hundred feet had been sunk using a hand-operated windless. Shaft sinking continued using the windless from the tunnel level until the company finished installing the shaft's main steam hoist at the surface.³⁰

Construction on the hoist foundation, hoist installation, and steam boiler plant continued until mid-February 1888. The hoisting plant—reportedly the largest and most complete ever erected in the state—was described as a 350-horsepower steam hoist capable of lifting six tons from a depth of two thousand feet at a speed of one thousand feet per minute.³¹

A special stockholders' meeting, held in Boston on 10 May 1888, decided to levy a voluntary assessment of twenty-five cents per share to raise additional funds to develop the property. A Colorado corporation, the company could not force assessments on its stockholders in violation of Colorado law. Caleb H. Johnson, the company's manager at Silver Cliff, reported to the stockholders that the shaft had reached a depth of four hundred feet and was being pushed as rapidly as possible.³²

The *Rocky Mountain News* reported on 2 June 1888 that the company's operations were shut

down, with the shaft sunk to a depth of 440 feet. Another report on the same day by the *Engineering and Mining Journal* stated that, on instructions from the company's eastern management, the men had been paid off and the pumps pulled. A Dr. C. Flowers had filed an attachment of twenty-seven thousand dollars against the company. At the end of June the *Journal* reported that the company's property would soon be sold at a Custer County sheriff's sale.³³

Immediately after its listing on the New York Consolidated Stock and Petroleum Exchange in February 1887, Security company stock sold for between \$6.00 and \$6.63 per share. Despite various reports and warnings about the company's financial condition, the share price held at about \$6.00 until July 1887. However, after four months of "optimistic news," but with no substantial financial or operational improvements, the stock price plunged to \$0.25 per share by April 1888. The Security Mining and Milling Company, and the first phase of the Geyser Shaft, had reached its end.³⁴

Geyser Mining and Milling Company

Augustus A. Rowe, S. Gregory Doran, and John H. Norton incorporated the Geyser Mining and Milling Company under the laws of Colorado on 8 October 1888. They capitalized the venture with five hundred thousand shares at ten dollars par value. Directors for the first year were: Doran from New York; Rowe and Norton from Boston; Caleb H. Johnson, Silver Cliff; Charles H. North, Somerville, Massachusetts; and A. L. Brown, Whitefield, New Hampshire. As Colorado corporate law had been changed to permit assessable stock, this company was incorporated with assessable shares.³⁵

Company officers included Rowe as president, Norton as vice president, and James W. Cartwright as secretary and treasurer. Making fun of the newly organized company's name, the *Engineering and Mining Journal* sarcastically opined

that "if it only succeeds in spouting silver instead of gas there will be more security for the holders of the 500,000 shares of Geyser stock than there was [for] the old stockholders."³⁶ Apparently many of the old crowd from Security Mining and Milling Company were still in charge, as both Rowe and Cartwright had been officers and directors of the former operation.

Upon organization, Geyser Mining and Milling acquired all former properties of the Silver Cliff Mining Company at Silver Cliff, as well as the thirty-some claims in the Rosita area formerly held by the Security Mining and Milling Company. The new company began to rehabilitate the surface facilities at the Silver Cliff property in December 1888.³⁷

On 22 December 1888, a meeting was held at the company offices at 31 Milk Street, Boston, to discuss purchasing new equipment for the Silver Cliff operation. The officers decided to purchase a new hoist and other equipment for approximately seventeen thousand dollars. At the time the company had about thirty thousand dollars in cash in the treasury, the result of selling thirty thousand one-dollar shares.³⁸

Construction of the hoist and boiler plant were completed by mid-February 1888. On 24 May 1889, Geyser Mining and Milling finally received the sheriff's deed to all property and equipment formerly owned by Security. In July 1888 the new company had a crew of men at work cutting a pumping station and sump at the 250 level.³⁹

A special stockholders' meeting on 10 August 1889 discussed mortgaging the company's Silver Cliff property. In a letter to the *Engineering and Mining Journal*, dated 23 September 1889, Caleb Johnson, superintendent under the Security Mining Company, stated that the shaft was at 425 feet and sinking would continue to the 500 level. Further, the company had just sold another 22,871 shares at one dollar per share and total debt amounted to between twelve and fifteen thousand dollars.⁴⁰



*Geyser Mining and Milling Company stock certificate no. 6360, issued 12 August 1899.
(Author's collection.)*



The Geyser Shaft's surface plant. The shaft house is the large building in the center of a photo taken c. 1896. (Courtesy of the Denver Public Library, Western History Collection, C-61723.)

