

The Arizona Gem Show season has arrived. Listed below are a few dates to mark on your calendar. A complete show listing is available from the Museum, the Department, or at our website.

- November 15, Arizona City Gem & Mineral Show, Arizona City
- December 5, 6, Green Valley Arts & Crafts Fair, Green Valley
- January 2-11, Tyson Wells, Quartzsite
- January 2-4, 23rd Annual Flagg Gem & Mineral Show, Mesa
- January 9-11, Arizona Rockfest, Tempe
- February 12-15, Tucson Gem & Mineral Show, Tucson
- February 27-29, Phoenix Gem & Mineral Show, Phoenix

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Arizona Department of Mines & Mineral Resources
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Phoenix, Arizona 85007

Address Correction Requested

Mineral Resource

Mercator Acquires Mineral Park

Mercator Minerals, Ltd. has acquired the Mineral Park mine, Mohave County, from Equatorial Mining North America, Inc., a subsidiary of Equatorial Mining Limited. The mine was sold for 4.61 million shares in Mercator and a 5 percent royalty interest in the net operating proceeds of the mine, until such time as Equatorial Mineral Park has paid a total of \$2.7 million to the holders of the interest.

Mineral Park, located 16 miles north of Kingman, is a dump and bench leach copper mine with an SX-EW plant. It produced 5.0 million pounds of cathode copper in 2000, 3.6 million pounds in 2001, and 3 million pounds in 2002. Reported mineral resources at Mineral Park are 204 million tons of 0.21 percent total copper.

Mercator hopes to expand copper production to 15 million pounds per year. The first phase of improvements - expanding the SX plant from 6000 gpm to 7000 gpm - has been completed. Production at the end of their first quarter of operation was 860,000 pounds.

In 1863 gold was discovered in the Cerbat Mountains near Mineral Park, but it was the news of rich silver ore in 1870 that brought prospectors and miners flooding into the area. In 1876 Mineral Park had a population of 500 and had become the county seat.

Calumet and Arizona did the first drilling at Mineral Park in 1906. Exploration work was performed off and on over the years until, in 1958, the claims were acquired by the Duval Corporation. The property was developed as an open pit and a concentrator was built. Duval continued operating the mine, employing 200 - 400 miners and producing 17,000 tons of ore per day through the 60s, 70s, and early 80s. The mine was also a significant producer of molybdenum during years when the concentrator was active.

The mine went to all leach in 1982, with an SX-EW plant replacing precipitation in 1995. In 1986 Cyprus Minerals purchased Mineral Park. In October 1997 Equitorial purchased the mine, adding a third stage of extraction to the SX.

Mercator Minerals, formerly Silver Eagle Resources Ltd., has its corporate office in Tucson. The Canadian

company is traded on the TSX Venture Exchange under the trading symbol "ML." Key personnel at Mercator includes Michael Surratt, President and CEO, J. Michael Sierakoski, Arizona Vice President, and Michael Lindeman, California Vice President. Mercator is also evaluating the Three R project in Santa Cruz County, five miles south of Patagonia as a possible in-situ leach project. The Three R is a past producing underground copper mine. Prefeasibility work will be done on the property to determine viability.

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Copper prices have reached a
near 6-year high at \$.95/lb.
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Mining Regulations Circular

Recent statutory and regulatory changes that affect mining claims have made portions of Special Report 11, *Laws and Regulations Governing Mineral Rights in Arizona, 9th Edition*, inaccurate. Pending the completion of the rewriting of Special Report 11 the Department has released Circular 104, *Mining Laws and Regulations, Changes and Revisions, 2003*. This circular briefly describes statutory and agency policy changes in mining claim procedures.

Circular 104 covers rental fee requirements, small miners' exemptions, the Stock-raising Homestead Act, the moratorium on patenting claims, changes to surface management regulations, including 43 CFR 3809, 43 CFR 3715, 43 CFR 3600, and Forest Service changes, and the elimination of State mining claims.

It is important for claimants to keep informed as Congress or managing agencies may make additional changes to mining law or regulatory procedures.

Circular 104 is available for \$.25 if mailed or free at the Department website.

