

**Annual Report 2013 – 2014 for EL36/2010**

**APPENDIX 3**

**Drilling Proposal – EL36/2010**

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## **Geology and Gold Exploration Potential - EL 36/2010**

Within EL 36/2010 there are three aspects of the geology which support a worthwhile Greenfields gold play.

- Several alluvial and elluvial/regolith hosted detrital gold occurrences, some of which have been successfully mined on a small scale, but no primary source has been located to date.
- A major structure (Brookside Fault) which appears to control the location of the Middleton Creek detrital gold occurrences.
- A carbonate unit (Late Proterozoic Savage Dolomite) which is partially silicified and spatially correlates with several gold occurrences. The origin of the silicification, and any potential links to gold mineralisation, has not been determined to date.

### Prospective Geology

The prospective part of the EL covers part of the Arthur Metamorphic Complex (Geological Survey of Tasmania Geological Atlas 1:50,000 Series Corinna Sheet, Livingstone 1:25,000 Sheet). An association of Late Proterozoic metamorphosed volcanics, clastic sedimentary rocks and dolomitic carbonates, and several major faults, is strongly aligned in a northeast-southwest tectonic scale fabric. The Proterozoic rocks and derived Cenozoic surficial sediments comprise the entire outcropping geology in the EL.

Exploration potential is focused on the 3km northeast-southwest segment of the Brookside Fault which forms the contact between the Bernafai Volcanics to the northwest and the Savage Dolomite to the southeast. Deeply weathered silicified dolomite, known locally as “silica flour”, is mined as a source of high grade ceramic silica at Brookside, just outside the northeastern limit of EL 36/2010. The deposit sits on an offset segment of the Brookside Fault and persistent traces of detrital gold have been reported from prospecting by the mine operator. Anecdotal evidence suggests this gold is often associated with organic material in the surficial sediments and exhibits particle shapes compatible with in-situ growth rather than alluvial transport.

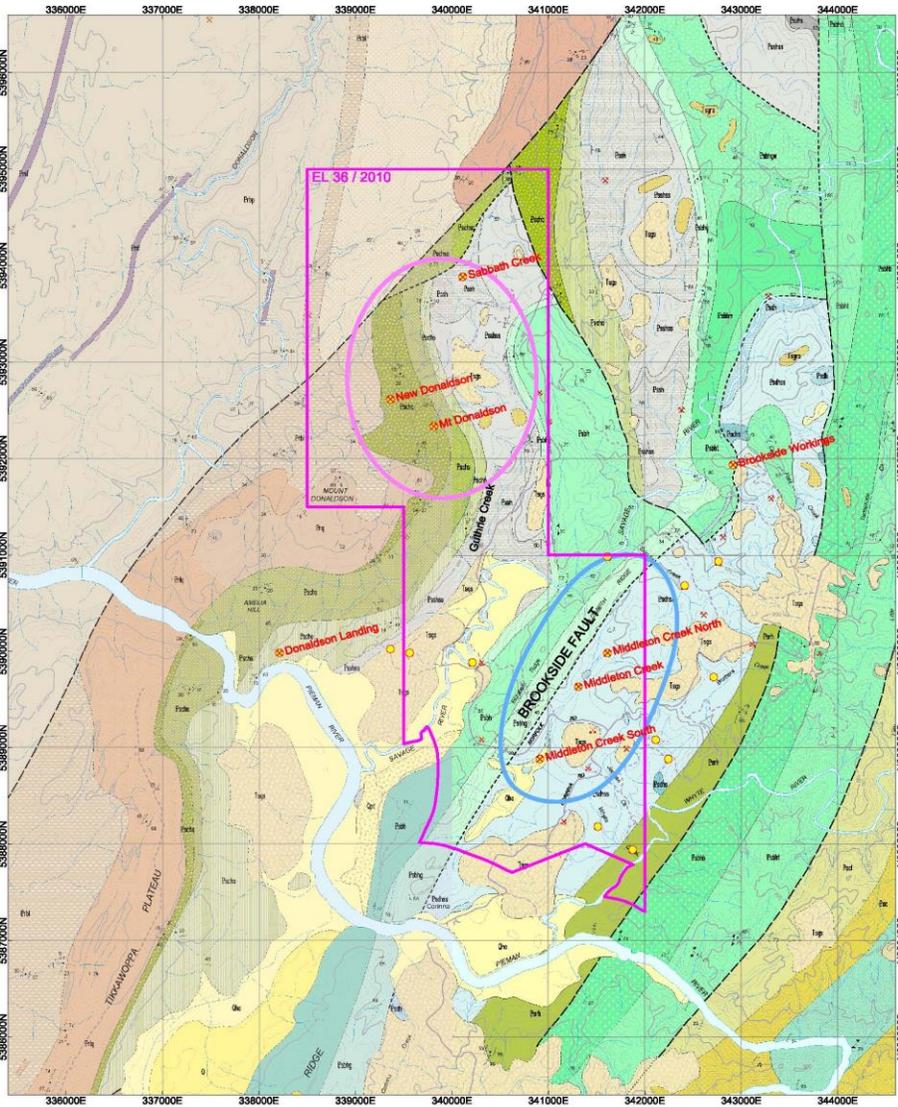
In Middleton Creek and some tributary creeks and gutters, placer gold workings commenced in 1879 but most production occurred during the 1930s. Chalcedonic quartz and “black cement” were recorded as common components of the gold bearing gravels but no primary source of the gold has been recorded. Most of the abandoned workings are within the area covered by EL 36/2010 and amateur prospecting continues today in the shallow gravels and regolith sediments along Middleton Creek.

