Mining in Utah:

Past and Present

Marie Wilde

Utah's Diverse Heritage

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I know I'm a bit old for Disney cartoons, but a classic song from the movie, Pocahontas, replayed in my mind the other day. A duet titled "Mine, Mine, Mine" is sung by two of the main characters, John Smith and Governor Ratcliffe, after they've first stepped on the new land of America. John is anxious to embark upon the epic adventures that await him while Governor Ratcliffe has one clear wish, to strike it rich or to find his fortune!

Not unlike John Smith and Governor Ratcliffe, many immigrants have come to the United States with the hope of finding good fortune. The lands of our wonderful state of Utah holds many mineral fortunes which our modern day society has become dependent upon for survival. President Abraham Lincoln once said, "Utah will become the treasure house of the nation. (1)" Today, I believe his prediction has come true. Utah's Kennecott Copper Mine is the second largest copper producer in the United States! (2) It is interesting that throughout our history, often those who first settled and staked claims in Utah were not the ones to reap the riches from what Utah's rich soil had to offer. Taking a look back into Utah's history of mining provides some surprising insights.

It has been suggested that the first people to mine the diverse lands of Utah were the Native American Indians who successfully survived off the riches of the land. Later, the Spanish explorers from Mexico came to explore the northern territories. While there is a great deal of evidence to support these theories, the first recorded mining was conducted in 1847 by early Mormon pioneers. Quarrying stone for buildings, coal for

heat, iron for tools, and lead for bullets(3), all of these were essential to establish a new and self-sustaining community.

Mormon President and pioneer leader, Brigham Young, strongly discouraged the mining of precious metals, arguing that it would distract the men and women from growing crops, raising livestock, and the essential mining to sustain their settlements. President Young also feared that the mining of precious metals would bring non-Mormons into the region, disrupting the peace and faith within the religious community. Just as President Young feared, in October of 1862 (at the height of the Civil War), Colonel Patrick E. Connor and his volunteer soldiers were ordered to the Utah territory to accomplish two specific tasks: to protect the overland mail and stage lines, and to "keep an eye on the Mormons." Opposed to Brigham Young's beliefs and the control that he had over the Utah territory, Colonel Connor encouraged his experienced prospectors and miners to search the nearby mountains for metals such as silver and gold. They found both.

After the discovery of precious metals in 1863, Colonel Connor and his regiment formally organized the first mining district in Utah. West Mountain District became known as Bingham Copper Mine after the discovery of lead-silver ore in Bingham Canyon in the Oquirrh Mountains, west of Salt Lake County. This location was the largest and most productive gold placer ever discovered in Utah, yielding up more than $1.5 million in gold before it was depleted in the early1900s. In 1870, hopeful prospectors staked claims in the Mercur District of Tooele County, which were abandoned because of the scarcity of water and available gold that could be more easily panned. Silver ores kept the District alive until approximately 1883 when more gold-

bearing ores were found. Unfortunately, the gold could not be easily separated from the rock, which disappointed the prospectors and caused them to leave in despair. Finally, in 1889, a new cyanide leaching process was developed which provided an easier separation method for separating gold from rock. Over the next ten years, almost 2 million tons of gold ore were treated, producing over 380,000 ounces of gold, worth approximately $8 million. (4)

Due to limitations and challenges for mining gold, silver has proven to be the consistent producer in Utah. Silver was the most important early metal until the early 20th Century when copper production eventually surpassed it. Foundations for family fortunes, industrial employment, and development of mining areas were based upon the mining of silver. Until the turn of the century, more than half of Utah's mineral production was silver, totaling about 20% of the entire silver production in the United States. By 1925, Utah mines accounted for 32% of the nation's silver production. Since then, the amount produced and the percentage of the nation's production have both continued to decline. Still, Utah remains an important silver-producing state. In fact, in l983, the last year figures were available, Utah produced 10.5% of the silver mined in the United States. (5)

Copper mining has also played a significant role in the industrial, economic, and social life of Utah throughout its history. Two Mormon pioneer brothers, Sanford Bingham and Thomas Bingham, first discovered copper ore in Bingham Canyon. Being advised not to pursue mining operations by President Brigham Young, the brothers did not stake a claim for copper, and they eventually moved to what is now Weber County, leaving the canyon named after them. (6) As Colonel E. Patrick and his regiment

pursued mining in Bingham Canyon, they too discovered the copper ore as a by-product of the lead-silver ores.

