



MANTLE MINING
ASX: MNM and MNMO

DIRECTORS

Mr Martin Blakeman
Chairman

Mr Ian Kraemer
Managing Director

Mr Peter Anderton
Non-Executive Director

Mr Stephen de Belle
Non-Executive Director

COMPANY SECRETARY

Mr Winton Willesee

PRINCIPAL PLACE OF BUSINESS AND REGISTERED OFFICE

Level 16, 190 Queen Street
Melbourne VIC 3000

CONTACT DETAILS

Website:
www.mantlemining.com

Email:
admin@mantlemining.com

ph: + 61 (3) 9602 4133
fax: + 61 (3) 9670 6643

G.P.O. Box 2986
Melbourne VIC 3001

ASX Release
19 February 2009

Phosphate Target Areas Defined

Highlights:

- **Desktop studies confirm Phosphate prospectivity**
- **Geological interpretation highlights favourable geology**
- **Historical drilling confirms presence of Phosphate**
- **Drilling design underway to test target stratigraphy**

Mantle Mining Corporation Limited (ASX: MNM), is pleased to report that it has recently conducted a comprehensive desktop review of its Georgina Basin phosphate prospects. This work builds on previous reconnaissance prospecting and has recognised a zone of prospective stratigraphy within the Georgina Basin between the Alexandria and Highlands Plains phosphate deposits.

The prospective stratigraphy comprises sediments deposited at shallow depth along a topographic high within the Georgina Basin and along the northern basin margin. These areas are considered prospective for the precipitation of phosphate.

Analysis of historical drilling has confirmed the presence of phosphate rock on Mantle's tenements, within this prospective stratigraphy, which underlies a significant area of Mantle's tenements.

Best Results from Historical Drilling			
Hole Number	Thickness (m)	Grade P₂O₅ (%)	Depth from (m)
A25	1.50	13.0	33.7
A33	0.75	13.2	36.0
A59	0.75	12.6	31.5
A86	0.75	11.5	34.5

Modelling suggests potential for a thickening of Phosphate deposition down dip from areas of near surface sediment deposition along the basin margin.

A program of broad spaced RAB drilling is being designed to test for accumulations of phosphate within Mantle's ELs 26018, 26019 and ELAs 27035 and 27037 (once granted).

Mantle holds four large exploration tenements in the Georgina Basin considered prospective for Phosphate and Uranium. The tenements are located in the Barkly Region of the Northern Territory approximately 1500km south of Darwin and 450km east of Tennant Creek. Two additional exploration tenements, immediately to the west of the existing holdings, were applied for late in 2008. Mantle was recently notified of Proposed Grant of the first of these.

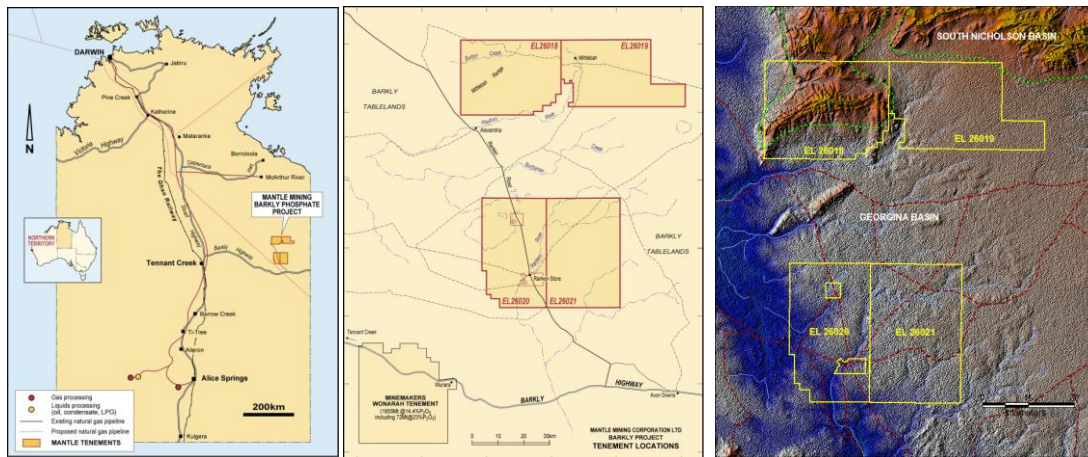


Figure 1: Project Location and Topography

An exploration model for discovery of commercially viable quantities of phosphorite has been advanced from knowledge of the mode of formation of known regional deposits, and by placing these deposits into a geological and geophysical framework. The Primary Marine style depositional model of phosphate is being used.