Shaft sinking continued in earnest, and by late January 1890 had reached 630 feet. The company indicated that no drifting would begin from the shaft until more competent rock was reached. A report in July 1890 stated that four feet per day had been sunk during the previous week, and that the depth had reached more than eight hundred feet. It is probable that this slow advance was the result of poor rock conditions and increasing water inflow. Shaft station cutting began on the 1100 level in late November 1890. When completed, the plan was to drive a crosscut toward a potential ore zone that had been encountered in the shaft when small stringers containing gold and silver values were discovered on 11 February 1890.⁴¹

The *Engineering and Mining Journal* reported on 27 December 1890 that a special stockholders' meeting was scheduled for 31 January 1891 to vote on another assessment of ten cents per share. Income from Assessment No. 1 had been \$50,000 and from Assessment No. 2, \$28,423. From its date of organization to 1 October 1890, the company had spent \$127,743.54 developing the Silver Cliff property. Cash on hand amounted to \$5,600.43. Although a shaft depth of 1,130 feet had been reached, no ore had been found.⁴²

In February 1891, the company encountered a small seam of high-grade silver ore in the east crosscut on the 1100 level. That March a brief report stated that the company had struck "fine mineral in the Geyser mine." In early July development crews struck a well-defined vein fifteen to twenty inches wide in the shaft at a depth of 1,390 feet. At about the same time flooding increased to one hundred gallons per minute. The 1450-level station, twenty by forty feet, was completed and drifting started from it in August 1891.⁴³

The *Silver Cliff Rustler* reported in December 1891 that exploratory diamond drilling from the 1450 level reached 325 feet below that level before the drill rod broke. Ten assays from the last forty feet of the hole averaged between eight and sixty-four dollars in gold. Although work continued, little news reached the public concerning

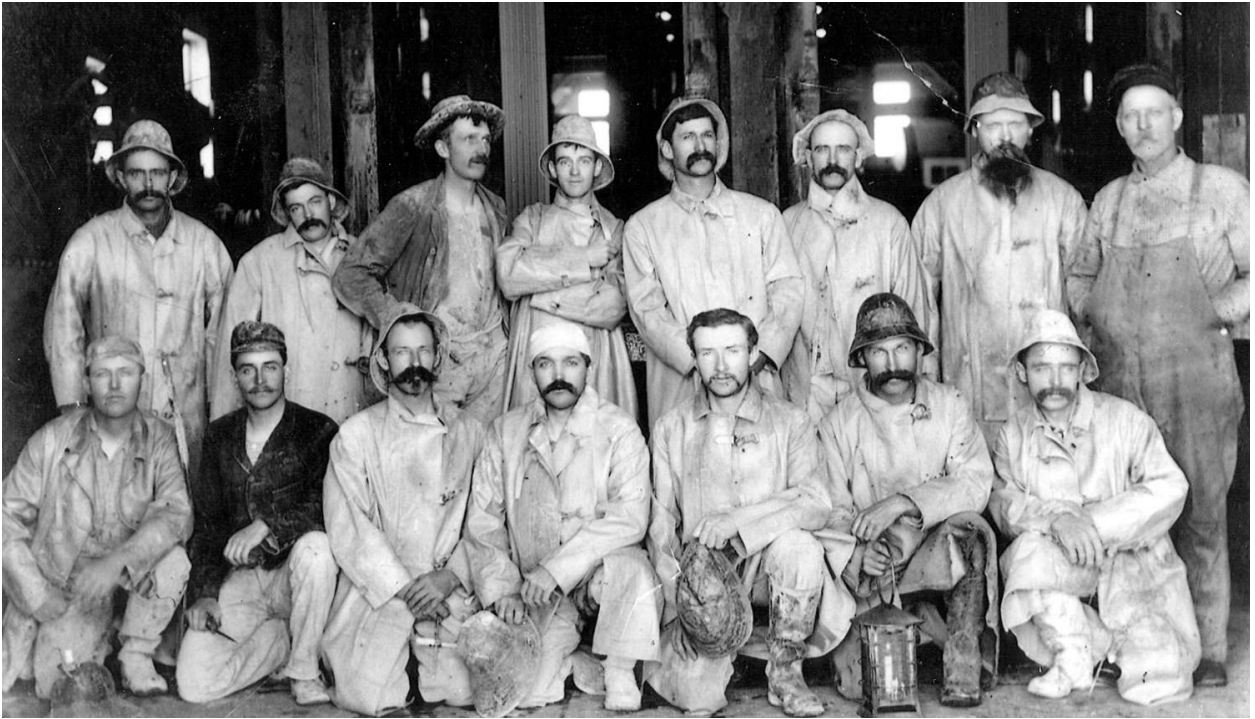
progress until the *Engineering and Mining Journal* reported on 23 April 1892 that sinking had been suspended, but that drifting was continuing on the 1450 level.⁴⁴

