MINING A DREAM

BRINGING THE EARTH'S RICHES TO LIGHT

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1. No other gem offers ametrine's range of colors. We cut our ametrine differently, blending the colors so they mingle and change as the gem is seen from different angles (gems from Cynthia Renee Co. Watson photo).
3. Main Street, Puerto Suez, Bolivia (C.R. Marcusson photo).
5. At company headquarters in Santa Cruz, the bags of rough will be further processed (C. Rivero photo).
6. Briolette-cut, ametrine is particularly mesmerizing. This new eighteen-karat yellow gold and briolette jewelry is designed and manufactured by Cynthia Renee Co. (Charles Colladay photo).
Of course, gems don’t grow in jewelry stores. Besides knowing they come from the earth, have you ever wondered just what it takes to bring a gemstone to a Jeweler’s showcase? What obstacles must the owner of an undeveloped mine claim hurdle to carve his passion in reality? Desire, vision and hope inspire a dream, while courage, tenacity and creative problem-solving are the architects of the dream’s reality.

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To most Americans, the mention of the Latin American country of Bolivia brings images of Butch Cassidy and the Sundance Kid and scar-faced mafiosi smuggling “white powder.” But, truly, Bolivia is a magnificent blend of magical landscapes, colonial treasures, colorful indigenous cultures and remnants of mysterious ancient civilizations. One unique aspect of Bolivia is that its jungle holds the Anahi Mine, the world’s only source for ametrine, the largest producer of amethyst and the only commercially available source of unheated sunflower citrine.

The Anahi Mine, in Bolivia, is an inspirational example of the first hopeful stirrings of a dream and the rigorous step-by-step process of making the dream a reality. But, it didn’t start out that way. Using the Anahi as an example, let’s see what it takes to bring a beautiful gem from the earth’s inside out. Reviewing how its owner formed a fully functional mine from a scratch of jungle ridge, set up a facility for processing gemstone rough and established an international distribution network will increase our appreciation for the gemstones in our cases and inspire us all to pursue greatness.

Minerales y Metales del Oriente (M&M from now on!), the owners of the Anahi Mine, didn’t start with the 125 employees, offices in two cities and 2,100 feet of underground tunnel it has today. In 1989 M&M’s owner, Ramiro Rivero, purchased the undeveloped gem claim on a whim. Armed with dauntless confidence, he jumped into gemstone mining knowing little about mining and even less about gems. But he’s a quick study. In six short years, Mr. Rivero parlayed his “can do” attitude, financial resources, technical ability and disciplined work habits into a working mine of precision, beauty and financial viability.


The costs and time involved in operating a mine in such a remote locality are immense. Traveling from North America, it can take up to thirty hours just to reach Bolivia’s Rio Paraguay. There, the “fast” boat takes seven hours to reach the drop site, where a truck will finish the trip to the mine, taking two-and-a-
half hours to cross 17 miles of ragged jungle road.

One year and $500,000 after the undeveloped Anahi claim was purchased, the first gemstones began to trickle out. Imagine the logistics, money and time required to create the equivalent of a city for 100 people, an industrial plant and transportation system in a remote jungle. Where do you start?

First, establish the basic structural, transportation and operational facilities needed to provide the operation's foundation. A landing strip was cleared in a semi-flat area about a mile from the mine. Structures for worker housing, offices, store-rooms and mechanics' shops were erected. Teamed with this task was the installation of a water well and plumbing system, development of electrical generating units and installation of winches, air compressors and an air ventilation system for the mine's underground tunnels. Heavy equipment, such as bulldozers, trucks and skip loaders, were shipped in. For the first two years, the only transportation was via air. To lower the high costs of air transportation, the road to the river was constructed, and M&M purchased a boat in order to move personnel and material between Anahi and their satellite office in the duty-free zone of Puerto Suarez, Bolivia.

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This little city is not all dormitories; it includes a medical facility, blacksmithing shop, kitchens (specializing in meals like piranha soup, chops and freeze-dried potatoes called "zunos"), TV salon (with a satellite dish installed during the 1994 World Cup), mineral cleaning and sorting facilities and mechanics' workrooms. Since it is not as easy as a quick trip to the convenience store to

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pick up milk, the accurate forecasting of supply needs is a detailed job. Staples include everything from coca leaves for tea (legal in Bolivia), food staples including fresh meat, dynamite, construction equipment, fuel, etc. Everything has its price. The monthly budget figures $7,000 for food, $7,000 for supplies and $5,000 for transportation. Total monthly costs for operating only the mine's support system are around $50,000.

The Anahi workers are very well compensated. Their base wages are twice what they would make doing blue-collar work in the city; plus, their bonuses are tied into production. As a result, they bring home four to five times the national average salary, and they have medical insurance. The workers have a cycle of two months at the mine and two weeks home and talk to their families once a week via short-wave radio.

Obviously one can't just expect to dig a hole and pull out gems. Careful evaluations of the area's geology and initial exploratory tunnels provided clues on how and where to start. After six years, there are 2,100 feet of underground tunnels and 900 feet of shafts. Since gemstones aren't deposited in the rock in regular intervals, the tunnels following the gems are irregular in direction and shape.

