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Mr David Kitto  
Executive Director – Resource Assessments and Business Systems  
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Dear Mr Kitto

### **Tailings Dam Liner Policy**

I refer to the ongoing discussions between the Environment Protection Authority (EPA) and the Department of Planning and Environment (DPE) regarding the EPA's policy in relation to standards for the lining of storage facilities for contaminated tailings and water. As you know, to date the EPA's advice on tailing storage facilities (TSF) has been based on the requirements set out in the EPA's *Environmental Guidelines: Solid Waste Landfills* which aim to "contain leachate and prevent the contamination of surface water and groundwater over the life of the landfill". The guidelines set out criteria requiring a liner of with an in situ hydraulic conductivity of less than  $1 \times 10^{-9}$  metres/second.

The EPA has commenced development of a policy on liner systems for tailing storage facilities and contaminated water storages (CWS) at mine sites. Seepage from tailings storage facilities (TSFs) and storage of contaminated mine water storage (CWS) have the potential to be one of the most significant environmental impacts from a mining or processing operation, not only during operations but also long after the closure of the mine or processing plant. Tailings and contaminated mine water pose potential water pollution risks through vertical and lateral seepage of contaminants to groundwater and other water resources. There are many site and contaminant specific issues that require consideration on a case by case basis to appropriately design and construct liner systems to prevent water pollution from occurring.

To inform the policy, the EPA has undertaken a review of best management practice for tailings storage facilities (TSFs) liner standards across Australia and internationally which indicates that for clay liners maximum permeability of  $1 \times 10^{-9}$  m/s is best practice.

Accordingly the EPA's policy will adopt a benchmark requirement for liners for TSF and CWS is to achieve a hydraulic conductivity of  $1 \times 10^{-9}$  m/s or less with a constructed clay liner of at least 1000mm (or a geosynthetic liner) providing equivalent or better protection. If the tailings pose a low risk to the environment a liner with higher conductivity than the benchmark requirement may be accepted. This is consistent with the criteria set out in the *Environmental Guidelines: Solid Waste Landfills*.

TSF and CWS liner systems must be designed, constructed and operated to prevent pollution of waters (including surface and ground water) from seepage of contaminants (vertical and lateral) through the base and side walls. A risk assessment process should be used to determine a suitable liner system including appropriate hydraulic conductivity and liner thickness.

If it can be demonstrated that the tailings pose a low risk to the environment (e.g. inert tailings and the TSF and CWS are in rock with discontinuous fractures), a liner with higher conductivity than the benchmark requirement may be accepted. Similarly, if the tailings pose a high risk to the water environment (e.g. located above high permeability aquifers and unconfined aquifers, in close proximity to a watercourse, presence of shallow groundwater, in close proximity to drinking water supply) a liner system that provides a higher level of protection is likely to be required.

Where an alternative liner system to the benchmark requirements is proposed and/or where the natural geology of the site is proposed to be used as part of the liner system, a robust hydrogeological investigation and impact assessment must be undertaken by a competent entity and adequate justification must be provided to prove the efficacy of the liner system and to demonstrate the construction will be adequate to prevent the pollution of waters.

If you would like to discuss this issue further, please contact me directly.

Yours sincerely

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