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1502 W. Washington, Phoenix, AZ 85007
602-255-3791, toll-free in Arizona 1-800-446-4259, www.admmr.state.az.us

Boutique Industries Require "Boutique Minerals"

Some small Arizona firms, serving niche markets, are using specialized and distinctive minerals to make their products unique and desirable in a highly competitive market. Three examples are provided below.

A paint firm starting a business in Patagonia called Patagonia Natural Paint and Finishes will manufacture natural interior paint. They plan to produce interior, architectural paints in subdued tones with all "natural" ingredients. The paint "film" is made up of cellulose and clay. Pigmentation or color results from natural colors in the clays and added natural, non-toxic mineral pigments. This eliminates such pigments as lead, copper, vanadium, and cobalt. These paints are reported to be very popular in Santa Fe, New Mexico. The company is especially interested in using Arizona clays and colored lime-stones and marble.

Another boutique mineral producer is Elias Clay. Ernesto Elias produces reddish clay from land adjacent to his farm fields in the Santa Cruz River flood plain near Friendly Corners in Pinal County. His clay is blended with crushed sand and decomposed granite to produce sports surfaces such as baseball diamond in-fields and pitcher's mounds and clay court tennis surfaces. The clay is also shipped to California for blending to produce vitreous clay roofing tile. Production is as much as 50 tons per day.

Many architects for new and remodeled commercial buildings are now specifying cultured, or faux, stone for exterior facing. Cost and structural considerations have been driving forces in such specifications. Stone industry specialist, Ed Anderson, plans to produce natural building stone and hopes to supplant the trend toward faux stone. He is convinced it can be quarried and cut cheaper than artificial stone made from lightweight aggregate, Portland cement, and color. An important criteria is that the stone, when cut or shaped, have an installed weight less than 15 pounds per square foot. At this weight no additional strengthening of a wall structure is needed. He explained that his experience in producing stone for wall facing has been saw cutting 5 sides of a block and using the natural break or a guillotine break for the exposed face. Using a cutoff style diamond saw and unskilled labor he has been able to produce 100 ft² of quartzite per 8 hour shift at a direct cost of under \$1.00 per square foot. It then sells for \$3.00 per square

foot. He reports he could produce such stone from softer rock. An example would be the marble from eastern La Paz County that can be worked at a rate of 200 -250 ft² per worker-shift per day. Direct production costs would be about the same per day as for harder rock.

San Manuel to Close

BHP Billiton announced that, after fifty years of mining and smelting, the San Manuel smelter and refining facilities are scheduled for permanent closure. BHP had hoped to find a buyer for the facility. The San Manuel smelter, located 45 miles northeast of Tucson, has been on care and maintenance since May 1999.

If no buyer is found by the end of the year, all buildings will be demolished. The mine tailings will be recontoured and revegetated. Reclamation of the sites will be completed over the next five to seven years.

From January 1956 until June 1999, more than 700 million tons of sulfide ore was mined, mostly from the underground workings. Oxide ore mining began in 1977 with an in-situ leach operation. Open pit mining of oxide ore, from 1985 to 1995, yielded 580 million pounds of cathode copper.

Uranium Data Received

The Department has received a donation of ten boxes of data on the Anderson mine from Molycorp Corporation. The Anderson is in Yavapai County, 35 miles west of Congress, near the Santa Maria River. The Anderson, a major Arizona uranium resource, has been reported to contain resources of 34 million pounds with a cutoff grade of 0.05 percent U₃O₈. The uranium occurs as carnotite, tyuyamunite, weeksite, coffinite, and uraninite in late Tertiary carbonaceous lake sediments. The mine is a past producer. Ore shipped from the open pit operation from 1955 - 1959 contained 33,230 pounds U₃O₈.

The well-organized data from Molycorp, who did extensive exploration work on the Anderson in the 1970s, includes geology, geochemistry, drill data, and reserve information. The donation awaits cataloging, while the Anderson itself awaits higher uranium prices.