The company continued to levy assessments, with little information forthcoming for nearly a year. In August 1893 the company reported that ore being removed from the 1450 level assayed between seven and ten thousand dollars per ton. Whatever happened to this "bonanza" is not known, but by that November the company had returned to sinking the shaft even deeper.⁴⁵

On 27 January 1894 the *Rocky Mountain News* pointed out that "the Geyser may have a large body of ore, but they have failed so far to ship one pound." Having failed to ship any ore in 1893 from the 1450-level bonanza, in February 1894 the company claimed to have struck gold ore on the same level that ran twenty dollars, or about one ounce, of gold to the ton. That May the company stated that it had completed construction of a winze station on the 1850 level, and that sinking to the 2000 level would begin within a few days.⁴⁶

In June 1894 a report claimed that the Geyser mine was producing ore yielding 72 percent lead and two hundred ounces of silver to the ton. Several weeks later, further "puffery" by the company stated that it had struck a rich deposit of argentite (silver sulphide), which assayed between seventeen and nineteen thousand dollars per ton. In early August the company announced that the Geyser shaft would be sunk from the 2000 to the 2100 level, and that some stoping would be carried out on the 2000 level. Later the same month, the company was making plans to complete the winze between the 1850 and 2000 levels. Once that was done, stoping would begin on the known ore between the two levels. Geyser's annual meeting in October 1894 elected John H. Norton, W. G. Brown, C. H. Johnson, F. M. Libby, A. A. Rowe, R. J. Bowlby, and L. Foster Morse as directors.⁴⁷

The *Silver Cliff Rustler* reported in January



A group of Geyser Shaft employees wearing typical gear for wet conditions poses inside the shaft house in front of the shaft. Note the vertical timbers of the headframe and the flat hoisting cable in a photo taken c. 1896. (Courtesy of the Custer County Library, Westcliffe, Colorado.)

1895 that ore continued to show up in good quantities in the Geyser stopes. By then a second drift was being driven on the 2100 level to connect with the north drift. In February the company announced that assays from the 2100-level stopes continued to give good results in both gold and silver, that five ore sorters were being kept busy, and that a large shipment of high-grade ore had recently been sent to the smelter. Prospects finally seemed to be looking up for the Geyser Mining and Milling Company.⁴⁸

