

Mayflower Mill: An Iconic National Historic Landmark

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Introduction

The Silverton Caldera is a key part of Colorado's mining history, with mining dating back over 150 years. Significant exploration, mining and development in the region brought change, prosperity and opportunity, along with history, memorabilia and landmarks. This includes the Mayflower Mill, which was first built in 1929 and was essential to the region's mining operations for decades. Donated to the San Juan County Historical Society by SGC, the iconic Mayflower Mill is now on the National Register of Historic Sites and is being operated as a Historical Tour and Interpretive Center. The Mill is well-preserved and maintained to show today's visitors the pivotal role it played in shaping the region.

Area History

The Mayflower Mill is located in the Upper Animas River Basin in the Silverton Caldera, two miles northeast of Silverton in San Juan County, Colorado, an area with significant mining history dating back to the 1870s. The area is naturally highly mineralized and has been for millions of years, and was a prime location of mining activity for gold, silver, lead and copper. The area hosted over 1,500 mines (USGS Fact Sheet, 1999) and was home to over 50 separate mill sites, 8 distinct smelters and 35 different aerial trams (Jones, 2007, at 76).

Historically, mining in the area heavily influenced the way of life as people flocked to San Juan in search of opportunity and prosperity. As described by the San Juan Historical Society:

Our mining heritage has been the heart of San Juan County's development. Many service industries were instrumental in the success of the mining industry including the railroad for transportation of the ores, Otto Mears toll road system, the mining of precious metals (from numerous mines, the mills and smelters, boarding houses) and the support towns that followed the big strikes, which provided employment, supplies, housing, cultural opportunities, and entertainment.

Over the past 150 years, the Animas River Basin has also been affected by the extensive historical mining, milling, and smelting activities that occurred, including mining and milling in areas upstream of the Mayflower Mill, and on the opposite bank of the Upper Animas River across from the Mayflower.

Mayflower Mill

In 1876, an important historical milestone was achieved with the construction of the Polar Star Mill (also known as the William Crooke Mill), near the mouth of Boulder Creek. This mill was active in the late 1870s and early 1880s, and by 1882 it had a 50 ton per day capacity. In accordance with historic practice, mill tailings from the Polar Star Mill were generally discharged directly into the Upper Animas River rather than being stored in tailings impoundments (Kimball, Runkel, Walton-Day).

Declared a National Historic Landmark in 2000, the iconic Mayflower Mill was constructed by Shenandoah-Dives Mining Company in 1929. As described by the San Juan County Historical Society:

The Mill began to take shape in the summer of 1925 as the dream of Charles A. Chase, who had made a reputation as a successful mine manager at the Liberty Bell near Telluride, Colorado. In the spring of 1929, a contract was issued to Stearns-Roger Manufacturing Co. of Denver for \$375,000 to erect the mill. It was to be built

of pre-framed Oregon fir, a good choice for the mountain environment and harsh San Juan winters it would have to withstand. The latest industrial equipment was employed in its construction, including the innovative steam shovel and dump trucks coming onto the market [...]. Construction was pushed to take advantage of the short mountain summer. The mill was completed in six months, and started processing ore in February of the following year. The Mayflower Mill was the single longest running mill in the history of the San Juan Mountains. In its 61 year milling career from 1930 to 1991, it was shut down only a total of 12 years, resulting in 49 years of actual milling. The total amount of rock milled is estimated at 9,700,500 tons. The Mill produced 1,940,100 ounces of gold; 30,000,000 ounces of silver; and 1,000,000 tons of combined base metals -- a remarkable record [...].

From 1936 through 1953, the Mill received ore from over 60 mines in the area. In addition to processing ore from various private mines, the Mayflower Mill also processed material developed through government contracts (1963 Royalty Audit Report). The Mayflower Mill was described as “absolutely essential” to regional mining operations, and the “entire mining and business community” was “completely dependent on the Mill and the Shenandoah-Dives Mining Company.” (Hazen Jr., Varnes). As described by History Colorado, the mill is “an exceptionally intact example of a selective flotation mill reflecting the distinctive characteristics of hard-rock milling processes in the early 20th century Rocky Mountain West.”

Tailings from the Mill were still discharged directly into the River until at least 1935 (Bunyak, Lee at 51). By 1935, the Mill’s capacity was up to 600 tons per day. Mayflower Impoundments Nos. 1 and 2 were constructed at this time and operated from 1936 to 1975 (See 2017 Investigations Summary). Mayflower Impoundment No. 3 operated from 1976 to 1977, and No. 4 became the only Impoundment in use after 1977, and its use continued until mining operations in the area stopped in 1991. During the 1980’s, Impoundment Nos. 3 and 4 were used for disposal of municipal landfill waste with authorization from BLM.

Until late 2011, BLM was the owner of significant portion of Impoundment No. 4 and a portion of Impoundment Nos. 1, 2 and 3, and was the owner of these properties the entire time tailings were being deposited on them. SGC only deposited tailings in the upper portion of Impoundment No. 4.

