

The Honourable Willem Westra van Holthe  
Minister for Mines and Energy  
GPO Box 3146  
Darwin NT 0801

Tel +61 8 8975 8179  
Fax +61 7 8975 8170  
Web [www.mcarthurrivermine.com.au](http://www.mcarthurrivermine.com.au)

Address McArthur River Mining  
34a Bishop Street  
STUART PARK NT 0820

PO Box 36821  
WINNELLIE NT 0821

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Dear Minister

### Independent Monitor's Audit Report of the McArthur River Mine for the 2011 Operational Period.

For the third year in succession, the Independent Monitor has identified no issues requiring urgent investigation and has complimented McArthur River Mine (MRM) on the evidence of improved environmental management and procedural compliance.

Results to date reflect MRM's commitment to environmental protection and continuous improvement and reflect our investment in both operational and capital resources to not only comply but to improve systems on site.

The Independent Monitor observed many improvements within the last audit period and noted a proactive effort in improving environmental performance and monitoring in a number of areas. Our efforts to follow up on previous recommendations were also noted.

We also note that the Independent Monitor considers the following monitoring programs to be appropriate:

- surface water monitoring
- fluvial sediment monitoring
- dust monitoring at the mine site
- structural monitoring of the river diversions
- improved collation of monitoring and reporting programs.

We have thoroughly reviewed the report for the 2011 operational period and submit the following comments on the issues identified as further information and changes that have occurred since the audit took place in May this year.

#### Non-conformances identified

As identified, MRM is currently being prosecuted for an incident occurring in May 2011, which resulted in the loss of approximately 28,000 litres of diesel. This has been noted as a non-conformance as no environmental fines, penalties or prosecutions was a target and objective for MRM within the Sustainable Development Annual Plan and hence written in the Sustainable Development Mining Management Plan (SDMMP) within the goals for the reporting period.

To date no outcome has been finalised with the prosecution however MRM recently provided an update of monitoring and remediation to your Department within the latest SDMMP. As per previous reports submitted on this matter, monitoring and weekly reporting will continue to occur.

The second non-conformance relates to the sub-aqueous deposition of tailings in the tailings storage facility, rather than sub-aerial deposition. While this was a commitment within the SDMMP, it should be noted that this was only occurring due to the large amounts of water within cell two and that the ultimate aim of the activity was to form a beach on each wall and hence displace water to central locations within the dam to alleviate any potential seepage issues. As per previous comments made by the Independent Monitor, the consideration of pumping this water into the Water Management Dam (WMD) had been mentioned however, this was not seen to be a viable option due to clean water being in the WMD. Adding water from cell two would have only increased contaminated water inventories and reduced the possibility of any potential controlled discharges under MRM's current discharge licence.

Water within cell two and WMD has dramatically decreased since the Independent Monitor's visit in May 2012 through several actions taken by MRM including:

- increasing tailings thickness
- recycling water from cell two back into the processing circuit
- increasing the surface area for evaporation in the WMD through pumping water into dry areas;
- utilising water from the WMD for dust suppression and clay conditioning for the cell two lift.

For ongoing management, MRM was given approval to complete a lift on cell two of the tailings dam, increasing the capacity to hold tailings, and to date, good progress has been made. The placement of rock has been completed along with several lifts of clay. Work is expected to be completed by mid January 2013, ensuring a greater safety factor of freeboard for this and future wet seasons, allowing tailings placement up until 2015.

### Section 7.3.3

#### Annual assessment of SDMMP and past SDWMPs

On page 23 of the report, the Independent Monitor considers the assessment and approval process of Water Management Plans (WMPs) and MMPs to be appropriate. MRM does not agree with this and would like to make comment on approval timeframes. Over the past three years, the approval time of both plans has been excessive, and in some cases, approval has only been granted at the conclusion of the planned year. We have also seen the level of detail required by the plans become increasingly excessive, despite our track record of no regulatory breaches. This is depicted in the timetable within the audit report. A date for the approval of the 2010/2011 MMP was not mentioned and comments to MRM only came four months after the initial submission. This was similar for the 2011/2012 MMP. As noted in the draft report, it was submitted in November 2011 however approval for this plan didn't come until 14 August 2012. While we acknowledge we took up to five weeks to provide additional information for one of the plans, acceptance of a plan nine months later doesn't reflect an appropriate process, as suggested by the audit team.