All marine sediments, especially limestone, contain some phosphate. Deposits of this type are generally extremely large and relatively low grade and to form commercial concentrations of phosphorite a secondary enrichment process is required. Three enrichment processes are recognised; re-precipitation of phosphorite leached from higher in the sediment pile, selective leaching or replacement of the limestone in the phosphatic horizon and mechanical up-grading to concentrate phosphate where phosphorite concentration has occurred.

Examination of photographs of drill core derived from the Wonarah deposit suggests it belongs in the second category. The Highland Plains deposit is described by Phosphate Australia as an unconsolidated sand and phosphorite occurrence which implies the third mechanism of up-grading.

The chemical nature of phosphate, the description of the primary marine deposit style and the methods of secondary enrichment lend themselves to the development of distinct exploration criteria, all of which are coincident in the tenements:

1. Shallow, restricted marine basins enhance formation
2. Presence of limestone and known phosphorite deposits
3. Location of restricted sediment input and favourable chemical conditions
4. Limestone removal/replacement can be an important mechanism

Recent desktop studies incorporating a review of open file information has enabled the identification of a broad area considered to be highly prospective for accumulations of phosphatic sediments, (Figure 2).

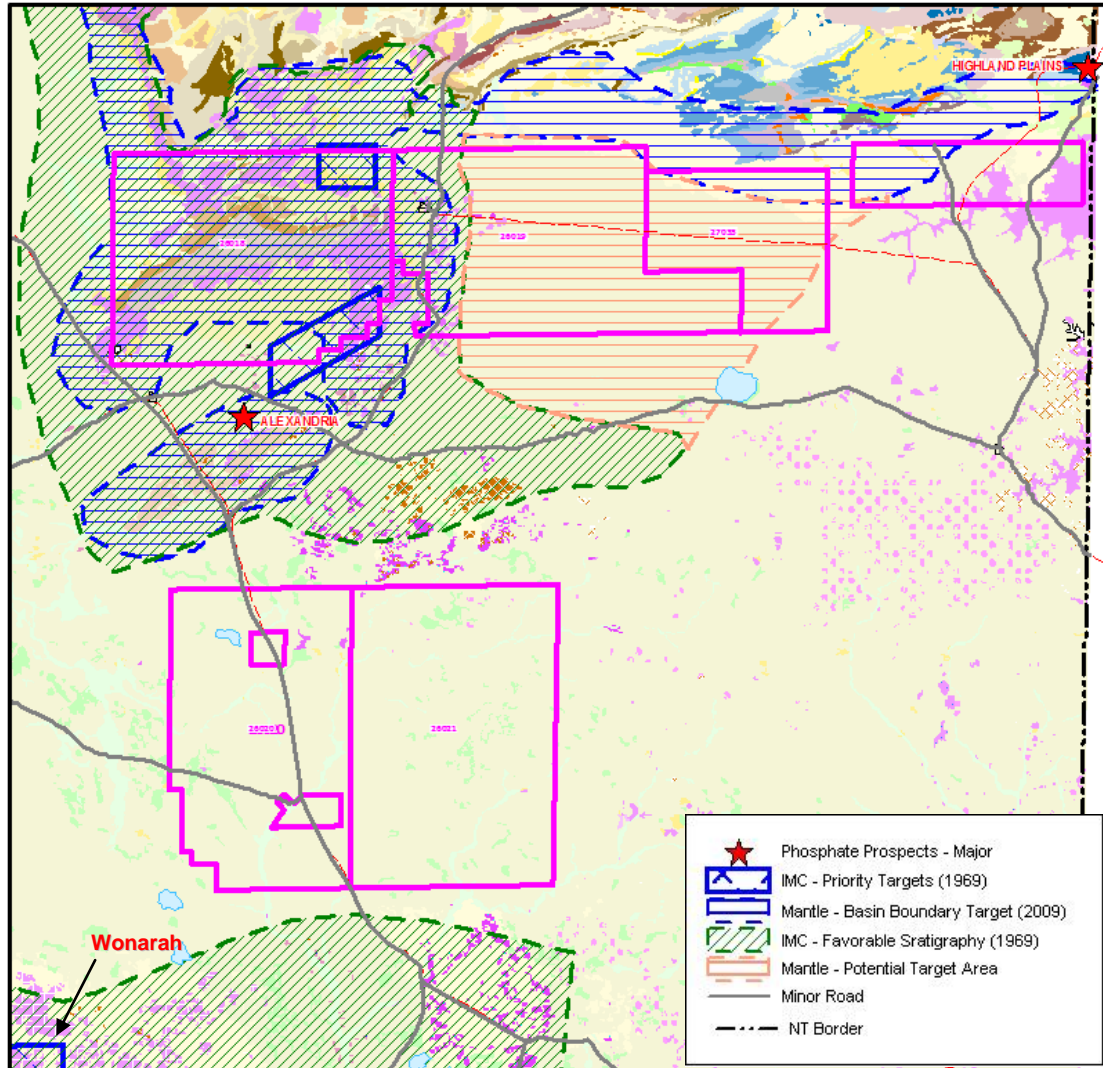


