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THE MONTANA DISCOVERY FOUNDATION IS ORGANIZED TO CONSERVE AND ENHANCE THE NATURAL RESOURCES OF THE HELENA NATIONAL FOREST AND SURROUNDING AREAS THROUGH EDUCATION TO IMPROVE WILDLIFE HABITAT, WATERSHED HEALTH AND PROMOTE RESPONSIBLE OUTDOOR RECREATION ETHICS.

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CHARTER OAK MILL & MINE SITE



PRESERVING THE PAST: A HERITAGE RESOURCE OF THE HELENA NATIONAL FOREST





THE EARLY DAYS OF HARD ROCK MINING



John Hopkins & Charlie Anderson working at Charter Oak Mine



What it might have looked like inside the mine



Single-jacking Double-iacking



Compressed-air drill



Candles lit the way

In the early days of hard rock mining, dynamite holes were drilled by a lone miner using a chisel and swinging a four-pound hammer. This was called single-jacking. Two miners working together, one holding the chisel and the other swinging an eight-pound hammer, was called double-jacking. Both methods were slow, difficult, and expensive.

Engineers experimented with steam-operated drills. These were not efficient and were unreliable. They then turned to compressed air which made the drills both fast and efficient. The Charter Oak Mine turned to this type of drill after getting a compressor. These drills were called widowmakers because almost as soon as they were put into use, miners began to die by the scores. The pressurized air churned up huge amounts of razor sharp silica dust which cut into the miners' lungs causing a hard cough and eventual death. This illness was silicosis.

This hazard was eliminated by an invention that injected water through a hollow port in the drill. The water mixed with the silica dust and carried it away. This method is still used today.

Candles were the primary source of light for miners until the calcium carbide lamp was invented. Besides light, both gave early warning of bad air by changing color, flickering or going out. Miners preferred candles because a candle went out when the oxygen content dipped below 18%, giving a miner, who needed oxygen at 15% a 3% safety margin. Carbide lamps needed only 12% oxygen and could outlast their owners. Both were replaced by battery-powered lamps.

CHARTER OAK MILL & MINE SITE

The ruins of abandoned placer and lode (underground) mines are a common sight on the Helena National Forest. Exploration and prospecting on public land has resulted in thousands of prospect pits, trenches and mining shafts. When placer or lode claims seemed promising, the land was usually patented and thus came out of government ownership. Mines and mills were then developed on patented land but the resulting waste rock piles (from excavating tunnels) and tailings piles (from milling the ore) was often strewn across adjacent public land. These areas are now the scene of toxic mine waste cleanup.

A significant exception to this pattern of patenting mining developments is the Charter Oak Mine and Mill, located in the Little Blackfoot River south of the community of Elliston. It lies on Helena National Forest land and contains standing buildings and mining-milling buildings and equipment. The mine has been stabilized and interpreted, and is open for public visitation on select summer weekends.

Briefly, Charter Oak was a lode mine and mill active off and on from 1916 to 1955. The Hopkins family ran the first Charter Oak operation as a stamp mill until the stock market crash of 1929. The mine was inactive during the first years of the Great Depression. In 1942, the Hopkins & Sons Mining Company developed the 50-ton flotation mill you see today. The Hopkins brothers and leaseholder James Bonner operated the mine throughout World War II and into the 1950s. World War II brought great productivity to the mine. Designated a strategic metals mine by the federal government, Charter Oak produced lead and zinc essential to fighting the war.

By 1955, Charter Oak was in decline. Market conditions, lack of investment capital, and technological changes all played a role in its demise. The mine changed hands and lease- holders several times but little hardrock mining was done. Ore from surrounding mines was assayed at Charter Oak as a business. In the 1980's, plans to upgrade the mill to process the older tailings and waste rock at Charter Oak were unsuccessful. Never patented, this mine on public land became Forest Service property in 1995. Toxic waste rock and mill tailings were removed from Charter Oak from 1996-1998. The historic mine has been stabilized and interpreted by the Forest Service with the invaluable assistance of Passport in Time program volunteers and Helena High School X-CEL program students. Charter Oak is one of a handful of standing World War II-era lode mines still in existence on public land in the West. For this reason, the Charter Oak mine was listed in the National Register of Historic Places in 2001.

Some additional reading:

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