THE
VICTORIA COPPER MINE
Elko County, Nevada USA

COLDWELL BANKER COMMERCIAL
INTERMOUNTAIN MERGERS & ACQUISITIONS

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Victoria ore (bornite and chalcopyrite)
THE VICTORIA COPPER MINE

SUMMARY

The Victoria Copper Mine was first developed by Anaconda Copper Company as an open-pit mine with a 1,000-ton-per-day mill. Open-pit production began in February 1975 with announced ore reserves of 2.4 million tons grading more than 2.4% copper. The mine was converted to underground production in 1976, but closed in late 1977 due to low copper prices. During its operation by Anaconda, the Victoria mine produced 6,000 tons of copper concentrate. In mid-1979, Day Mines bought the Victoria mine from Anaconda and resumed production in mid-1980, producing concentrates that were shipped to the Kennecott smelter at McGill, Nevada. The mine was closed again in the spring of 1981 due to low copper prices and has not operated since that time. Announced reserves remaining in the Victoria mine at the end of this operation period were 1.4 million tons of proven ore grading 0.35 ounces of silver per ton and 2.15% copper.

Anaconda also drilled a smaller mineralized zone on the Eugenia patented claim about 1.2 miles east of the Victoria Mine, inferring a reserve of 250,000 tons of 2.6% copper in a massive sulfide lens. The ore deposit is not fully defined at depth or laterally. Copper mineralization is widespread throughout the Dolly Varden area. Anaconda was planning an extensive exploration program in the area when the mine closed. The company drilled only a few holes outside the Victoria orebody, mainly in search of a porphyry copper deposit. The possibilities of finding other Victoria- or Eugenia-type deposits in the Dolly Varden area are excellent, and the deeper porphyry-skarn concept has not been tested.

Taylor Western Resources, LLC (TWR) now owns the Victoria mine and surrounding mining claims, which has millions of dollars of infrastructure in place – power, water, and most importantly, the underground access to the ore deposit. The two lower levels of the mine were being developed in the orebody when the mine closed. With rehabilitation of the underground workings, ore extraction can start quickly. The existing surface disturbance at the mine should facilitate the issuance of required permits without the need for extensive environmental surveys.

LOCATION and PROPERTY DESCRIPTION

The Victoria property, located in the Dolly Varden Range in southern Elko County, Nevada, is accessible by 38 miles of paved road (U.S. Highway 93A) south from Interstate Highway 80 at Wendover, then by 12 miles of improved gravel road to the Victoria mine (Figure 1). The property presently includes 5 patented and 121 unpatented claims (Figure 2).
Figure 1. Location of the Victoria mine in northeastern Nevada.

Figure 2. The Victoria property: Blue boxes are patented claims; black line is the approximate boundary of Taylor Western’s unpatented mining claims.
HISTORY

The Anaconda Copper Company originally acquired the Victoria property in the 1940’s and sank a 500-foot-deep vertical shaft, drove 9,000 feet of drifts, crosscuts and raises on three levels (the 150-, 300- and 500-foot levels) and drilled 47 underground core holes. This work revealed that the original orebody was cut off or displaced by a low-angle fault at about 100 feet of depth; however, they found a much larger and deeper orebody about 200 feet west of the original site.

The company had done enough drilling for assessment and property development purposes since the 1940’s that they had a good understanding of the size, shape and quality of the orebody down to a level sufficient to maintain production for a number of years. Open-pit mining started in 1975 and underground operations started in 1976.

Anaconda used a modified version of sublevel caving beneath the pit, reached by a 14 x 14-foot decline ramp driven from a portal 700 feet east of the orebody. After reaching the ore, the ramp spiraled downward with new levels driven at 40-foot depth intervals into the orebody. Anaconda ceased production in August of 1977 due to low copper prices (US$0.60 per pound).

