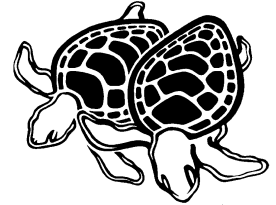


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McArthur River Mine Open Cut Project: Public Environmental Report

Submission by Environment Centre Northern Territory

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. ECNT has presented its wide-ranging concerns about the environmental and social impacts of this proposal in a number of documents, including our submission on the Draft EIS. A few examples of our correspondence with the NT Government, which we still consider relevant in the assessment of the PER, are provided in the appendices to this submission.

- App. 1. Email and attachment sent to Hon. Marion Scrymgour and the EPA Program (17 February 2006) on the McArthur River Mine Sediment Study.
- App. 2. Letter sent to Hon. Syd Stirling on the economic costs associated with the McArthur River Mine (5 April 2006).
- App. 3. Letter sent to Hon. Marion Scrymgour on the failure of the PER Guidelines to address the potential economic and social costs of the mine proposal (22 June 2006).
- App. 4. Letter to Hon. Marion Scrymgour detailing a number of concerns relating to the assessment and approvals process for the McArthur River Mine Open Cut Project and the test pit expansion (30 June 2006).

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

1.0. Introduction

1.1. Overview

Fig 1.2 shows a dated aerial photograph (2001) that misleadingly excludes the current test pit operation.

2.0. Modified Project

2.4. Construction Schedule

What does it mean that MRM will 'accept the risks' associated with floods larger than a 50-year ARI in the 2006-07 wet season? This should be spelt out in detail.

Will flood velocities around the partially completed flood protection bund during the 2006-07 wet season be low enough to ensure bund stability? MRM says that modelling shows it will be but ECNT has not been able to find any specific data on this in the PER or the Hydraulic Design Report in App. B. This company assurance should not be taken at face value, especially since Section 9.2.3. indicates that MRM has not even decided yet whether the flood protection bund between chainage 0-1800 will be constructed to the final arrangement during 2006 (p 9-5).

3.0. Alternatives

3.1. Summary

It is disingenuous of MRM to say that one of the adverse impacts of the 'no project' option is a loss of royalties when they have paid no royalties to the NT Government in more than 10 years of operations.

3.2. Continuation of underground mining

MRM makes a lot out of the issue of safety in explaining why underground mining can no longer continue. It cites a detailed feasibility study, which has not been publicly released. It cites the need for backfilling as a major barrier to continuing the underground mine and says that the disturbance footprint of the mine would need to be increased. It is difficult to see how this would increase disturbance to a level comparable to the open cut proposal however, where the major disturbance is to the natural flow of the river itself.

3.3.2. Mining without affecting the McArthur River

What are the hashed areas in Fig 3.1? The Fig 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?

3.4.2. In-Pit disposal

What are the implications for mine rehabilitation of the proposal to dispose of PAF overburden in the pit towards the end of the mine life?

4.0. McArthur River Diversion

4.3.2. McArthur River Catchment

The PER says that the McArthur River generally dries up for one to two months each dry season. Is there any data on this, especially given the no-flow period will be extended by 2 weeks if the open cut project proceeds?

4.3.3. Geomorphic environments of McArthur River

The fact that Cyclone Monica deposited up to 2 metres of sand on the banks of the mine reach in some places speaks volumes about how dynamic this river system is and how vulnerable it is to bouts of degradation and aggradation.

It is also noted that access to the 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'.

The PER (p4-16) points out that in the existing river channel considerable bank slope strength is provided by the extensive root mats of the trees that line the banks. This will be very difficult to replicate in a revegetation program for the proposed new channel.

4.3.4. Conclusions

The PER states that the dense riparian vegetation in the mine reach supports a number of rainforest-type trees. These should have been named and only serves to highlight once again the deficiencies in the flora sampling completed for the EIS, i.e. *no surveys have been completed directly where the open cut will be located.*

4.5.3. Re-calibration of hydraulic model to the January 2003 flood event

The PER states that 'there is some uncertainty associated with the flow estimate at the MIM gauge due to an unknown contribution of the Glyde River and other tributaries for the January 2003 flood event'. What level of uncertainty?

4.5.5. Confirmation of roughness coefficients using Cowan's Method

The calibrated roughness coefficients (Table 4.4.) are the same as in the EIS for flows of 20, 50 and 100 m³/s. Erskine (2006: p5) described these values as 'high'. There are many variables that are assessed when the Cowan's Method is used in the PER to substantiate the adopted roughness coefficients. ECNT advises that the results of this analysis should not be accepted by the EPA Program without an independent analysis, including, if necessary, more field observations.

4.5.7. Re-modelling of existing river conditions

Prof. Erskine observed in his February report (Erskine 2006) that **'no alluvial or bedrock channel can withstand a specific stream power of greater than 200 W/m² or a shear stress greater than 160 N/ m².**

For the existing channel the shear stress in the mine reach is up to 160 N/ m² for a 5-year ARI flood event, whilst upstream and downstream values are even higher (up to 330 N/ m² upstream). Upstream of the mine, stream power reached 1030 W/m². The explanation given in the PER, that these high values were localised and 'generally occurred where bedrock was exposed in the channel or some other flow restriction was present', is hardly reassuring. These high shear stress and stream power values have barely changed, if at all, since the data presented in the EIS. It is therefore difficult to see how the revised modelling has changed anything in relation to Prof. Erskine's earlier conclusions regarding the accuracy of the model calibration.

4.5.8. Design modification to diversion channel

The PER recognises that there are 'no firm scientific criteria to guide hydraulic design for stream diversions with respect to how much change in stream power is sustainable' (p 4-41). We are told that the best approach is to design the diversion to avoid excessive increases in stream power and to monitor performance. Surely the best approach is to not divert the river at all, given the acknowledged scientific uncertainties.

4.5.9. Re-modelling the modified diversion channel

Do the Australian Coal Association Research Program (ACARP) guidelines for diversion channel design have any official government recognition? By referring to them as the 'Australian ACARP guidelines', the impression is given that they may have. ECNT has found no evidence of this however. The guidelines have been developed by the coal industry for use in stream, not river, diversions in central Queensland – and that may indeed be all they are good for.

ECNT also questions the usefulness of the ACARP guidelines when there is no guideline provided for the crucial 5-year ARI flood event.

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. It is not explained in the PER why the hydraulic modelling for the diversion suddenly ends at 15000 m (at the end of the diversion channel). Why is there no data for the section of the river downstream of the diversion channel given Prof. Erskine's concerns?

ECNT also notes Prof. Erskine's comment that when stream power exceeds 35 W/m² sand-bed channels usually erode and that no alluvial or bedrock channel can withstand stream power greater than 200 W/m². He also said that stream powers of 80 W/m² 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 60-150 W/m² in the rock section of the diversion, with a maximum of 290 W/m².

Moreover, the PER itself says that stream power in the alluvial section of 65 W/m² has been accepted as the criterion for vegetation establishment (p 4-44). The maximum stream power in the alluvial section of the diversion channel was modelled as 65 W/m². It seems somewhat convenient that the figure equals, but does not exceed, the accepted threshold.

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).

