Titleholder	Minemakers Australia Pty Ltd
Operator	Minemakers Australia Pty Ltd
Tenements	EL29849 (Dalmore Downs)
Project name	Partial Relinquishment Report for period ending 24 March 2017
Personal authors	A. Pellatt and R. Fulton
Corporate author	Minemakers Australia Pty Ltd
Target commodity	Phosphate
Date of report	31 March 2017
Datum/Zone	GDA94, Zone 53
250,000 map sheet	Alroy and Ranken
100,000 map sheet	Wonarah and Ranken
Contact details	Fulton, R. Avenira Limited PO Box 1704 West Perth WA 6874 Fax: (08) 9264 7099 Ph: (08) 9264 7000
Email for technical details	apellatt@avenira.com
Email for expenditure	rfulton@avenira.com

ABSTRACT

EL29849 (Dalmore Downs Project) is located approximately 220 km ESE Tennant Creek and approximately 25 km south of the Barkly Highway on the Alroy and Ranken 1: 250,000 and the Wonarah and Ranken 1:100,000 map sheets in the Northern Territory. The tenement occurs within the central western part of the Georgina Basin where flat-lying, phosphate-bearing Cambrian sediments have been deposited. The lower part of this sequence, the Gum Ridge Formation, is considered prospective for phosphate mineralization overlying either carbonates or basalts of the Middle Cambrian. The tenement was formed by the amalgamation of several tenements in early 2013. A total of 8 RC drill holes, with significant results including 19 m @ 20.3 % P_2O_5, and 15 m @ 30.0 % P_2O_5 and an airborne electromagnetics survey was completed on the relinquished part of the historic tenement. Since 19 March 2013 when EL29849 was granted, work has comprised rehabilitation and rehabilitation monitoring. The tenement was reduced by 41 blocks in 2015. A partial cancellation of 18 blocks was made in April 2016. A partial relinquishment of 11 blocks was made on 24 March 2017 pursuant to section 29 of the Mineral Titles Act on some blocks which identified significant mineralisation. However, the mineralisation is patchier than the current very large Wonarah JORC resource to the south.

CONTENTS

FIGURES

1. INTRODUCTION

This report describes exploration activities on a relinquished portion comprising 11 blocks of EL29849 (Dalmore Downs), part of Minemakers Australia Pty Ltd's (MAPL) Wonarah Project. MAPL was required to nominate blocks for reduction pursuant to section 29 of the Mineral Titles Act.

MAPL is a wholly owned subsidiary of Minemakers Limited which listed on the ASX on 10 October 2006. Exploration was aimed at the discovery and development of economic phosphate deposits proximal to the Alice Springs-Darwin railway and associated with shallow marginal sediments at the western edge of the Georgina Basin.

2. LOCATION

EL29849 is located approximately 220 km east-southeast of Tennant Creek in the Northern Territory (Figure 1). The tenement lies on the Alroy SE5315 and Ranken SE5316 and the 1:100,000 Wonarah 6158 and Ranken 6258 map sheets.

Access to the project is via the Barkly Highway, the main paved freight link between Queensland and the Northern Territory. The nearest town is Camooweal in western Queensland, approximately 180 km to the east. Access within the tenement is via a gravelled road and a network of dozed tracks suitable for 4WD only.

3. TENURE AND TITLE HISTORY

EL29849 comprising 83 blocks (229 km^2) was granted on 19 March 2013 to Minemakers Australia Pty Ltd for a period of six years. The tenement was reduced to 41 blocks (114 km^2) on 19 March 2015 and a relinquishment report submitted (Pellatt and Fulton, 2015). A further cancellation comprising 18 blocks occurred in April 2016 (Pellatt and Fulton, 2016). 11 blocks were surrendered on 24 March 2017 pursuant to section 29 of the Mineral Titles Act.

EL29849 was formed by the amalgamation of two former Minemakers' tenements, EL26451 and EL28233, which were surrendered on 19 March 2013 (Figure 2).

EL29849 is located on NT Portion 773, Perpetual Pastoral Lease 988 Dalmore Downs.

