Geologist's Report on the Blackstone Mine Project
Elmore County, Idaho
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The purpose of this report is to describe the results of an earlier geological exploration and drilling program of the Blackstone Mine area, Elmore County, Idaho and discuss recommendations for further work.

Location and access

The Blackstone property consists of 5 patented claims and 32 located claims in Sections 13, 14, and 15, T2S, R10E, and Section 18, T2S, R11E, about 60 miles southeast of Boise, Idaho. Access is via the Hill City County Road, 6 miles south of U.S. Highway 26.

The Blackstone property lies at an elevation of approximately 5,800 feet and extends along the crest of a low granite ridge that rises about 1,000 feet above the broad Camas Prairie valley to the north. Surface development consists of a 100 x 600-foot open pit located near the eastern end of the five patented claim block.

The claims are held by Richwell Resources Ltd. under a lease agreement with Blackstone Mining Company Ltd., the property owner. It is understood that Richwell has an option to obtain a 100 percent leasehold interest subject to a 4 percent net smelter return in favor of Blackstone.

Sources of information

The primary sources of information on which the report is based include geologic data, maps, drill logs, cross sections, and other information obtained from Mr. Richard F. DeLong of Reno, Nevada. In his report of March 29, 1986, he summarized the drilling of a total of nine inclined, reverse-circulation rotary drill holes on the extreme eastern portion of the Blackstone property. The drill holes (3,010 total footage) tested the vertical and horizontal extent of the geologic structure, rock alteration, and mineralization.

In addition, the writer has drawn upon other appropriate sources including assays, petrographic analyses, publications pertaining to the geology of Elmore County, Idaho, and discussions with Richwell Resources Limited.

Geology

The Blackstone property lies within the Volcano Mining District, which contains a number of gold-silver base metal veins and pods grouped along a zone of structural weakness near the southern edge of the Idaho batholith.

Silver-rich quartz veins of the Blackstone Mine are intimately associated with granitic dikes and are localized by an east-west shear zone in a quartz monzonite facies of the Idaho batholith. Surface development on the Ohio and Kentucky patented claims exhibit quartz veins and stockwork, and the adjacent country rock is intensely altered.

Delong (1986) states that three zones of alteration with some mineralization surround the stockwork. The zones from the stockwork outward are: a sulfide-epidote zone, a sulfide-sericite zone, and a sericite-manganese oxide zone, which is the most widespread alteration associated with the deposit.

Nine drill holes intersected east-west structures that host quartz veins and altered rock at the eastern end of the property. The structures and associated quartz veins dip north between 50° and 70°. Two major structures at the surface converge at depth with a combined thickness of 90 to 130 feet and have a well-developed zone of altered rock between them. The vertical extent of the structure is at least 300 to 400 feet downdip.

DeLong, using cross-sections and plan views from drill-hole data, developed a three-dimensional model of the quartz veins, structures, and altered rock. A body of rock can be outlined which measures approximately 600 x 200 x 400 feet. According to DeLong, this body of altered and mineralized rock, partially blocked out by drilling, possibly contains 3 million to 4 million tons.

Results

DeLong reported on surface samples taken from the open pit at the eastern end of the property. They contain 3.8 to 11.3 ounces/ton silver in the stockwork, 5.1 to 11.2 ounces/ton gold in the sulfide-epidote zone, 3.3 ounces/ton silver in the sulfide-sericites zone, and 0.25 to 1.0 ounces/ton silver in the sericite-manganese oxide zone. Base metal values range from 0.66% to 6.40% lead, 0.46% to 5.4% copper, and 0.38% to 6.95% zinc.

Assays obtained from drill holes S4 and S7 show the following (sampling at 5-foot intervals; silver by fire assay; base metals by atomic absorption):

S4

Footage: 400 feet to depth of 300 feet, angle 45°
Silver: 55 to 345 feet = 0.3% to 6.4 ounces/ton (3.31 ounces average)
Copper: 55 to 330 feet = 0.3% to 2.96%
Zinc: 55 to 295 feet= trace to 1.6%

S7

Footage: 400 feet to depth of 312 feet, angle 50°
Silver - 60-75, 95-115, 255-295 feet = 2.25 to 10.40 ounces/ton (4.68 ounces silver average)
Copper: 60-75, 95-115, 160-200, 255-295 feet = 0.9 to 2.7 percent
Zinc - 60-75, 95-115, 160-20, 255-295 feet = 0.39 to 2.3 percent
Data from drill holes S4 and S7 indicate silver-rich ore lies at depths of less than 300 feet, having average values ranging from 3.31 to 4.68 ounces silver/ton with significant copper values as well.

Although only a small area located at the eastern end of the patented claim block has been drilled; drill-hole data outline a silver deposit that shows excellent potential for lateral and depth extension. Additional work is needed to determine the size and shape of the zone of silver-bearing quartz veins and altered host rock, especially in areas on strike to the west.

Recommendations

I recommend a rotary drilling program on that segment of the patented claim block situated in Sections 14, T2S, R10E; work to start adjacent to the previously drilled area. The program would consist of 400-foot holes on 100-foot centers for a minimum of 28,000 feet of drilling. Trenches excavated at several localities should be mapped and sampled to help correlate surface geology and mineralization to that in the drill holes. Drilling toward the south at a dip of 45° would intersect the northward dipping, east-west trending, fractures, quartz veins, and alteration zones. There should be flexibility in the choice of drilling sites, based on geologic data gathered during the drilling program. In addition, I recommend two exploratory holes be drilled in that segment of the claim block that is situated in Sec. 15.

A rotary reverse-circulation drill should be used with samples taken at 5-foot intervals. Since the reverse-circulation drill rig will not effectively produce clean samples in wet ground, it will be necessary to change to a coring operation when ground water is encountered. Selected holes should be cored to a depth of 400 to 600 feet to determine if a zone of enrichment exists at the water table. I recommend fire assay of samples by Universal Laboratories of San Francisco, California.