4.5.10. Stream power and erosion potential of diversion

The methodology for the Annandale analysis of erosion potential is not very well explained, and the raw data from the three boreholes is not provided, so it is difficult to assess the reliability of the results presented in the PER. ECNT, however, notes that the Annandale method as adopted in the PER is not without criticism in academic literature. Coleman et al (2003) point out that the erodibility index approach 'does not provide a means of assessing the influence on erodibility of the degree of protrusion of particles in the flowing body of water' (p874). It is important, the authors say, to account for the influence of particle protrusion on particle stability. Particle stability tends to decrease with increasing protrusion and decreasing surface length.

The degree of particle protrusion should therefore be included in an Annandale analysis when assessing the erodibility of a channel bed. It could, for example, be included in the relative joint structure number J_s (Coleman et al 2005).

4.6.3. Proposed rehabilitation strategy

The PER states that the available moisture for bank vegetation is primarily controlled by river water levels. Would bank vegetation be affected by the groundwater drawdown associated with mining operations?

How much Roundup will be used to control weeds in revegetated areas and will this have an impact on water quality? Roundup and its many constituents can be very toxic to a range of organisms.

It is noted that a 20 metre wide strip of vegetation will be established beyond the top of the channel banks *where practical*. How much of the diversion channel would be revegetated in this way? More detail is certainly required in order to convince ECNT that more than just a token riparian corridor would be created.

4.7.3. Potential fauna impacts

It is undeniable that there will be significant impacts on specialist riparian bird species such as the White-Browed Robin and Purple-crowned Fairy-wren. ECNT raised major concerns about fragmentation of bird habitat in its submission on the Draft EIS, which we still believe have not been adequately addressed. It is not even made clear in the PER whether the new riparian corridor will be of the stated sufficient width (e.g. >100m) to re-establish connectivity along the corridor following revegetation.

5.0. Barney Creek Diversion

5.4. Aquatic habitats

ECNT notes that there were no aquatic habitat survey locations on Surprise Creek (Fig 4.1).

5.5.1. Flood flows

The PER relies on anecdotal evidence from mine site personnel to suggest that Barney Creek has significant flood retention areas upstream of its confluence with Surprise Creek, rather than a systematic survey of the area. This is hardly best-practice flood flow modelling.

5.6. Hydraulic Modelling of Barney and Surprise Creeks

5.6.2. Estimation of roughness coefficients using Cowan's method

The PER relies on the Cowan's method to determine roughness coefficients for Barney Creek and Surprise Creek, rather than recorded flood data, as there is no stream gauge located on either stream. ECNT has to ask why, after 10 years of operations and the previous problems with flood flows impacting on the tailings storage facility, a stream gauge has not been installed on Barney Creek. This lack of recorded data reduces the reliability of the estimated roughness coefficients.

What body of experience is there to estimate n-values for Australian tropical rivers and streams in both alluvial and bedrock sections – see box next page? Prof. Erskine certainly questioned the adopted values for McArthur River in his February report. ECNT must question the reliability of this method also, especially since the health of a significant aquatic ecosystem is at stake.

The trouble with Manning's n... from <http://www.srcf.ucam.org/~rlk23/Manning/> (accessed 28/07/06):

■ Manning's n has long been a trouble spot for engineers, hydraulists and hydrologists attempting to model flow in natural river channel. This is because **there is no accurate objective means of measuring Manning's n in the field**. As Barnes (1967) puts it:

'In the absence of a satisfactory quantitative procedure this evaluation remains chiefly an art. The ability to evaluate roughness coefficients must be developed through experience'.

■ Over the years, engineers have developed a solid body of experience in estimating Manning's n for lowland, alluvial rivers. **However, bedrock-confined channels, the 'last frontier' of hydraulic modelling, are another story entirely.**

5.6.3 Modelling of existing creek conditions

The modelling in the PER shows that shear stresses and stream powers reach very high levels in the existing channels of Barney Creek and Surprise Creek during flood events – e.g. stream powers of up to 600 W/m² in Barney Creek downstream of the Surprise Creek confluence for a 2-year ARI flood event (Table 5.6). Stream powers in Barney Creek both upstream and downstream of the Surprise Creek confluence are also high (over 300 W/m²). The presentation of the data in Fig. 5.2 shows very high maximum stream powers during a 10-year flood and a 50-year flood, assuming no concurrent flooding in the McArthur River (up to 1200 W/m²). It is explained that the high values *generally* occurred where bedrock or rock outcroppings were exposed in the channel or some other flow restrictions were present. Why is no data for a 5-year flood event depicted in Fig. 5.1 and 5.2?

5.6.5. Design requirements from PER and follow-on discussions

The Barney Creek diversion channel will be designed to resist flow velocities and stream powers for flood events less than or equal to the 50-year ARI (i.e. less than or equal to 65 W/m²). MRM says it will accept the risks associated with floods larger than a 50 year ARI. But it is not only MRM that faces risks if the revegetated channel should fail, it is the McArthur River ecosystem and all that depend on it.

5.6.6. Modelling of original (EIS) diversion design

The PER notes that in the original EIS design of the diversion channel, stream powers for all flood events were generally greater than the threshold value of 65 W/m² and would therefore threaten the stability of newly-planted vegetation. Significant velocities downstream of the haul road bridge would also create significant scour and erosion. This is an admission by MRM that they got their original design wrong. It also underlines the fact that the EPA Program and Ministers Scrymgeour and Vatskalis made the correct decision in rejecting the EIS.

5.6.7. Design modifications to diversion channel

Fish passage will be restricted along Surprise Creek due to the stepped energy dissipation structure that is proposed. It is claimed in the PER that the fish habitat value of Surprise Creek is low, however this would be more convincing if an aquatic habitat survey had actually been carried out in the creek.

5.6.8. Modelling of the modified diversion channel

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. Fig. F.2.4, for example, shows stream power reaching over 1200 W/m² in the short term in the slightly weathered section of the realigned channel during a 2-year flood. These stream power readings are much higher than in the same section of the existing channel. Moreover, in the upstream extremely weathered rock section, stream power reaches over 400 W/m² at one point, surely a high enough value to lead to substantial erosion. Similar concerns are revealed in Fig. F.2.12 for a 5-year flood event with concurrent flow in the McArthur River.

The shear stress values in the slightly weathered rock section of the diversion are also at times higher than Prof. Erskine's threshold of 160 N/m² during all flood events.

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*.

5.6.9. Annandale analysis of stream power and erosion potential of Barney Creek diversion

It is proposed that large diameter rock riprap will be placed in the channel bed and banks of the upstream extremely weathered rock section of the channel in order to protect it from erosion. Again the conclusion that this will hold is based on an Annandale analysis (see ECNT's comments on 4.5.10).

6.0. Waste Management

6.3. Kinetic leach test results

Sulfate marginally exceeds applied ANZECC and NEPM applied guideline criteria in Non-Acid Forming (NAF) Bituminous Shale. Testing of NAF Upper Pyritic Shale has shown that it may initially leach levels of metals and salts (Al, Cd, Co, Ni, SO₄, Se and Zn), but we are assured that it 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.

6.4.1. Trigger levels and corrective actions

In ECNT's view the proposed trigger levels before NAF sediment pond overflow can be released into the McArthur River are not restrictive enough. Why is the 99% protection level of freshwater ecosystems not adopted instead of the 95% protection level? It is not explained why there are two different trigger levels proposed and how these correspond to one another. Given the cocktail of heavy metals and sulfate in many of the NAF materials, as indicated in the kinetic leach testing, releases from the NAF sediment pond should be minimised to the greatest extent possible.

