



Planning Panels Victoria

Department of Environment, Land, Water and Planning

17 March 2021

Mr Ian Magee
Bendigo District Environment Council
Via email

1 Spring Street
Melbourne Victoria 3000
GPO Box 2392
Melbourne, Victoria 3001
Telephone (03) 8392 5115

Dear Mr Magee

Fingerboards Mineral Sands Project Inquiry and Advisory Committee (IAC) – Correspondence from Bendigo District Environment Council

Thank you for your emails of 11 and 15 February 2021 (attached) and I apologise for the delay in replying.

As you are aware the Inquiry and Advisory Committee (IAC) at the Directions Hearing on 15 February 2021 adjourned the Hearing until Monday 3 May 2021, a period of 11 weeks, to enable the consideration of additional material related to the inclusion of centrifuges in the Project to dewater tailings.

I understand from your emails that the Bendigo District Environment Council (BDEC) has significant concerns with the mine model and the implications of using centrifuges. Whilst the IAC encourages you to put these concerns to the IAC in the Hearing, this correspondence and your emails (as you have requested) will be tabled so that the concerns can be considered prior to the Hearing by the Proponent, experts and other parties as relevant.

If you have questions, please contact Amy Selvaraj at Planning Panels Victoria at Fingerboards.IAC@delwp.vic.gov.au.

Yours sincerely,

Nick Wimbush

Chair, Inquiry and Advisory Committee

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Amy Selvaraj (DELWP)

From: Ian Magee [REDACTED]
Sent: Thursday, 11 February 2021 3:16 AM
To: Fingerboards Inquiry and Advisory Committee (DELWP)
Subject: Adjournment of Fingerboards IAC Panel Hearing.

EXTERNAL SENDER: Links and attachments may be unsafe.

Mr Nick Wimbush
Chair of the Fingerboards Mineral Sands Project Inquiry and Advisory Committee
Planning Panels Victoria
1 Spring Street
Melbourne Victoria 3000
By [email: Fingerboards.IAC@delwp.vic.gov.au](mailto:Fingerboards.IAC@delwp.vic.gov.au)

Attn: Nick Wimbush

Dear Mr Wimbush,

The Bendigo District Environment Council (BDEC) wish to refer to your advice of 5th February regarding the changed circumstances before the Fingerboards IAC Panel, in particular the lodgement of additional expert witnesses Reports and the lodgement of additional documents by the proponent, including Technical Note 1.

We note that a directions hearing will now be held on the 15th February. BDEC do not seek to join that hearing. BDEC holds the view that the proponent, local government and the local community are reasonably represented, in a legal sense, by those parties currently engaged with the IAC Panel. BDEC does not feel it is positioned to make further comment on matters of social license or matters of economic effects that are better argued by the local community.

BDEC has, however, had the opportunity to participate in, or otherwise attend, most of the significant EES Panel hearings for gold projects in central Victoria over the last two decades. BDEC feels it is well informed and has the capacity to provide comment which may be of advantage to inform, or otherwise educate communities on environmental matters, on the permitting of mine operations through EES Panels or local government, on community engagement in the regulation of mines through such processes as Environmental Review Committees and on the rehabilitation of mine projects. BDEC would also seek to suggest to a community the opportunities that exist if directions can be included within the final report of an EES Panel which will provide additional controls on mining projects which are specific to that project and so supplement the MRSD Act and the associated regulations. BDEC's membership includes community members who have had a long-term engagement with ERC's and also includes members with academic qualifications in disciplines such as health, engineering and the social sciences.

Specifically, with respect to the Fingerboards project, BDEC has concerns that the proponent has proposed a novel mining project on a scale which has previously not been attempted. It has found itself in the circumstances where it has not been able to provide a sufficient technical brief to the

consultants it has retained to prepare Reports. It is now in the circumstance of attempting a fundamental redesign of their mine model and not able to prepare new documentation in a timely manner to allow the progress of the Panel hearing. BDEC's submission (number 429) expressed concern that the proponent had based several core reports on assumptions which were unlikely to be valid, or on estimates which were unreasonable, or that the proponent provided directions to the consultant which unreasonably constrained the consultant from preparing an evidence based report. These failures have led to several core Reports which are unfit for purpose. These failures include -

1. That HMC could be shipped in bulk from Port Anthony in Corner Inlet. BDEC provided evidence in our submission that this would neither be practical or permitted in a regulatory sense. BDEC note that the company appears to have removed this option from their documentation.

