Titleholder: Minemakers Australia Pty Ltd
Operator: Minemakers Australia Pty Ltd
Tenement: EL29350 (Attack Creek 2)
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250,000 mapsheet: HELEN SPRINGS SE53-10
100,000 mapsheet: BRUNCHILLY 5760, MUNKADERRY 5860
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ABSTRACT

This annual and final report describes activities completed on EL29350 during its short life. EL29350 is part of a joint venture between Minemakers Australia Pty Ltd (MAPL) and Geotech International Pty Ltd. Exploration is aimed at the discovery of economic phosphate deposits proximal to the Alice Springs-Darwin railway. Such deposits are known to occur in shallow marginal marine sediments at the eastern edge of the Georgina Basin and associated with a basement high at MAPL's Wonarah project located approximately 220 km to the east-southeast. The presence of economically significant phosphate mineralisation in the eastern Georgina Basin has yet to be established.

The tenement is located 80 km east-northeast of Tennant Creek and 30 km east of Stuart Highway and lies on the 1:250,000 HELEN SPRINGS SE53-11 and the 1:100,000 BRUNCHILLY 5760 and MUNKADERRY 5860 map sheets.

The tenement was acquired to replace ground that had been recently dropped due to failure to meet expenditure commitments (EL26687). No exploration work took place during the current tenure. The tenement was relinquished as part of the rationalisation of the regional phosphate exploration joint venture with Geotech International.
1. **INTRODUCTION**

This annual and final report describes exploration activities completed on EL29350, Attack Creek 2 prospect, which is part of Minemakers Australia Pty Ltd (MAPL) regional phosphate project (Figure 1). Exploration is aimed at the discovery of economic phosphate deposits proximal to favorable infrastructure, particularly the Alice Springs-Darwin railway. Such deposits are known to occur in shallow marginal marine sediments at the eastern edge of the Georgina Basin and associated with a basement high at MAPL’s Wonarah project located approximately 220 km to the east-southeast.

2. **LOCATION**

EL29350 is located 80 km east-northeast of Tennant Creek in the Northern Territory and 30 km east of Stuart Highway. The tenement lies on the 1:250,000 HELEN SPRINGS SE53-11 and the 1:100,000 BRUNCHILLY 5760 and 1:100,000 MUNKADERRY map sheets. The tenement covers generally flat to undulating land within two pastoral properties, viz. Banka Banka and Brunchilly owned by S. Kidman & Co. Ltd, Adelaide, South Australia. Land use is dominated by cattle grazing. GPS sample site elevations vary from a low of 248 m to a high of 275 m.

3. **TENURE**

EL29350 was granted on 4 October 2012 to Minemakers Australia for a period of six years and covered an area of 24 blocks (77.95 km²).

A joint venture agreement between Minemakers Australia Pty Ltd and Geotech was signed on 12 May 2009. The agreement provides participating interests for Minemakers (80%) and Geotech (20%), with Geotech being free-carried from expenditure contributions until a Decision to Mine. Field exploration activities were subject to consultations with the pastoral lessee and, through the Northern Land Council, with the Native Title claimants (Banka Banka Native Title Claim NTD6005/01 and Brunchilly Native Title Claim NTD6031/01).
Figure 1: Location of EL29350.
4. GEOLOGY

The Attack Creek prospect is located on the eastern edge of the Palaeoproterozoic Tomkinson Creek Group, a dominantly arenaceous sequence particularly in the basal portions with siltstone and shale more important in the upper portions (Donnellan, 2004). This stratigraphy is overlain by undeformed Middle Cambrian marine sedimentary rocks that comprise the western edge of the Georgina Basin which has been divided into two sub-basins called Barkly and Undilla (Figures 2 and 3). Early Cambrian deposition is represented by the Helen Springs Volcanics that consist of amygdaloidal tholeiitic basalt and a basal sandstone unit. These rocks unconformably overlie the Tomkinson Creek Group.

The Middle Cambrian Gum Ridge Formation was deposited in shallow shelf epicontinental seas subject to episodic peritidal influence. Lithologies consist principally of limestone that includes fine-grained sandstone, siliciclastic mudstone, bioclast, oncoid, styloilthic and cryptomicrobial limestone, marly limestone, fossiliferous nodular chert; carbonate and evaporitic pseudomorphs (Hussey et al., 2001). Occasional trilobites, brachiopods and sponge spicules occur in this formation. There are a number of mapped exposures of Gum Ridge Formation in and adjacent to the tenement and geological mapping has identified a number of exposures of slightly younger and related Anthony Lagoon beds (op. cit.). The Gum Ridge Formation is the primary target for phosphorite mineralisation.

Figure 2. Stratigraphy and phosphate occurrences of the Georgina Basin (after Khan et al, 2007).
Figure 3. Location of EL29350, formerly part of EL26687, in the Barkly Sub-Basin of the Georgina Basin (after Khan et al, 2007).
5. WORK COMPLETED

No work was undertaken during the life of the tenement.
6. CONCLUSIONS AND RECOMMENDATIONS

The tenement was picked up to replace ground that had to be dropped from EL26687 because of a failure to meet minimum expenditure commitments. The tenement was part of a phosphate exploration joint venture between Minemakers Australia Pty Ltd and Geotech International Pty Ltd. The tenemented area was postulated to be adjacent to a basement high based on regional gravity and magnetics and therefore potentially a place of phosphate deposition during the Cambrian. The joint venture was dissolved in early 2013 on the basis that the tenements had low prospectivity for phosphate and that any phosphate present would be likely to be typical Georgina Basin phosphorite; very high silica content, very low reactivity and therefore unlikely to be able to sold as a beneficiated rock. The alternative development route of downstream processing of mined phosphate rock into a phosphoric acid or fertiliser product via the typical “wet” process is considered to be an even more difficult sell as the capital costs would be very high. Minemakers has decided to focus on the development of its Wonarah deposit and manufacture of superphosphoric acid using a proprietary, cheaper process and consequently is not interested in further greenfields phosphate exploration.
7. REFERENCES


