

Distribution of gold within the Dargues Reef alteration system

Angela Lorrigan¹,

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General Manager, Growth and Discovery, Diversified Minerals Ltd
Email: angela.lorrigan@divminerals.com.au

ABSTRACT

The Dargues Reef gold deposit is hosted within the Braidwood Granodiorite, 60 km southeast of Canberra, 13 km south of the town of Braidwood and 2 km north of the village of Majors Creek. The Resource and Reserves are 1.615Mt @ 6.3g/t Au (327,300 oz of gold). The deposit is undeveloped however decline access is currently being constructed.

The nature of gold mineralisation within the Dargues deposit is unusual. The geometry and distribution of the gold-bearing lodes is similar to that expected in a structurally-hosted gold deposit, however the gold is found within disseminated “clots” of pyrite at the centre of structurally-controlled alteration zones. The density of pyrite mineralisation, within a wider alteration zone, broadly determines the shape and geometry of the gold mineralisation. Even at the centre of the lodes, the granitic texture of the host rock is retained and it is not possible to identify a particular structure that hosts the gold.

Because disseminated pyrite is the main determinant of gold mineralisation, the Dargues-style mineralisation is readily located through the use of Induced Polarisation (I.P.) geophysics, the disseminated sulphides being located as distinct chargeability anomalies.

Although pyrite is the main determinant of gold mineralisation within the Dargues system, not all disseminated pyrite contains ore-grade gold, therefore a method of using other minerals to discriminate between I.P. anomalies and also, to “navigate” within pyritic alteration systems is being trialled at Dargues.

This paper discusses the mapping of metal zoning and key alteration minerals, including those identified by ASTER imagery, to identify high-grade gold within pyritic alteration zones.