Exploration drilling programs were authorised by the Department of Mines and Energy through approval of a Mining Management Plan; Wonarah Project Authorisation 0413-01, 0413-02, 0413-03, 0413-04 and 0417-02.

MAPL obtained sacred site clearances through the Central Land Council: Sacred Site Clearance Certificate C2009-003, C2010-032 and C2012-094. Although the land of EL28233 falls under the jurisdiction of the Northern Land Council, MAPL obtained sacred site clearances through the Central Land Council as they are responsible for the majority of Wonarah tenements south of the Barkly Highway (Sacred Site Clearance Certificate C2012-094).

.

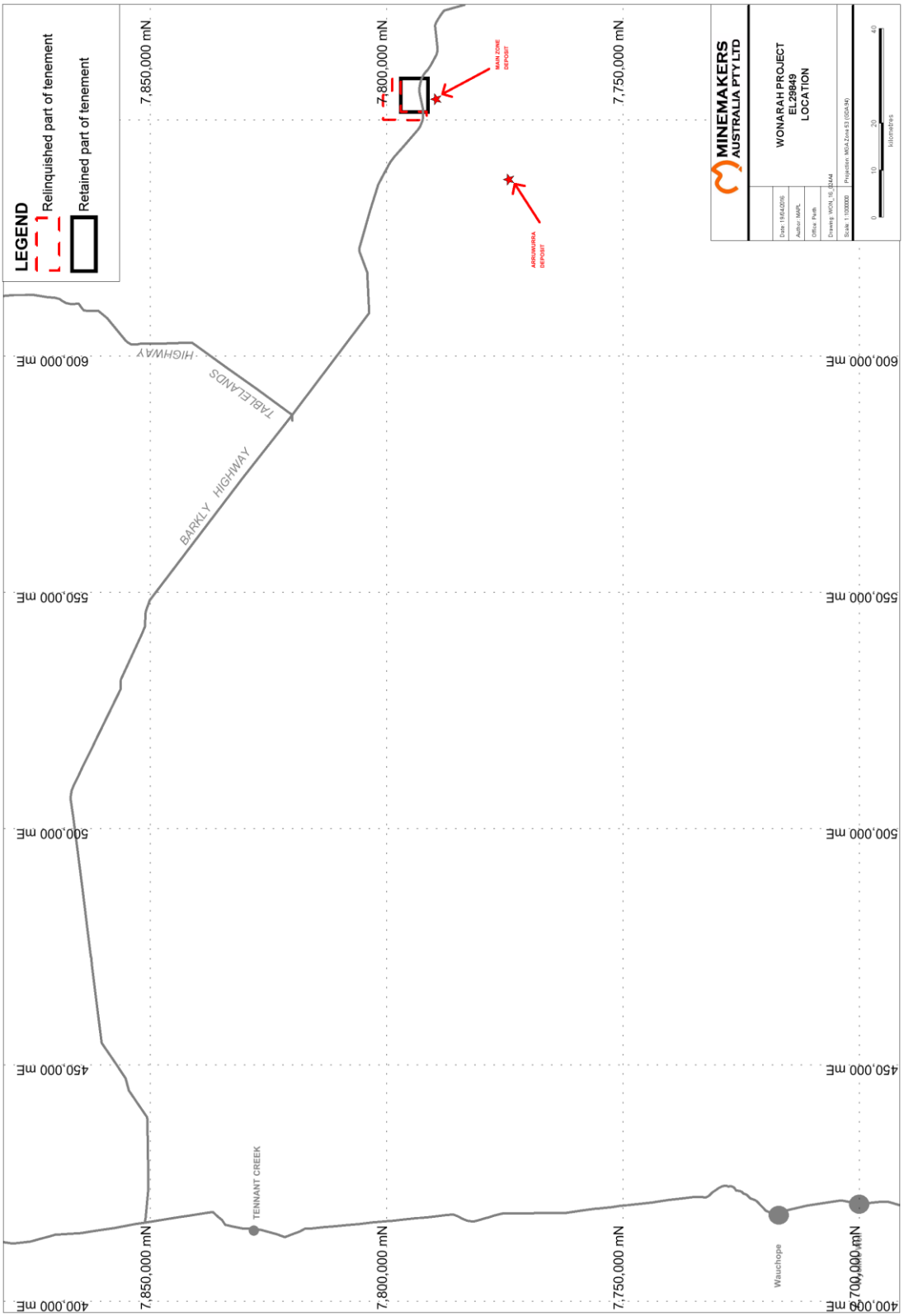

Figure 1: Location of EL29849.

