Capping & Landform Construction over the Newlands Ramp 14 In-pit TSF for Mine Closure

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# ABSTRACT

Coal mining is now complete at the Newlands Open Cut in the Northern Bowen Basin, QLD, Australia. The last coal was mined on site in March 2023 and the site is now being rehabilitated, including several in pit TSFs with a combined surface area totalling more than 100 hectares. As part of the closure plan it is a requirement to place a soil cap and construct landforms over all TSFs to meet the design acceptance criteria and satisfy the post mining land use.

Ramp 14 is a TSF in the Main Deposit where the final landform has been constructed. Geotechnical stability during and post construction has been a major focus for closure planning. Further, settlements of the landform have also been a focus for Ramp 14 as the landform is required to remain free draining, yet, the placement of fill over the TSF was predicted to cause significant settlements in the underlying tailings and potentially cause inadequate surface water drainage.

This paper presents a case study of the Ramp 14 TSF focusing predominantly on geotechnical aspects for or relating to: landform design criteria, landform concept selection, data collection, geotechnical stability, settlement assessments, construction implementation, along with the monitoring strategies that are now in place to manage long term settlement risks.