

JOHNNY MOUNTAIN GOLD

By Pamela Phillips

Situated 110 km northwest of Stewart, B.C., the Johnny Mountain gold mine has geological reserves of 796,000 tonnes grading 18.9 g per tonne. The gold vein deposit is owned by Skyline Gold Corp.

Copper, molybdenum, gold and silver mineralization was discovered in the Johnny Mountain area in the early 1900s. The first work done on Skyline's property identified gold, silver and copper in veins in 1907. The Pick Axe showing, in the area of present day mining, was discovered in 1954 by Hudson Bay Mining & Smelting. The property and surrounding area were explored by various companies during the next two decades, and in 1980 Skyline acquired the property. In spite of extensive glacial till coverage,



16 Vein with pyrite, galena, sphalerite, chalcopyrite, visible gold and quartz.

prospecting identified two more showings. Subsequent exploration work led to a production decision in 1987.

Regionally, the property is underlain by late Triassic to early Jurassic volcanic and sedimentary rocks belonging to the Intermontane Tectonic Belt along the eastern flank of the Coast Plutonic Complex. The rocks are intruded by granite and Quaternary basalt dykes.

In the area of the deposit, the stratigraphic section consists of predominantly unbedded heterolithic lapilli tuff, crystal lithic tuff, and agglomerate, all of which are intercalated with feldspar porphyry. Although the overall thickness of the stratigraphic section in the area is unknown, the individual rock types units from five to 20 m in thickness, strike 245°, and



1. Feldspar porphyry

2. Lapilli tuff

3. Epidote altered lapilli tuff

4. Massive pyrite with gold and minor chalcopyrite from the Discovery vein.

GOLDEN GENESIS

The following qualifies as the most imaginative speech given this year by a company president to his shareholders. Harvey Atkin, an actor, businessman and president of Armistice Resources, delivered the speech at the company's annual meeting. Armistice is exploring the possibility of an extension of the Kerr Addison orebody. Ladies and gentlemen, Mr Atkin . . .

And it came to pass that a great upheaval of the Earth occurred. And after the dust had settled, man found upon the face of the Earth a brightly colored substance which he could fashion into things. And he called it gold, and it was good. And man searched hither and yon for this gold for it was plentiful, but hidden in strange places . . . And gold became a mighty and powerful thing to possess. And man coveted gold and there evolved the axiom of gold, also known as the golden rule, which said "he who has the gold makes the rules" . . .

And it was determined that gold was only to be found in certain places, and experts evolved to find and locate those places, and those experts were called prospectors and geologists. And the geologists went forth and fifth and found places and they called those places breaks, and they gave them weird names like the Porcupine Destor Break and the Kirkland Lake/ Larder Lake Break. And they were accurate to a fault. And they built huge monuments to the gold and they called their monuments mines. And there was the Kerr Ad-

dison and the Comstock and the Dome and the Hollinger and the Red Lake.

And there rose up in the land two great and mighty geologists and their names were Glenn Hogg and Guy Hinse. And they knew the area and after a time they said that the Kerr Addison horizon and indeed the Kerr Addison orebody was broken and all of it was not to be found on the Kerr Addison claim. But there were naysayers and skeptics and those of little faith who said they knew not of what they spoke, for others had failed to find what was now called the downfaulted extension

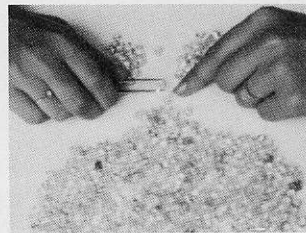
of the Kerr Addison orebody, and there was much laughter in the land. But it is a known fact that nature is lofty, but malicious she is not.

And it came to pass that there were believers and they persevered and they explored and they drilled and they dewatered and they flow-throughed and their efforts proved fruitful. But still they were taunted and jeered and not believed. So they drilled some more and lo and behold they succeeded and they found the downfaulted extension of the Kerr zone. And they were called Armistice . . .

DIAMONDS ON DEMAND

The ingenious and complex chain of companies that De Beers has set up to market diamonds worldwide has been called the most successful cartel of the century. The Central Selling Organization (CSO) was established by De Beers in 1934 when the diamond industry was reeling from the effects of the Great Depression. By establishing production quotas and centralizing the grading and selling process within one organization, the CSO succeeded in doubling diamond sales within a year. Since then, the organization has proved remarkably adept at maintaining a dependable market.

