



Ark Mines Mount Porter Project Status Review Report

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1.0 EXECUTIVE SUMMARY

The Mount Porter Project was permitted via the Public Environmental Review (PER) process by Arafura Resources in 2007 and Ark Mines will have the right to submit a Mine Management Plan (MMP) to the Department of Mines and Energy (DME) to request authorisation to mine.

However there are a number of issues that must be addressed in the MMP prior to authorisation being granted and some issues that may arise that may delay authorisation. These include:

- All the commitments of the PER assessment are met in the MMP.
- The requirements of the Environmental Protection and Biodiversity Conservation (EPBC) permit is met (Squatter Pigeon survey undertaken, submitted and no issues arise from this survey).
- The Aboriginal Areas Protection Authority (AAPA) is granted.
- Either a Waste Discharge Licence (WDL) is granted or a commitment to keep all water on site is realistically made.
- Acid Rock Drainage and waste rock assay and analysis is undertaken on a more representative scale.
- Ground water monitoring is undertaken.
- Closure Plan and costs are developed.

There is potentially a significant cost associated with addressing all of the obligations in the PER and this must be factored into any mine and project planning.

With all of the issues and obligations addressed there is still the possibility for the MMP to be referred to the EPA due to the length of time since the PER assessment. This will increase the time to get the MMP approved and will increase the level of scrutiny on the project.

If there are any fundamental changes to what was proposed in the PER the MMP will be referred to the EPA and if the changes are significant they may request Ark Mines to resubmit the PER which would start the review process. Ark Mines should avoid this as the costs and delays will be significant.

2.0 OBJECTIVE

Ark Mines Managing Director Roger Jackson has asked Jamie Coad and Co to review the status of the Mount Porter Gold Project to determine what Ark Mines may be required to undertake to enable mining at the project in the future. From this review a number of gaps and potential outcomes have been highlighted.

This review was undertaken with the use of information provided by Ark Mines and accessed from the Northern Territory Government website and discussions with Roger Jackson, Christine Fawcett (NT Department of Mines and Energy) and Lisa Bradley (NT EPA).

3.0 DOCUMENTS REVIEWED

Mt Porter Project, Northern Territory: Public Environmental Report; Nov 2006 (MBS Environmental)

Mt Porter Gold Project, Arafura Resources NL, Environmental Assessment Report and Recommendations; Mar 2007 (NRETAS, NTEPA)

Further Information Request

Further Information Submission

Mt Porter Northern Territory Public Environmental Report Supplement; Feb 2007 (MBS Environmental)

Mt Porter EPBC Approval Instrument

EPBC Ongoing Monitoring

Variation of EPBC Conditions

4.0 REVIEW INFORMATION

4.1 General

Currently the Mount Porter Gold Project has an assessed Public Environmental Report (PER) that allows the Mining Lease holder to develop a mine as long as the operator meets the requirements of the assessment and the NT Mining Act.

The PER was developed by MBS Environmental for Arafura Resources NL and submitted in November, 2006.

The document was reviewed by the public and further information requests were submitted in early 2007. Arafura (via MBS Environmental) provided a submission addressing the information requests again in early 2007.

This was assessed by the Northern Territory Government Environmental Protection Agency (EPA) Program and recommendations were made. These recommendations are commitments by the mining company and must be addressed in a Mine Management Plan (MMP) prior to an authorisation to operate being granted. This PER assessment is open ended (no specific start date).

Ark Mines will need to submit the MMP that will be assessed by the DME. If the DME deem that there has been significant variations from the PER or that there are outstanding issues that warrant a higher level of scrutiny will refer the MMP to the EPA. The EPA have the capacity to require that Ark Mines undertakes further studies before Authorisation of the MMP is approved and this could cause significant delays to the project. There is a possibility that the DMR will refer the MMP to the EPA due to the length of time since the PER assessment regardless of what Ark Mines undertakes.

The aim should be to address all of the commitments in the PER Assessment in the MMP so that the MMP does not get referred to the EPA.

4.2 Permitting Requirements

The PER assessment effectively gives Ark Mines the authority to utilise the Mining Lease assuming the following:

- A Mine Management Plan is submitted and accepted prior to the commencement of operations.

- All the commitments of the PER assessment are met in the MMP.
- The requirements of the EPBC is met (Squatter Pigeon survey undertaken, submitted and no issues arise from this survey).
- That the DME do not refer the MMP to the EPA or if the MMP is referred then there are no further requirements imposed by the EPA.

Permits or authorisations may be required, depending on the final implementation of infrastructure. These include:

- Authorisation to Operate which is granted with an accepted MMP and Closure Bond submission
- Waste (Water) Discharge License (WDL) for any water discharge from site.
- Dangerous Goods licence for the storage of explosives and Bulk hydrocarbons.

4.3 Project Commitments and Requirements

The PER assessment process for Mount Porter Project included a public review that allowed organisations and members of the public to raise issues and questions of the Project that may not have been addressed by the NT government reviewers. The final PER assessment document included commitments made by Arafura to address the issues raised by both the NT Government and supplementary issues raised by other organisations and the public. There are a total of 138 commitments made by Arafura of which 24 are supplementary commitments addressing issues raised by the public.

All of these commitments must be addressed in the MMP to ensure that the MMP will be accepted and authorisation to mine granted.