2. That it would be possible using the Work Plan and equipment described in the consultants Reports as lodged by the proponent to de-water the mine pits to the circumstance where they could be rehabilitated in the timescale required by the project description, and further that the amount of water recovered from these pits would be sufficient to provide make up water of the quantity that would permit the company to operate within their estimate of water consumption (page 20 of our submission). BDEC had sought clarification from the proponent prior to the lodgement of our submission to the IAC. Our understanding is that our engagement with the company, along with the content of several other submissions to the IAC, has brought the company to the circumstance where they now propose the installation of centrifuges in an attempt to achieve a water balance.

BDEC submit that the installation of centrifuges is a fundamental change to the mine model which will require the addition of considerable energy and cause a change in the environmental outcomes, particularly in the area of management of the mine pits, the transport of slimes, the use of flocculants and the risk to aquifers. It is our view that these fundamental changes to the mine model will require new Reports to be prepared to replace several of the existing Reports and will cause the modification or rewriting of most other reports to a lesser or greater degree. BDEC submit that -

- the new suite of Reports should be lodged in its entirety by the proponent before the IAC recommences a Panel hearing.
- that expert witness statements will need to be reviewed.
- that individual submitters be offered a reasonable period to review their circumstances i.e. do they wish to lodge a new submission or modify their existing submission or in the changed circumstances do they now wish to present before the IAC Panel.

There are a number of other matters, not currently before the IAC, that we are aware of which we believe are of such a significance that the IAC would not be able to complete an evidence based final report until these matters are resolved. These matters fall into three areas -

1. permitting
2. regulation
3. engineering design

1) In the matter of permitting -

a. BDEC has not been able to ascertain that the company has themselves, or through ERR, sought exemption from the Minister, and received that exemption from the Minister with the declared reasons as to why they can be exempted, from S14.4 of the MRSD Act (1990). S14.4 limits mining licences to 260 ha. This requirement (the original square mile rule) was included for good reason in the Act after experience with legacy mining operations which grew to such a size that, with the failure of regulation to require progressive rehabilitation, it was not possible for a single entity, be that the mining company itself, the regulator or the State of Victoria, to be capable of engaging with the scale of the rehabilitation project.

b. The circumstances of a retention license, as currently held by this proponent, is that the license

was issued to the proponent at that time as the proponent was not able to demonstrate that the project was viable and therefore warranted an application for a mining licence.

BDEC cannot locate documents where the proponent has advised ERR, or the Minister, that there is now a change in circumstances, i.e. the change in a mineral value, that has increased the value of the project such that the issue of a mining licence might now be considered. BDEC is aware that technical note 1 is likely to cause a significant increase in the capital and annual operating cost of the project due to the cost of the centrifuges, the transport of slimes and the input of electrical energy and flocculants.

The MRSD Act Regulations 2005 provides a process such that a proponent can engage an approved consultant to provide an estimate of a project viability and lodge this with the Minister to demonstrate the new circumstances. BDEC suggest that the most transparent way for the company to demonstrate the viability of the project and gain an understanding with the community on this matter is to prepare and lodge a business case with the IAC. A business case does not need to include that information which the proponent might consider as commercial in confidence. A demonstration of project viability will ultimately be required as a statutory requirement for the issue of a mining licence.

2) In the matter of regulation -

The MRSD Act and the associated regulations 2005 require the engagement of the prime regulator, ERR, to provide site specific advice as to the suitability and conduct of a particular type of mine operation as to a proponent as may be necessary.

ERR are similarly required to engage with the community to provide interpretation on those regulatory constraints that would be applied to manage a particular project and further are required to ensure that an engagement process occurs between the proponent and a community. BDEC note that ERR have until this time actively engaged with and attended Panel hearings and incorporate this attendance as a part of their statutory responsibilities. BDEC submit that the attendance of ERR should be a requirement of any IAC Panel to provide an interpretation of regulatory matters without the requirement for a constant referral to an external source for legal interpretation. It is difficult to understand that a community could hold comfort that a project is to be regulated to a correct standard without the engagement of the regulator, ERR, with the Panel hearing.

