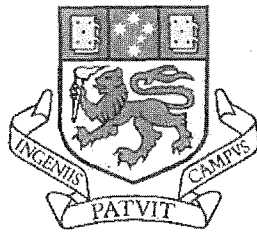


# **The Geology of the Sideling Range**

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## Abstract

The Sideling Range is comprised of Mathinna Group sediments on the western margin of the Scottsdale Batholith. The Sideling Range is situated close to an informally proposed stratigraphic transition within the Mathinna Group that has been documented but not comprehensively mapped or defined. The Sideling Sandstone has been informally proposed as a distinct unit from the underlying Bellingham Formation.

Recent prospecting around the Sideling Range has also revealed a small area of gold mineralisation within a contact aureole, opening the possibility that the gold is related to granite intrusion rather than a typical turbidite hosted mesothermal gold vein style.

This thesis studies the structure and sedimentology of the Sideling Range. It defines the Sideling Sandstone and discusses the proposed stratigraphic transition. It also investigates the nature of the gold mineralising fluid.

The Sideling Range consists of first generation NNW trending folds that conform to the regional structure of the Mathinna Group. Faulting within the Sideling Range is rare and small-scale and post D1 deformation is mainly only evident within the contact aureole.

The Sideling Sandstone unit is approximately 1500 metres thick. It is a fine to medium-grained sandstone that is dominated by thick and massively bedded sandstones that are interlayered with thinner bedded classical turbidites as well as siltstone. The Sideling Sandstone is more thickly bedded than the Bellingham Formation and is from a more proximal environment on the submarine fan. The Sideling Sandstone was deposited in an ancient channel environment.

The study of sulphides within the gold mineralised veins revealed that the fluid, which formed the veins, had a magmatic component.

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