As the demand for copper increased, especially with the development of electric power, Utah's role as a copper producer became more significant. In l903, Daniel C. Jackling, known as the father of Utah copper mining, and Enos A. Wall, organized the Utah Copper Company. Jackling introduced open-pit mining to Utah where ore is mined from the surface using large mechanical shovels to remove the surface rock and its ore, thus creating Kennecott Copper's Bingham Mine. In l910, Utah Copper and Boston Consolidated Mining merged. A few years later in 1915, the Guggenheim's Kennecott Copper Corporation purchased a financial interest in the Utah Copper Company and later fully acquired the company in 1936. In 1981, a world-wide fall in copper prices brought about the acquisition of Kennecott by Standard Oil of Ohio. A few years later, British Petroleum acquired Standard Oil of Ohio, and Kennecott became part of BP Minerals America. Later, in l989, Rio Tinto Zinc purchased the mining assets from British Petroleum, and Kennecott Utah Copper Corporation was formed by Rio Tinto as a new mining company under the laws of the State of Utah. A Rio Tinto press release dated Monday, August 16, 2010, reported:

> The Mine has been one of Utah's major economic engines for more than a century and has produced 18.7 million tons of copper, which is more copper than any other mine in history. The Mine's output currently comprises nearly 25% of U.S. refined copper production. In 2009, Kennecott

produced 7% of U.S. refined gold, 10% of refined silver,

and 23% of molybdenum. (8)

These mining operations have resulted in the creation of an open-pit mine over 7.5 miles deep, 2.5 miles wide and covering 1,900 acres. According to Kennecott, it is the world's largest man-made excavation! (9)

Just as copper today is essential to Utah's economic development, coal too is an important economic contributor. Over 95% of the electricity generated in Utah comes from coal-generated plants. In 2005, a little over 24.5 million tons of coal were produced, representing a 12.5% increase over 2004. Minerals Management Service reports that the coal produced in 2004 has a total sales value of over $432.7 million and generated royalty revenues in excess of $27.8 million, certainly an important economic contributor to Utah.

The history of coal in Utah dates back to early Mormon pioneer settlers who used coal primarily to heat their homes and businesses. As the Mormon community grew, so did the demand for coal, especially when the local lumber supply was reserved only for building. As the need for more coal increased, territorial legislation of l854 offered a cash prize for the first usable coal deposits found within 40 miles of Salt Lake City. Unfortunately, the first coal deposits discovered in Utah were too far away to win the prize money. During the 1850s-1870s, settlers discovered coal in other parts of the territory, including Utah's southwestern corner and Sanpete County. Many prospects were opened, including the Coalville deposited in Summit County, about 40 miles from Salt Lake City. The early Mormons built a connecting railroad to the Summit County deposit, which was later acquired by the Union Pacific Railroad. The Union Pacific was

able to take over the majority of Utah's coal supply, forcing the Mormon pioneers to load their wagons for their own personal needs. These practices prompted the Mormons to complete the competing Denver and Rio Grande Western railroad lines. The new railroad traversed the foot of the Book Cliffs, which as later determined to be Utah's richest coal deposit. Finding labor to extract the rich coal deposits proved to be a major challenge. The Rio Grande Railroad hired labor agents to bring in foreign immigrants to Utah to do this dangerous work by luring them with false promises of easy money. Miners came from all over the world, including Italy, China, Finland, Greece, present-day Yugoslavia, Japan, and Mexico. They were often brought in as strikebreakers! Most of the immigrant miners remained in Utah and have given the area its distinctive ethnic mix.