Releases from the NAF sediment pond are of particular concern during initial project start-up, with the PER basically saying that 'slight' deviances of 25% from the ANZECC water quality criteria for heavy metals should be tolerated. But this should not be tolerated. First flush events at the beginning of the wet season are known to cause greater stress on aquatic systems when there are high metal levels, as has been witnessed at the Mt Todd mine site in recent years.

7.0. Tailings Storage Facility

7.2.3. Additional seepage controls

Modelling indicates that an elevated groundwater mound would extend outside the footprint of the TSF and may in the latter period of the mine life express into drainage channels and creeks. There is also limited precedent to confirm the longevity of the TSF geopolymer barrier. Hence, the PER says, there is a need for recovery bores. ECNT notes, however, that the water balance modelling is still incomplete and that natural groundwater may be intercepted by the recovery bores and increase the total volume of water in the water management dam, perhaps by 20 percent. This raises the question of whether the water management dam, as currently designed (see Fig. 7.1), will be large enough to contain any extra water should the modelling prove to have underestimated water volumes in the system.

ECNT also notes the limitations in the groundwater modelling described in Appendix N (p5-1) in that it only investigates the groundwater environment below the permanent watertable: The consultant, URS, says that 'the model does not represent seepage from the embankment walls, or the potential expression of seepage at the toe of the TSF from flows in the unsaturated profile'. What are the potential implications of this other non-modelled seepage for the seepage mitigation systems outlined in the PER?

7.4. Closure strategies to manage environmental impacts

After mine closure surface water run-off from the TSF that is not suitable for discharge will be disposed of in the decommissioned mine pit. Given that the mine pit will be flushed every two years or so after mine closure during flood events, this proposal can not really be described as 'disposal' of contaminated water, as the water will eventually find its way into the McArthur River system.

7.5.2. Cover design

It is not sufficiently explained why the adopted protection layer for the TSF cover is 1000mm and not 1500 or 2000mm as in the Lundgren (temperate) and Williams (Semi-arid, sub-tropical) references (Table 7.5).

7.5.3. Long-term performance modelling

It appears as though climate change was not included as a variable in the HELP model to simulate the performance of the 5 cover designs of the TSF.

7.5.4. Vegetation cover

ECNT is concerned that exotic grasses such as Buffel Grass, a known weed threat, will be planted on the TSF cover while native vegetation is establishing itself. What are the risks of the exotic grasses outcompeting native species and spreading from the TSF over the long-term? This is not addressed in the PER.

7.8.2. TSF closure

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 shown in Fig 7.7 will not take place. What is the 'considerable evidence' that the dolomitic sandstone underlying the TSF has a higher permeability than depicted in the 'worst case' scenario?

8.0. Surface Water – water and sediment quality

8.1. Summary

The PER states that 'monitoring to date has not shown any detectable downstream metal effects from the existing mine'. This bland and simplistic assurance by the company can not be accepted. Downstream monitoring of heavy metals, such as lead, zinc, manganese, copper and cadmium, in the river and coastal area has been insufficient. As has been pointed out previously by ECNT, there have been no studies of potential mine-related contamination in the Sir Edward Pellew Islands, apart from at a couple of sites on West Island around Bing Bong Port. There have been no systematic studies of contamination in sediments in the freshwater reaches of the McArthur River. Only two days of sediment sampling in ten years has taken place in the McArthur River delta near the coast.

Water quality around the existing minesite has shown that there are already elevated levels of zinc in Barney Creek that can likely be attributed in part to contamination from mining wastes. There have also been elevated levels of sulfates detected in Surprise Creek and the McArthur River downstream of the mine, probably caused by previous leakage from the existing tailings dam. The EPA Program concluded in its assessment report on the EIS that there was 'already probable impact to water quality resulting from mining activity', but that insufficient data had been collected in the McArthur River catchment to fully assess the mine's contribution to this.

8.2.1. Existing water quality

ECNT also requests that the EPA Program seek independent advice on whether the Hardness Modified Trigger Values that have been adopted in the Water Quality Assessment (App. C) are appropriate and accurate as they effectively give MRM much greater leeway to pollute the McArthur River system.

Why is no Barney Creek data for filtered metals, including zinc concentrations, provided for 2005 – see for instance Fig. 2.7 in App. C? In Fig 2.7., 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.

8.2.3. Metals transport risk assessment and mitigation

It is not clear why the ANZECC livestock drinking water guidelines are referred to in relation to the runoff from the NAF section of the Overburden Emplacement Facility.

It can be expected that runoff from the external face of the flood protection bund will be discharged from overflowing sediment ponds via spillways two or three times during the 25-year life of the mine.

8.4. NAF runoff monitoring

Why does the proposed water monitoring program for the NAF sediment ponds not include testing for selenium? The geochemical testing of Upper Pyritic Shale showed that Selenium levels were above applied guideline values (Table 6.1). ECNT acknowledges that Upper Pyritic Shale is not proposed to be used on the external faces of the OEF, flood protection bund or the TSF, but nevertheless the lack of selenium monitoring seems like an oversight.

8.5. Sediment monitoring data

ECNT notes that MRM has adopted the ISQG-High ANZECC sediment quality guideline values rather than ISQG-Low values. Whilst the sediment sample data provided for lead, zinc and copper would still be below the ISQG-Low values, there is a question mark over cadmium as the ISQG-Low value is 1.5 mg/kg. Three sediment samples in 1994-95 appear to be somewhere around this trigger value. 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.

We also refer the EPA Program to App. 1 to this submission, which discusses the McArthur River Sediment Study 2003. This raises questions that have yet to be answered about the high levels of manganese in sediments in one downstream section of the river.

8.6. TSF discharge regime

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. Why, for instance, is the the criteria for an uncontrolled discharge from the OEF PAF pond 1 in 100 years and not the more stringent 1 in 500 years? MRM would certainly be culpable if such an event were to occur. The following statement by MRM would have to be one of the most opaque that ECNT has ever come across in EIS/PER reports:

“This recognises that it is neither possible nor practical to estimate and contain all implausible, but possible, extreme probable maximum rainfall that could cause uncontrolled discharge.”

The analogy then used about a teaspoon of sugar in an olympic swimming pool once every 500 years is both inappropriate and unprofessional when assessing the risk of heavy metal contamination from an uncontrolled discharge.

8.7. Marine monitoring program

8.7.1. Bing Bong

The PER states that the maximum levels of cadmium and lead in molluscs near Bing Bong have remained less than the Australia NZ Food Standard. The high zinc and copper levels in molluscs west of Bing Bong channel (Cu – up to 19 mg/kg wet wt; Zn up to 99.2 mg/kg wet wt) are of considerable concern. Whilst there is apparently no Australian Food Standard to compare these levels to, ECNT notes that a Chilean study on metals in molluscs (De Gregori et al 1996) found that:

“There were several sites where the metal concentrations in molluscs approached or exceeded the criteria levels for Cd, Cu and Zn in shellfish products: 1, 10 and

50 ppm ww respectively, which are regarded as safe levels for human consumption”.

The statement that metal levels are below what would be considered to have an impact on migratory wader birds is simply unsubstantiated.