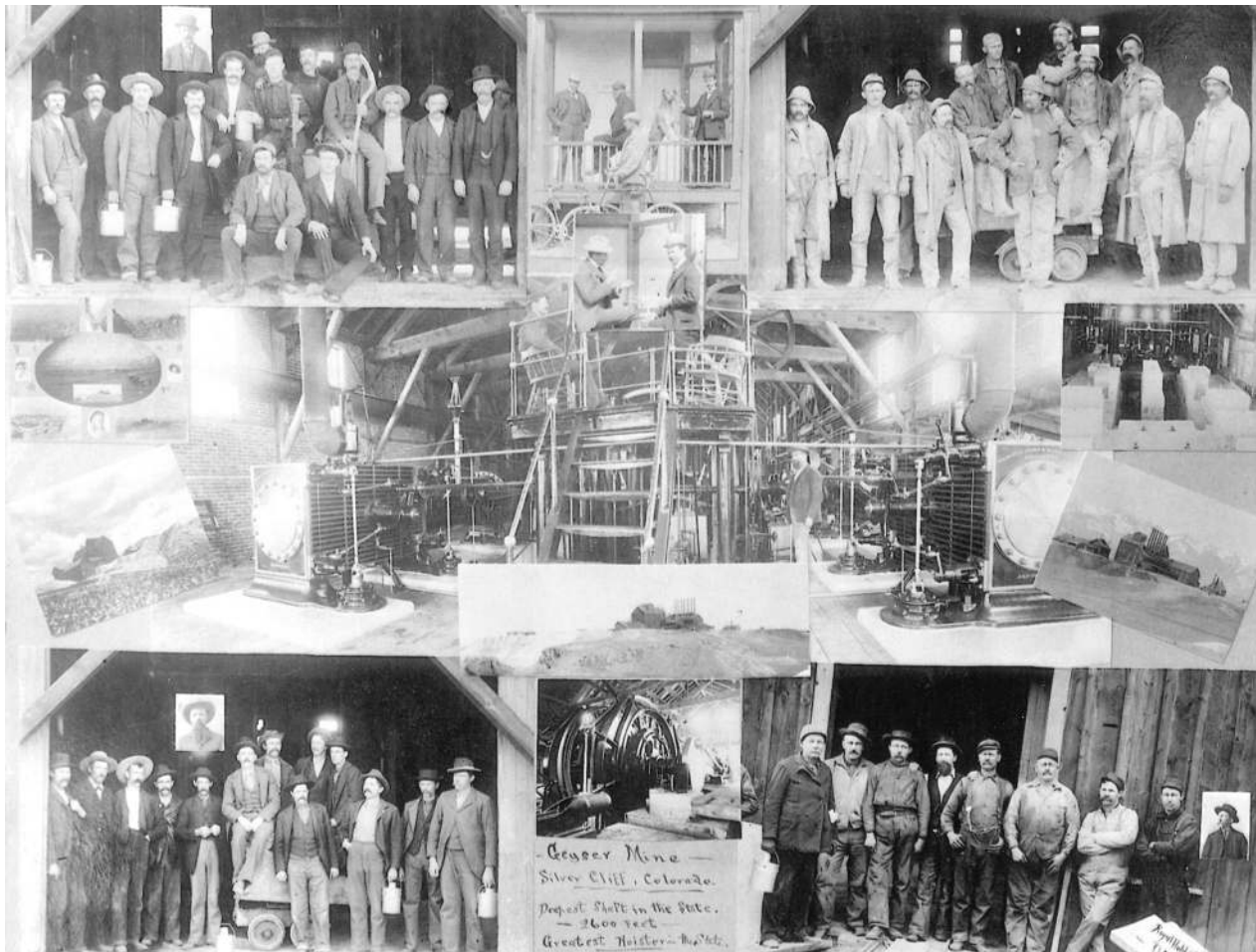
Continued reports of large quantities of high-grade ore fueled this optimism. The *Silver Cliff Rustler* reported in October 1895 that

things are getting in splendid shape at the Geyser and new hoisting machinery will soon be arriving. Three new massive boilers are being set and extensions of the engine and boiler rooms are completed and the buildings now present the

most gigantic appearance of any mining plant in the West. Splendid ore and lots of it is being taken out and sacked all the time. Everything about the great works is push and prosperity.⁴⁹

Geyser's secretary, James W. Cartwright, told the *Engineering and Mining Journal* that the company had shipped a lot of 101 tons of high-grade sulphide ore recently that netted forty-one thousand dollars from the smelter. On 19 December 1895, the *Rocky Mountain News* opined that perhaps at last the great Geyser mine would redeem itself. The project was employing sixty to seventy workers erecting new and larger hoisting and associated equipment. This new hoist was designed to reach a depth of four thousand feet and expected to be completed in four to five months.⁵⁰

William J. Orange, editor of the *Silver Cliff Rustler*, described the operation in August 1896:



A collage of Geyser Shaft surface and underground employees. The machinery at center and bottom center is the large double-reel flat-rope hoist, in its only known photograph, taken c. 1896. (Courtesy of the Custer County Library, Westcliffe, Colorado.)

The Geyser mine is 2,240 feet deep by a vertical shaft. At every 250 feet there is a station cut, about twenty-five feet square, with an air pump. The timbers are 12 x 12 all the way down and I believe it is the best piece of its kind to be found in this world. The operators have so far spent \$1,100,000 in development and have taken out about \$300,000 worth of ore. At the 2200 foot level the ore runs about 23,000 ounces silver and \$60 to \$80 in gold.⁵¹

Edmund C. Bassick visited the Geyser Shaft in late March 1897 and stated that the fact that

the Geyser was down 2,300 feet proved that high-grade ore might be found at depth. He said that he saw slabs of the finest "horn silver" ever brought to light in Colorado, or any other state, extracted from the lower workings. Another "mining expert" stated that he knew that "the Geyser is on a vein of high grade silver with traces of gold, eighteen inches wide and 90 per cent silver."⁵²