Minemakers commenced fieldwork in 2008 and the following work was carried out on the relinquished areas, but on previous tenements prior to their amalgamation to form EL29849 (Figure 2):

During the year ended January 2009 the following work was carried out:

- A RESOLVE airborne electromagnetic survey over the Wonarah Project completed by Fugro Airborne Surveys, Ontario, Canada. Two survey blocks (GEA3 and GEA7) were within (S)EL26451 (Figure 2). The purpose of the survey was to provide information that could be utilized to map the geology and structure of the survey area. The survey was completed using a RESOLVE multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity cesium magnetometer. The data from these sensors was processed to create maps that display the magnetic and conductive properties of the survey area.

During the year ended January 2011 the following work was carried out:

- During August 2010, a total of 2 RC holes for a total of 127 metres were drilled as part of a scout drilling program on 2-4 km spaced grids (Figure 2). Samples were sent to Amdel, Mt Isa for submitted for XRF analysis of major oxide elements. The RC samples were measured for radioactivity using a RadEye PRD device. The device measures gamma radiation and the purpose of the exercise was to detect high uranium samples and to help with geological logging. Best drilling results were 19 m @ 20.3 % P_2O_5 from 43 m depth (WNRC1564) and 15 m @ 30.0 % P_2O_5 from 46 m.

During the year ended January 2012 the following work was carried out:

- During June 2011, a total of 6 RC holes for a total of 339 metres were drilled as part of a scout drilling program on 2-4 km spaced grids (Figure 2). Samples were sent to Amdel, Mt Isa for submitted for XRF analysis of major oxide elements. The RC samples were measured for radioactivity using a RadEye PRD device. The device measures gamma radiation and the purpose of the exercise was to detect high uranium samples and to help with geological logging. Best drilling results included 12 m @ 21.7 % P_2O_5 from 33 m depth (WNRC1604).

Since the granting of EL29849 in 2013, the following work was completed:

During the year ended January 2013 the following work was carried out:

- Rehabilitation of drill sites and tracks and rehabilitation monitoring.

During the year ended January 2014 the following work was carried out:

- Rehabilitation of drill sites and tracks and rehabilitation monitoring.

During the year ended January 2015 the following work was carried out:

- Rehabilitation monitoring.

During the year ended January 2016 the following work was carried out:

- No work carried out.