Atlantic Richfield purchased Anaconda Copper and divested itself of all mining operations. The Victoria property was subsequently sold to Day Mines in 1979, which then reopened the mine in 1980, with first production in May 1980. Day Mines struggled to keep the mine profitable with the low copper prices during this time, but the company maintained the mine and did limited development work while hoping for higher copper prices. They mined the 7070 level, started the extraction drifts on the 7030 level and drove the spiral decline to the 6990 level. In late 1980, Day Mines was acquired by Hecla Mining, and Hecla ceased production at Victoria in March 1981 when copper prices were still less than US$1.00 per pound. Hecla sold the mill in 1988 and it was moved to Cripple Creek, Colorado. No mining has occurred at Victoria since 1981, although Hecla drilled a few holes in 1991 for assessment purposes.

In the 1990’s, Mr. Glenn W. Taylor purchased the five patented claims and water rights from Hecla Mining. After Mr. Taylor’s death, his children inherited the patented claims and formed Taylor Western Resources, LLC. Taylor Western Resources has added the unpatented claims to form a solid land position on the mineral trend.

GEOLOGY AND MINERALIZATION

The Dolly Varden Range consists largely of a thick sequence of Mississippian- to Triassic-age carbonate and clastic sedimentary rocks, which exhibit a generally moderate easterly dip, but are locally strongly folded and faulted. Near the center of the range, a Late Jurassic/Early Cretaceous porphyritic quartz monzonite pluton, referred to as the Melrose stock, has intruded the sedimentary rocks. Most of the intensive hydrothermal alteration and mineralization in the area is probably related to the intrusion of the stock and/or to late-phase igneous activity associated with it.

Tertiary volcanic flows, pyroclastic rocks, and calcareous and tuffaceous sediments cover much of the eastern half of the Dolly Varden Range. Late Tertiary block faulting elevated parts of the range and tilted the rocks 20 to 25 degrees eastward. Subsequent erosion exposed most of the previously covered central contact aureole and the Victoria mineralization.
The Victoria property is situated in an area of very complex geology, with folding, faulting, igneous intrusion and intense alteration. Mineralization at the mine is in an elongate, elliptically shaped breccia pipe formed on the nose and south limbs of an east-west trending anticline. Limestone, dolomite and sandstone/quartzite of the Permian Pequop Formation and the Park City Group host the breccia pipe. Anaconda's geologists believed the breccia pipe formed in response to hydrothermal fluidization stoping and magma withdrawal prior to and contemporaneous with collapse and brecciation of the walls of the pipe. The anticlinal fold may have served as a structural locus for a deep, underlying offshoot of the Melrose stock, which in turn furnished the hydrothermal fluids responsible for magmatic stoping, alteration and mineralization.

The breccia consists of mixed fragments of sandstone/quartzite and limestone/dolomite in a matrix consisting of diopside, calcite, quartz, sulfides and clay minerals. From maps of the lower mine levels and from drilling, it appears that mineralization migrates south and southeasterly around the crescent with increasing depth.

The ore mineralogy is simple and consists of pyrite, chalcopyrite, bornite, and chalcocite occurring both in the matrix of the limestone breccia and as veins and disseminations along bedding in the clasts. Repeated brecciation apparently enhanced permeability and resulted in a highly shattered sulfide matrix. Pyrite and chalcopyrite form the great bulk of the mineralization in the ore. Silver content ranges from about 0.30 to 0.60 opt. No significant gold has been found with the mineralization to the depths developed or explored. A sample of the ore is shown in Figure 3.

Figure 3. Photograph of Victoria ore, consisting primarily of bornite and chalcopyrite.
PRODUCTION and RESERVES

Anaconda's ore reserves, at the time of initial production, were announced at 2.4 million tons at a reported grade of 2.42% copper and 0.59 ounces-per-ton (opt) silver. The company extracted a total of about 700,000 tons of ore from its open pit and an additional 206,000 tons underground (down to the 7070 level) at a reported average mill-head grade of 2.03% copper before suspending operations.