In late July 1897, Cartwright, the Geyser company's secretary, informed the *Engineering and Mining Journal* that

our work at the mine is progressing well and the latest news is very satisfactory to the management. We are stoping out

some ore of very good quality between the 2200 and 2300 foot levels. We are running a drift on the 2400 level and the material is all country rock and also sinking the main shaft in the same material to the 2500 level. The future outcome of this enterprise for a successful issue never looked brighter than at this time.⁵³

Caleb Johnson, the Geyser's superintendent and a company director, died in Silver Cliff on 11 November 1897, aged 63. He had been in charge of the property since the beginning of operations. Soon after Johnson's death, the company appointed William J. Elemendorf, from Aspen, to replace him. Elemendorf received the title of resident director and manager. In early January 1898 the new manager stated in an interview that "the mine is giving better evidence than ever before of being a great property. Three drifts are being run at the 2000 level and below and the drifts are in high grade in two places." The temperature at 2,300 feet was 90 degrees, so men wore little clothing when working there. Eight-five men worked the mine, the largest number in its history.⁵⁴

The year 1898 was almost completely devoid of any news concerning the Geyser shaft in either the *Engineering and Mining Journal* or the *Rocky Mountain News*, except a small article in mid-November mentioning that the shaft was down more than 2,400 feet. On 12 January 1899, the *Wet Mountain Tribune* reported that sinking of the Geyser shaft continued and opined that the mine had plenty of ore. The paper noted that the total number of stockholders had declined from about six hundred to between twenty-five and thirty, a circumstance brought about by a few wealthy investors buying up the shares of the many stockholders who had refused to pay the continuing flood of assessments.⁵⁵

Editor Orange, of the *Silver Cliff Rustler*, visited the mine at the beginning of 1899 and collected samples from various areas. He reported

that assays from these samples ran between six hundred and eight hundred ounces per ton gold. The directors scheduled another special stockholders' meeting for 11 April 1899 to authorize yet another assessment and to authorize the board of directors to mortgage the company's property to secure a twenty-five thousand dollar bond issue. By late March 1899 the shaft had been sunk to twenty-six hundred feet. Among the officers, John H. Norton ascended to the presidency, Warren G. Brown became vice president, James W. Cartwright was retained as secretary and treasurer, and William J. Elemendorf as resident director and mine manager.⁵⁶

Another ten-cent-per-share assessment was levied on 24 July 1899. By late August 1899 station cutting began on the 2600 level. Miners found mineralization in the shaft bottom and continued drifting on the 1450 and 2400 levels. John Norton, president, visited the mine after the annual stockholders' meeting, on 21 September 1899, and said he was pleased with the condition of the mine and spoke very encouragingly of its prospects.⁵⁷

But by late 1899 an increasing number of stockholders were not paying their assessments. At a delinquent share auction on 14 October 1899, 7,626 shares were offered for sale. The number of delinquent shares for sale increased to 16,675 at a 16 February 1900 sale, and to 59,389 by a 24 March 1900 sale. At the final sale, held on 27 June 1900, a total of 105,811 delinquent shares were offered for sale. Obviously, this trend showed that the remaining stockholders had ceased to support management's policies and had lost confidence in the company's leadership.⁵⁸

On 5 July 1900, the Geyser closed and President Norton filed papers with the Custer County recorder signing over all company property and other assets to William J. Elemendorf, who was authorized to sell them to pay more than twenty-five thousand dollars in back wages and other debts. The editor of the *Wet Mountain Tribune* wrote that he believed "that the end at last had

[sic] come and that the Geyser has passed into history.”⁵⁹

In summarizing the history of the Geyser Mining and Milling Company, the *Engineering and Mining Journal* stated that, since its organization in 1888, the company had levied twenty-five assessments of ten cents and one assessment of fifteen cents per share. The company owed twenty-five thousand dollars for wages and supplies, twenty-five thousand dollars for the property mortgage, and fifteen thousand dollars in taxes.⁶⁰

Following its closure, numerous rumors concerning a possible reopening of the Geyser Shaft began. Several of these were reported in the *Rocky Mountain News* on 19 July and 30 August 1900. On 1 September 1900 the *Wet Mountain Tribune* contained a lengthy article reporting on a scheme being developed by a stockholder committee. This plan called for organizing another new com-

pany to pay off the debts and reopen the mine. This venture was to be financed by selling shares and issuing a quarter of a million dollars in bonds. Norton also proposed forming a new company, the shares of which would be held by the major stockholders of the old company.⁶¹

