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1992
ANNUAL
REVIEW



STATE ACTIVITIES 1992

Colorado side of the border have yielded about 0.2 carat/st.

A rare deposit of jet black marble was found near Avalanche Creek at the base of Mount Sopris near Redstone. The black marble is worth twice that of the most expensive white marble. Most black marble comes from Belgium and sells for about \$4.50/lb. ♦

Idaho

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As metal prices continued to decline in 1992, so did exploration in Idaho. The slide was amplified by increases in foreign opportunities and domestic environmental costs. During 1992, 47 major projects were active (Fig. 1), down from about 70 the year before. Gold continued to be the main target, but interest in industrial minerals, cobalt and copper was on the upswing.

Chemstar Lime Co. opened a new quarry and an energy efficient lime plant near Bancroft in Caribou County. Pegasus Gold Corp.'s Black Pine Mine in Cassia County completed its first full year of production. The heap leach facility and carbon adsorption plant added 1.5 t (48,725 oz) of gold to the state's economy.

Another first was the startup of Nerco Minerals' \$7 million acidification, volatilization and reabsorption (AVR) plant to recycle cyanide at the DeLamar gold-silver mine in Owyhee County. It is only the second such plant in the world. **Coeur d'Alene district and north Idaho**

Hard times got even tougher in the Silver Valley during 1992 as the silver price sunk below 13 cents/g (\$ 4/oz). The Galena Mine shut down in July, leaving only the Lucky Friday and Sunshine mines operating. Hecla Mining had the only major exploration effort, drifting from the Lucky Friday under the old Gold Hunter Mine to evaluate a new silver-lead vein.

At Murray, Golden Chest Mining did confirmation drilling aimed at opening a small, underground gold mine. Kennecott Exploration and two Canadian joint venture partners drilled a deep core hole at Tributary Creek looking for stratiform lead-zinc mineralization in the Prichard Formation.

Salmon area

Meridian Gold Co. kept the proposed Beartrack gold mine on hold due to the low gold prices. The deposit contains at least 18.7 t (600,000 oz) of heap leachable gold. Meridian drilled two core and 12 reverse circulation holes and collected bulk samples from a new 38-m (125-ft) decline into the North Zone.

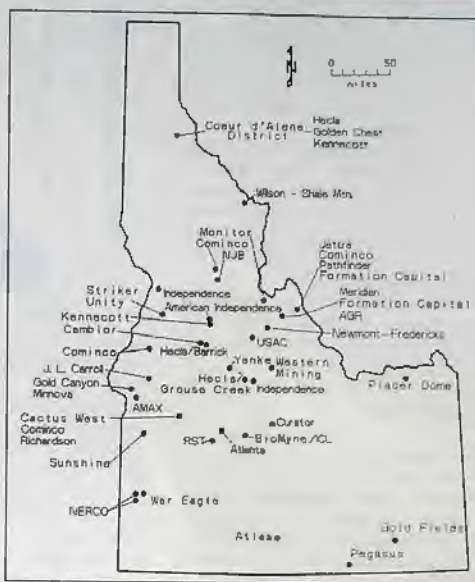
American Gold Resources (AGR) performed 5180 m (17,000 ft) of infill drilling in the Haidee area of the Arnett Creek property. AGR also submitted samples for metallurgical testing.

Formation Capital Corp. was active at the Bobcat property and elsewhere near Salmon in Lemhi County. Formation excavated 610 m (2000 ft) of trenches and drilled 12 holes at Comet Ridge, two holes at Sawmill Gulch and four holes across the Panther Creek Fault at Moose Creek.

Pathfinder Exploration trenched and drilled six holes on Formation's King Solomon and Gilt Edge properties. Jettra Resources explored Formation's Queen of the Hills and Wallace Creek properties.

Formation Capital also joined the search for stratabound copper-cobalt-gold mineralization by leasing the 4-km² (1000-acre) Blackpine Mine property 5 km (3 miles) east of the Cobalt Ranger Station in Lemhi County. The underground mine was worked in the 1940s and 1950s. Formation did preliminary soil sampling and geophysical surveys and hopes to drill in 1993.

Another major property transaction was finalized in mid-October when Newmont Mining Co. acquired two discoveries of Atlas Precious Metals for \$22.5 million. Included was Atlas' Grassy Mountain deposit in southeastern Oregon and the Musgrove project, which covers 52 km² (20 sq miles) in Lemhi County, ID. In December 1991,



Exploration projects in Idaho during 1992.

Atlas reportedly intersected good gold values when it drilled nine holes from a single drill pad on top of a cliff. Newmont was looking forward to an aggressive program in 1993.

West-central Idaho

At Warren, CSC Mining Co. intersected the main gold vein crossing the New Rescue Decline and drifted 85 m (280 ft) along it. CSC proposes building a small gravity mill. Unity Gold Mines, Inc., continued rehabilitation of a caved zone in the old Unity Mine.

Hecla Mining and American Barrick Resources joined forces on a 3050-m (10,000-ft) diamond drilling program at Hecla's Yellow Pine Mine at Stibnite in Valley County. The effort was designed to evaluate the large (perhaps 62 t or 2 million oz) sulfide gold resource on the property. Barrick, however, withdrew from the agreement at the end of the year.

Cambior drilled five helicopter-supported core holes on claims west of Johnson Creek south of Yellow Pine. In spite of encouraging results, Cambior dropped the property due to permitting difficulties.

Kennecott Exploration worked three properties in the Thunder Mountain District, mapped and sampled the area

and drilled eight core holes at the Dewey Mine.

East-central Idaho

Hecla Mining had considerable success with development and exploration drilling at the Grouse Creek project, located near the Sunbeam Mine on Jordan Creek in Custer County.