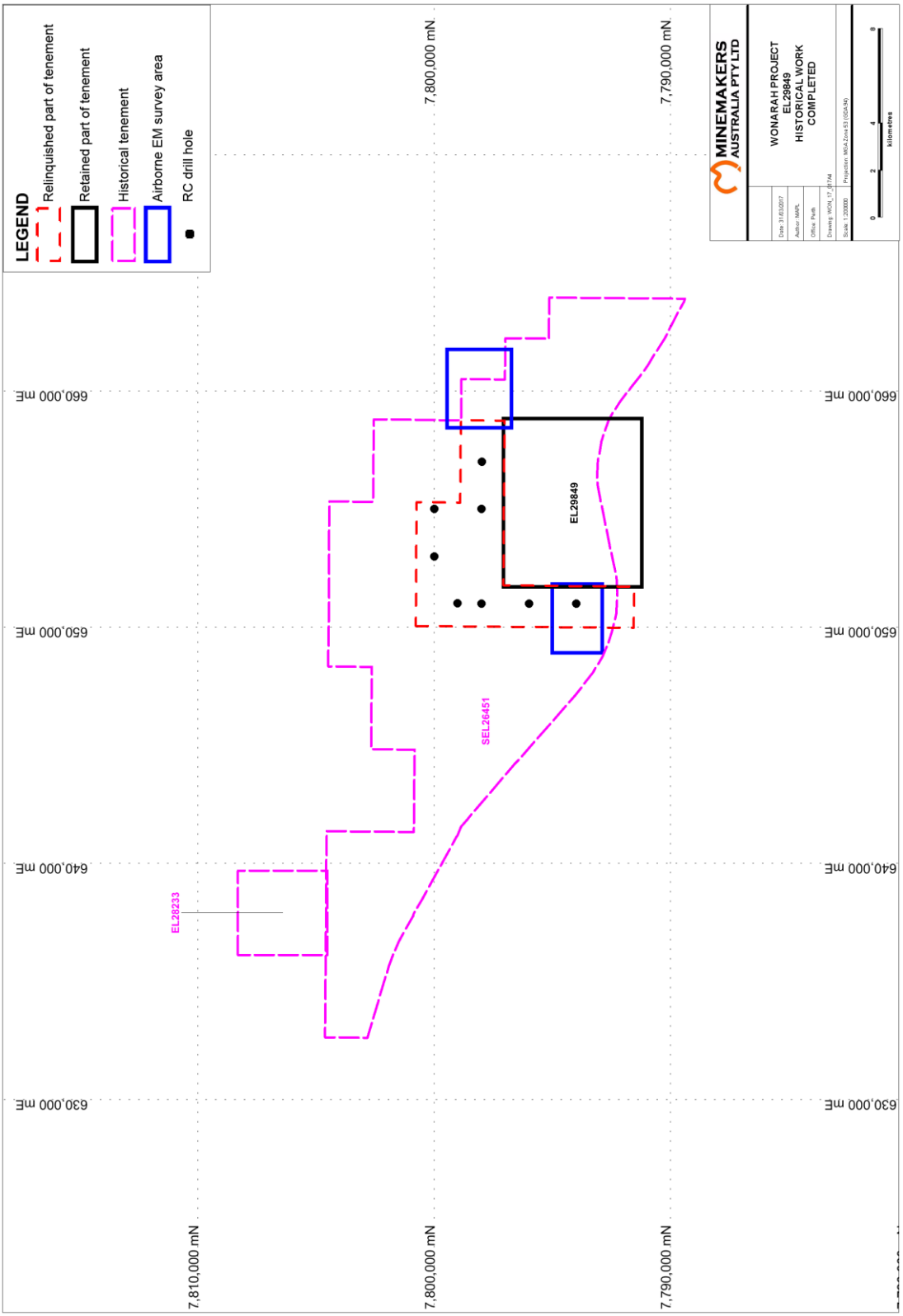

Figure 2: Historical work completed.

4. GEOLOGY

4.1 Deposit style and model

Minemakers Australia is seeking to develop a large sedimentary phosphate deposit within the Georgina Basin. The Georgina Basin is an extensive late Proterozoic to early Palaeozoic basin that extends from northwestern Queensland through much of the eastern Northern Territory area and which hosts several large sedimentary phosphate deposits. A map representing the regional geological setting is presented in Figure 3.

Sedimentary phosphate deposits are restricted in their occurrence globally. The model for phosphate deposition requires upwelling, cold phosphate-saturated water depositing phosphate onto the continental shelf where the required narrow pH range is locally present. Co-deposition with carbonate occurs at slightly higher pH values. Carbonate deposition becomes dominant at higher pH. Post-depositional reworking and replacement of carbonate facies by phosphatic mineralisation is probably an important factor in upgrading phosphorite grades to economic levels.

4.2 Regional Geology

The Wonarah phosphate project is situated in the central western Georgina Basin, a large late Proterozoic to early Palaeozoic basin that extends from northwestern Queensland through much of the eastern Northern Territory.

Basement rocks in this part of the Georgina Basin are comprised of granites of unknown age. They are possibly correlates of the Palaeoproterozoic rocks of the Tennant Creek region. Mesoproterozoic sediments and volcanics are overlain by the Early Cambrian Helen Springs Volcanics (formerly Peaker Piker Volcanics). A northeast-southwest trending basement high runs through the Wonarah project area.

