

McArthur River Mine Open Cut Project: Public Environmental Report

Summary of ECNT's submission

31 July 2006

General Comments

The Environment Centre NT (ECNT) strongly recommends that the McArthur River Mine Open Cut Project, as outlined in the Public Environmental Report and the previous EIS, not be approved.

The McArthur River and its associated wetland and coastal habitats are too valuable to risk for a mining project that quite clearly failed the scientific and environmental test the first time around in February of this year. It is stretching the credibility of the environmental assessment process to suggest that less than six months later, with only minor changes to the original plan, the serious problems identified in the EPA Program's Assessment Report 51 have been fixed. ECNT believes that the identified problems have not been adequately addressed in the PER, as outlined in our specific comments below. ECNT also believes that as a matter of good public policy the NT Government should rule out dams and river diversions on all major NT rivers.

Specific Comments

- Fig 3.1. shows that MRM could develop the west pit and not move the river. How long could the company continue to mine by digging the west pit only?
- It is also noted that access to the river channel was limited during the fieldwork due to in-channel flow and floodplain ground conditions (p4-16). Surely more fieldwork is required before approval can be considered. Decisions of such importance can not be based on limited fieldwork and 'some general observations'.
- ECNT notes that for the 5-year and 50-year flood events the stream power in the diversion channel is still nowhere near consistent with downstream stream power. Erskine (2006: p11) predicted that a sand slug would form downstream unless flow velocities, shear stresses and specific stream powers in the diversion channel were consistent with the downstream channel. Figure 4.9 shows that this is still not the case with stream powers in the diversion channel *up to three times higher* than those in the existing channel downstream.
- Prof. Erskine commented in his February report on the EIS that when stream power exceeds 35 W/m^2 sand-bed channels usually erode and that no alluvial or bedrock channel can withstand stream power greater than 200 W/m^2 . He also said that stream powers of 80 W/m^2 within the first 5 years after construction would completely destroy the diversion channel (p6). ECNT is therefore extremely concerned about the model results for the 5-year ARI flood, which predict stream power of $60\text{-}150 \text{ W/m}^2$ in the rock section of the McArthur River diversion, with a maximum of 290 W/m^2 .

- If a 5-year ARI flood were to happen within the first 5 years, before revegetation has established itself along the banks, the risks of channel destruction still appear to be unacceptably high. This is especially so, given the extra difficulties associated with growing suitable riparian vegetation species in fractured rock (see p4-53).
- Fig 5.6 shows some very high stream powers in the diverted Barney Creek channel in the slightly weathered rock section (up to 1800 W/m² for 2-year and 10-year flood events) assuming no concurrent flooding in the McArthur River. Disturbingly, this is the case in the short term when vegetation is establishing itself, as well as over the long term.
- Of even greater concern are the high stream power results depicted in Appendix F.2 when there is concurrent flow in the McArthur River, which the PER says is the more likely scenario. For instance, in the upstream extremely weathered rock section during a 2-year flood event, stream power reaches over 400 W/m² at one point, surely a high enough value to lead to substantial erosion. Similar concerns are revealed for a 5-year flood event with concurrent flow in the McArthur River.
- Given these high stream power and shear stresses that will be exacted on the Barney Creek diversion channel, ECNT can not concur with the conclusion in the PER that the long-term risk of instability is low. Nor does the PER make it clear whether the risk of channel instability over the short-term – before vegetation has established itself - is also considered to be low. ECNT strongly suspects that this is not stated in the PER because *the risk of short-term channel instability during flood events is in fact high.*
- We are assured that potentially acid-forming rock will not be used on the external faces of the Overburden Emplacement Facility (OEF), flood protection bund or the Tailings Storage Facility (TSF). It is noted that of the proposed external materials, Teena Dolomite, Dolomitic Sandstone and Breccia, testing only began in April 2006 and comprises three flush results only. This is not sufficient and bears out the fact that the EPA Program was right to question the potential for contaminated runoff from the NAF section of the OEF.
- TSF seepage will occur for 30-50 years after closure. ECNT finds it hard to believe MRM's assurance that it will continue to be responsible for post mine closure monitoring and maintenance of the recovery system another 55-75 years from now, unless it intends to eventually mine the remaining three-quarters of the ore body under the existing river channel.
- No evidence is actually provided in the PER to convince ECNT that the 'worst case' seepage scenario will not take place.
- What caused the very high spike in filtered zinc concentrations in the McArthur River downstream (SW6) around May 2005 – over 100 micrograms/L – which is 4 times higher than the hardness modified trigger value (HMTV) for 95% protection level of freshwater aquatic ecosystems? There are spikes in copper and lead concentrations in the McArthur River downstream at this point in time as well, with copper concentrations exceeding the HMTV by more than two times. There is no explanation provided in the PER Main report or Appendices.