By blitzing Japan with slick, seductive advertising campaigns in the mid-1960s, the CSO created a billion-dollar-a-year diamond market within a decade. Through advertisements, the CSO has also been able to tailor market demand to



whatever type of diamond the cartel holds in its stockpile. When the supply of large diamonds in the stockpile declined in the 1970s, the CSO created a demand for the lower-carat stones by mounting an advertising campaign that made small, delicate diamonds more popular.

The advertising money appears to be well spent. The CSO, which controls more than 80% of the world's diamonds, reports that diamond sales increased by 32% in 1988 to \$4.1 billion (US). The average price of rough, uncut stones rose 13.5%. World sales of retail diamond jewelry set records for the sixth consecutive year.

IN SEARCH OF BRIGHT IDEAS

The following is excerpted from a speech delivered by Harvie André, federal minister of industry, science and technology, at a Conference Board of Canada luncheon, Nov 7, 1989:

"(O)ur abilities in research and development and science and technology are the keys to our competitiveness in the years ahead. Long-term growth can no longer depend upon our endowments of natural resources, nor on our established manufacturing base.

We've long been known for our wealth of natural resources. However, we need to become much better known for our natural resources from the neck up!

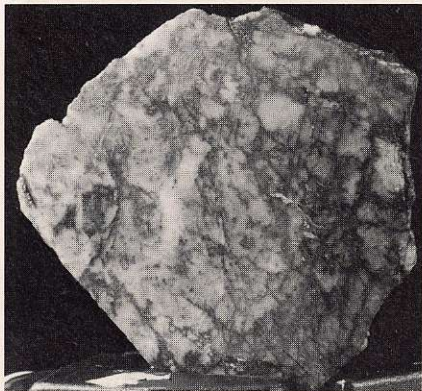
Increasingly, our growth will depend upon knowledge. In today's global economy, science, engineering and technological know-how are vital ingredients to competitiveness and, in these areas, Canada has not been measuring up to the competition . . .

In Canada, we have 4.3 research scientists and engineers per thousand workers.

That compares with 8.1 per thousand in Japan, 6.6 in the U.S. and 5.2 in West Germany.

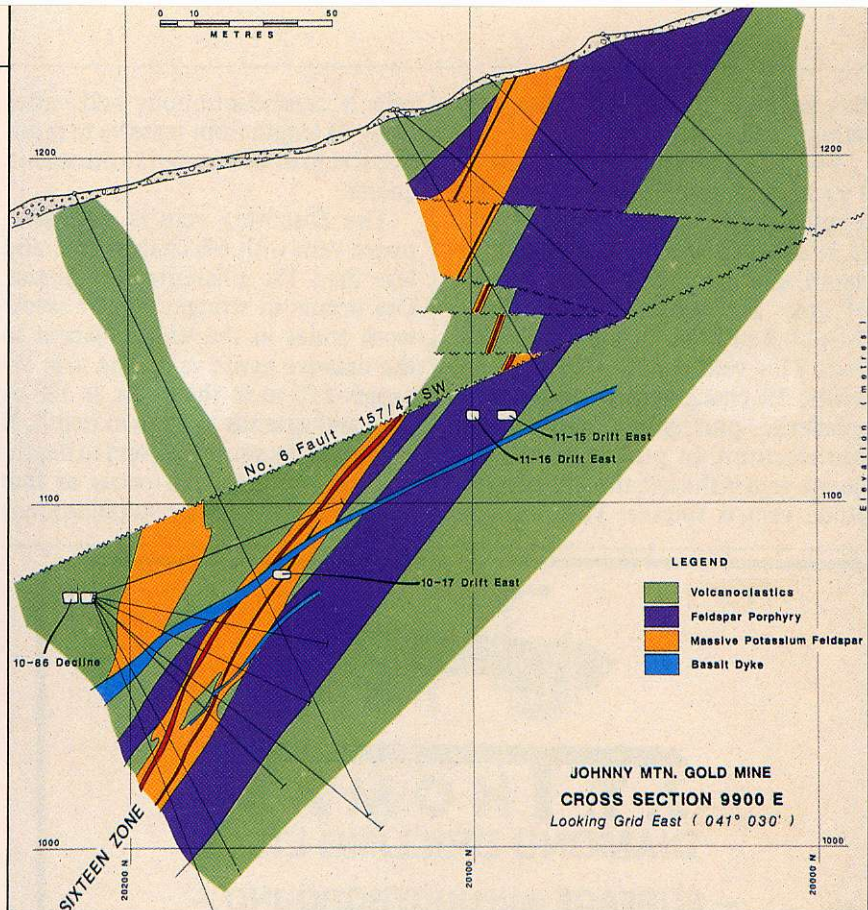
Where are our engineers? Why are they not in our boardrooms and our decision-making bodies? Many of our high-level offices are filled with people who are skilled, not in technology nor in finding ways to build, but in manipulating legal and financial systems."

