

Exploring the Wapolu Detachment-Related Mesothermal and Epithermal Gold Deposit, Fergusson Island, PNG

S M Munroe (MAusIMM)¹ and M Wilson²

1. Principal Consultant, SRK Consulting, Sydney NSW 2000. smunroe@srk.com.au:
2. Managing Director, Arc Gold Projects Pty Ltd, Coogee NSW 2034. martinwilson1970@icloud.com:

Fergusson Island and Goodenough Island are located at the western end of the Miocene age Woodlark back-arc spreading centre in Papua New Guinea. At Fergusson and Goodenough Islands the extension has resulted in isostatic crustal rebound, detachment faulting and exposure of lower plate Cretaceous schist. The schist has been intruded by granitic intrusions. Miocene to recent hydrothermal activity on the detachment faults and steeper faults associated with intermediate – silicic volcanic and sub-volcanic rocks.

Arc Gold Projects holds Exploration Licence over most of Goodenough Island, the north-west part of the Fergusson Island and the south-west part of Fergusson Island. Of economic interest is the mesothermal to epithermal mineralisation associated with shallowly NNE and NW-dipping detachment faults near Wapolu at the north-western part of Fergusson Island. Relatively little is known about the details of the formation of the gold deposits or details of the controls on mineralisation at Wapolu. The gold is reportedly very fine-grained and associated with silicification and epithermal-textured quartz veins with sulphides of pyrite, arsenopyrite, and rarer stibnite.

The Wapolu sulphide-gold hosted and epithermal gold-silver project is hosted in shoots within detachment fault breccia and mineralised or re-worked mineralised talus (rock debris). The project has been extensively explored with appreciable gold and silver mineralisation identified to date. A significant amount of shallow exploration drilling (total of 97 diamond core holes, 202 RC holes and 94 air core holes) have been completed. Geological and assay data from the drilling has been used by previous explorers to estimate a resource although none of these are reported according to JORC. Past estimates have a large range of estimated tonnage. The focus for Arc Gold Projects is to verify the existing exploration data and use existing and new geophysical data to extend the mineralisation from known areas along strike and to the west on Goodenough island.