



GEOFABRICS CASE STUDY



GEOTUBE DEWATERING CONTAINERS MANAGE TAILINGS AT MMG MINE

PRODUCTS USED

Geotube® dewatering container geotextile

- Made from an engineered textile that is designed for dewatering high moisture content sludge and sediment
- High flow rate allows residual materials to dewater, whilst containing solids
- Simple to use as there are no mechanical or moving parts that could breakdown or wear and tear
- Custom fabricated with seaming techniques that withstand pressure during pumping operations
- Available in many sizes, depending on volume and space requirements
- Supported by design advice and guidance on polymer use for your sludge

GEOTUBE® is a registered trademark of Solmax.

PROJECT DESCRIPTION

The MMG Mine in Rosebery is located approximately 300 kilometres north-west of Hobart, Tasmania. The mine has been operating for nearly 80 years, with operations commencing in 1936.

The mine was nearing capacity of the Bobadil Tailings Storage Facility (TSF), and an embankment raise was required in order to increase the dam's capacity and allow for continued processing and expansion of the facility.

The project took place from August 2020 until early 2021.

A turbid wastewater with roughly 0.5% solids content was still being discharged into the 1,000m x 650m TSF, and was starting to block the overflow channel which was also close to its limit.

To prevent the channel blocking, a system was required to collect the sediment prior to it reaching the overflow channel. Any blockages would risk overtopping the TSF in an uncontrolled manner, spilling sediment and tailings into the polishing ponds and eventually the environment.

OUR SOLUTION

To resolve the challenges on site, the Geotube dewatering container was seen as the ideal solution.

It was scalable, had a relatively low upfront capital cost and could produce clean filtrate water when combined with a suitable flocculant and polymer dosing rig.

Due to their international experience with similar applications, Geofabrics and Solmax were engaged by Armstrong Resource Management, the dredging contractor, for technical support.

In order to properly assess the viability of this concept, Geofabrics tested a sample of the wastewater from site using their in-house Geosynthetics, Research, Innovation & Development (GRID) lab on the Gold Coast.

This testing service was offered to illustrate the performance of the sludge type with various flocculants and the Geotube geotextile.

The testing gave the customer confidence that the sludge would dewater well in the bags, as well as retain and capture the solids producing an acceptably clean filtrate.

Following testing, the Geofabrics team in conjunction with Solmax carried out a site-specific proposal that considered wastewater material properties, flow rates and helped predict final dewatered volumes.

In addition, Geofabrics were able to produce a conceptual layout for the Geotube units over the tailings dam.

The MMG Mine project was a unique case due to the location in the middle of dense forestland providing limited space for the laydown area normally critical for Geotube applications.

Due to the nature of the site the only option was to lay the bags over the tailings surface of varying strength and not on level ground.

Geotube units typically must be laid on level ground to prevent risk of rolling.

The risk was considered minimal and fill heights were managed and monitored to suit the varying ground conditions.

It was understood that there were very few options that would allow processing to continue and wastewater to flow into the TSF.

This innovative solution was easily scalable and cost effective. Trials onsite for desludging the adjacent polishing pond also reinforced the Geotube concept.

Technical support from Geofabrics and Solmax on Geotube dewatering projects is a unique source of information for both stakeholders and installers/dredging operators. Add to that the international experience across various large mining operations, there is significant value in getting Geofabrics' involved in dewatering concepts only.



RYAN HACKNEY

MINING AND ENVIRONMENTAL MANAGER

📞 0427 810 392

✉️ R.HACKNEY@GEOFABRICS.COM.AU

📍 GOLD COAST, QLD

Visit **geofabrics.co** or call 1300 60 60 20 (AU)
or **geofabrics.co.nz** or call 0800 60 60 20 (NZ)

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