Overlying Middle Cambrian sediments are divided into two basin-wide sequences. Sequence One deposited clastics, carbonates, organic shales and minor phosphorites during gradual transgression which was abruptly terminated by rapid regression. In the Wonarah region, basement highs are flanked by on lapping dolomitic rocks equivalent to the Thorntonia Limestone. An erosional unconformity is represented by the development of a karst surface.

Sequence Two deposited shallow clastics, carbonates, grainstones, peritidal phosphorites and phosphatic limestones in a transgressive tract system. At Wonarah dolostone, mudstone and phosphorite of the lower Middle Cambrian Upper Gum Ridge Formation overlie Sequence One rocks and basement highs. This formation contains major phosphorite mineralisation and is equivalent to the Beetle Creek Formation on the eastern Margin of the basin which hosts Phosphate Hill and Lady Annie-D-Tree phosphate deposits. The overlying Wonarah Beds are Middle Cambrian mudstone, siltstone and dolostones. Silcrete, ferricrete and calcrete regolith are extensively developed and large areas are covered by stabilised aeolian sand.

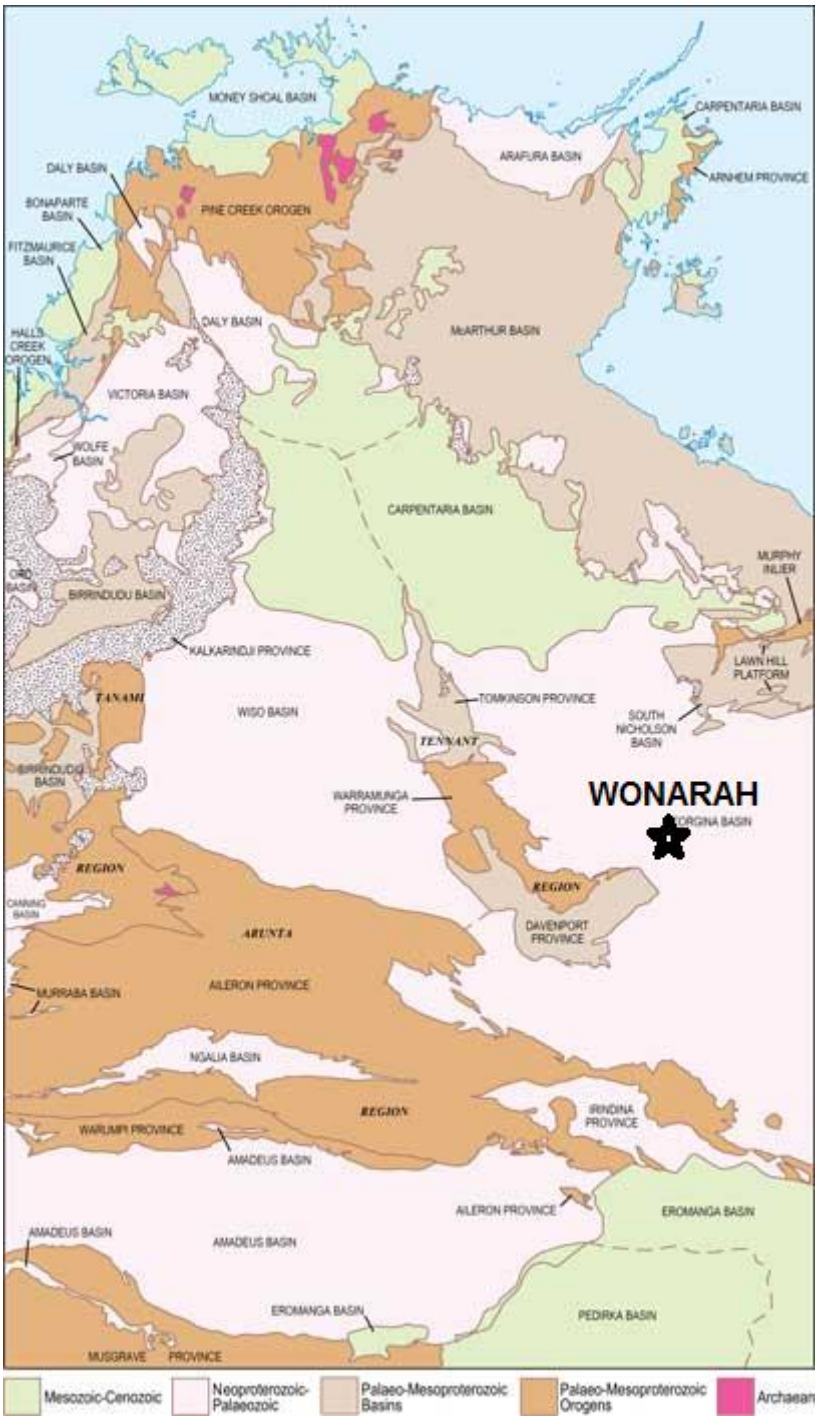

Figure 3: Regional geological setting (from the NTGS)

4.3 Local Geology

Basement in the Main Zone area is alkali feldspar granite of possible Palaeoproterozoic age. These are overlain by the Helen Springs Volcanics. The top of the basalt is extremely weathered and a ferruginous and manganiferous duricrust is developed locally. Where less weathered, the basalt is vesicular, amygdaloidal and irregularly porphyritic. Dolomitic rocks of the Thorntonia Limestone equivalent are present above the basalt at the southeastern extremity of the Main Zone. To the east and the south, the carbonate rocks are developed extensively.

The overlying phosphate-bearing Upper Gum Ridge Formation is divided into five main units: a basal, indurated high grade phosphorite; muddy to sandy, clay-rich transitional sediments; a chert breccia phosphorites; a mudstone phosphorite; and a convolute mudstone.