8.7.2. McArthur River Estuary and Sir Edward Pellew Islands

The proposed two years of sampling in the river downstream, at points based on the 2003 study, is inadequate. The PER says the two years of monitoring will follow the commencement of the open cut, so presumably one of those years will be 2007 and include the construction period for the McArthur River diversion channel. This will not provide sufficient data to inform the public and Traditional Owners about downstream pollution issues.

9.0. Surface Water – flood protection bund

9.2.3. Construction program

Why is there still equivocation in the PER as to whether the flood protection bund would be constructed to the final arrangement during 2006?

9.2.4. Design considerations

The hydraulic modelling for Barney Creek presented in Appendix F.2. shows that in a 100-year flood (assuming concurrent flow in the McArthur River) the flood level would reach almost 40m AHD. Would the flood protection bund be high enough to prevent overtopping in such an event? ECNT also wonders why no data is provided for a 500-year flood in the Barney Creek diversion channel assuming concurrent flow in the McArthur River.

Why is one the Factors of Safety - for the Inner (downstream) face of Initial Construction and design flood event (500-year ARI) – so close to the minimum required (see Table 9.1)?

ECNT has a couple of questions about the presentation of the two-dimensional hydraulic modelling of the 500-year flood event undertaken by KBR (depicted in Fig. 9.2. and in their Hydraulic Design Report, App. B). Apart from the 500-year event modelling, why does the model extent not include all of the Tailings Storage Facility? What are the risks of another tailings dam breach during smaller flood events, as occurred in 2001?

10.0. Groundwater

10.3. Potential impacts from extension of no-flow period in McArthur River

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. The PER asserts that all migratory aquatic fauna, including the Freshwater sawfish, will already be established in more permanent refuge pools at the time of flow reductions. Presumably this must include Djirrinmini Waterhole, which will suffer the effects of groundwater drawdown during the life of the mine. 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.

10.5.2. Baseline and annual riparian vegetation surveys

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.

11.0. Biology

11.2.2. Freshwater sawfish

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.

The PER says that from a regional perspective, the upper reaches of the McArthur River may be described as marginal habitat for the Freshwater sawfish in comparison to other Gulf rivers, such as the Roper River. Appendix L also says, however, that the species generally has only a low abundance within each system and that numbers in the Gulf have been declining. It also points out that rivers of the Gulf of Carpentaria, and that includes the McArthur, represent *important refuge habitat* for the species in that region, particularly it seems for juveniles. The significance of Djirrinmini Waterhole as a possible resting pool for migrating sawfish is also downplayed in the Main Report. Appendix L points out that the significance of this pool as a dry season refuge needs to be confirmed by subsequent sampling. Again, ECNT maintains that this sampling must be completed before any approvals are considered for the open cut. Overall, it appears to ECNT that the material presented in the Main Report has been purposely selected to minimise the importance of the McArthur River as sawfish habitat. 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 fact that an undescribed species of eleotrid (gudgeon) was recorded downstream of the mine during the fish survey (see App. L, p5) further highlights the lack of knowledge about the aquatic values of this river, as well as the loss of biodiversity that could result from the proposed mine.

11.2.4. Proposed aquatic monitoring program

More information is required about the criteria for assessing the three options for monitoring fish passage, including sawfish passage, through the diversion channel. There is no information provided about which of the three options described in the PER is the more practical in terms of logistics, the respective costs of the three options and what resources MRM/Xstrata will allocate to the monitoring program. It is therefore impossible to ascertain whether the monitoring program will be adequate.

11.3. White-Browed Robin

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 (see Table 1 in App. J). This is not a lot of observations, especially if it is considered that impacts on the Glyde River are no longer relevant to the mine project. 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 suggestion in the PER that the bird is able to move across areas of unsuitable habitat is largely speculative. ECNT therefore must treat with scepticism claims in the PER that no significant impacts on the White-Browed Robin, or for that matter other riparian birds such as the Purple-crowned Fairy-wren, will occur.

11.4.2. Current monitoring program at Bing Bong

The PER says that there was an unexplained increase in copper concentrations in oysters from Rocky Reef in 2005. Since this information did not appear in the EIS, some additional detail should have been provided, although ECNT notes that summarised results of the 2005 marine monitoring program are on MRM's website. This particular result at Rocky Reef should be further investigated prior to any consideration of approval.

11.4.4. Proposed management and monitoring program

It seems strange to ECNT that an initial survey of migratory birds in the Bing Bong and Port McArthur River mouth areas is proposed. One would have thought that this would have been carried out long ago given the wide ranging public and Aboriginal concerns about heavy metal pollution from operations at Bing Bong. It is already clear that significant numbers of migratory birds live in the area – see Chatto (2005). MRM should be committing to the second stage of the monitoring program – the monitoring of food species – not making it contingent upon the outcome of the initial bird survey.

13.0. Social Impact

ECNT has already made its views known to the NT Government regarding the failure of the PER Guidelines to require MRM to outline the social and economic costs of the open cut proposal (letter to Min. Scrymgour, 22 June 2006 included as App. 3 to this submission). We still consider this a major deficiency in the PER process. We have also raised concerns about the overall economic costs/benefits of the mine, including the lack of mineral royalty payments by MRM to the NT Government, in correspondence to the NT Treasurer (5 April 2006) – attached as App. 2 to this submission.

13.1.2. Regional economic and social development

MRM says that its ultimate objective is to ensure that following mine closure, the communities have been strengthened and their capacity built to the extent that they will flourish independently of the mining operation. However, the communities in the region are mostly operating independently of the mining operation already. Obviously there are linkages between the mine and nearby local communities, but compared to other mines in the Territory such as Ranger, these are nowhere near as significant at McArthur River Mine due to it being a fly-in/fly-out operation coupled with the lack of royalty payments to Aboriginal people.

MRM has set a target of 20% Aboriginal representation in the operational workforce, but does not stipulate over what timeframe this target is intended to be met.

13.2.3. Challenges and opportunities

Perhaps this section should have been titled 'Challenges and lost opportunities' given the failure of MRM to live up to its previous promises to the local community. In Table 13.1. under the heading of 'Trust' MRM still maintains that the lack of trust amongst some members of the community is due to a 'perception' of 'broken promises' by the mine. It is more than a simply a perception, however, as has been previously outlined in a submission on the Draft EIS by the Mabunji Aboriginal Resource Association. A number of MRM commitments dating back to the early 1990s have failed to materialise, including a dialysis machine, a haul facility for the trucks in Borroloola, a laundry, and access to Home Creek (Mabunji Aboriginal Resource Assoc. pers. comm.).

13.2.4. Stakeholders

Table 13.2 lists various stakeholders in the community, but does not specifically refer to Aboriginal Traditional Owners or the Northern Land Council. If this is an example of how MRM views its relationships with the local community then there is something seriously wrong with the community engagement approach being put forward by the company. 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.

We also note that ECNT and other environmental non-government organisations are not included in the list of community organisation stakeholders.

13.2.9. Active participation

In May 2006 ECNT received correspondence from the Borrooloola Traditional Owner Groups outlining serious misgivings about MRM's Community Reference Group and the process by which it was being established. The EPA Program must listen closely to the concerns expressed by the Borrooloola Traditional Owner Groups, and not accept the 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.