The last mining bonanza in the history of Utah's mining was the uranium boom during the Cold War era of the l950s and l960s. First discovered in l789 by German chemist Martin Heinrich Claret, as a by-product of the mineral pitchblende, it wasn't until 1896 that French physicist Antoine Henri Becquerel discovered the radioactive elements in uranium, eventually calling it the "wonder metal." Uranium came into high demand when it became the key ingredient for nuclear weaponry. The Manhattan Project of the U.S. Corps of Engineers, was responsible for the development of the atom bomb, and it instituted a covert program to mine for uranium. Previously, 90% of the United States' uranium supply was shipped in from the Belgian Congo and Canada, but small amounts were filtered out from radium and vanadium dumps along the Colorado Plateau, giving promise for an untapped domestic source. After World War II ended, the Atomic

Energy Commission replaced the Manhattan Project and launched the first federally sponsored mineral rush in history.

In l952, Charles Augustus Steen, an unemployed oil geologist from Texas, found the nations' first big uranium strike in the Big Indian Wash of Lisbon Valley, southeast of Moab. The story, known as Steen's Folly, tells how Charles Steen moved to the Colorado Plateau with his wife and four young sons in search of luck and wealth. Unable to afford a Geiger counter, which tests sandstone formations for radioactivity, he took a broken down drill rig into the back country, ignoring standard uranium seeking protocol. He used his oiling background to explore the land and successfully located the Mi Vida mine in an area the Atomic Energy Commission deemed barren of ore. (11)

Utah has many rich mineral deposits, and the above represent only a few of those that have made a great impact upon our society today. Certainly we have become dependent upon the luxuries they have brought to pass. Electricity, heating and cooling, telephones and computers, bicycles, automobiles and airplanes all benefit from mining. As I contemplate the role of minerals in Utah, I feel the urge to sing along with Governor Ratclife: "Mine boys! Mine ev'ry mountain, and dig boys! Dig 'til ya drop, grab a pick boys, quick boys. Shove in a shovel, uncover those lovely pebbles that sparkle and shine! It's gold and it's mine, mine, mine!"

Footnotes

1. Author Unknown, *Utah Mining Association*, http://www.utahmining.org/brochure.htm
2. Author Unknown, *Kennecott Utah Copper's Bingham Canyon Mine*, http://www.utah.com/attractions/kennecott.htm
3. Donald K. Winegar, *Treasure House Relics Project, History of Mining in Utah*, http://www.miningutah.com/id66.html
4. Author Unknown, *Utah's Gold History*, http://geology.utah.gov/online_html/pi/pi-50/pi50hist.htm
5. John S. McCormick, *Silver in the Beehive State, Beehive History 16*, http://historytogo.utah.gov/utah_chapters/mining_and_railroads/silverinthebeehivestate.html
6. Author Unknown, *Bingham Canyon Mine*, http://en.wikipedia.org/wiki/Bingham_Canyon_Mine
7. Author Unknown, *Utah Mines*, http://www.miningartifacts.org/Utah-Mines.html
8. Rio Tinto Press Release, Monday, August 16, 2010 http://www.kennecott.com/library/media/NR%20Cornerstone%20Extension%20and%20U%20of%20U%20Study%20August%2016%202010.pdf
9. Author Unknown, *Bingham Canyon Mine*, http://en.wikipedia.org/wiki/Bingham_Canyon_Mine
10. U.S. Department of the Interior Bureau of Land Management, http://www.blm.gov/ut/st/en/prog/energy/coal.html

11. Raye C. Ringholz, *Uranium Mining in Utah*, Utah History Encyclopedia, http://historytogo.utah.gov/utah_chapters/utah_today/uraniumminginutah.html