3) In the matter of engineering design -

a. The proponent proposes the construction and operation of one or more ANCOLD categorised dams in a geologically difficult environment. BDEC at this time have not seen sufficient information to suggest that the proponent has provided a design model which could allow an adequate foundation for the dam wall(s) and that the proponent could source a sufficient volume of the materials locally as required for construction of the dam wall. If such a model for a dam can be described then hydrological modelling of the stream flows in the adjacent river channels is required to describe the flow surge that would result from catastrophic failure of a dam wall (or for catastrophic failure of certain of the walls of the mine pits). The ANCOLD dam(s), and under certain regimes of management, individual mine pits, have the capacity during structural failure to discharge up to several millions of tonnes of tailings or water. The required modelling would be conducted utilising a flood routing program, for example XP Solutions.

Until these hydrological models have been prepared and run to consider the various circumstances of seasonal stream flows, it is not possible to proceed to a determination of risk to downstream structures or risk to human health. The EPBC determination of risk to the Gippsland Lakes RAMSAR site will need to access this modelling. BDEC have no understanding as to why this significant omission was not identified by the TRG. BDEC reminds consultants that they are not protected from a decision to consciously exclude matters which might be uncomfortable to a proponent from their reports by the inclusion of disclaimers within their documents and in the case of the avoidable loss of life Worksafe or a coroner's or criminal court will be the arbiter.

b. The estimates provided in Report A009 for airborne dust are simply not credible or fall within the

bounds of a reasonable assessment. The estimates for increased turbidity in the local river systems resulting from disturbance on the project site are equally not rational. Many of the consultancies from the mining industry that have prepared Reports for the Fingerboards project have also provided Reports to inform an EES or prepare Work Plans for three significant mining projects in central Victoria, at Stawell, Bendigo and Costerfield. The dust estimates in these reports are now shown to not be reasonable. After local communities lodged evidence of dramatic dust exceedance at all three sites, the regulators sought peer or independent assessments of the dust pollution levels. These were the GHD regulatory compliance report, the EPA 53V Audit and the Golder reports respectively. Dust level compliance has not still been satisfied at any site. The consultants who prepared Report A009, for whatever reason, have used an empirical model from a section of the NPI manual knowing that particular table is derived from modelling in long wall coal mining in New South Wales. The consultants further included in their analysis an agreement with the proponent that the proponent would use water as a dust suppressant and limit vehicle speeds and movement as required.

A rational process by the consultant would have led to comparison with other basic mechanisms to estimate dust deposition. The project ore body has a high component of fine sands and silts in this case derived from the actions of waves on a beach. The Australian continent features, each few years, major dust storms which transport tens of millions of tonnes of soil and sand to the east coast cities where visibility is often reduced to less than several hundred metres. Similar storms strip mallee dust from Victoria and NSW and deposit this in cities such as Mildura and Melbourne. Farmers in the mallee are well aware that an area disturbed by cultivation or stock grazing can be eroded by more than 5 centimetres during a period of several hours when wind speeds gust over 100 km/hour. The CSIRO measured the particle concentration in a dust storm over NSW in 2008 as 15,000 micrograms per cubic metre (Ref. see below). During mining at the Fingerboards project area, large continuous areas without vegetation will be exposed. The company does not have a suitable water supply to allow water application to be used for dust suppression on disturbed areas. Three questions then arise -

- Would a sandy soil mallee farm paddock or an underground coal mine provide the better model for a consultant to observe and compare with the Fingerboards site?
- If an inland dust storm can produce dust loadings of 15,000 micrograms/cubic metre at receptors hundreds of kilometres distant, is a consultant's report that predicts dust loadings of 50 micrograms/cubic metre at a receptor one kilometre away credible?
- Would observation of the behaviour of the proposed GHD Starter pit during construction and rehabilitation have provided a more practical benchmark on dust generation levels than the NPI manual?