Neither of these plans ever amounted to anything, and the First National Bank of Denver purchased the Geyser property in February 1901 for nine thousand dollars, plus payment of property tax loans amounting to four thousand dollars. George Beardsly, of the Westcliffe firm of H. H. Tomkins and Company, was placed in charge of the Geyser property. He had all of the mine's equipment overhauled and put in operating condition so that it would be available for inspection by prospective buyers. But the Geyser Shaft property would sit idle for the next six years, until early 1908, when a new company began to



Geyser Silver Mining Company stock certificate no. 2208, issued 12 May 1909.
(Author's collection.)

prepare it for reopening.⁶²

Geyser Silver Mining Company

The last company to attempt to locate a viable orebody from the Geyser Shaft was the Geyser Silver Mining Company. This company was organized under the laws of South Dakota in 1907 and capitalized with three million unassessable shares at a par value of one dollar. I. C. Atkinson, president of the new firm, visited Silver Cliff in November 1907 to make arrangements for reopening the mine. By February 1908 the company had started to put the surface plant back into operating condition and residents of Silver Cliff heard the mine's whistle for the first time in many years.⁶³

In March 1908, C. H. Swanson assumed charge of the Geyser. Pumping began in February 1908, and the water had been lowered to the 2100 level by early March. By early April the Geyser was reportedly being worked by two shifts of men. Development results from the 1850 level in early July were very encouraging, with assay results from a three-inch-wide streak containing native silver and ruby silver showing forty-five hundred ounces of silver per ton of ore. At the same time, miners struck a good grade of copper ore on the 500 level. Apparently exploratory work at the Geyser continued at a much slower pace for the following seven months, as by March 1909 the workforce had been reduced to a single shift pending a report from a mining consultant.⁶⁴

For the next two years only smatterings of news filtered out from the Geyser. The company was delinquent paying taxes on their seventeen claims for 1908, owing \$467.04 in back taxes as of October 1909. But by December 1910, W. H. Rains had been hired as Geyser superintendent, and the company began driving a drift north on the 500 level on 2 May 1911.⁶⁵

The exact status of the mine between 1911 and 1917 is unknown, but the Geyser Silver Mining Company probably ran out of operating funds

and closed the property. In April 1917, Herman Hansen, of Westcliffe, was awarded a contract to dismantle the large double-reel steam hoist, which had stood idle for more than five years. The hoist had been awarded to its original builder, Hendrie and Bolthoff Manufacturing Company of Denver, during settlement of the debts of the Geyser Mining and Milling Company. In September 1917, Buffalo Hunter Mining, Milling, and Development Company purchased the Geyser's shaft house and other surface buildings, planning to tear them down and use the material to construct a mill several hundred feet east of the Geyser Shaft.⁶⁶

Although the Geyser apparently shipped very little ore, two different groups reworked the huge dumps south of the shaft during November 1917. The ore recovered after hand sorting was reportedly of reasonable quality.

Geyser Development and Geology

Little is known about the underground development undertaken at the Geyser Mine as, unfortunately, no maps apparently exist. Samuel Franklin Emmons' United States Geological Survey publication, "The Mines of Custer County, Colorado," printed in 1898, contains no detailed maps and no information on anything below the 2100 level. Emmons stated that exploration drifts were driven on the 500, 750, 1450, 1850, 2000 and 2100 levels. He estimated that the total of drifting on these levels reached about eighty-nine hundred feet. After his last visit, the company did additional development on the 2400 and 2600 levels. The Geyser shaft was sunk through volcanic rhyolite and tuff until it reached the 1850 level, where it entered granite and gneiss basement rock.⁶⁷

The area north of Silver Cliff consists of gently rolling terrain, with a few low-lying hills. The bedrock in this area is largely rhyolite and tuff resulting from volcanic eruptions which occurred some 27 million years ago. Although the volcanic rocks which overlay the basement granites and



The stone foundations for the Geyser Shaft's double-reel flat-rope hoist, looking south, with Silver Cliff and the Sangre de Cristo Mountains in the background, August 2000. (Author's photo.)

gneissic Precambrian rocks are fourteen hundred to eighteen hundred feet thick, the erratic "horn silver" deposits seem to be limited to no more than one hundred feet in depth. Shafts sunk in the original open cut were limited to about fifty to sixty feet deep. There was no evidence, even in the 1890s, that these deposits extended deeper.