4.4 Significant Issues

There are still several issues that according to the NT EPA have not been addressed adequately in the PER that may have a significant impact on the Mount

Porter Project that require more study. If these studies are not undertaken then it should be expected that the DME will refer the MMP to the EPA.

The most significant issues include:

- Acid Rock Drainage (ARD) – there is a lack of understanding of the ARD issues for the Mount Porter project. In fact the consultants MBS actually refute the findings of the technical expert (EGI) engaged to undertake the study. There has been a lack of test work undertaken to determine both the quantity and quality of the waste rock. This means that the waste rock dump design and management of PAF material may not be appropriate. (EGI are one of the for most experts in ARD and MMD in the country (if not the world) and I have used Stuart Miller the Principal on numerous occasions including for work at Cosmo, Pine Creek and Union Reefs site. He is very well respected by members of the DME.) A significant test work program would need to be undertaken prior to finalising the waste Rock Dump design and a comprehensive Waste Rock Management Plan would need to be developed prior to the MMP being submitted.
- Ground Water – there is no information or test work undertaken for ground water. There are currently no ground water monitoring bores. There is a general lack of understanding of what will happen locally with the groundwater during the project or when the project is complete. There is currently no accurate base line information for ground water (the only samples have been taken from a spring) and this makes it difficult to determine what may happen to quality in the future. A ground water monitoring program will need to be undertaken prior to submitting the MMP. This will include the installation of bores up and down stream of the mine. Hydrogeological reviews will need to be undertaken to firstly determine the best sites for the bores and then after the installation of the bores as the basis to develop a Ground Water Management Plan.
- Surface water and water discharge – This is a major issue. The DME and EPA will not let Ark Mines discharge water outside of the wet season and then only during stream flow events. A Waste Discharge License is required and to get this further studies to determine what effect any water release may have will need to be undertaken. These studies are relatively

expensive and require some lead time. A Surface water Management Plan will need to be developed prior to submitting the MMP.

- Closure Plan and Costings – A comprehensive Closure Plan will need to be developed prior to submitting the MMP. This normally only needs to be comprehensive 3 years from completion of the project and gives the site time to develop processes to address issues identified in the environmental assessment stage. However for such a short project timeframe it is required prior to the MMP. There will also be a requirement to develop closure costs. These costings will be based on the DME closure costing spreadsheet. The final step in the MMP approval process is for the DME assessment branch to review the Ark Mines closure costs. A bond equivalent to these costs will then need to be paid to the DME (normally a bank note with cash in a fixed account). When closure is complete this bond is released. Having developed numerous closure costs for NT sites and having been through this process several times it is very unlikely that the DME will allow Ark Mines to operate without having cash in a bank and a bank note for the DME.
- Cultural Heritage – The Aboriginal Areas Protection Authority (AAPA) has expired (as per the PER) and will need to be re-granted if there isn't a current one. I am unsure of the stage this is at and it may be as simple as re-applying. However there is the chance that negotiations will need to be undertaken. If this is the case I have a contact (Rachael Wedd – Abrus Consulting) who I have used for this process in the past and has excellent contacts in both the government and Northern Land Council (NLC). She would have negotiated a significant proportion of these in the last 15 years in the NT. Contact should be made with her to move this forward to get the AAPA re-issued prior to the MMP being submitted.

4.5 Government Regulators

The Northern Territory Department of Mines and Energy (DME) is the department that has the final say on whether or not a Mine Management Plan (MMP) is approved or not. If they are not happy with the submission they will respond in writing with as many questions and queries as they deem necessary to

feel satisfied that all of the issues are going to be adequately addressed. A number of Environmental Management Plans will need to be submitted as appendices to the MMP. These will include but not limited to:

- Water (ground water and surface water)
- Flora and Fauna
- Fire Management Plan
- Pest and Weeds
- Air quality
- Hazardous Materials
- Cultural Heritage

If the DME has issues will how Ark Mines are to manage the Mount Porter Project they may decide to review it to the NT EPA. The EPA will undertake a more detailed review of the information in the MMP. This process is fundamentally the same as with the DME however the scrutiny of the project from an environmental view point will be elevated and it will take longer. Ark Mines should attempt to avoid the MMP being referred to the EPA for this reason.

However I know that the EPA expect the MMP to be referred to them by the DME due to the length of time since the PER assessment. The level of scrutiny on all mining projects has increased. If this happens it could almost put the project back to the PER assessment stage. The company will need to demonstrate commitment to the major issues above to have a chance to avoid this.

Within both departments there are individuals with significant existing experience on the Mount Porter project and surrounding areas. There is no chance that they will not understand the area and the issues that may arise. Ark Mines needs to work hard to get the confidence of these people to ensure that project progresses.

4.6 Ore Processing

The current PER submitted by Arafura specified that the ore was going to be treated at the Union Reef Gold Mine that was at the time owned by GBS. This

processing facility is currently owned by Crocodile Gold Mines and negotiations will need to be had with this company and an agreement in place prior to the submission of an MMP.

Any changes to this may require the MMP to be assessed by the EPA.

My knowledge of the plant is there is currently sufficient capacity in the mill, however the processing technique specified in the Arafura PER – Geocoat was not installed at Union Reef and this is a change to the processing as documented and again may provide the change that requires referral to the EPA.