Figure 2. Mantle tenement locations relative to prospective zones

Previous work by IMC (1969) compiled areas of phosphate prospectivity based upon field reconnaissance and test drilling of selected areas (Figure 2, diagonal green hatch). Within their prospective area, priority targets including Wonarah were identified by the dark blue outlines as shown in Figure 2. Portions of these target areas lay within Mantle's EL 26018. Broad spaced test drilling by IMC and others (Figure 3) has intersected moderate grade (11%) phosphate mineralisation, and anomalous phosphate evidenced in molybdate spot tests, in thinly bedded coarse sediments immediately to the north Mantle's EL 26019 and ELA 27035.

Mantle has now recognised a zone considered to be highly prospective for phosphate mineralisation as shown by the horizontal blue hatching in Figures 2 and

3. This zone includes the area of a basement high, that includes the Alexandria prospect, and extends along the northern side of Mantle's ELs 26018, 26019 and ELA 27035.

Historical broad spaced regional drilling demonstrates that phosphate deposition has occurred concurrent with input of sediment from outcrop areas to the north of the basin margin and the Mittiebah Range within EL 26018.

Potential exists for phosphate to concurrently have been deposited along the basin margin further down dip from the areas of near surface sediment deposition, in quieter areas with less sediment input and favourable chemical conditions. This area of prospectivity is highlighted by the horizontal orange hatch in Figures 2 and 3 within most of the area of EL 26019 and ELA 27035.

