

ERA Ranger tailings corridor review

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1 Introduction

Sinclair Knight Merz were commissioned by the Office of the Supervising Scientist on 25 May 2000 to undertake a review and complete a report on the tailings corridor at the ERA Ranger Mine.

The objective of the study was to undertake an 'as is', and to some extent historic and look ahead, review of the corridor system sufficient to:

- assess the current suitability of key aspects of the design;
- assess the suitability of current operating, maintenance and system development regimes and responsibilities; and
- record any recommended actions or further investigations arising out of the review;

in order to ensure the adequacy of the design, operation and maintenance.

The scope of the study report was limited to the corridor itself, its associated sump and sump contents discharge and the branch corridors carrying pipelines to Pit 1.

A representative report contents was discussed and agreed with the Office of the Supervising Scientist prior to commencement of the study and this is included as appendix A to this report. The originally agreed content is, with only minor amendment, reflected in this report.

The study methodology comprised a review and assessment by SKM of the design of the existing system and current operations documentation and information obtained from investigations on site and discussions with ERA site personnel. Follow up information and advice as required to complete the study investigations was obtained by fax, phone and e-mail communications with the site.

Concurrent with the investigations for this report, a specialist pipeline inspection firm (Intico) was undertaking a condition assessment of the pipelines in the tailings corridor on behalf of ERA. The findings of the Intico assessment have been obtained from ERA and are included in this report.

2 Overview description of the existing system

2.1 System process and layout description

As part of the mine milling process, tailings produced by milling are carried by process water from the mill to a tailings repository. The process water is then returned to the process for reuse in the process, thereby providing what is essentially a closed process water system.

During the initial operation of the mill, the tailings were pumped to a purpose built tailings dam until mining in Pit 1 was complete. When Pit 1 mining was complete, the pumping of tailings from the process was, in line with ERA authorisation to operate, transferred to Pit 1 after suitable preparation of this pit to receive tailings. As part of the water management system, there is provision to transfer process water from the tailings dam to Pit 1 and vice versa.