- There is also a notable gap in the sediment data around 2001, including the time of the tailings dam breach and water release during the February 2001 flood. This data must be provided if the sediment analysis is to have any real credibility.
- MRM says it is not feasible to license the quality or quantity of an uncontrolled discharge when the cause (extreme rainfall) is beyond the control of MRM. But surely, the adoption of a design criteria for the TSF (1 in 500 years) and the OEF PAF pond (1 in 100 years) would be a contributing cause of any uncontrolled discharge. MRM would certainly be culpable if such an event were to occur.
- The proposed two years of sampling in the river downstream, at points based on the 2003 sediment study, is inadequate. This will not provide sufficient data to inform the public and Traditional Owners about downstream pollution issues.
- ECNT finds the assurance in the PER that the extension of the no-flow period in the McArthur River will not have a significant effect on river ecology to be unconvincing. If a series of low-rainfall years were to occur – not unknown in the Top End - the extension of the no-flow period could have very serious impacts on aquatic life and potentially also riparian vegetation. These risks have not been adequately accounted for in the PER.
- It is very concerning that an initial baseline survey of plant communities in the riparian zone around Djirrinmini Waterhole has not been completed for the environmental assessment process.
- The discussion of the Freshwater sawfish in the Main Report of the PER leaves out some important pieces of information that appear in Appendix L. ECNT notes that access to the river was impeded during the May 2006 survey due to high river flows coinciding with the end of the wet season. Yet an individual juvenile sawfish was recorded at Eight Mile Waterhole upstream of the mine. It is therefore crucial that a second survey be undertaken, as proposed in the PER, before any substantial conclusions can be drawn about the potential impacts of the mine and river diversion on this listed threatened species.

At least the PER acknowledges that the mine reach section of the river is important as a relatively unobstructed passage for sawfish to upstream habitat.

- The listed migratory bird, the White-Browed Robin, was seen on 5 different occasions during bird surveys in 2003 along the McArthur River adjacent to the mine and along the Glyde River. It is extremely difficult to base any substantive conclusions about the behaviour of the bird or how it will be affected by habitat fragmentation on such a limited number of observations.
- The PER Guidelines specifically state that MRM should outline appropriate mechanisms for communication with all stakeholders (*ensuring effective community and language group representation*). Nowhere in the proposed community engagement strategy does MRM outline appropriate mechanisms for ensuring effective language group representation. Instead it tends to categorise people as either Aboriginal or non-Aboriginal 'residents', thereby ignoring the complexities of Aboriginal communities in the region which are based on land, sea country and language group affiliations.

- The EPA Program must listen closely to the concerns expressed by the Borroloola Traditional Owner Groups, and not accept MRM's Community Reference Group as being representative of the community as a whole. Now more than ever it is clear that a vast majority of Aboriginal Traditional Owners in the region are unhappy about the consultation process for the open cut project and do not want to see the river diverted.
- Aside from the \$5.84 million of spending in 2005 on transport and freight services (most of which is presumably for the barge operation operated by Carpentaria Shipping Services), only \$171,000 was spent by MRM on products and services from local community sources. This emphasises the relative lack of dependence of the local community on the mine.
- ECNT is also somewhat mystified that the DEH letter to MRM included in App. A.2. does not mention the need for MRM to supply further information on migratory bird species, including the White-Browed Robin. Yet this requirement is included in the PER Guidelines. These procedural matters must be clarified at the highest level before any NT or Commonwealth decisions are made on the open cut.

Conclusion

The PER does not demonstrate that MRM can conduct this mine project without significant, irreversible and unacceptable impacts on the McArthur River environment. In particular, MRM has failed to show that the substantial risks to the environment posed by the McArthur River and Barney Creek diversion channels, as outlined in the EPA Program's Assessment Report 51, have been adequately addressed. The company has also failed to produce a workable community engagement strategy, underlined by the fact that there is continued opposition to the river diversion proposal by the large majority of Aboriginal people living in the region. The PER should be rejected by the NT Government accordingly and attention should be focussed on creating a new Marine Park in the mouth of the McArthur River and Sir Edward Pellew Islands. This would provide a much more culturally, socially, economically and ecologically sustainable future for the region than an open cut mine and a damaged river system.