13.2.10. Evaluation techniques

MRM proposes that to ensure the community engagement strategy is meeting its objectives, a survey amongst *selected* community members will be undertaken. Who will select the community members to participate in the survey – surely not MRM given its currently fractious relations with large sections of the local community? This survey could very easily produce biased results if not carried out by an independent monitoring organisation.

13.3.3. MRM economic impacts – Northern Territory suppliers

ECNT notes from Table 13.7 that 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 again emphasises the relative lack of dependence of the local community on the mine.

13.3.6. Management of economic and social development

ECNT notes that an agreement has been entered into with MAWA for delivery of MRM's Corporate Social Involvement Program. It is not clear how MRM and MAWA will ensure effective community and language group representation in the program. General statements to the effect that partnerships will be pursued with organisations like Mabunji do little to alleviate our concerns here.

ECNT welcomes the belated acknowledgement by MRM in Table 13.2 that there is interest among the people of the Sir Edward Pellew Islands (namely the Yanyuwa, though again MRM does not use language group names) in developing an ecotourism operation. In ECNT's view such an operation would be best served by declaring a marine park in the region, as proposed

by the Yanyuwa and the Mabunji Aboriginal Resource Association, and not proceeding with the river diversion for the open cut mine.

14.0. EPBC Act matters

ECNT has sent correspondence (30 June 2006) to Min. Scrymgour (cc. Commonwealth Minister for the Environment and Heritage) – included in App. 4 to this submission - outlining our concerns over the way that EPBC Act matters have been handled for the PER process. In particular, we are concerned that the bilateral agreement does not apply to the PER and that the amended mine proposal is being assessed only under NT legislation. This has meant that no PER Supplement is required of the proponent outlining its responses to public submissions, thereby reducing public accountability and transparency in the assessment and approvals process.

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.

References

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Appendices

Correspondence from ECNT to the NT Government on various matters relating to the McArthur River Open Cut Project.

Appendix 1. Email and attachment sent to Hon. Marion Scrymgour and the EPA Program (17 February 2006) on the McArthur River Mine Sediment Study.

Attention. Hon. Marion Scrymgour, Minister for Natural Resources, Environment and Heritage

Dear Minister

Please find below a summation of ECNT's concerns regarding the findings, and reportage in the EIS process, of the McArthur River Sediment Study 2003. I apologise for sending this to you so late in the assessment process for the McArthur River Open Cut Project, but we have only just uncovered this report, which is difficult to access publicly.

Kind Regards

Gary

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**McArthur River Sediment Study 2003:
ECNT has new concerns about heavy metals in the McArthur River**

The Environment Centre NT has recently uncovered a copy of the McArthur River Sediment Study carried out for McArthur River Mining Pty Ltd three years ago (Munksgaard and Parry 2003). We now have some new concerns about the levels of heavy metals in one section of the McArthur River downstream of the mine, as well as the way the findings of this particular study have been used during the environmental assessment process for the McArthur River Mine open cut project.

Please note that the McArthur River Sediment study has not been made available publicly by the company, or, as far as we know, to Aboriginal Traditional Owners in the Borroloola and Sir Edward Pellew Islands region.

Sediment sampling was carried out by researchers from Northern Territory University over two days on 23 and 24 November 2002. In total, 116 surface grab and core samples were taken from Davies Channel, Carrington Channel and McArthur Channel in the McArthur River delta and in the stretch of river from Borroloola to Batten Point. This has been the only sediment study in this part of the river system since the mid-1970s (see McArthur River Project Draft EIS 1992) and the only study in the current life of the mine.

Sediments in the 10 samples taken from the river section from Borroloola to Batten Point on average had higher Manganese (Mn), Cobalt (Co), Zinc (Zn) and Cadmium (Cd) levels than the deltaic channel sediment (p6). Sediment in this section, the report says, is mostly sand-dominated with major deposits having been formed in the floods of early 2001 (p3).

Manganese levels were particularly high (an average of 1950 ppm dry weight), almost 8 times the average recorded in the deltaic channels. There was no discussion in the report, however, as to what might have caused these high readings. Manganese levels in this river section ranged from 302 ppm to 6760 ppm. In contrast the average Manganese reading for a comparable Gulf river, the Norman River, was 553 ppm.

A recent phone conversation (16 Feb 2006) with one of the authors, Prof. David Parry, confirmed that it remains unknown what had caused the higher levels of manganese in sediments from this section of the river. He did not rule out that it could be mine-related (though he suspected not because, he said, there was no mine-related lead signature detected in these same sediments).

Nevertheless, the Environment Centre NT believes this issue warrants further investigation. The McArthur River Mine Open Cut Project Draft EIS (August 2005) says that the concentration of Manganese in the tailings is higher than the recommended ANZECC environmental investigation level for this element. Tailings tests indicated that Manganese is relatively soluble at neutral pH and would be expected to remain in solution and potentially impact upon the quality of seepage from tailings materials (p 7-17 to 7-18).

The tailings dam has been leaking into Surprise Creek since 1997. The creek flows into the McArthur River. Only in the last couple of years has the company placed a geopolymer barrier along the breach in order to contain the seepage.

Moreover, during the floods of February 2001, MRM released 40 million litres of water per day from its tailings return runoff water dam, after a breach occurred in the dam wall. The released water contained elevated levels of zinc and lead, but the company argued that no solids or tailings were involved (MRM Media Release 16 Feb 2001).

Of most concern to ECNT is the fact that Munksgaard and Parry's findings about higher levels of manganese and other metals in McArthur River sediments between Borrooloola and Batten Point were not mentioned in the company's Draft EIS or EIS Supplement. The McArthur River Sediment Study 2003 is briefly summarised in the Supplement, but this one significant finding was omitted altogether (see p 15-22 of the EIS Supplement).

Whilst ECNT is not claiming that the higher levels of manganese are definitely mine-related, this possibility can not be ruled out until further studies are conducted. The very selective reportage of the 2003 McArthur River Sediment study results in the EIS Supplement is a major cause for concern. It reiterates to us that there has been an inadequate level of monitoring of heavy metals in the river to date. It also highlights why a much greater level of publicly accountable reporting is required from the mining company.

In light of this information, and ongoing concern from local communities, ECNT recommends that the NT Government defer any approval for the open cut project pending a full independent investigation of downstream impacts of the mine to date, and the risks associated with the proposed open cut mine.

Reference

Munksgaard, N and Parry, D. 2003. *McArthur River Sediment Study*, for McArthur River Mining Pty Ltd, Environmental Analytical Chemistry Unit, Northern Territory University, Feb 2003.

Appendix 2. Letter sent to Hon. Syd Stirling on the economic costs associated with the McArthur River Mine (5 April 2006).

Hon. Syd Stirling MLA
Treasurer
GPO Box 3146
Darwin NT 0801

5 April 2006

Re. Economic costs associated with the McArthur River Mine

Dear Minister

The Environment Centre NT (ECNT) would like to congratulate the NT Government for the rigorous environmental assessment process conducted thus far for the McArthur River Mine Open Cut Project. As you would know, ECNT is opposed to the proposal to divert the river in order to mine the bed of the existing river channel. We also have major concerns about many other aspects of the mine proposal, not least of which is the flawed rehabilitation plan that will see the mine being left as an open pit in the existing river channel.