The basal Transitional Phosphorite is a laterally discontinuous high grade indurated phosphorite up to 3m thick developed throughout the eastern and southern part of the Main Zone.

The Transition Sediments (TUN) are laterally continuous, 4-6m thick and comprised of clay-rich mudstone and siltstone with minor phosphorite, dolomite, sandstone and basal epiclastic.

The Chert Breccia Phosphorite forms a distinctive, laterally continuous horizon, 1-10 m thick, and comprised of yellow, grey or pink, variably friable or indurated, low to high grade phosphorite with abundant dark grey chert. Chert averages 50-60%.

The Mudstone Phosphorite is the main phosphate-bearing unit at Wonarah and is comprised of 1-10m of yellow and pink mudstone phosphorite with trace to minor dark grey chert. The mineralogy is dominated by (carbonate)-fluorapatite – $Ca_5(PO_4,CO_3)_3F$. The MPH is variably friable or indurated with the indurated phosphorite typically being high to very high grade (30-40% P_2O_5).

The Convolute Mudstone is a 1-10m thick unit of white, light grey and yellow clay-rich variably convolute mudstone with minor siltstone and fine sandstone interbeds. It generally contains minor (<10%) P_2O_5.

The Wonarah Beds overlie the Convolute Mudstone and are comprised of mudstone and siltstone with minor chert, the Hangingwall Mudstone. The Wonarah Beds thicken towards the east and south away from the basement high that defines the western fringe of the Main Zone. Dolomitic units, the Hangingwall Dolostone, are present east and south of the Main Zone.

Regolith is extensively developed throughout the Main Zone with silcrete and ferricrete present in most holes. Low silcrete ridges are prominent features. Colluvial and alluvial deposits are common and extensive stabilised aeolian deposits cover much of the regolith.
The phosphatic units thin and peter out towards the basement high which trends in a northeast-southwest direction towards Arruwurra. To the east and south the phosphatic units, although still present with grade and thickness, are too deep to be of economic interest at this time.

A stratigraphic column and schematic section are presented in Figure 4 and Figure 5 respectively.

