

Tasmanian Water and Environmental Services

85 Loverocks Road,
Marawah 7330
PO Box 76, Smithton 7330
Phone: 0484926655

Mr. David Rowell
170 Tugrah Road,
Devonport 7310

25th August 2018

Dear David,

Re: Hazard Consequence Assessment – Proposed Tailings Storage Dam

A hazard consequence assessment for a proposed new tailings storage dam at co-ordinates E 387802 N 5460397 on your property at Calder has been completed.

In this regard the following has been considered;

There is only plantation and natural bushland below the dam before the tributary crosses a low use forestry / country road (Beswicks Road) and before the flow path would enter onto flat paddocks.

A flood wave from a catastrophic failure would not impact anything of concern in this zone and using the approximate determination method under ANCOLD Guidelines, a flood wave is likely to be mostly contained and restricted in the immediate bushland and also dispersed significantly.

It is estimated therefore the flood wave would only minimally cross the Beswicks Road, as the head wall above the 600mm diameter culvert beneath the road, would contain a slower moving and already dispersed dam break.

Sight distance approaches from both directions is not ideal to see a dam break, but the road winds, whereby speed would be significantly reduced prior to approaching the dam break and stopping distances are therefore considered to be good.

It is therefore considered the public at risk scenario (PAR) is nil and infrastructure damage would be mostly non-existent at the culvert and downstream.

The Blackfish Creek tributary is mostly impacted from agriculture and other upstream runoff affects and there is no expected adverse environmental damage likely to be caused by a dam break.

Due to the flat nature of the tributary, and the low use of the Beswicks Road, the depth / velocity of any water from a dam break should it rise high enough to cross the Beswicks Road is considered to be small.

Recommendation

The hazard consequence assessment is therefore recommended to be LOW.

Please otherwise contact me on 0484 926 655 if you have any queries about this hazard consequence assessment.

Kind Regards.

David Krushka
Tasmanian Water & Environmental Services

1. Hazard Consequence Assessment

Applicant Name	David John Rowell				
Stream Name	Un-named tributary of Blackfish Creek				
Estimated Capacity at FSL	Water volume = 4ML & Total volume of Tailings estimated to be 17ML				
Dam ID. No. (if existing dam)					
Dam Height (metres)	5 M				
Location	Calder				
Damage and Loss	Estimate	Severity Level Minor Medium Major Catastrophic			
B1 TOTAL INFRASTRUCTURE COSTS					
Residential	<\$10M	▼ YES	.	.	.
Commercial	<\$10M	▼ YES	.	.	.
Community Infrastructure	<\$10M	▼ YES	.	.	.
Dam repair or replacement cost	\$10M-\$100M	▼ .	YES	.	.
Total Infrastructure cost severity level	MEDIUM				
B2 IMPACT ON DAM OWNER'S BUSINESS					
Importance of the system, need to replace the dam	Restrictions needed during dry periods	▼ YES	.	.	.
Effect on services provided by owner	Reduced services are possible with reasonable restrictions	▼ .	YES	.	.
Effect on continuing credibility	Some reaction but short lived	▼ YES	.	.	.
Community reaction and political implications	Some reaction but short lived	▼ YES	.	.	.
Impact on financial viability	Able to absorb in one financial year	▼ YES	.	.	.
Value of water in the storage	Can be absorbed in one financial year	▼ YES	.	.	.
Impact on dam owner's business severity level	MEDIUM				
B3 HEALTH AND SOCIAL IMPACTS					
Human health	<100 people affected	▼ YES	.	.	.
Loss of services to the community	<100 people affected	▼ .	YES	.	.
Cost of emergency management	<1,000 person days	▼ YES	.	.	.
Dislocation of people	<100 person months	▼ YES	.	.	.
Dislocation of businesses	<30 business months	▼ YES	.	.	.
Employment affected	<100 jobs lost	▼ YES	.	.	.
Loss of heritage	Local facility	▼ YES	.	.	.
Loss of recreational facility	Local facility	▼ YES	.	.	.
Health and Social severity level	MINOR				
B4 ENVIRONMENTAL IMPACTS					
Area of impact	< 1 km ²	▼ YES	.	.	.
Duration of impact	< 1 year	▼ YES	.	.	.
Stock and fauna	Discharge from dambreak would not contaminate water supplies used by stock and fauna.	▼ YES	.	.	.
Ecosystems	Discharge from dambreak is not expected to impact on ecosystems. Remediation possible.	▼ YES	.	.	.
Rare and endangered species	Species exist but minimal damage expected. Recovery within one year.	▼ YES	.	.	.
Environmental impacts severity level	MINOR				
Highest severity level	MEDIUM				
Reasons for recommending a consequence category (refer ANCOLD Guidelines On The Consequence Categories For Dams October 2012) MUST include comments on the PAR (both permanent and itinerant), buildings, roads, other infrastructure and the natural environment downstream of the dam and the potential impacts arising from a dam break: (** Note** Provide photographs to support reasons for recommending consequence category)					
There is only plantation and natural bushland below the dam before the Tributary crosses a low use country road (Beswicks Road) before entering into flat paddocks. A flood wave from a catastrophic failure would not impact anything of concern in this zone and using the approximate determination method under ANCOLD Guidelines, a flood wave is likely to be mostly contained and restricted in the immediate bushland and also dispersed significantly. It is estimated therefore the flood wave would only minimally cross the Beswicks road as the head wall on the 600mm diameter culvert beneath the road and would contain a slow moving and dispersed dam break. Sight distance from both directions is not significant, but the road winds whereby speed would be reduced and stopping distances are good. There is a 0 PAR and infrastructure damage would be mostly non-existent. The tributary is mostly impacted from agriculture and other upstream runoff affects and there is no expected environmental damage likely caused by a dam break. Due to the flat nature of the tributary, and the low use of the Beswicks Road, the depth / velocity of any waters should it rise high enough to cross the Beswicks Road is considered to be small and therefore a Low Consequence Rating is recommended.					
Population at Risk (PAR)	<1	CONSEQUENCE CATEGORY =			Low
PAR includes all those persons who would be directly exposed to flood waters within the dam break affected zone if they took no action to evacuate Note 1: With a PAR in excess of 100, it is unlikely damage will be minor, similarly with a PAR in excess of 1,000 it is unlikely damage will be classified as medium Note 2: Change to 'High C' where there is a potential of one or more lives being lost					
Completed By	David Krushka				
Date	25th August 2018				

2. Dam Break (using the Approximate Determination Method)



3. **Photograph of culvert at Beswicks Road**