There are a number of economic costs associated with the McArthur River Mine that ECNT believes it is in the public interest to seek further information on.

1. It was reported in the *NT News* (28 February 2006) that McArthur River Mine, owned by Xstrata, had not paid mineral royalties to the NT Government in over a decade of operations. The mine is obliged to pay 18 per cent of its profits, but MRM claims not to have made any profit since it opened. It was reported that the cost of transporting the ore to smelters overseas was currently being passed on to the mine by Xstrata's head office in Zug, Switzerland. MRM has an agreement with Glencore (a Swiss-based metal trading conglomerate which has a 16% stake in Xstrata) to supply 204,800 wmt per annum in 2005 and 2006 of zinc concentrate (Xstrata plc Interim Report 2005: p90).

MRM responded by saying that the mine paid millions of dollars each year in other taxes, such as payroll tax.

Q1. How much is paid annually to the NT Government by MRM in these other taxes?

Under previous owners MIM Holdings (prior to mid-2003), it appears there was a similar global shifting of costs, which made the mine unprofitable. The *MIM 2002 Annual Report* announced an operating loss of \$0.9m in 2002 for McArthur River Mine, although in 2001 an operating profit of \$15.9m (before interest, tax and foreign exchange) had been recorded. The *Annual Report* cites 'off-site realisation costs' as the reason for the low profitability:

'Both the McArthur River and Mt Isa lead-zinc mines are world competitive in terms of on-site operating costs but off-site realisation costs, mainly transport and smelting, represent up to 60% of total production costs (in the case of McArthur River) and are eliminating margins in a low price market' (p17).

Q2. Why does McArthur River Mine have to pay for the transportation and smelting costs? To ECNT this appears to be an unusual practice in the mining industry.

MIM Holdings was sending most of its lead-zinc concentrate to Europe (MIM *Annual Report 2002*, p17). MIM owned two zinc smelters in Europe at the time – Duisburg (Germany) and Avonmouth (UK) – both of which recorded substantial operating losses in 2002. 70,000 tonnes per annum of McArthur zinc concentrate – over half of the mine’s production - was being exported to the Duisburg smelter. The company sold its interest in this smelter in late 2002, partly in order to avoid environmental clean up costs (<http://www.aktienboard.com/vb/archive/index.php/t-47531.html>). Avonmouth smelter closed in March 2003.

This raises the following question: *Q3. Why was MRM helping to prop up unprofitable overseas zinc smelters for years and therefore not paying mineral royalties to the NT Government?*

2. MRM has also been receiving an energy subsidy from the NT Government since it opened. It was reported in the *NT News* (6 March 2005) that Xstrata had been seeking an electricity subsidy of up to \$100 million from the NT Government to help it build a new processing facility on-site. Power and Water responded by saying that it is already selling power to the mine at a price typically below what it is selling to everyone else. The NT Government rightly rejected the additional subsidy proposal.

Q4. How much in annual energy subsidies has MRM received from the NT Government since the mine started operating?

3. Chapter 17 of the Draft EIS (prepared by MRM) for the open cut project analyses the economic impacts of both the current underground operations and the proposed open cut (including multiplier effects) citing an unpublished input-output table for the NT produced by Prime Research and ACIL Tasman.

Q5. Can this table, which was prepared for the then Office of Territory Development, be made publicly available?

The EPA *Assessment Report* (Feb 2006, p36-38) contained an analysis of the economic impacts of the mine proposal. It also cited the ACIL Tasman study for the Office of Territory Development and noted that Gross State Product (GSP) would be an estimated 0.96% lower in the 12 month period following mine closure. This does not bear comparison with recent claims being made in the media by mine proponents that the mine contributes 4% of the Territory’s GSP.

Q6. Have there been any additional economic assessments by the NT Government of McArthur River Mine, apart from the ACIL Tasman report? If so, have they looked at all of the economic impacts of the existing and proposed mine, including the loss in mineral royalty payments over the preceeding decade, the total cost of the electricity subsidy and the rehabilitation cost risks posed by the open cut proposal? If so, ECNT requests that a copy of the study be made publicly available in the interests of transparency and informed public debate.

4. The last thing the Northern Territory needs is another Mt Todd situation where the Territory Government has been left with what may turn out to be a \$40-50 million clean up bill.

Q7. Is there a current estimate of probable NT Government liability for the long-term rehabilitation costs of the McArthur River Mine open cut should the project eventually proceed?

Once again, ECNT is appreciative of the effort being put in by the NT Government to ensure that the environmental assessment of the proposed McArthur River Mine Open Cut Project is not simply a rubber stamp process. This augurs well for the future of the Territory and will help to set it on a more environmentally sustainable development path. We trust that a similar amount of rigour is being applied to an assessment of the economic impacts of the mine proposal.

Should you require any further clarification about any of the issues or requests contained in this letter, please contact either myself or Peter Robertson (ECNT Coordinator).

Yours sincerely

Dr Gary Scott
Freshwater Campaigner

cc. Hon. Clare Martin MLA, Chief Minister
Hon. Kon Vatskalis MLA, Minister for Mines and Energy
Hon. Marion Scrymgour MLA, Minister for Natural Resources, Environment & Heritage
Hon. Elliot McAdam MLA, Minister for Local Government
Hon. Paul Henderson MLA, Minister for Business and Economic Development
Ms Barbara McCarthy MLA

Appendix 3. Letter sent to Hon. Marion Scrymgour on the failure of the PER Guidelines to address the potential economic and social costs of the mine proposal (22 June 2006).

22 June 2006

Hon. Marion Scrymgour MLA
Minister for Natural Resources, Environment & Heritage
GPO Box 3146
Darwin, NT 0801

Social and economic costs of McArthur River Mine Open Cut Project not addressed in PER Guidelines

Dear Minister

The Environment Centre NT (ECNT) would like to take this opportunity to raise with you a major concern regarding the finalised Guidelines for the McArthur River Open Cut Project Public Environmental Report. We would like to begin by saying that we were encouraged to see many of our comments on the Draft Guidelines taken on board in the final document.

However, there is one aspect in particular that remains inadequately addressed in the Guidelines. Section 12 (Social Impact) asks the proponent to describe the likely economic and social benefits and contribution of the project to the local region and its communities (including the Sir Edward Pellew Islands), but does *not* ask the proponent to describe the *social and economic costs*. ECNT made a recommendation in its submission on the Draft Guidelines that costs should be included, but this was ignored.

To not include a discussion of social and economic costs means that best-practice social impact assessment will not have taken place. ECNT refers you to the recently released discussion paper about the proposed Northern Territory EPA:

"In the context of creating an EPA, social impact assessment is mostly about understanding the distribution of benefits **and costs** – the positive and **negative** social effects - among those whose livelihoods or environments are affected by a proposed development or program. In most major developments there will be some who gain a good deal, others who suffer some losses and many who experience both gains and losses. Social impact assessment seeks to identify these costs and find ways to mitigate them or facilitate wider access to the benefits".

"In the Northern Territory in particular, social impact assessment has the potential to be a critical instrument for assessing the success of policy for regional and Indigenous development, both of which are Territory Government priorities".

"Environmental assessment that does not include careful consideration of social impacts is at best incomplete and more likely misleading, because it can provide no reliable estimate of the net benefits or costs".

From *Towards an EPA for the Northern Territory - discussion paper*, EPA NT, May 2006.

