

Bagdad revisited

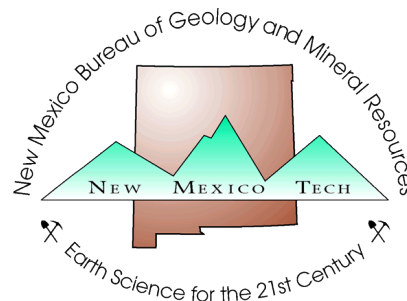
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The annual [New Mexico Mineral Symposium](#) provides a forum for both professionals and amateurs interested in mineralogy. The meeting allows all to share their cumulative knowledge of mineral occurrences and provides stimulus for mineralogical studies and new mineral discoveries. In addition, the informal atmosphere encourages intimate discussions among all interested in mineralogy and associated fields.

The symposium is organized each year by the [Mineral Museum](#) at the [New Mexico Bureau of Geology & Mineral Resources](#).



Abstracts from all prior symposiums are also available: <https://geoinfo.nmt.edu/museum/minsymp/abstracts>

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When I wrote about the history and minerals of the Bagdad mine (2015. *Mineralogical Record*, 46, 585–602), I intended to write the complete story. But when one is writing about an operating mine, there is no “final word”: drilling and blasting continue to produce ore, the open pit gets deeper and perhaps wider, and sometimes previously unreported minerals are discovered. This has been the case with Freeport McMoRan’s copper mine in west central Arizona in the historic mining town of Bagdad in Yavapai County.

As mining continued at Bagdad since I finished my article, there have been several major changes to pit operations. The decision was made to remove all of Giroux Point (site of many high wall failures over the years) and reshape pit contours. While removing the bulge from the north side of the pit, a heretofore unreported diatreme was found below Giroux Point (Bob Jenkins, personal communication May, 2021). A diatreme forms when hot magma forces its way toward the surface, encounters water, and forms a plug of highly fractured and altered rock. As the hot magmatic rock slowly intrudes the older host rock, heating and melting occurs and new minerals form in vugs around the margins of the diatreme. These vugs contained a suite of species previously unknown from Bagdad, including well crystallized dolomite, sphalerite, pyrite, large quartz crystals, chalcopyrite, and chrysocolla.

The Pit Geologist at this time was the late Erich Laskowski who worked at Bagdad for twelve years from (2008 to 2020). He was a lifelong field collector; as luck had it, his job at Bagdad was to inspect each

blast in the pit and map the results. He also carefully collected the contents of various vugs exposed from May 2010 to November 2011 for himself. The results are noteworthy. But Laskowski died unexpectedly in 2020 and his mineral collection was sold off during the April 2021 mineral show.

The vugs surrounding the diatreme were all found at depth, well below the pit’s oxide zone which had produced lovely copper minerals in the 1970s. These new vugs produced an unusual assortment of well-crystallized species. Not only were these new minerals from Bagdad, but their appearance is more typical of Tri-State mines.

The Bagdad mine has never had the reputation for fine mineral specimens comparable to those from Bisbee, Morenci or Ajo. Yet Bagdad has produced its share of appealing finds. During the last decade a variety of new specimens were collected as miners removed the large diatreme located at the base of Giroux Point. Virtually all of the specimens, found earlier, came from the oxide zone high in the pit. These new finds all came from lower in the pit, in the sulfide mineralization.

As active mining continues, there is also the possibility of additional finds. A major pushback of the Bagdad pit margins is under consideration by Freeport MacMoRan (2021) because of the recent surge in copper prices. Thus, collectors may hope that there will be more specimens to come as pit expansion occurs. Only time will tell.



Chrysocolla over quartz. 8.5 x 7 cm. Bagdad pit, 3050-N bench. Muntyan collection.



Yellow doubly-terminated calcite crystals on a cluster of quartz crystals. 8 x 6 cm. Bagdad pit, 2900 bench. Muntyan collection.