Mine Waste and Tailings 2020

Performance of a Flow-Through Tailings Dam, Savage River Mine

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ABSTRACT

The South Deposit Tailings Storage Facility (SDTSF), is located at Grange Resources Pty Ltd’s (Grange) Savage River mine in north west Tasmania. The 140m high facility will provide storage for approximately 37 million cubic metres of tailings, equating to approximately 20 years’ tailings storage. The SDTSF embankment is constructed entirely of waste rock won from mining operations and provides Grange with an economical storage solution for waste management (both tailings and waste rock) minimising the sites environmental footprint.

The embankment features a permeable filter face which is sufficiently fine to retain tailings and allows passing of normal catchment flows, while larger flood events are stored within the facility and slowly released. Outflows from the filter face are passed to a ‘flow-through’ drain constructed from alkaline, waste rock. The outflows discharged through the ‘flow-through’ will provide a long-term source of alkalinity to Main Creek, subsequently feeding into the Savage River.

The facility is already showing the first signs of environmental benefits to the downstream ecology that has long been degraded due to the effects of legacy acid and metalliferous drainage (AMD), caused by historical mining operations. Based on initial monitoring following commissioning of the facility, a water balance is presented to assess the filter performance compared with design, along with water quality from the ‘flow-through’ drain.