Today, Mayflower Impoundment No. 4 has served a key role in facilitating remediation throughout the Silverton Caldera, being used as a repository for remediation waste from other sites and water treatment precipitate from water treatment facilities. It is has proven to be an ideal repository for waste storage, and continues to be to this day.

SGC’s Brief Five Years of Operation

SGC was formed in September 1985 and acquired the Sunnyside Mine from Standard Metals in November 1985. When SGC first acquired the Mine, it was not commercially producing and was subject to numerous mining and discharge permit violations.

SGC promptly brought all discharge permits into compliance, re-designed the mining operation, and completed a substantial mine permit amendment in cooperation with Colorado regulatory agencies, including the Colorado Department of Public Health and Environment. The improvements resulted in a modern, efficient and environmentally sound operation. As a result of SGC's efforts, on February 29, 1988, the Colorado Mined Land Reclamation Division awarded SGC the 1987 Mined Land Reclamation Award in the classification "Most Improved Sites." (Reclamation Division Letter, 1988).

SGC operated the Sunnyside Mine for only 5 years, from 1986 to 1991. During that time period, ore from the Mine was hauled to the Mayflower Mill for processing. All tailings were confined to the upper level of Impoundment No. 4, well clear of any groundwater path or surface path to the Animas River.

SGC's operations, including its mining and reclamation work, were conducted using modern techniques and under the modern era of environmental regulation. SGC's operations became uneconomic when metals prices dropped and with the mine's closure, SGC's operations transitioned from active mining and remediation work to solely remediation work, which was conducted in accordance with all of SGC's applicable permits.

Between 1991 and 2004 SGC fully reclaimed all four Mayflower Impoundments according to reclamation plans approved by state and federal regulators, including areas not owned by SGC. Reclamation included management and elimination of residual surface water, re-grading of embankment slopes to improve geotechnical stability and prevent erosion, and grading of the top surface to create a free draining surface for precipitation runoff. Further stability was achieved by placement of cover soils and re-vegetation. As a result of SGC's work, the reclaimed Mayflower Impoundments are stable and meet both the regulator-approved reclamation plans and their post mining land uses.

The Mayflower Mill Today

SGC donated the Mayflower Mill, operational and intact, to the San Juan County Historical Society, along with \$120,000 and other valuable property (Blair Mountain Placer), to provide base funding for maintenance and conversion to a historic tour.

In 2000, the Mayflower Mill was added to the National Register of Historic Sites and is currently being operated as a historic tour and interpretive center by the San Juan County Historical Society. In fact, the original mill equipment is preserved and still intact with no other mills comparable to it in Colorado.

Not only is historic preservation important to the community, as evidence of its many contributions to society, it plays a key role in the economic viability of the region. Preservation and restoration of historical structures attracts tourists and history buffs, generates direct and spinoff jobs, generates tax revenue and supports a variety of other tourism industries.

As described in a report prepared for the Colorado Historical Foundation:

"These [restoration] projects have also allowed the historic properties to continue to generate revenue and attract tens of thousands of visitors to this scenic and exciting part of the state, while also fulfilling the SJCHS [San Juan County Historical Society] mission of interpreting the area's history for the enjoyment of future generations.

The Mayflower Impoundment area is fully reclaimed in accordance with all applicable permits, and Impoundment No. 4 continues to serve as a potential safe storage repository for waste from other area sites, further facilitating cleanup of the Silverton Caldera.

Conclusion

The Mayflower Mill was essential to the area's rich mining heritage and today, the historically-important regional fixture continues to be a significant contributor to San Juan County. SGC donated the intact Mayflower Mill to the San Juan County Historical Society and, as a National Historic Landmark, it is operated as a Historical Tour and Interpretive Center, a draw for tourists to the area who want to learn more about the Silverton's extensive mining history, contributing to local tourism industry and generating economic benefits for local institutions.

Historical Photos (credit: San Juan County Historical Society)



Mayflower Mill (1970s)



Mayflower Mill (2013)



Mill Interior



Mayflower Mill Tram Station

References

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Author Biography



Larry Perino is a recently retired expert in mining and reclamation who, throughout his 40-year career and continues to be today, is actively involved in reclamation efforts in the Silverton, Colorado area. Since receiving his Civil Engineering degree from the University of Colorado-Boulder, Larry spent his entire career in the mining industry, in a variety of fields including engineering, production, environmental affairs, permitting, and closure and reclamation. Since the closure of the Sunnyside Mine, Larry focused on reclamation efforts around Silverton, and was instrumental in SGC's reclamation activities that have improved water quality. He's a licensed Professional Engineer in the state of Colorado, and registered as a Mine Safety and Health Administration trainer. He was a long-time member of the Animas River Stakeholders Group and currently sits on the Bonita Peak Community Advisory Group.