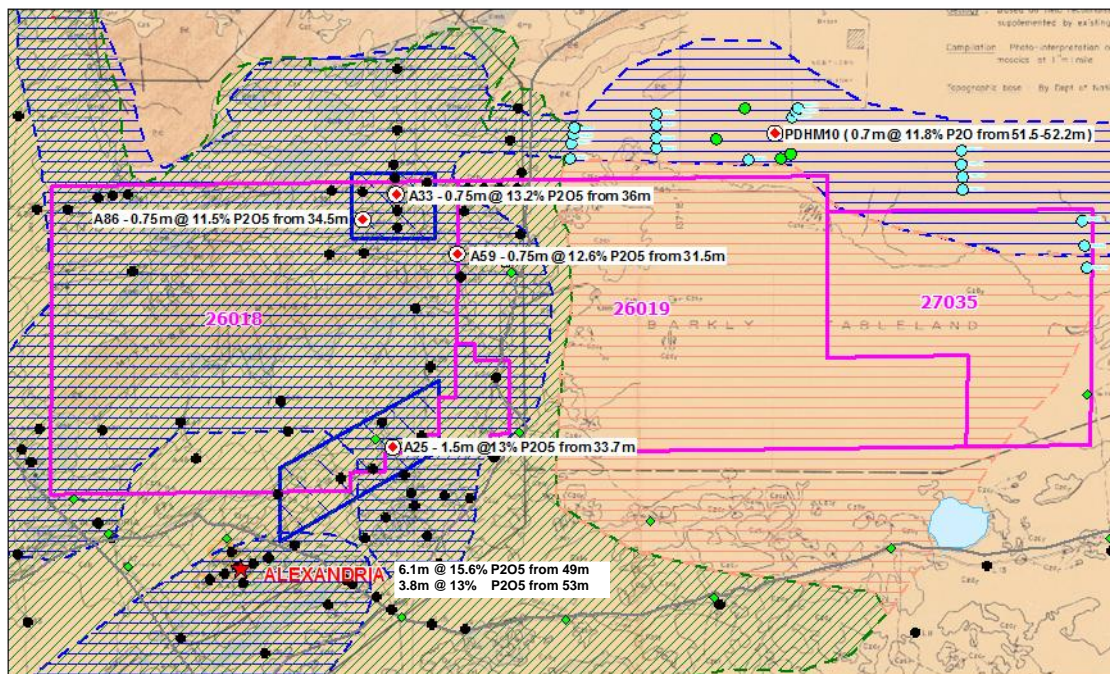


Figure 3. Phosphate intersections documented by previous explorers within and adjacent to Mantle's tenements EL 26018, 26019 and ELA 27035.

The prospectivity of this locality may be enhanced by the regional airborne TMI geophysics that shows an elongate high trending across the central part of EL 26019 into ELA 27035 where it forms an arcuate shape (Figure 4). Further work will determine if this reflects an area of basement high and embayment favourable for the deposition of phosphorite; analogous to the Alexandria prospect setting.

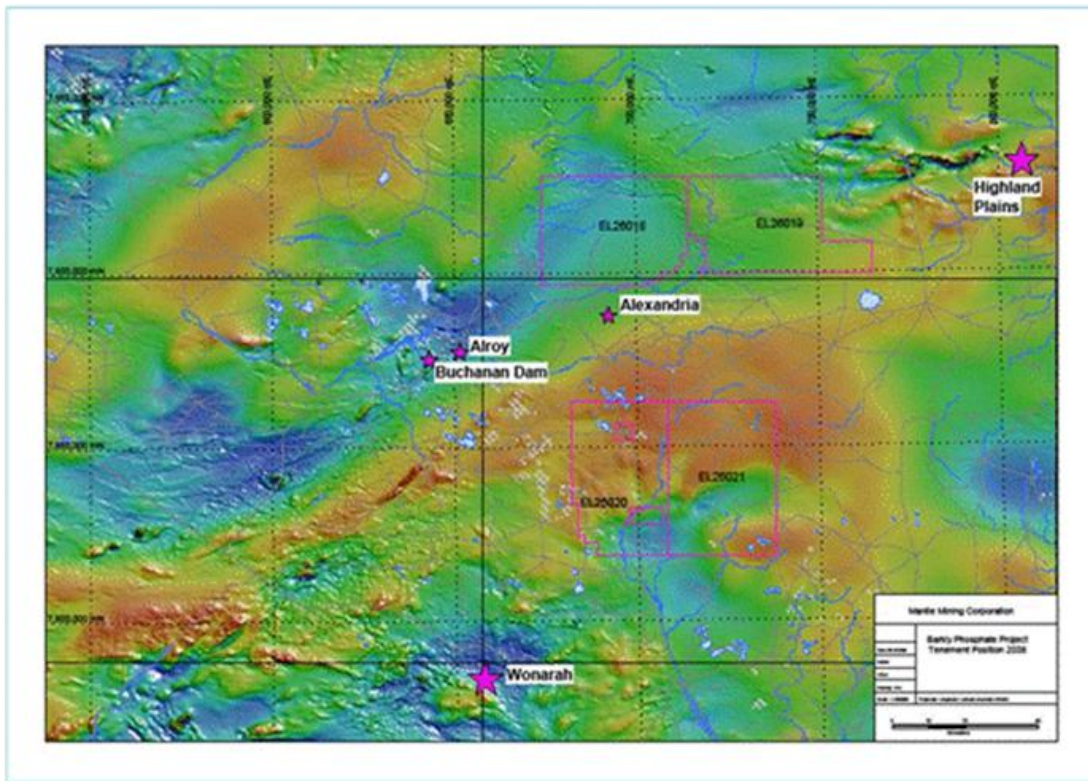


Figure 4: Airborne Total Magnetic Intensity (TMI)

Mantle is currently designing a programme of RAB and R/C drilling to test the target areas defined within ELs 26018, 26019 and ELA 27035.

For further information:

Ian Kraemer
 Managing Director
 Mantle Mining
 (07) 3512 7200

Doug Macdonald
 Capital Group
 0424 255 959

Competent Person Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Stuart Moore, an Executive of Mantle Mining Corporation Ltd. Mr Moore is a Member of the Australasian Institute of Mining and Metallurgy (M.AusIMM). Mr Moore has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Moore consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.