Later geologic investigations by the United States Geological Survey have determined that the Geyser Shaft is located within what is known as the "Geyser Vent." Within this vent are several breccia pipes. This Silver Cliff Volcanic Area is a complex zone of various types of volcanic rock and near vertical faults. Although the origin of the precious-metal mineralization is unknown, it could be postulated that the vents and breccia pipes were the source. The best source for geologic information on this area is a U.S. Geological

Survey map entitled "Geologic Map of the Silver Cliff and Rosita Volcanic Centers, Custer County, Colorado" (Map I-1081), printed in 1978.

Summary

Little evidence remains of the importance of the Geyser Shaft at Silver Cliff today. The huge waste dumps of gray rhyolite and tuff dominate the hill above the old open cut on the north edge of town. On top of the hill are remnants of the Geyser Shaft boiler building and the concrete cap over the shaft. Most impressive of all is the fairly intact stone foundation for the large, double-reel steam hoist, with its dressed granite blocks. Beneath the concrete shaft cap the Geyser Shaft extends to a depth of 2,640 feet. At one time it was the deepest mine shaft in Colorado. Two thousand feet

west of the shaft are the stone foundation ruins of the forty-stamp mills built in 1880 and 1881 by the Silver Cliff Mining Company and modified later by several unknown companies.

So was the Geyser Shaft project a scam or a legitimate exploration project? In many suspected stock promotion schemes it can be determined that company officials profited by manipulating stock prices. However, in the case of the Geyser Mining and Milling Company, this cannot be proved, since research to date has failed to discover any stock price listings. Hence stock price trends from 1888 through 1900 are unknown. It is also not known how much stock company officials held. As the stock was assessable, all owners had to pay the levied assessments or have their stock auctioned off, a point that seems to argue against this being a swindle from the outset.

The one thing definitely known is that various companies spent much money over twenty years on a project based upon little or no geologic

or physical evidence of deep silver or gold mineralization. However, judging from published accounts, there may have been sufficient high-grade stringers located at depth to warrant such continued expenditures. Unless some company documents come to light, we can probably never be certain whether the Geyser Shaft project was a scam or not. ■

James B. Copeland is a retired mining engineer and manager. A graduate of the Colorado School of Mines in 1957, he served for more than forty years in various capacities in the industry. His experience includes underground and surface mining in silver, iron, lead and zinc, gold, and coal. He began his career as a miner at the Bunker Hill in Idaho and ultimately served as superintendent of several mines for CF&I Steel and St. Joe Minerals. A long-time collector of mining stock certificates, his main historical interests are in mining company history and underground methods, and particularly the mines of Colorado and the Comstock Lode of Nevada.

Notes:

1. Horn silver (cerargyrite) is silver chloride (AgCl) and is 75 percent silver. It is commonly found in the upper parts of silver deposits.
2. Warren M. Blackenship, "The Hardscrabble Mining District: Its Leading Mines and Towns, 1872-1900" (master's thesis, University of Denver, 1959), 72-3. "Racine Boy and Silver Cliff Claim Filing Record," Custer County Miscellaneous Records, Ledger Book 1, 525, 526.
3. Frank Fossett, *Colorado: Its Gold and Silver Mines, Farms and Stock Ranges and Health and Pleasure Resorts* (2nd ed.), (New York: C. G. Crawford, 1880), 473-4.
4. *Engineering and Mining Journal*, 31 May 1879 (hereafter EMJ).
5. Silver Cliff Mining Company, "Articles of Incorporation," Colorado State Archives, Denver, Box 3817.
6. Silver Cliff Mining Company, *1880 Annual Report*, 9; Denver Public Library.
7. Robert A. Corregan and David P. Lingane, *Colorado Mining Directory* (1st ed.), (Denver: Colorado Mining Directory Co., 1883), 192.
8. Silver Cliff Mining Company, *Prospectus*, Denver Public Library.
9. EMJ, 16 Aug. 1879.
10. Fossett, *Colorado*, 473.
11. *Rocky Mountain News*, 19 Feb. 1880 (hereafter RMN).
12. Silver Cliff Mining Company, *1880 Annual Report*, 7.
13. RMN, 4 Aug. 1880.
14. *Cañon City Record*, 28 May 1880. EMJ, 9 Oct. 1880, 20 Nov. 1880, 22 Jan. 1881.
15. EMJ, 12 Feb. 1881, 23 April 1881.
16. EMJ, 23 July 1881.
17. EMJ, 21 Jan. 1881. RMN, 20 Mar. 1882. *Silver Cliff Weekly Herald*, 27 April 1882. Despite its elevation, Silver Cliff has fairly open winters, so insufficient ore production, rather than snowfall, seems to have caused the ore shortage that closed the mill.
18. EMJ, 3 Feb. 1883, 12 Apr. 1884. RMN, 14 Mar. 1883.
19. EMJ, 21 June 1884.
20. Security Mining and Milling Company, "Articles of Incorporation," Colorado State Archives, Denver, Box 3558. RMN, 3 June 1885. EMJ, 13 June 1885.
21. RMN, 9 Nov. 1885. EMJ, 24 Jan. 1885, 13 Feb. 1886.
22. RMN, 4 Mar. 1886. Modern milling practice on silver ores would expect 90 to 95 percent recovery of silver.