If there is a quantum error in the estimates of airborne dust available to receptors within or adjacent to the mine site, then that dust has the opportunity to, in the same proportion, increase the volume of radioactive material at the receptors and significantly this could involve inhalation or ingestion by humans. Appendix A011 Radiation Assessment Report is then equally flawed in the manner of A009.

c. The proponent has still not been able to demonstrate a logistics capacity for the transport of ore. This logistics requirement will weigh on the cost structure of the project in an equitable portion to the cost of winning ore, or the cost of processing ore, and therefore is integral in considering the viability of the mining operation.

d. To our knowledge, the proponent has not proceeded with excavating the trial pit as proposed in the GHD Starter Pit Report (Appendix A004). This activity would be expected by an experienced company so that they could better inform themselves and their consultants, on matters such as -

- i. A better definition of JORC (an assessment of the ore value).
- ii. The pit wall slope angle which could be safely constructed.
- iii. The capacity to win local material for road construction or dam wall fill.
- iv. The possible encounter of groundwater.
- v. The possible bulk assay of ore at an existing processing site.

vi. The existence of discontinuities in the soil profile which may assist in the explanation of tunnel erosion.

vii. The opportunity to observe the pit behaviour during construction, closure and in differing weather conditions.

BDEC can offer no explanation as to why the proponent would dismiss an opportunity to better inform all parties, including the IAC, on these matters.

e. The company to date has not been able to describe a satisfactory means to access electrical energy. Technical Note 1 has dramatically increased the requirement for electrical energy. The project now is likely to require the construction of a new 66Kv or 22Kv feeder along the Dargo road, an upgrade of the Bairnsdale substation and the consideration of the upgrade, or replacement, of other plant such as one of the three 66KV feed lines between Loy Yang and Bairnsdale.

The proponent does not seem to have lodged any advice with the IAC covering the planning or construction activities for this new plant that would likely extend over a number of years.

f. The ecological content of Reports now needs to be reassessed to consider the effects on farm soil and the aquifers of the estimated 10,000 tonnes / year of flocculants that the proponent now intends to incorporate into the "rehabilitation" of mine pits.

The application dose rate for the flocculant most quoted by the proponent for use in association with the centrifuges is regularly quoted in literature as 340 gram per tonne of slimes solids.

BDEC therefore request of the IAC that they consider –

- That the panel does not recommence from adjournment until it has established those Reports which are to be replaced and re-lodged and the timescale for that activity.


- That BDEC's concerns that the initial assumption by the proponent on water recovery were justified and further that there was not sufficient expertise within the TRG for this failure by the proponent to be recognised. It is suggested that a more complete understanding of the mine model would be available within the TRG and therefore also be available to the IAC if the services of an independent professional mining engineer were available to the TRG. This would provide a basic understanding of the mine model and allow an appreciation of those changes, such as technical notes, which might be lodged by the proponent during the period before the hearing.

- That a sufficient extended period of adjournment might allow the proponent, on reflection, to seek further professional engineering advice such that a realistic mine model could be placed before the IAC at a future time. That model could be reduced in scale such that the existing road and power network were utilised within their capacity. Further, the considerations of ecological sustainability, the risk from structural failure of mine pits or water storage dams, or the capacity of the company to progressively rehabilitate could be better monitored and managed. There is a continuous reference to these considerations within the mining act and its regulations.

Because of the unusual circumstances that both the IAC and the many individual submitters now find themselves in after the failure of the proponent to be able to to manage the preparation of Reports fit for purpose, and the timely lodgement of those Reports, would you be able to place this request from BDEC before the IAC panel members please. If a Panel hearing is to recommence at a future time BDEC request that a more reasonable, less legalistic, discussion might be facilitated between all the parties so that a less expensive process is available to the some 900 individual parties which are not legally represented. Such a process might allow a reduced timeline for the hearing and may also assist the proponent.

Would you please advise if this correspondence can be placed on the website as a pre-hearing document before the Directions Hearing on the 15th February.

Thank you.

Submitted by Ian Magee for the Bendigo District Environment Council. 

CSIRO citation

Aryal Rupak, Kandel Dheeraj, Acharya Durga, Chong Meng Nan, Beecham Simon (2012) Unusual Sydney dust storm and its mineralogical and organic characteristics. *Environmental Chemistry* **9**, 537-546.

<https://doi.org/10.1071/EN12131>

Amy Selvaraj (DELWP)

From: Ian Magee [REDACTED]
Sent: Monday, 15 February 2021 3:49 PM
To: Fingerboards Inquiry and Advisory Committee (DELWP)
Subject: Request to consider the adjournment of the fingerboards panel hearing.