The Anahi is operated under the direction of a mining engineer who maintains a three-dimensional representation of the mine workings, mineralization patterns and rock structure. The purpose of the model is to understand and recognize the patterns involved in gem mineralization, then use those patterns as an exploration aid in predicting where to dig for gems. Like much of life, geology tries to understand the present to unlock the riddles of the past and future.

The mining engineer also determines where and when to use support shoring; supervises equipment operation, including the electrical generator, air compressor and ventilation systems; conducts the flow of workers; sets theft controls; estimates mineral reserves; plans safety features and makes contingent plans for where to mine when systems are interrupted by the high water table that comes with each year's rainy season.

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Most of the gems are extracted using hand tools; drilling and blasting are employed only in hard-rock areas to avoid destroying the gemmy crystals. Nevertheless, about four hundred cartridges of dynamite, costing $2,500, are blasted each month. The ametrine crystals are found in irregular clay-filled cavities within the host rock. Non-gemmy rock pieces are removed from the mine in wheelbarrows. Being "wheelbarrow man" is not an enviable position, as it involves pushing/pulling about one hundred loads of rock through the hot, steep tun-
nels every day. After each day’s shift, the rough crystals are cleaned, sorted into first and second grades, bagged and stored securely. Each bag weighs approximately one hundred pounds, and it is hoped for a finished yield of 20,000 carats of gems in all grades.

After bagging, the rough crystals begin the next leg of their journey. While the top-grade material is frequently flown into M&M’s home office in Santa Cruz, the lower grades are transferred in twelve- to fifteen-ton lots via boat to the company’s satellite office in the border town of Puerto Suarez. Each boat run costs $1,000. The Puerto Suarez office handles all operations directly relating to the smooth running of the mine. Headquarters in Santa Cruz focuses on administration and the marketing and processing of the top-grade materials.

After landing in Santa Cruz, the bags of higher grade rough crystals are logged into the company warehouse for secure storage. Each bag is then opened, weighed and prepared for quality grading. Color enhancement is not part of the processing of Anahi gems; all Anahi gems are naturally colored.

Once the rough is sorted and categorized according to color(s), clarity and size, the process of “cobbing” begins. The crystal’s outside is hit with a small hammer, chipping away the cracked outside rind to expose the inner gemmier portions. During this process, sharp chips of rock shards fly through the air, and the workers have to carefully

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shield their eyes and tape their finger ends to prevent cuts. The gems are weighed along the way, to record weight recovery from rough and prevent thievery. The crystals are successively cobbled into finer and finer pieces, readying the gem for the next step in processing: “preforming.”

In preforming, determinations are made for the finished shape of the piece of cobbled rough. The rough is then shaped by holding and rotating the pieces against a grinding wheel until the desired shape outline is achieved. The finished preforms are again weighed. Now faceting can begin.

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Ametrines are typically faceted in the rectangular emerald cut. The nature of this cutting style allows us to see the sharpest delineation between the purple and gold colors. Checkerboard, bar and other faceting patterns can be added to the emerald cut to increase light reflection and brilliance.

Cynthia Renée Co., in a venture with the Anahi Mine, is the exclusive supplier of mixed ametrine. We cut our ametrine differently, mixing the colors so they mingle and change as the gem is seen from different angles. Cut this way, ametrine is an artist’s palette of colors, creating gem landscapes of light and wonder. As human beings, we are drawn to what we cannot completely hold and possess; this is what continually captures our imagination, and this is what ametrine does. We are forever intrigued and refreshed by this gem.

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Developing cuts to take advantage of mixing ametrine’s colors has been no easy feat. The lapidary must study each piece individually looking for clues and using intuition to unlock each piece’s potential.
Briolette-cut ametrine is perhaps the most dramatic and elegant faceting style. Creating finished jewelry is the "last frontier" for a mining company, and Cynthia Renée Co., again with the Anahi Mine, has designed a line of high-quality eighteen-karat yellow-gold pendants, earrings and brooches in ametrine, amethyst and citrine. The line's inspiration came from the intricate flowing "frog" buttons on Chinese dresses and a woman's need for uplifting and sensual jewelry that bridges casual and elegant occasions.

Step-by-step, in six shorts years, the Anahi Mine has moved from a beautiful dream to a vertically integrated company supplying rough and jointly marketing mixed-cut ametrine and a line of fine finished ametrine jewelry.

We mine our own dreams. JQ

Cynthia R. Marcusson is a frequent contributor to JQ Magazine on the subject of gems and gem promotion. In addition to operating her own business of selling fine colored gemstones to the jewelry industry under the name of Cynthia Renée Co., Ms. Marcusson is a popular speaker/educator and conducts in-store marketing/training seminars. For the first time, this year Cynthia Renée Co. will supply the designing and manufacturing Jeweler creatively cut Anahi ametrine, amethyst and citrine in fine and calibrated sizes. Promotional help for ametrine merchandising is available with Cynthia Renée Co.'s ametrine sales kit for retail Jeweler. For information, please contact Cynthia Renée Co., P.O. Box 1763, Fallbrook, CA 92028, Tel: 619-728-5150, Fax: 619-728-2636.