Supplementary Submission in response to Kalbar's proposal to use centrifuges in the Fingerboards Mineral Sands Project:

Dear Inquiry and Advisory Committee members,

I make this supplementary submission in response to the belated proposal by Kalbar Operations Pty Ltd (Kalbar) to modify their original Environment Effects Statement (EES) proposal to implement "… centrifuges for water recovery and tailings management."[1].

Water conservation, and quality protection of groundwater and surface water, are crucial given Australia's arid climate and the impending impacts of Climate Change. Any unmitigated depletion and/or pollution of our scarce water resources will have severe consequences. Hence the identification of the following egregious errors in the Fingerboards EES are cause for serious concern:

a. the *overestimate* of "… water released by the amphirols for process recovery…";
b. the *underestimate* of "…3GLpa water requirement…" now estimated to be "… 4-5 GL per annum when using the amphirols…".[1]

Victorian guidelines for the EES process include the appointment of a Technical Reference Group (TRG) to provide relevant technical expertise to the proponent[2]. Failure by both Kalbar and the TRG to identify, and plan to mitigate, a potential water supply deficit in this locality of intensive agriculture and horticulture at the EES feasibility stage may be construed as systemic failure of this EES process. Further, the need to consider implementation of centrifuges to rectify these errors has unreasonably prolonged the Fingerboards EES process: exacerbating the concerns and financial burden of the impacted community.

The crucial question remains:

- Will the introduction of centrifuges assist Kalbar to comply with their General Environmental Duty (GED)[3] requirement to protect the environmental health of neighbouring communities under the new Environment Protection Act 2017, and ensure: safe radionuclide content in dust and water; negligible tailings seepage to groundwater and drawdown on local aquifers; negligible surface runoff and contamination of river systems and the RAMSAR Gippsland Lakes; and negligible dust generation and offsite emissions?

According to Kalbar[4], the implementation of centrifuges will predominantly impact groundwater quality and extraction: less risk of contamination due to reduced seepage and less risk of depleting the aquifer due to a reduced water requirement.

Evidence provided by Hydrogeology Supplementary Expert Witness, Assoc. Prof. Matthew Currell[5], supports suggestions that using centrifuges could reduce seepage into the water table from tailings deposited in mine voids and could achieve a slight increase in water recovery. However, uncertainties remain regarding geochemical reactions and flow within the aquifer and the impact of flocculants on groundwater.

I again thank the Panel members for this opportunity to make a supplementary submission regarding the introduction of centrifuges to improve water recovery and tailings management in the Fingerboards proposal. However, I reiterate that the need for best practice water management should have been investigated at the inception of this project, thus avoiding the need for a protracted EES process.

Yours sincerely,

Dr Dora Pearce PhD

REFERENCES:

1. Document 43 Kalbar Technical Note 01 Implementation of centrifuges for water recovery and tailings management 18_01_21.

2. DELWP 2021 EES document resources: *How does the EES process work 2016a* < https://www.planning.vic.gov.au/environment-assessment/EES-documents > Accessed 22 March 2021.

3. EPA Victoria 2021 *New environmental laws and the community* < https://www.epa.vic.gov.au/for-community/new-laws-community > Accessed 22 March 2021.

4. Document 193 Kalbar Impacts of the use of centrifuges on EES study areas cross referenced table – Direction 59c.

5. Document 186 MFG Supplementary Expert Witness Statement – Assoc. Prof. Matthew Currell – Hydrogeology 12_03_2021.