A 27-m (90-ft) intercept assaying 1.9 g/ (0.056 oz/st) gold and 747.4 g/t (21.8 oz) silver was one highlight of the season-long drilling program. Hecla has received all the necessary state and federal permits. The project was to include two pits, a 5.4 kt/ (6000-stpd) mill and a 125-person work force, producing more than 2.17 t/a (70,000 oz/year) for seven years.

South-central Idaho

Curator American Inc. took over Westmont Mining's base metal properties, including the DSA project at the head of the North Fork of the Big Lost River. Curator did surface mapping and geochemistry.

Biomyne Inc. expanded its mapping and soil sampling coverage of the Warm Springs area west of Ketchum. The company has drilled 1400 m (4600 ft) in the last two years and plans an expanded program in 1993.

Atlanta Gold put down 23 fill-in holes in the West Pit area of the Atlanta property in Elmore County. The property has open pit reserves of more than 23.3 t (750,000 oz) gold. In 1992, Newmont and Atlanta tested the deep, high-grade zones.

Boise Basin

The Boise Basin is Idaho's largest historic gold-producing district. In 1992, however, the region was very quiet. Cominco American did surface work at a property on Elk Creek.

Cactus West drilled five holes early in the year at the Gold Hill Mine near Quartzburg, and later ran an IP survey and soils program over their Century property. The company planned to drill in spring 1993.

Southeast Idaho

Placer Dome drilled 15 reverse circulation holes and did surface mapping and geophysics over the volcanic-hosted Kilgore property in Clark County. Gold Fields Mining completed eight holes to test gold-bearing jasperoids near Cherry Creek in Oneida County.

Pegasus Gold continued exploration drilling, along with production, at its new Black Pine Mine in Cassia County.

Mine reserves were 14.2 Mt (15.7 million st) grading 0.8 g/t (0.022 oz/st) recoverable gold.

Southwest Idaho

Amax Exploration finished 6400 m (21,000 ft) of drilling at the Idaho Almaden Mine, east of Weiser in Washington County. The mercury mine hosts a resource of about 37 Mt (30 million st) of 1 g/t (0.03 oz/st) gold ore with silica encapsulation problems. Amax also performed metallurgical and feasibility studies.

North of Weiser, Minnova optioned the Blue Dog gold prospect from Gold Canyon Resources. J.L. Carroll Exploration drilled 11 holes at the Consolidated Mercury prospect near the mouth of Crane Creek. Cyprus Minerals drilled the property in 1990.

Cominco drilled two core holes at a volcanogenic massive sulfide target near Peck Mountain northwest of Council. Results were disappointing.

Nerco Exploration did minimal work around its DeLamar Mine in Owyhee County due to budget cuts. Permitting efforts for the Stone Cabin project, which hosts 12.7 Mt (14 million st) of gold-silver ore, were slowed by wetlands issues and changing corporate priorities. The proposed mine site is on Florida Mountain 13 km (8 miles) east of DeLamar.

Sunshine Mining had good results with its 10 reverse circulation holes at Cartwright Canyon in Boise County. One hole into a previously untested soil anomaly returned a shallow, 17-m (55-ft) intercept of 2.2 g/t (0.064 oz/st) gold.

Industrial minerals

Overall, industrial minerals comprise about 59% by value of Idaho's nonfuel raw ore mineral production. In 1992, that figure was estimated by the US Bureau of Mines to be about \$325 million.

Phosphate mining and processing are the largest contributors to Idaho's mineral production. In 1992, the six southeastern Idaho mines extracted about 5.2 Mt (5.7 million st) of ore worth about \$95 million.

In-state processing of the ore into phosphoric acid or elemental phosphorus added more than \$400 million in value to the Idaho product.

Two joint ventures did exploration drilling on proposed phosphate lease areas. There was also renewed interest in limestone exploration, building and landscaping stone and sand and gravel resources. ♦

Illinois

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Mineral production remained relatively high in Illinois in 1992, showing a slight increase in value over 1991. However, exploration and development for several minerals, most notably coal and fluorite, decreased or remained at moderate to low levels.

Coal

Coal exploration and development activity decreased significantly. This is indicated by the filing of only 435 Test Hole Record and Plugging Affidavits last year with the Illinois Department of Mines and Minerals (IDMM). That number compares with 889, 674 and 680 in 1989, 1990 and 1991, respectively.

The 1992 records were filed by 11 companies for locations in 18 counties. About 81 of the 435 holes are far enough away from active mines to be classified as exploration holes. This marks the second straight year with a significant decrease in exploration drilling—down from 222 holes in 1990 and 103 holes in 1991.

Exploration drilling for new mines last year was conducted by Northern Coal Co. in Vermillion County, Consolidation Coal Co. in Clark County, Amax Coal Co. in Edwards County, Zeigler Holding Co. in Franklin County, Monterey Coal Co. in St. Clair County and Tower Fuel Co. in Henry County.

The remaining 354 holes drilled in 1992 were classified as developmental. They were mainly located in Saline, Randolph, Sangamon and Perry Counties in southern Illinois.

Significant developments in the Illinois coal industry in 1992 included the purchase of Shell Mining Co. by Zeigler Holding Co. The Elkhart Mine of Turriss Coal Co. is the only mine in Illinois involved in this transaction. Shell Mining was renamed SMC Mining Co., a subsidiary of Zeigler Holding.

In addition, Zeigler and Old Ben Coal merged and now operate under the name of Old Ben Coal Co., another subsidiary of Zeigler Holding.

In 1992, Illinois produced 55 Mt (60.6 million st) of coal. That is a slight increase from the 54.4 Mt (60 million st) produced in 1991. Underground mining accounted for 43.3 Mt (47.8 million st), while surface mining accounted for 11.6 Mt (12.8 million st).