dip 60° to the northwest. Within the stratigraphic section are four auriferous quartz-sulphide veins, namely the 16, Discovery, Zephrin and Pick Axe veins. Most of the ore to date has been from the 16 vein. The veins are subparallel and conformable with the stratigraphy, with the exception of the Zephrin, which crosscuts the stratigraphy. The Discovery vein lies 150 m



16 Vein with grey quartz, minor pyrite, chalcopyrite and visible gold.

northwest of the 16 vein, whereas the Pick Axe vein lies 100 m south-east of the 16 vein. The Zephrin vein



Geological cross-section of the Johnny Mountain gold vein deposit.

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lies between the 16 and Discovery veins.

The 16 vein ranges from 0.5 m to 1 m in thickness, is 350 m in strike length and extends to 275 m in depth. It is open to the northeast and to depth, and comprises several phases of grey and white quartz and a 0.1-to-0.2-m-thick massive sulphide vein. This vein contains 20% to 25% pyrite, 2% chalcopyrite, less than 1% sphalerite, plus galena, visible gold and electrum. In general, where the quartz vein is thicker, the massive sulphide vein is thicker. The sulphide

vein is semi-continuous and varies along its length from massive to semi-massive to disseminated pyrite within quartz.

The Discovery vein is a massive pyrite vein with 6% chalcopyrite and less than 1% sphalerite and galena. Ore occurs in stringer veinlet stockwork zones in the walls adjacent to the massive pyrite vein. The vein averages 1.25 m in thickness, is 120 m long and extends to 70 m in depth. It is open to the southwest and to depth.

Gold and electrum occur as free grains in quartz and on sulphide grain



The Johnny Mountain mine, north-western B.C.



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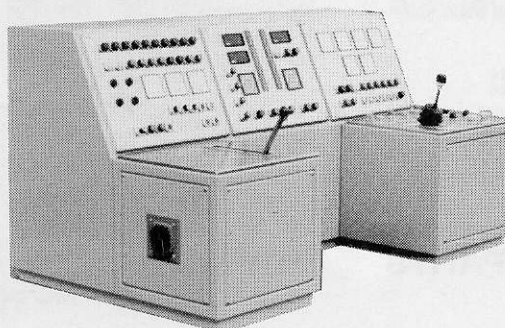
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boundaries. Silver, which occurs in a ratio of 2:1 with gold, is found in trace amounts of argentite, pyrargyrite, stephanite and tetrahedrite.

The margins of the veins are marked by pervasive grey potassium feldspar and light green sericite, as well as a distinctive zone of 1-to-2-cm-thick quartz pyrite stringers. Farther from the vein, the alteration grades to biotite and chlorite and disseminated pyrite. Epidote is abundant in the vicinity of the deposit.

The deposit is accessible by ramp and the mining method utilized is shrinkage stoping. The mill, situated on the mine site, processes 270 tonnes per day and produces both dore bar and a copper concentrate. A gravity and flotation circuit and a regrind mill are used to increase the gold recovery to 90%. Exploration on the property is continuing. □

Pamela Phillips is a geologist and project co-ordinator for Greenstone Resources in Toronto. She would like to thank William Price, president of Sky-line Gold Corp., and David Yeager, chief exploration geologist, for their assistance.