Maps and data from Anaconda, Day Mines and Hecla show remaining proven ore reserves at 1.4 million tons at an average grade of 2.25% copper from the 7030 level to the 6750 level. Additional ore remains on the 7070 level, as records indicate that level was only 50% mined. Below the 6750 level, Anaconda penetrated the ore zone with fewer holes, insufficient to classify the ore as proven reserves, but adequate to add more than 0.5 million tons of probable reserves. In addition, copper mineralization was encountered to the 6200 elevation, but no information exists on how far below the 6200 elevation the mineralization might extend.

According to Anaconda and Day Mines production records, the developed part of the orebody contained about 400,000 tons of ore per 100 vertical feet. If this trend continues to the 6200 elevation, an additional 2.0 to 2.5 million tons of ore could be developed.

The limestone-hosted ore is easily milled. According to Anaconda mill records, copper recovery rates were consistently above 90%, with some monthly mill production reports showing more than 95% recovery. Reports show routine concentrate shipments of more than 30% copper.

Anaconda discovered a second copper orebody on the Eugenia patented claim, located about one mile east of the Victoria Mine (see Figure 2). Anaconda and Day Mines drilled 14 core holes and roughly outlined about 250,000 tons at a grade of 2.6% copper in this blind, massive sulfide deposit lying at a depth of only 300 feet below surface. The orebody is not defined at depth and is not adequately defined laterally. This deposit has not been mined and warrants further work.

Copper oxide ore was stockpiled by Anaconda, but was not processed (Figure 4). The stockpile contains approximately 100,000 tons of 1.5 to 2.5% copper. There are additional in-place oxide reserves that have not yet been quantified.

Figure 4. Stockpile of copper oxide ore.
OREBODY and UNDERGROUND MINE

Anaconda compiled extensive information on the property, but some of this information was apparently lost. However, Day Mines and Hecla Mining compiled extensive files and maps, some of which were obtained from Anaconda. The remaining files are now the property of Taylor Western Resources. The files contain maps, cross sections, drilling records and technical reports. In addition, the files contain production records, milling and smelter reports, and numerous other documents. All of these files are available and are included with the mine.

Taylor Western has been able to digitize some of the historic maps and data in order to utilize computer applications and three-dimensional modeling. Much work remains to be done, but maps of the underground workings produced by Day Mines have been digitized to aid in the graphic depiction of the mine. Figure 5 is an example of one of Day Mines’ mine level maps.

The orebody forms a crescent-shaped deposit roughly 250 feet by 300 feet in plan dimensions and plunges to the west. Figure 6 is a three-dimensional depiction of the ore deposit, as digitized from Anaconda’s maps of the deposit at 50-foot depth intervals. Figure 7 is a three-dimensional depiction of the underground workings, spiral decline and extraction drifts, all digitized from the Day Mines individual mine level maps.

Figure 5. Day Mines map of Level 7140.
Figure 6. Three-dimensional view of the Victoria deposit, showing mine levels and ore reserves.

Figure 7. Three-dimensional graphic of the underground mine workings.
ASSETS

TWR’s Victoria Mine and property include significant assets. Millions of dollars were spent to develop the mine and many of the assets are still in place, including roads, water lines, power lines, and especially the underground workings. Some rehabilitation will be required, but this is a mine that could be put into operation in a very short time and at a relatively small cost. With today’s record copper prices, the mine provides an outstanding opportunity and represents more than $500,000,000 in COPPER AND SILVER RESERVES.

Assets include:

- Five patented and 121 unpatented mining claims
- Proved ore reserves of 1.4 million tons at average grade of more than 2% copper
- Additional Probable ore reserves of more than a half million tons
- Outstanding exploration potential for additional resources
- Existing power line with three-phase power at mine
- Water rights, water wells, springs, and water-supply pipeline
- All-season gravel county road from highway to mine
- Developed work pads
- Underground haulage ways in place
- Historical records, maps and files