

Mines revisited: How to find that stash of silver or pot of gold

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By ALEX GESHEVA

Geologist Chris Lloyd has learned to listen to stones. He can point to the signs of a 100,000-year-old volcanic explosion, identify a 1,000-year-old obsidian mine and guess at the face of a landscape over time. And, like many other intrepid explorers, he hopes to use his knowledge to find buried treasure.

Lloyd's company, Soltoro Ltd., is one of several foreign prospectors willing and eager to take another look at Jalisco's historic mine sites in what is considered a country of fabulous geological wealth. All they have to do is retrace the steps of the Spanish Conquistadores.

"In the 1500s Spanish found all there was to find and the indigenous people also knew most of the sites. There's very little for us to do but revisit their mines. But their ability was pretty crude," explains Lloyd. "They basically wanted to crush rock and have pure silver or gold fall out."

The Conquistadores also lacked the intricate geological models developed by modern science. Cortez, for example, blithely walked over what is today considered a promising gold prospect at his



Don't we wish it were that easy! Geologist Chris Lloyd points out the glowing silver-white growths on the roof and walls of a tunnel in the old Santa Catarina mine. What looks like silver to the uninitiated is nothing more than colonies of cave-dwelling fungus. Finding treasure, unfortunately, is a bit more of a challenge.

exact landing spot in Veracruz and headed for the interior of the country.

The heyday of Mexican mining was at the start of the 20th century. Santa Catarina, Lloyd's current promising prospect near Guachinango, about two hours west of Guadalajara, operated mostly with U.S. and British money. Pumps had just allowed miners to lower the water table to dig deeper when the start of the Mexican Revolution in 1910 put a premature end to the boom.

That's lucky for Lloyd and other modern explorers. "Most of the mines that shut down with the Revolution were growing con-

cerns, nowhere close to being played out," he explains. "With new technology and techniques, there is a lot we can do."

There are 300 mines in Jalisco, mostly silver, but with the occasional gold and copper prospect. Between 50 and a 100 are being explored and about five are operating.

Why would treasure stay buried for so long? Following the Revolution, the country was in such shambles that most foreigners stayed away. The PRI government allowed businesses to come back in the 1940s and 1950s, but foreigners were allowed to own only up to 49 percent of what they found.

"When the mining act was revised in the early 1990s, Canadians came running," says Lloyd, who started his stay in Mexico working for Cominco Mining. "But exploration is a very risky, expensive business and most of the old Mexican families wouldn't touch it. You generally need to run across a thousand veins before finding a viable mine."

Mining was always a tough business. "Back in the old days, you could take a family hostage and tell a man that you would kill them if he didn't find god or silver," says Lloyd. "That usually worked." The PRI government could also expropriate properties for exploration, then sell them back to their original owners.

But modern mining has its

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own hurdles. "Most of the original charting data and drill bit samples were thrown out when the government ran out of storage space," says Lloyd. "To miners and geologists, that data is sacred and in Mexico much of it is gone."

The terrain is still challenging for those trying to accurately map and sample. Sweltering sun, unyielding rock and rough roads don't make for pleasant day hikes or an easy time chipping with a hammer and chisel. Accurately mapping and sampling just a few square kilometers can take months of work.

"Also, about one in every three or four old mines is home to Africanized bees," says Lloyd. "You have to watch the tunnel entrances carefully. Then you

have to make sure tunnels of old mines are stable."

Bureaucracy and paperwork with Hacienda are an entirely different adventure, as are negotiations with landowners. To begin exploration, the company needs permission from the owners. Most of the time, this is simple: mining concerns usually build roads and offer desperately needed jobs in rural areas and are welcomed by most ejidos and individual owners. Soltoro Ltd., for example, provides seven jobs at just one of its exploration sites, employing nearly half of the community's male population.

"Say you find something," says Lloyd. "Then the trouble starts. We own the mineral rights, sub-surface. Mining is considered a strategic resource and you can technically expropriate those lands if you find something, but nobody

would do that. So we negotiate to buy the land, separately with each owner. Diplomacy becomes very important."

The entire process, from identifying a site and exploring, to mining and discovery, can take more than a decade and generate mountains of paperwork and debt. Mining is for those with nerves of steel.

Almost five centuries after the Conquista, digging for buried treasure is still the ultimate gamble: backbreaking work that could yield nothing more than tons of shredded rock. Why risk so much?

"We geologists are eternal optimists," says Lloyd. "We always want to know what's over or in the next hill. And the few people who make it have made it very big, even if they can be counted on one hand."