The rejected MRM Environmental Impact Statement provided only a minimalist discussion of the potential social and economic costs of the project, particularly for Aboriginal people living downstream. As you know, even the proponent has acknowledged the lack of consultation that occurred with Aboriginal people living downstream and in the Sir Edward Pellew Islands.

The Environment Centre NT therefore believes it is incumbent upon the NT Government to insist that the proponent provide a full discussion of the potential social and economic *costs* of the amended open cut proposal. The Guidelines for the Public Environmental Report should be amended accordingly, or if it is too late for that course of action, the Minister should require further information from the proponent and extend the statutory assessment period.

ECNT looks forward to your reply.

Yours sincerely

Dr Gary Scott

Freshwater Campaigner

cc. Ms Lyn Allen, Executive Director – EPA Program

Appendix 4. Letter to Hon. Marion Scrymgour detailing a number of concerns relating to the assessment and approvals process for the McArthur River Mine Open Cut Project and the test pit expansion (30 June 2006).

Hon. Marion Scrymgour
Minister for Natural Resources, Environment & Heritage
GPO Box 3146
Darwin, NT 0801

30 June 2006

Dear Minister

This letter details a number of concerns that the Environment Centre NT wishes to express in relation to the assessment and approvals process for the McArthur River Mine Open Cut project and the related test pit expansion. Furthermore the Environment Centre wishes to submit several requests that seek to address those concerns.

The Environment Centre has concerns about four aspects of the decision-making procedures following the rejection of MRM's Environmental Impact Statement by the relevant NT Ministers:

1. The decision by the Minister for Mines and Energy in April 2006 to approve the expansion of the test pit by granting a variation of the existing mine Authorisation.
2. The decision by the Minister for Natural Resources, Environment and Heritage not to require further assessment of the test pit expansion proposal under the *Environmental Assessment Act 1982* (NT).
3. The failure of relevant NT Government Ministers and agencies to refer the test pit expansion to the Commonwealth for a determination under the *Environment Protection Biodiversity Conservation Act 1999* (EPBCA) as to whether it is a controlled action.
4. The decision by the NT Government and/or Commonwealth Government to suspend the Bilateral Agreement in relation to assessment of EPBCA matters for the duration of the Public Environment Review process currently underway for the open cut project.

1. Approval of the Test Pit Expansion under the *Mining Management Act (MMA)*.

In April 2006, MRM/Xstrata Zinc applied to the Minister for Mines and Energy for a variation of its existing mine Authorisation for an expansion of its 'test pit'. An MRM/Xstrata Zinc media release states that the application for a variation sought an expansion of the test pit for the purpose of supplying international markets and the mine's ore feed requirements while the environmental assessment of the proposed full open cut mining operations was completed. The proposed size of the test pit sought under the variation would mean that the expanded pit would be in excess of twice the size of the original 6 hectare pit.

The application was referred to the EPA Program under clause 14A of the *Environmental Assessment Administrative Procedures* ("Administrative Procedures"). After receiving comments from advisory bodies, the EPA Program determined that no further formal assessment was required under clause

14A(3)(a) of the Administrative Procedures. We have been advised by EPA officers that the determination was issued on the basis that the impacts for the expansion were substantially the same as those anticipated when the variation to the Authorisation for the initial 6 hectare test pit was approved.

Somewhat inconsistently with that assumption, the EPA nevertheless recommended that the Authorisation be amended to include certain further conditions to apply to the expansion. We do not have details of those conditions.

On 19 April 2006, approximately one week after MRM/Xstrata Zinc submitted its application, the Minister for Mines and Energy issued a press release announcing the approval of the variation of the Authorisation to expand the test pit. The existing rehabilitation bond was increased from \$14 million to \$25 million.

The Environment Centre seeks responses from the NT Government to the following submissions which are made in relation to the variation to the Authorisation:

(a) the Environment Centre submits that the variation will not “have the effect of improving the protection of the safety or health of persons or the environment on the mining site to which the Authorisation relates” as required under s 38(3) MMA. The Environment Centre submits that a doubling in size of the test pit, involving further native vegetation clearing and the production of additional mine tailings and overburden, will not improve the protection of the environment;

(b) the Environment Centre submits that, as the variation cannot fulfil the requirement of 38(3) MMA, a new Authorisation, under s 36 is required. Furthermore the Environment Centre submits that, in the above outlined circumstances, the change from an underground mining operation to an open pit mining operation requires a new Authorisation and mining management plan and not simply a variation of an existing Authorisation and mining management plan;

(c) the Environment Centre submits that MRM/Xstrata Zinc are seeking to achieve open cut mining in circumvention of the original application for such made in 2003, and which was subsequently withdrawn. The Environment Centre seeks to question whether the initial test pit approval in 2005 was also a variation of the existing Authorisation and would therefore also likely be in contravention of s 38(3) MMA;

(d) the Environment Centre also questions whether the conditions imposed through the amendment to the Authorisation for the expansion of the test pit properly address the likely impacts of the proposal.

The Environment Centre applied for an internal merits-based review of this decision, which has been subsequently rejected on the grounds that the application fell outside the 28-day limitation period. The Environment Centre submits that the decision to approve the test pit expansion was taken in undue haste and is in contravention of Section 38(3) MMA, and therefore unlawful.

2. Decision that no further assessment was required under the *Environmental Assessment Act*.

As stated above, the test pit expansion proposal was referred to the EPA Program for assessment. Under the *Environmental Assessment Act 1982* (NT) the Northern Territory Minister for Natural Resources, the Environment and Heritage has the discretionary power to determine the level of environmental assessment that will be required for a variation to an Authorisation. The Minister must

determine whether further assessment is required in accordance with the criteria stipulated in the *Environmental Assessment Act 1982* (NT) and the Administrative Procedures. These include the following:

- (a) to re-consider the environmental significance (clause 14A); and
- (b) to ensure, to the greatest extent practicable, that each matter affecting the environment which is, in the opinion of the Minister, a matter which could reasonably be considered to be capable of having a significant effect on the environment, is fully examined and taken into account: s.4 *Environmental Assessment Act 1982* (NT).

The Environment Centre believes that, given the fact that the variation to the Authorisation constitutes a fundamental reconstitution of the purpose of the pit, namely from the sourcing of test samples to the commercial operation of open cut mining, further assessment of the test pit expansion was required.

The attached correspondence from the Minister to the Environment Centre (dated 19 June 2006) states that the environmental matters associated with the expansion of the test pit have been examined through the previous Environmental Impact Statement, and therefore do not require a level of further environmental assessment or public consultation. The Environment Centre submits that the test pit expansion (entailing a total test pit size of 12.5 ha and 64 m depth) is of sufficient similarity to Stage 2 of the operational open cut proposal (which proposed a pit of 11 ha and 65 m depth), as outlined in the Draft Environmental Impact Statement (4.2.2. Pit excavation), to raise serious questions as to whether the rapid approval of the expansion in the absence of further assessment or public consultation is in accordance with the intent of the governing legislation.

This is especially the case when one considers that by implication the EPA Program's Assessment Report 51, in failing to stipulate otherwise, makes clear that Stage 2 of the operational pit cannot proceed without significant environmental impact. It could well be argued that given the EPA Program's and the Minister's concerns as to the impacts of the original proposal for open cut mining – a number of which would almost certainly pertain to the expanded test pit proposal - further formal assessment of the impacts of the test pit expansion ought to have been required.