Museum News

By Susan Celestian, Curator

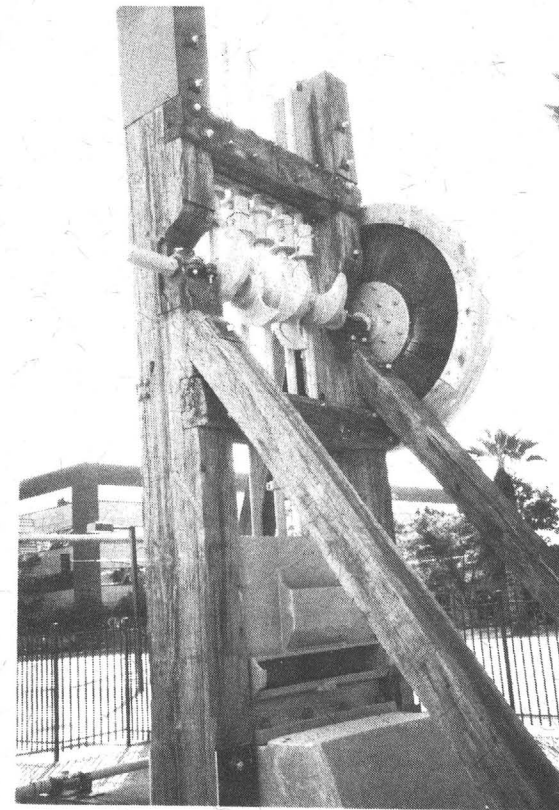
The summer visitor season is over already, we are aswarm with school children, and the walls are echoing with their delight!

July 1st marked the beginning of an admission fee for the Museum — \$2 for adults (18+). Children remain free, as do adults with scheduled school groups, gift shop-only visitors, and those visiting the Department staff, library and files. The new fee did not seem to deter folks, as we had nearly 4000 visitors, during July-September.

And the word is slowly spreading, thanks in large part to Liz Anderson our Passionate Press Person. On July 20, Brad Perry from Channel 3 was here for the morning show. And on September 29, Cory McCloskey from Channel 10 spent an hour in the Museum, doing 4 long spots and 4-5 short leader spots. He VERY enthusiastically donned a hardhat with carbide lamp, grabbed a rock hammer, and pushed the wheelbarrow around.

My husband had a wonderful idea. Leaverites sell 12 mineral, rock or fossil samples to children at various events and donate the proceeds to the Museum. They collect egg cartons for that activity. Stan thought that perhaps Hickman's Eggs would print a coupon in their egg cartons: bring in an egg carton for 50 cents off admission. PR guru, Liz Anderson ran with the idea and contacted Hickman's. They too thought it was a wonderful idea and because the goal is education they will sponsor the printing. Be looking soon for the Museum information on the inside of the lid on Hickman's Jumbo eggs!

Summer was also a good time for us to create some new exhibits. Next time you visit the Museum you will find 3 new permanent exhibits and one temporary. Shirley Cote created and implemented an exhibit on Crystal Habits. She designed it to be interactive; worksheets and answer sheets are available at the exhibit. "Dripping Water" is a new, attractive exhibit on caves and cave formations, designed by Sam Nasser. I expanded the Meteorite display and put it in a case that will allow visitors to get a closer look at the specimens. Finally, on exhibit until February is a case of hot air balloons carved from stone. They are the work of Win Richards, a long-time member of the Maricopa Lapidary Society (stalwart supporter of the Museum).



Stamp Mill Installed

Volunteers led by Charlie Connell have completed the first phase of our latest outdoor display, the Swallow Mine Stamp Mill. The project has taken 17 years to get to this point. Charles W. Brown, owner of the Swallow mine, originally donated the 5-stamp mill to the Department in 1986. Over the following years the mill was dismantled and transported in pieces to the Museum as resources permitted. The aim is to complete the mill and actually make it operational.

The Swallow mine, in Yavapai County, northeast of Wickenburg, was first worked in 1890. This stamp mill was used to crush gold-bearing ores and amalgamate the fine gold on copper plates coated with mercury. It is 19 feet tall, and the large drive wheel is 7 feet in diameter. Each vertical rod (stamp) weighs 850 pounds. The stamps drop 82 to 85 times per minute from a height of 6 to 8 inches.

The Department extends thanks to the many individuals who provided labor and materials to this project. Special thanks go to Arizona Public Service Hauling Services for their support in making this restoration a reality.



Do you need this information in an alternative format? Please call the Department at 602-255-3795.