

Gold and base metal deposits of the Abu Marawat Concession, Egypt

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Aton Resources' Abu Marawat Concession comprises 738.8 km² in the northern part of the Arabian-Nubian shield in Egypt's Eastern Desert. Apart from scattered outliers of Cretaceous Nubian Sandstone towards the western end, the concession is underlain by a complex patchwork of intermediate to felsic volcanics with associated intrusives, clastic sediments, ophiolitic assemblages and at least two phases of granitoids. The geology is generally interpreted as a series of subduction related island arcs that formed in the Neoproterozoic between 550 and 850 Ma and accreted against an existing craton. Within the concession area, the rocks are probably restricted in age to approximately 550 to 700 Ma. Late post-orogenic pink 'younger granites' have been dated at 570 Ma from within the concession. The diverse geology is reflected in the wide variety of mineralization styles and commodities.

Gold occurs associated with base metals and silver in VMS and VMS-epithermal hybrid deposits, eg. Waayrah (Au-Zn-Ag-Cu-Pb) and Hamama (Au-Zn-Ag), and in epithermal deposits eg. Abu Marawat (Au-Ag-Cu-Zn). A diverse variety of gold-only orogenic lode gold type deposits are also present eg. Sir Bakis (a simple sub-vertical vein); Semna (shear-hosted quartz veins in diorites); West Garida (veins in phyllic alteration zones in rhyolites); and Zeno (older granodiorite hosted quartz veins). Gold mineralization is also associated with tungsten and/or bismuth in reduced intrusion related vein systems eg. Abu Gaharish and possibly Bohlog; and with copper in IOCG vein-type mineralization eg. Miranda South.

Other types of mineralization that are probably related to the suite of late pink granites include tungsten-bearing (Abu Garida Mine) and fluorite veins in the Garida granite; and uranium mineralization in the Eradiya granite. There are also reports of niobium-tantalum mineralization associated with the Kab Amira granite in the south of the concession.

There are also reported occurrences of podiform chromite, talc and nickel-copper-cobalt mineralization associated with the thick sequence of ophiolitic rocks that outcrops in the SE part of the concession; while Aton has identified gold mineralization in quartz-carbonate-fuchsite lenses in serpentinites at Abu Gaharish.