The Environment Centre notes that neither it, nor other members of the public, are in a position to make an assessment or comment as to whether the proposal may contain significant environmental impact outside of a PER or EIS process. The consequence of the approval of the test pit expansion in the absence of such a process may be that an action involving significant environmental impact has been approved without formal assessment or a public consultation process. Importantly, the Environment Centre also notes that, in the absence of public access to the conditions recommended by the EPA Program, as would normally be available through the PER or EIS assessment process, the public cannot have confidence that the conditions requested adequately address any of the potential impacts of the test pit expansion.

3. Non-referral of the test pit expansion proposal by the NT Government to the Commonwealth for a determination under EPBCA.

It appears that the application for a variation of the Authorisation to allow for the expansion of the test pit was not referred to the Commonwealth Department of Environment and Heritage under the EPBCA, either by the relevant Territory Minister or by MRM/Xstrata Zinc, for the purpose of determining whether the action is a controlled action under the EPBCA. The Commonwealth Minister for Environment and

Heritage did not require the referral of the action, though we understand that relevant Commonwealth officers were aware of the application.

Given that there are potentially significant implications arising from the test pit expansion for the EPBC-listed migratory species, the White-browed robin, and possibly also for the EPBC-listed threatened species, the Freshwater sawfish, the Environment Centre believes that this project should have been referred. We note that the original, smaller test pit proposal was referred by MRM/Xstrata Zinc for a determination under the EPBCA in August 2005.

The Environment Centre has therefore requested a statement of reasons for the non-referral from both the NT Minister for Mines and Energy and the Commonwealth Minister for Environment and Heritage.

4. Decision not to require a Public Environment Report Supplement.

The Environment Centre has recently been informed that:

“The Northern Territory Minister for Natural Resources, Environment and Heritage completed her assessment under the bilateral agreement. The Australian Government Department of the Environment and Heritage (DEH) have not yet concluded their part of the bilateral process and are waiting for further information from the proponent to make their decision on the expansion proposal. As the current PER is not being assessed under the bilateral agreement, a Supplement is not required under the Environmental Assessment Administrative Procedures” (email from Rod Johnson, EPA Program, 16 June 2006).

In your correspondence dated 19 June 2006 you also confirmed that the amended proposal is not being assessed under the Bilateral Agreement. The Environment Centre is very concerned that the current PER, required in response to a notice of an amended proposal under clause 14A Administrative Procedures, was not referred to the Commonwealth Minister for Environment and Heritage as a potential controlled action under s 69 EPBCA and has not been deemed to be a controlled action. The most salient consequence of this decision is that, although the proponent has submitted a reformulated action (which potentially entails environmental impacts that differ in a significant degree to the original proposal), this action will not be subject to assessment under the Modified Procedures. The completion of a Supplement to the PER (which of course requires the proponent to respond to any public comment on the PER) will not therefore be required. It is the view of the Environment Centre that a reformulated proposal submitted under cl 14A of the Administrative Procedures would constitute a “proposal by a person to take an action” that is separate from, and not covered by, the original proposal.

The Environment Centre notes that the Guidelines for the PER include the need for the proponent to address EPBCA matters (Section 13), and that the potential impacts on the Freshwater sawfish, the White-browed robin and other migratory bird species are required to be addressed in Section 10 (Biology) of the PER, which would, it would seem, lend weight to the argument that the amended proposal is in fact a controlled action.

Who is going to conduct the assessment of EPBCA matters, given that no proper assessment has been done to date? The lack of adequate assessment is demonstrated by the following:

- The EPA Program’s Assessment Report 51 has been provided to the Commonwealth with a statement under s 130(1B) EPBCA that “the certain and likely impacts of the action on things *other than matters protected by the controlling provisions for the action* have been assessed to the greatest extent practicable”.

- Assessment Report 51 concludes with respect to the EPBC-listed threatened species, the Freshwater sawfish:

“In the absence of baseline surveys, and proposed management, monitoring and mitigation strategies, an adequate assessment of the potential impacts of the Open Cut project on the Freshwater Sawfish cannot be made at this point in time” (p31).

- Nor did the EPA Program accept claims in the Environmental Impact Statement that the White-browed robin, a Commonwealth-listed migratory species, would not be significantly affected by the open cut project (at p33).

The Environment Centre is therefore very concerned that the PER environmental assessment process is being unreasonably truncated by the decision not to refer the amended proposal to the Commonwealth Minister for Environment and Heritage and that it could lead to an outcome detrimental to these particular species and to the environment generally.

The Environment Centre wishes to submit that the lack of a requirement to produce a Supplement to the PER severely reduces openness and accountability in the decision-making process. The public will not have an opportunity to review MRM/Xstrata Zinc’s responses to public submissions, or any commitments arising from them. This failure is compounded by the fact that any subsequent Mining Management Plan that incorporates such commitments is not publicly accessible.

The Environment Centre considers that a Supplement is essential to ensure that the proponent addresses the issues and concerns raised during the public review period. Furthermore the Environment Centre stresses that a PER Supplement is required in order to uphold the *credibility and integrity* of the McArthur River Mine Open Cut Project environmental assessment process, particularly given the legal shortcomings in the test pit expansion approvals process, as detailed in this letter. The Environment Centre therefore requests that a Supplement be reinstated.

Conclusion

In summation the Environment Centre respectfully requests the following:

- (a) With reference to the Administrative Procedures clause 15(1), that the Northern Territory Minister for Natural Resources, the Environment and Heritage review and assess, or cause to be reviewed and assessed, the environmental aspects of the expanded test pit. This review should be done in consultation with advisory bodies and include the effectiveness of the safeguards or standards for the protection of the environment adopted or applied in respect of the test pit, as well as the accuracy of the forecasts of the environmental effects of the proposal;
- (b) Given the factors outlined in this letter, a statement of reasons from the Minister for Natural Resources, the Environment and Heritage as to why the recent notice of intent, which the current PER is being prepared in response to, has not been referred by the Northern Territory Government to the Commonwealth Minister for Environment and Heritage under s 69 EPBCA;
- (c) The Northern Territory Minister for Natural Resources, the Environment and Heritage refer the proposal to the Commonwealth Minister for Environment and Heritage for a decision whether

or not the action is a controlled action under s 69 EPBCA. The Commonwealth Minister, would then be required to determine whether a PER Supplement is to be completed by the proponent.

The Environment Centre maintains that the flawed decisions outlined in this letter must be addressed and corrected before they lead to seriously flawed environmental outcomes and a lack of public confidence in the assessment process. Indeed it is submitted that due to the nature of the project, (both its size, likely impacts and level of public concern over those impacts) the appropriate level of environmental assessment is a public inquiry under s 10 of the *Environmental Assessment Act 1982* (NT).

Yours sincerely

Dr Gary Scott
Freshwater Campaigner

cc. Hon. Clare Martin, Chief Minister, Northern Territory Government

cc. Hon. Kon Vatskalis, Minister for Mines and Energy, Northern Territory Government.

cc. Ms Lyn Allen, Executive Director, EPA Program, Northern Territory Government

cc. Hon. Sen. Ian Campbell, Minister for Environment and Heritage, Commonwealth Government.