23. *EMJ*, 15 Jan. 1887.
24. *EMJ*, 19 Feb. 1887.
25. *EMJ*, 26 Mar. 1887.
26. *RMN*, 29 Mar. 1887, 8 May 1887.
27. *EMJ*, 4 June 1887.
28. *RMN*, 8 June 1887, 2 July 1887, 11 July 1887.
29. *RMN*, 7 July 1887. *EMJ*, 27 Dec. 1890.
30. *EMJ*, 15 Oct. 1887. *RMN*, 20 Nov. 1887.
31. *RMN*, 10 Feb. 1888. *EMJ*, 24 Mar. 1888.
32. *EMJ*, 12 May 1888.
33. *RMN*, 2 June 1888. *EMJ*, 2 June 1888, 30 June 1888.
34. *New York Times*, 29 Feb. 1887, 11 July 1887, 28 Apr. 1888.
35. Geyser Mining and Milling Company, "Articles of Incorporation," Colorado State Archives, Denver, Box 3487.
36. *EMJ*, 20 Oct. 1888.
37. *RMN*, 10 Dec. 1888.
38. *EMJ*, 22 Dec. 1888.
39. *EMJ*, 8 Feb. 1889, 15 June 1889, 20 July 1889.
40. *EMJ*, 27 July 1889, 5 Oct. 1889.
41. *EMJ*, 8 Feb. 1890, 29 Nov. 1890. *RMN*, 26 July 1890.
42. *EMJ*, 27 Dec. 1890.
43. *EMJ*, 21 Feb. 1891, 11 July 1891, 8 Aug. 1891. *RMN*, 14 Mar. 1891.
44. *RMN*, 24 Dec. 1891. *EMJ*, 23 Apr. 1892.
45. *RMN*, 14 Aug. 1893, 20 Nov. 1893.
46. *RMN*, 27 Jan. 1894, 6 Feb. 1894. *EMJ*, 2 June 1894.
47. *RMN*, 28 June 1894, 18 July 1894. *EMJ*, 11 Aug. 1894, 28 Aug. 1894, 6 Oct. 1894.
48. *EMJ*, 19 Jan. 1895, 3 Feb. 1895.
49. *RMN*, 5 Oct. 1895.
50. *EMJ*, 2 Nov. 1895, 29 Dec. 1895.
51. *RMN*, 13 Aug. 1896.
52. *RMN*, 3 Apr. 1897.
53. *EMJ*, 31 July 1897.
54. *EMJ*, 27 Nov. 1897, 11 Dec. 1897. *RMN*, 6 Jan. 1898.
55. *EMJ*, 12 Nov. 1898.
56. *RMN*, 12 Jan. 1899. *Wet Mountain Tribune*, 25 Feb. 1899 (hereafter *WMT*). *EMJ*, 25 Mar. 1899. The gold sample values seem exceedingly dubious, so the statement is probably just another of the lies or exaggerations associated with this property.
57. *WMT*, 1 July 1899, 26 Aug. 1899, 30 Sep. 1899.
58. *WMT*, 30 Sep. 1899, 17 Mar. 1900, 16 June 1900.
59. *WMT*, 7 July 1900.
60. *EMJ*, 14 July 1900.
61. *WMT*, 1 Sep. 1900, 22 Sep. 1900.
62. *WMT*, 16 Feb. 1901, 28 Jan. 1902.
63. *WMT*, 30 Nov. 1907, 22 Feb. 1908.
64. *Cañon City Record*, 3 Mar. 1908, 2 Apr. 1908, 9 July 1908. *WMT*, 27 Mar. 1909.
65. *WMT*, 2 Oct. 1909, 5 May 1911.
66. *WMT*, 27 Apr. 1917, 28 Sep. 1917.
67. Samuel Franklin Emmons, "The Mines of Custer County, Colorado," U.S. Geological Survey, *Seventeenth Annual Report*, v. IV (1896): 453-4.