From the perspective of modern exploration an important aim is to establish the origin of the microcrystalline chalcedonic/lace agate textures in the host quartz gravels, which continue to be noted by current era prospectors. If formation temperatures, trace element signatures and microscopic textures can indicate an epithermal origin, rather than a low temperature near surface silicification event, then the concept of an ultra fine primary

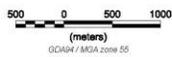
gold source controlled by the Brookside Fault and juxtaposed rock types is upgraded, and the Brookside Fault-Middleton Creek gold play deserves to be rated as a mainstream carbonate hosted epithermal gold exploration target.

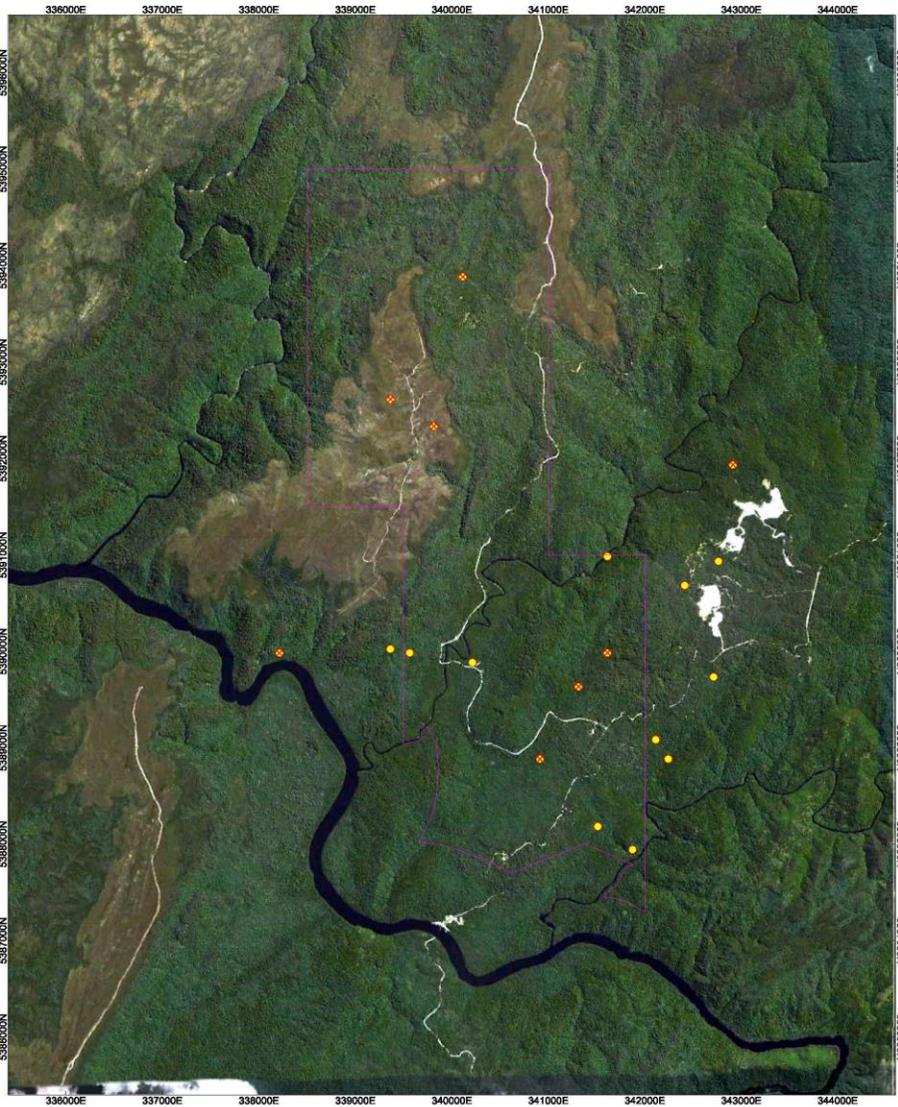
#### Drilling Proposal

Given the importance of the Brookside Fault to all conceptual mineralisation targets, and the fact that it has a well presented and constrained topographic, geological, magnetic and radiometric signature (see attached maps), it is the logical target for the current drilling proposal. The aim of a single DDH should be to drill through the structure and provide core to demonstrate rock types, alteration and chemistry to the point where the potential of a Greenfields gold play can be re-evaluated. The existing vehicle track, which may need upgrading after a site visit, provides access to a reasonable position for drilling the proposed hole.