### Section 9.1.3

#### Surface water monitoring recommendations

Overall, the Independent Monitor concurs with the discussion and presentation of natural surface and artificial water monitoring provided in the SDWMP. The following are observations and recommendations arising from the review of the 2011/2012 SDWMP.

Aspects of the Quality Assurance/Quality Control reporting should include comparison of field to laboratory results, in particular Total Dissolved Solids (TDS) and Electrical Conductivity (EC) Ratio. MRM agrees with this and as a result, linear regression analysis for the relationship between TDS and EC for surface water monitoring sites representative of the McArthur River and major tributaries was presented in the MRM SDMMP2012-2013 submitted 2 November 2012.

It was noted that MRM should compare both field and laboratory pH relative percentage differences and act on results with anything greater than 10% being the acceptable level. For future interpretation and monitoring results, MRM will enhance this component to ensure sampling methodology is adhered to, however it should be noted that within the Minerals Advisory Note # AA7-025, it is stated that samples that return a relative difference of equal to or greater than 20% should be investigated to identify problems with sampling methodology or training.

### Section 9.2.5

#### Review of Groundwater Quality Monitoring

In Section 6.3.5.3 of the 2011/2012 WMP it lists a criteria for arsenic of 500µg/L based on NEPC (1999), which in turn is based on ANZECC (1992) for livestock drinking quality. It is suggested by the Independent Monitor that this guideline value should be replaced by more relevant values of freshwater ecosystems based on ANZECC/ARMCANZ (2000) of 24 µg/L or human contact based on NHMRC.

MRM does not agree with the suggestion to use freshwater ecosystem or human contact guidelines as the most relevant for the following reasons:

- The MRM mineral lease is located within a pastoral lease and pastoral region. The primary purpose for groundwater is for livestock drinking.
- The nearest community is Borroloola located approximately 60 kilometres from the mine site. Weekly surface water testing reports nil exceedance of arsenic at the Borroloola monitoring site. Arsenic concentrations at Borroloola during the 2011-2012 reporting period ranged between 0.30 µg/L to a maximum limit of 1.75 µg/L. The median value reported from 51 samples was 0.85 µg/L.
- Groundwater used for MRM camp facilities and operations undergoes a reverse osmosis process and potable waters are regularly monitored. Nil exceedance of arsenic concentrations was reported during 2011-2012.

### Section 9.5.2 Fluvial sediment reporting

In reporting on elevated concentrations above the mine, the Independent Monitor has commented that our explanation of elevated concentrations doesn't constitute sufficient grounds to make such a statement. It needs to be noted that historical records prior to the open cut project (EIS 2005) identified levels of naturally occurring lead and zinc in the location, therefore such records constitute acceptable background information.

### Section 9.7.3 Flora monitoring

The Independent Monitor suggested that additional analogue sites are incorporated into the Barney Creek vegetation monitoring program. During 2012 two additional sites were established and data was collected in August 2012 under a revised rechanneled vegetation monitoring program.

It was also noted by the Independent Monitor that heavy metal analysis should be conducted on vegetation within Barney Creek and McArthur River. MRM believes that the presence of heavy metals is assessed in various existing monitoring programs including dust, soil, water and fluvial sediment and is therefore not warranted. The inclusion of canopy density in the revised rehabilitation procedure is an accepted technique for early indication of upper/mid-stratum stress, strengthening the argument against heavy metal analysis in vegetation.

### Section 9.7.5 Bing Bong flora monitoring

The Independent Monitor stated that monitoring of vegetation surrounding the dredge spoil drain be completed in order to monitor the possibility of dieback and ongoing efforts of rehabilitation. MRM has commissioned consultancy services to undertake vegetation community characterisation and condition around the dredge spoil which is to commence this month.

### Section 9.7.7 Marine monitoring

The report highlighted that additional control sites were required to be established for the annual seagrass survey. The most recent annual seagrass survey was conducted in October 2012 and several more control sites for comparison purposes were added to the locations monitored.

For any further information about the comments made in relation to the 2011 operational period Independent Monitor Report please contact Gary Taylor, Health, Safety, Environment and Community Manager on 0447 041 376 or via email on [gtaylor2@xstratazinc.com.au](mailto:gtaylor2@xstratazinc.com.au).

Yours sincerely



Etienne Moller  
General Manager  
McArthur River Mine