[REDACTED] [REDACTED]

EXTERNAL SENDER: Links and attachments may be unsafe.

For the attention of Amy please.

Good Afternoon Amy,

Thank you for the response you provided last Friday (12th) to the correspondence BDEC forwarded to the IAC on Thursday (11th).

I attempted to speak prior to the completion of today's Positions hearing on the matter of the Panel process but unfortunately a failure in technology denied that opportunity.

In your response last Friday you advised that the BDEC correspondence fell into the category of an additional submission regarding the proponents proposed use of centrifuges.

BDEC respectfully wish to submit that the subject (title) of our correspondence was as used in the subject of this email, that is a request to consider the adjournment of the Panel hearing.

BDBD recognise that our correspondence of some 3000 words was a significant document to read prior to today's positions hearing. However, the requirement for this correspondence came about because of a proposal, at the last moment, for the proponent to change the mine model in a fundamental way, without notice, rather than an action by BDEC or another party.

BDEC respectfully request that the IAC may consider the correspondence of last Thursday as being correspondence regarding the Panel process rather than being a comment on the centrifuge proposal. BDEC request that the IAC consider placing of our correspondence as a prehearing document or otherwise as a public document, so that BDEC is not disadvantaged in placing this document in the public arena compared to those several parties which are legally represented before the Panel.

In support of our request BDEC place the following argument.

1. That having the services of a retired engineer BDEC may be the only party providing engineering advice on the mine model before the IAC which is independent of the proponent or their consultants.
2. That the proposal by the proponent to make a fundamental change to their mine model, which happens to incorporate centrifuges, came about because of submission (429) by BDEC, along with other submissions, to the IAC. Our understanding is that after BDEC had demonstrated to the proponent that the mine model was fundamentally flawed i.e. the proponent would not be able to dry and rehabilitate the mine pits within a reasonable time scale nor would they be able to recover and recycle the estimated volumes of water, that the the proponent made the choice to revert to a more complex and expensive mine model which they had previously considered.
3. That the proposal by the proponent (Technical note 1) is in fact a fundamental change in the mine model. This fundamental change is of such a significance that it will require the preparation of new replacement Reports for several of the proponents core Reports and the reassessment of many other Reports.
4. That the change to a new mine model is still significantly flawed.

I.e. the company will not be able to source the considerable increase in electrical energy now required for the project from the existing infrastructure. The new mine model will require the planning and construction of a new power network.

Technical note 1 does not consider the impact of the placement of some 10,000 tons/ annum of flocculent into the subsoil of the to be rehabilitated farmland, or the downstream possible impact on the ecology of the Perry chain of ponds. These matters will require the preparation of additional ecological Reports. BDEC regard the proposal by the proponent to use centrifuges as a landscape scale experiment as to the practical outcome of placing slimes de-watered by centrifuges into mine voids. This has not been demonstrated at a previous sand mining project in Australia. Demonstration of a model project should be required before such a large scale proposal is approved within this ecologically sensitive environment.

5. BDEC suggest it would be impractical for a panel hearing to proceed until the new suite of Reports has been lodged.

6. In BDEC's correspondence of last Thursday we note that the proponent has to this time avoided discussion on the statutory requirement that will be placed before them to provide hydrological modelling to describe the plume of toxic waste that will enter streamflows if an ANCOLD category dam or certain of the mine pits suffer a catastrophic failure. This modelling will be required to determine the human health risk (risk to life) in the event of dam failure. BDEC note that this modelling, often used by local government for the preparation of flood strategies, usually takes one or more years to prepare.

7. BDEC respectfully suggest that it would be an advantage to the Panel if the technical reference group was provided with access to the services of a suitable qualified mining engineer so that engineering matters such as those described above by BDEC were captured when the proponents reports were initially lodged, rather than emerging at a later time.

BDEC feel that the information provided in our correspondence of Thursday 11th may be of advantage to all parties, including the proponent, in the area of furthering the understanding of the mining project and therefore seek advice from the IAC as to if this correspondence can be placed into a public forum.

Thank you.

Ian Magee. [REDACTED]