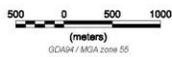
● Alluvial workings

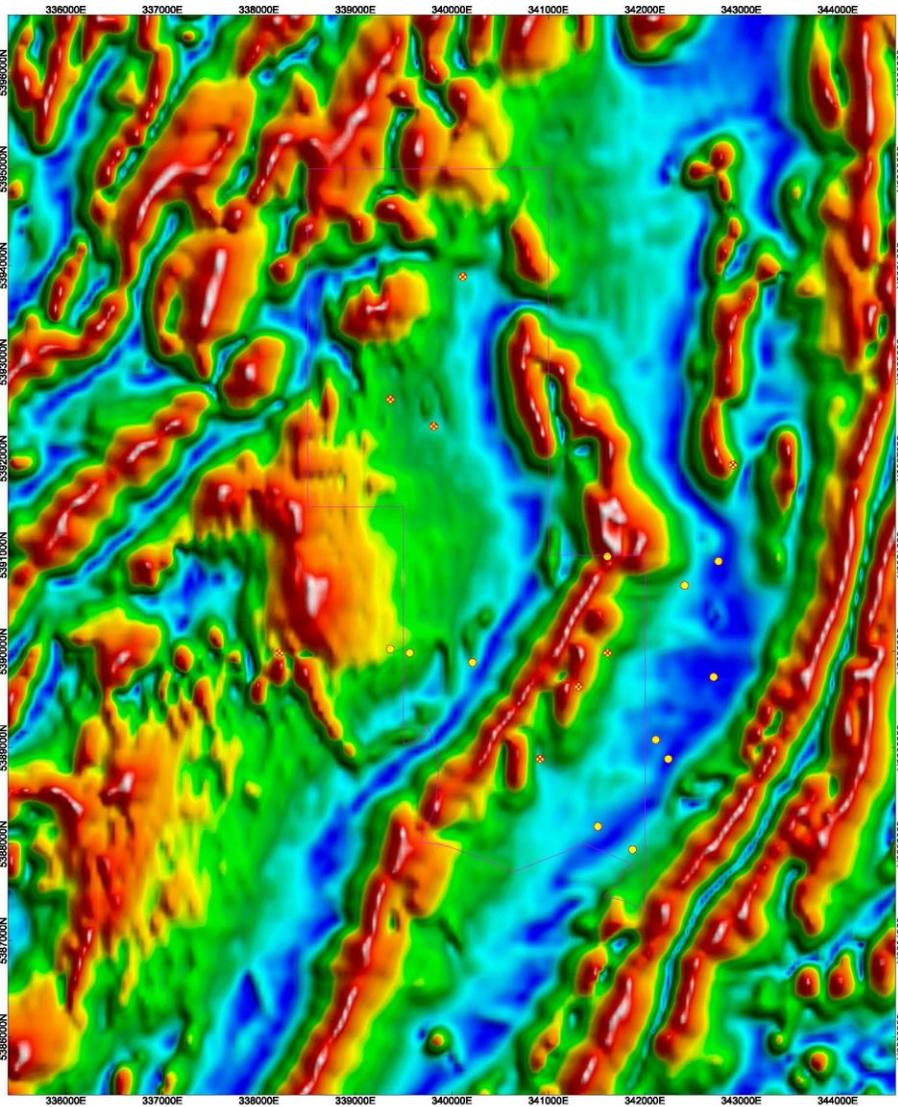




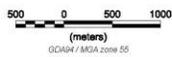
● Alluvial workings

Google Earth



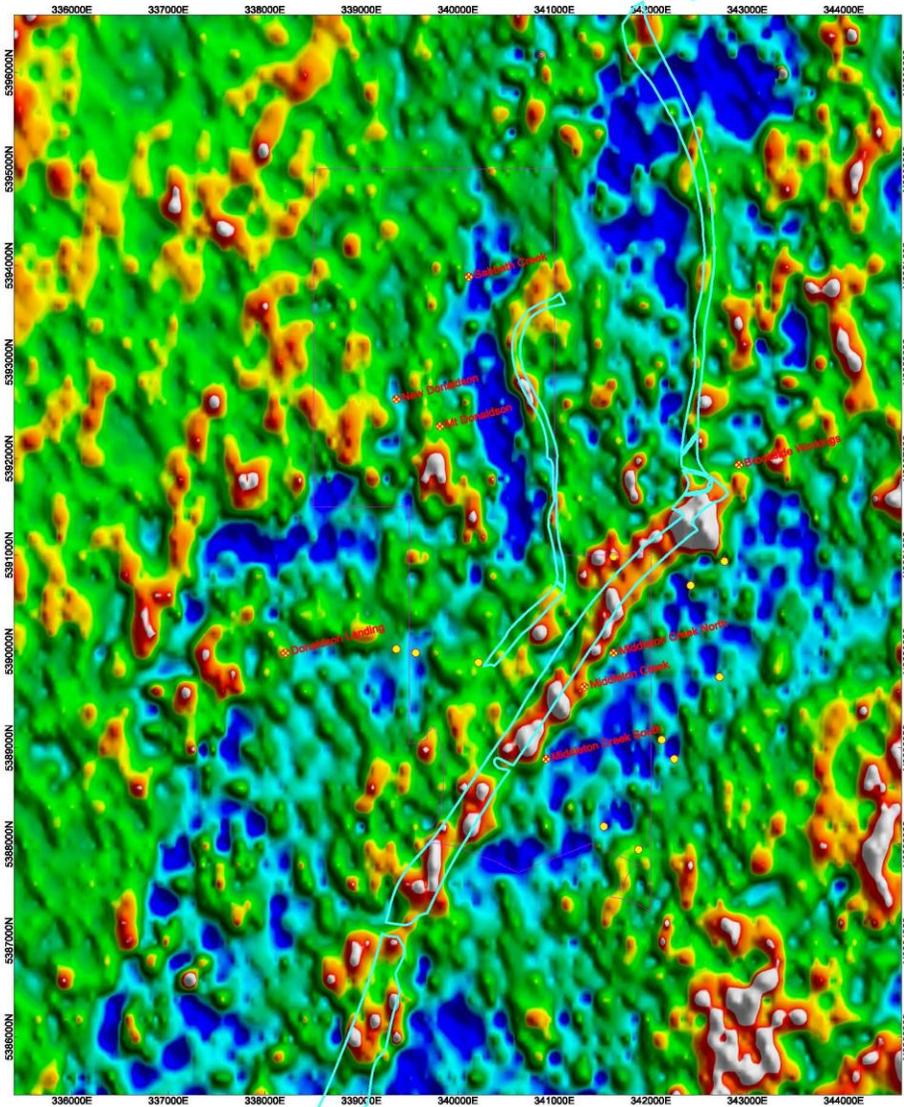


● Alluvial workings



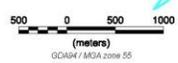
Magnetics  
Tilt Derivative (from RTP)





● Alluvial workings

outline of rock unit Lsbhg  
 (Dominantly grey tuffaceous and pelitic metasilstone (within Lsbh etc., Bernafai Volcanics)..)



Radiometrics  
 K / Th Ratio

