

# ATLAS-CAMPASPE

## Mineral Sands Project

ENVIRONMENTAL IMPACT STATEMENT



### ATTACHMENT 3 › PEER REVIEW LETTERS



CRISTAL



Resource  
Strategies

## **COLIN PARDOE BIO-ANTHROPOLOGY & ARCHAEOLOGY**

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21 November 2012

Ray Roberts

Resource Development Manager

Cristal Mining Australia Limited

Dear Mr Roberts,

I carried out a Peer Review of the *Atlas-Campaspe Mineral Sands Project Aboriginal and Non-Aboriginal Cultural Heritage Assessment*, by Niche Environment and Heritage Pty Ltd, at the request of Cristal Mining Australia Limited. This review was sent to Resource Strategies on 13 November 2012.

Although a peer review is a standard procedure that examines the adequacy and completeness of a piece of work, there are occasional specific items to address. The heritage assessment was examined with regard to current NSW legislation and regulation. In addition, I was asked to examine the heritage assessment with regard to potential impact on the nearby Willandra Lakes World Heritage and National Heritage region.

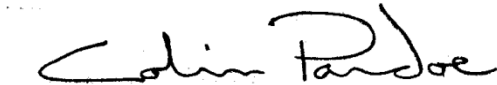
The assessment was a good piece of work that, in my opinion, documented the required assessment procedures as set out in the relevant legislation and regulation, as well as having been carried out at the professional standards expected by the Australian Association of Consulting Archaeologists. There were, however, some matters that needed clarification or explanation.

- ◆ The survey sampling method required further explanation in order to justify the extrapolation from results. This was attended to, and also made explicit the avoidance of sites by your company in planning the mining infrastructure.
- ◆ The proposed Cultural Heritage Management Plan was explained in the assessment, but required some further information so that the commitments by your company would be made explicit.
- ◆ Summary information on the kinds of artefacts and stone material is useful not only in the required significance assessment, but also for other practitioners to use when comparing findings within and between regions. A summary table has been added to the document.

Finally, the assessment was carried out with reference to the neighbouring Willandra Lakes World Heritage and National Heritage region. In agreement with the assessment, it is my opinion that

- ◆ the proposed development is unlikely to impact on the heritage precinct and
- ◆ the heritage values of the Project area [particularly in comparison with those of the Willandra heritage precinct] would not preclude approval of the proposed development.

Yours Sincerely,

A handwritten signature in black ink that reads "Colin Pardoe". The signature is written in a cursive style with a large, stylized 'P'.

Colin Pardoe



*Date:* 3 November 2012

*To:* Ray Roberts  
Resource Development Manager  
Cristal Mining Australia Limited  
PO Box 4062  
Mildura VIC 3500

*From:* Dr Noel Merrick

*Re:* **Atlas-Campaspe Mineral Sands  
Project – Hydrogeological  
Assessment**

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**Review of Atlas-Campaspe Mineral Sands Project  
Hydrogeological and Water Supply Assessment (GEO ENG, 2012)**

**Review by Dr Noel Merrick (Heritage Computing Pty Ltd)  
November 2012**

**Background**

GEO ENG has undertaken a Hydrogeological and Water Supply Assessment as part of the Environmental Impact Statement (EIS) for regulatory approval of the Atlas-Campaspe Mineral Sands Project. I was commissioned by Cristal Mining Australia Limited (Cristal Mining) to review the groundwater modelling and groundwater assessment undertaken by GEO ENG and to comment on the work undertaken during the development of the model and the subsequent assessment report and conclusions.

The review consisted of the following stages:

1. Initial review of the conceptual hydrogeological model and provision of comment/input to the model design/setup;
2. Review of the final draft Hydrogeological Assessment (including the model design, calibration, results and sensitivity analysis); and
3. Provision of a report which outlines the involvement of, and review undertaken by, Heritage Computing during various stages of the model development and assessment.

The initial review and assessment of the model design plan was performed in January 2012. Since then, a number of comments, suggestions and recommendations have been made during the various stages of the review. These suggestions and recommendations have now been included satisfactorily in the model and report.

The report is well presented and I believe it covers the important issues regarding any likely impacts to groundwater resources. In particular, assessment of potential groundwater impacts, including cumulative impacts, on the Willandra Lakes Region World Heritage Area located approximately 10 kilometres to the west of the proposed extent of mine footprints at the Atlas-Campaspe Mine has been undertaken, and based on the results of this assessment (including numerical groundwater modelling) there is expected to be:

- no impact on any surface ponding areas or shallow groundwater systems associated with the Willandra Lakes Region World Heritage Area;
- no drawdown of the deep underlying saline groundwater system below the Willandra Lakes Region World Heritage Area; and
- negligible change in groundwater quality as a result of the Project.

### **Conclusion**

Based on the data and information presented and the modelling conducted, I concur with the report conclusions and the management, mitigation and monitoring proposed.

In particular the existing monitoring site AM4 should be retained for the life of the Project to monitor the groundwater table roughly midway between the groundwater supply borefield and the Willandra Lakes Region World Heritage Area.

Groundwater drawdown extents are anticipated to extend about one-third the distance from the mine to the Mungo National Park, or about half the distance under worst-case conditions.

I found no evidence of any omissions or results that would conflict with the report or its conclusions.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'N P Merrick', written in a cursive style.

Dr Noel Merrick