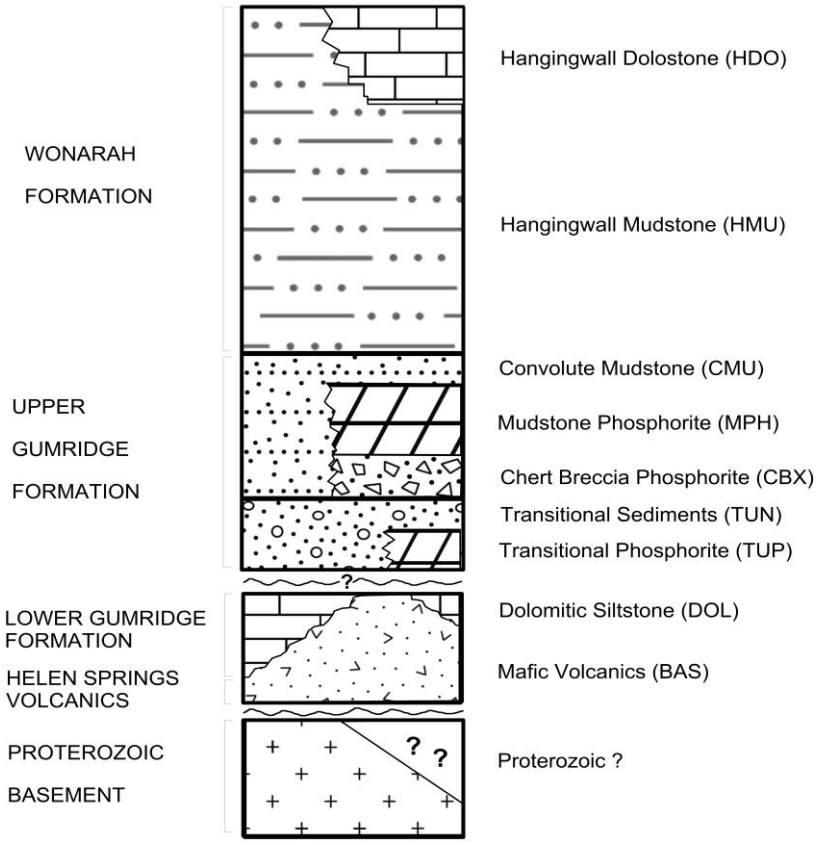

Figure 4: Regional Stratigraphic Column

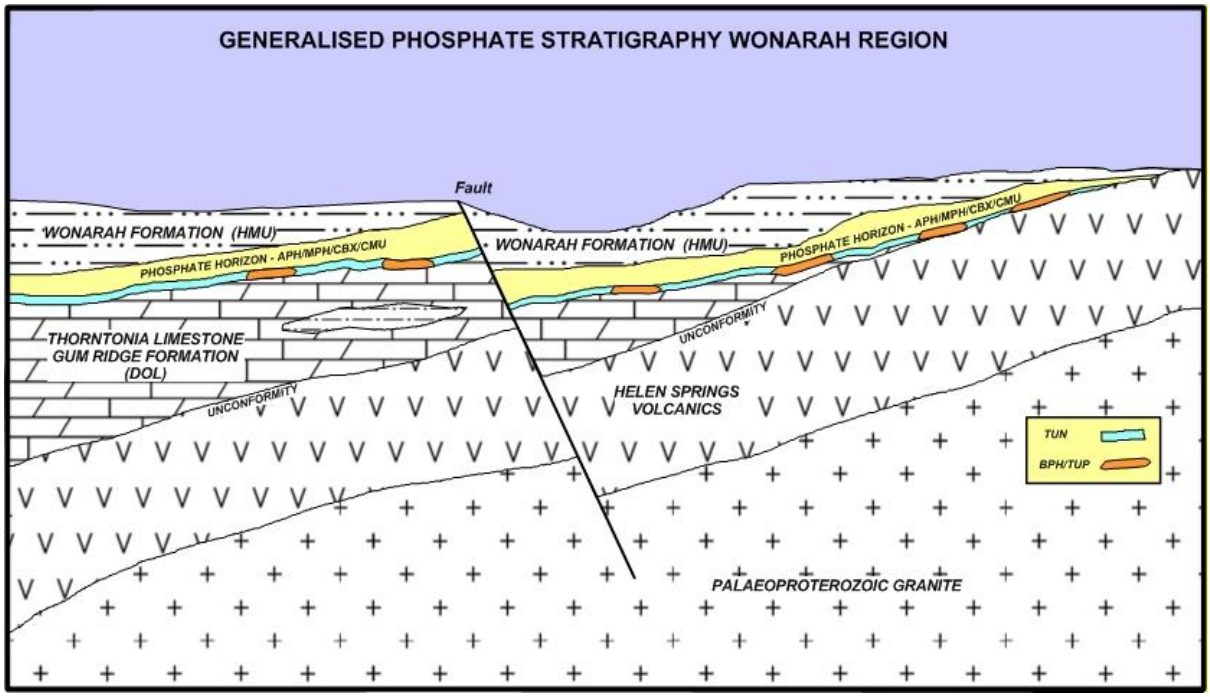

Figure 5: Schematic Regional Geology Section

5. WORK COMPLETED

Work completed on the relinquished portion of the tenement in the reporting year to March 2017 comprised rehabilitation monitoring.

6. CONCLUSIONS

MAPL was required to nominate blocks for reduction pursuant to section 29 of the Mineral Titles Act. Exploration on the relinquished portion of EL29840 returned some significant intervals of phosphate mineralisation defined by two phases of broad-spaced reverse circulation drilling. The mineralisation would require significant further exploration drilling to potentially delineate a resource, the cost of which is not warranted for the Company on the basis that the mineralisation is patchier than the current very large Wonarah JORC resource to the south.

7. REFERENCES

Fulton, R., 2013. Annual and Final Report for EL26452 (Wonarah) for the period 09 January 2008 to 19 March 2013.

Fulton, R.L., Drummond, A., Hepburn-Brown, D. and Hitchcox, A. 2009. Combined Annual Report on EL9979, SEL26451, SEL26452, EL26583, EL26584, EL26585, EL26586, EL26589 and EL26588. Wonarah Phosphate Project. Annual Report to 8th January 2009. Minemakers Australia.

Fulton, R.L., Pellatt, A. and Varley, R. 2010. Combined Annual Report on EL9979, SEL26451, SEL26452, EL26583, EL26584, EL26585, EL26586, EL26589 and EL26588. Wonarah Phosphate Project. Annual Report to 8th January 2010. Minemakers Australia.

