

History of Silver Mining in New Mexico

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The annual [New Mexico Mineral Symposium](#) provides a forum for both professionals and amateurs interested in mineralogy. The meeting allows all to share their cumulative knowledge of mineral occurrences and provides stimulus for mineralogical studies and new mineral discoveries. In addition, the informal atmosphere encourages intimate discussions among all interested in mineralogy and associated fields.

The symposium is organized each year by the [Mineral Museum](#) at the [New Mexico Bureau of Geology & Mineral Resources](#).



Abstracts from all prior symposiums are also available: <https://geoinfo.nmt.edu/museum/nmms/abstracts>

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Background

Silver, like gold and platinum, was born from cataclysmic events in the heavens. Researchers theorize that the majority of heavy elements (silver, gold, and platinum) in our solar system likely originated from a single neutron-star merger that occurred about 80 million years before the birth of our solar system (5.4 billion years ago).



Silver, Silver City Manganese Mine, Grant County, New Mexico. 3.5 cm. NMBGMR#10023. Jeff Scovil photo.

As the Earth formed, heavy elements such as iron, silver, and gold sank toward the planet's core. If no other events had occurred, there would be very little silver or gold in the Earth's

crust but around 4 billion years ago, the Earth was bombarded by asteroids. These impacts stirred the deeper layers of the planet and forced some silver and gold into the upper mantle. Plate tectonics and volcanism play an important role in transporting heavy elements from the mantle to the crust. Silver is transported in mineral rich water and is concentrated in veins and alteration zones.

Mindat lists 212 mineral species containing silver. This includes: 7 element species; 193 sulfides and sulfosalts species; 7 halide species; one oxide species; one sulfate species; and three phosphate, arsenate, and vanadate species.

New Mexico

New Mexico has a wonderful endowment of silver (and other minerals like copper and gold) because of its geologic history. Important geologic events creating this endowment include the marginal extension of the base domain, the Laramide Orogeny caused by the subduction of the Farallon Plate, and the subsequent crustal extension and Rio Grande Rift and its associated volcanism.

Silver has been found in 163 mining districts and other geographic locations in New Mexico. More than 118.7 million oz. of silver have been produced in New Mexico from 1848 through 2014. Silver is currently extracted only as a byproduct of copper mining. Production from most districts has been small; however, 14 districts have produced more than 3,000,000 oz. of silver, and together they account for approximately 80% of the total silver production in New Mexico. (V. T. McLemore, 2017)

Silver is found in 14 distinct types of deposits that range in age from Proterozoic through Holocene. Five deposit types have produced significant gold and/or silver as the primary product: placer, volcanic-epithermal, Great Plains margin (alkaline-related), carbonate-hosted silver-manganese replacement, and Laramide vein. Four deposit types have produced significant silver and gold as byproducts of base-metal production: carbonate-hosted lead-zinc replacement, Laramide skarn, porphyry copper, and Proterozoic massive-sulfide. The five remaining deposit types with minor silver and/or gold production are: copper-silver ($\pm$ uranium) vein, Rio Grande rift, Mississippi Valley-type, sedimentary-copper, and vein and replacement in Proterozoic rocks. (V. T. McLemore, 2017)



Silver, Acanthite, Ni-Skutterudite, Ankerite, Alhambra Mine, Black Hawk Mining District, Big Burro Mountains, Grant County, New Mexico. 18 cm across. NMBGMR#19016.

Silver mining occurred under Spanish and Mexican rule in what would become New Mexico, but records are sparse and inconsistent. The discovery of the Comstock Lode (NV) in 1858 inaugurated large-scale silver mining in the western United States. The Comstock was the first important silver-mining district in the United States, and its discovery stimulated a great deal of prospecting for silver across the western United States. New Mexico's first major

silver discovery (as a Territory) was in 1863 in the North Magdalena district (Pueblo Springs area).

The mining districts of New Mexico that produced the largest amounts of silver were the Mogollon in Catron County (with >20M oz.); Burro Mountains in Grant County (with >10M oz.); Willow Creek in San Miguel County (with 6.2M oz.); Lordsburg in Hidalgo County (with 6.2M oz.); Kingston in Sierra County (with 6M oz.); Lake Valley in Sierra County (with 5.8M oz.); Fierro-Hanover in Grants County (with >5M oz.); Steeple Rock in Grant County (with 4.5M oz.); and Magdalena in Socorro County (with 4M oz.). (R. M. North and V. T. McLemore, V. T., 1986)

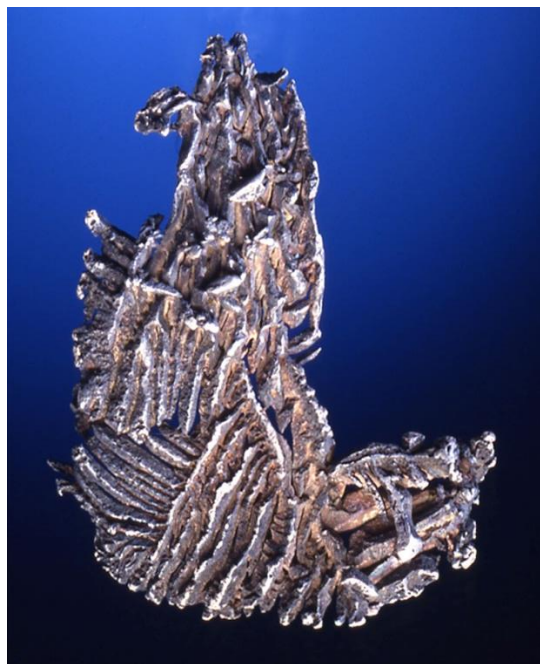
We will look at a select number of mines from the districts that produced significant amounts of silver as well as the silver species that made up the production. Because of its rarity, we will spend some time discussing the unusual arsenide five-element-vein deposits of the Black Hawk district in the Burro Mountains, Grant County, New Mexico. We will also discuss some historically significant mines like the Bridal Chamber located in the Lake Valley district, Sierra County, New Mexico that produced copious amounts of silver from a couple of halide silver species.



Chlorargyrite, Bridal Chamber Stope, Sierra Grande Mine, Lake Valley District, Sierra

*County, New Mexico. 8 cm. NMBGMR#15606.
John Rakovan photo.*

The story of Silver mining in New Mexico is not just about the production records and the geologic settings; it includes the story of the men and women that toiled in the sweltering New Mexico heat of summer and the freezing temperatures of winter; endured harsh mining conditions; weathered the turbulent economic policies of the mid 1800s through the early 1900s; and suffered through influenza pandemics, fires and floods, and the Apache Wars.



*Silver, Silver City Mining District, Grant County, New Mexico. 5 cm. NMBGMR#16799.
Jeff Scovil photo.*

Between 1879 and 1882 all of the major railroads within the state were completed and stage line established. This significantly improved the movement of labor, equipment, and ore. During this same time practically all precious and base metal producing districts in NM were discovered and developed. (J. Simmons, 1990).

In 1893 mines and smelters began to shut down, banks closed their doors, and real estate values plummeted when Congress repealed the Sherman Silver Purchase Act causing the price of silver to drop to \$0.62 per ounce.

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