Fulton, R.L., Pellatt, A. and Varley, R. 2011. Combined Annual Report on EL9979, SEL26451, SEL26452, EL26583, EL26584, EL26585, EL26586, EL26589 and EL26588. Wonarah Phosphate Project. Annual Report to 8th January 2011. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2012. Grouped Annual Report (GR-097/09) for EL9979, EL24607, EL26185, EL26584, EL26585, EL26586, EL26589, EL28233, SEL26451 and SEL26452 (Wonarah Phosphate Project) for the period ending 8 January 2012. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2013. Grouped Annual Report (GR-097/09) for EL9979, EL24607, EL26185, EL26584, EL26585, EL26586, EL26589, EL28233, EL26451 and EL26452 (Wonarah Phosphate Project) for the period ending 8 January 2013. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2014. Grouped Annual Report (GR-097/09) EL 24607, EL 29840, EL 29841 and EL 29849 (Wonarah Phosphate Project) for the period ending 8 January 2014. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2015. Grouped Annual Report (GR-097/09) EL 24607, EL 29840, EL 29841 and EL 29849 (Wonarah Phosphate Project) for the period ending 8 January 2015. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2015. Partial Relinquishment Report for EL29849 for the period ending 19 March, 2015. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2016. Grouped Annual Report (GR-097/09) EL 24607, EL 29840, EL 29841 and EL 29849 (Wonarah Phosphate Project) for the period ending 8 January 2016. Minemakers Australia Pty Ltd.

Pellatt, A. and Fulton R.L. 2016. Partial Relinquishment Report for EL29849 for the period ending 14 April, 2016. Minemakers Australia Pty Ltd.