

Coal Free Southern Highlands Inc.

Discussions with the Independent Planning Commission

Hume Coal Project – 2nd Referral
June 29th, 2021

Representing CFSH

- Peter Martin – President CFSH
- Alan Lindsay – Vice President CFSH

Matters covered

- CFSH response to the DPE Final Assessment
- Hume's response to the initial IPC report- key points
- Groundwater modelling
- Hume's unworkable make-good proposals
- Unresolved geochemical issues a serious concern
- Social implications
- Concluding comments

Response to the DPIE Final Assessment Report

- **CFSH agrees with the critical conclusions highlighted in the DPIE Final Assessment Report (FAR).**
 - *The drawdown impacts on an unacceptably large number of groundwater bores.*
 - *The proposed make good strategy is unworkable.*
 - *Considerable uncertainty remains about the mine design, which does not have the support of the DPIE experts in its present form.*
 - *The DPIE experts consider that the mine plan has potential safety risks for personnel and the environment.*
 - *The Resources Regulator considers that the mine plan poses an unacceptable risk to critical infrastructure.*
 - *Water NSW is concerned contaminated mine water may not be contained within the mine site and at the lack of treatment facilities.*
 - *The FAR concludes that the Project is not in the public interest and should not be approved*
 - ***Hume has refused to make further changes to their plans, insisting that problems arising can be managed adaptively post approval.***
 - ***Given the extent of the impacts and uncertainties, this approach has been rejected by the DPIE.***

Hume response to the IPL report

Hume's response to the IPL report took over 12 months to complete but resolved very few of the matters of concern with the project.

Some of the additional reports that were developed to support their case actually highlighted weaknesses in the Hume case.

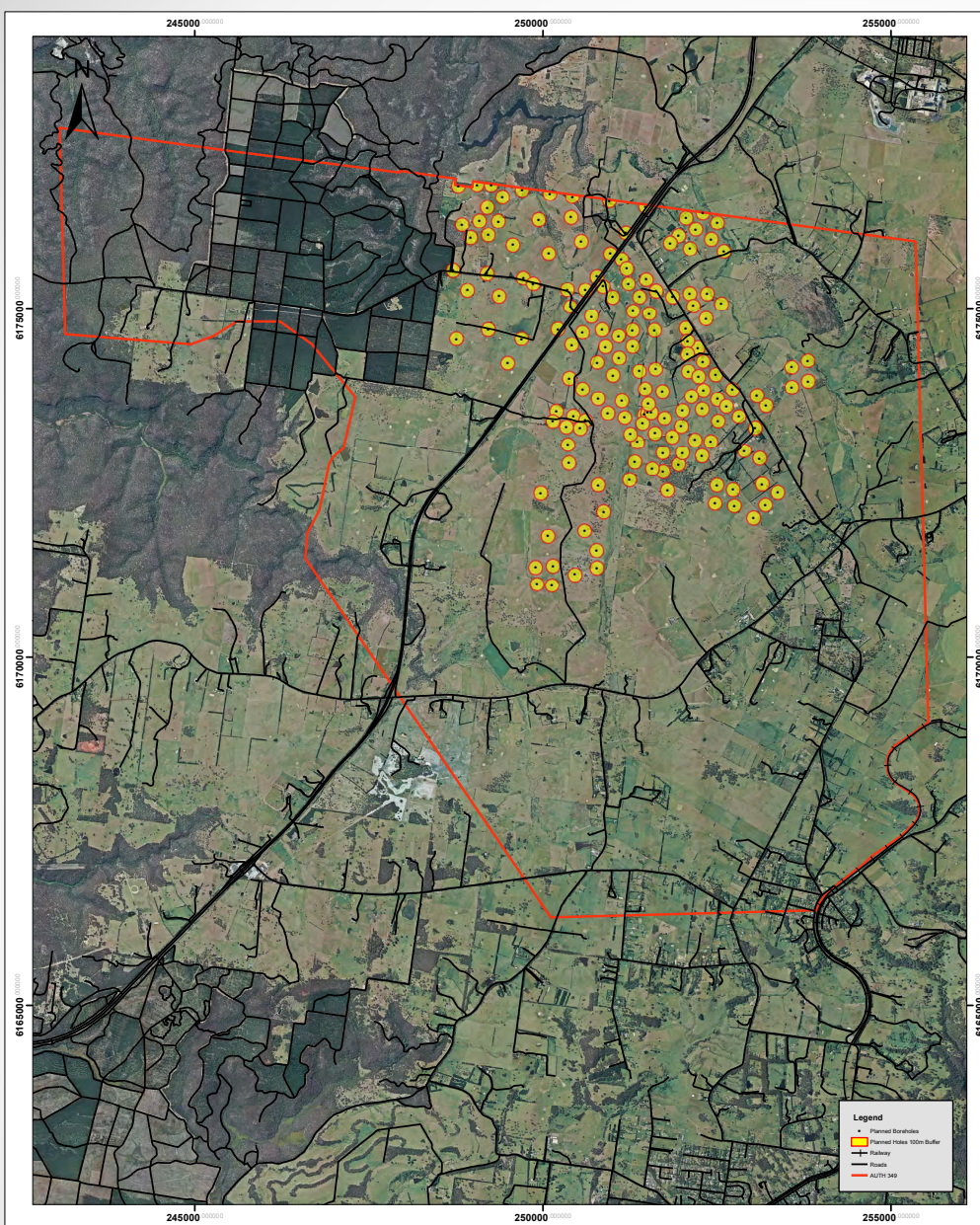
- *Consultant Brian Jones provides an excellent description of the geological forces that resulted with this weathered area of sandstone overlying a thin, shallow coal seam, However no mention of the fracturing of the sandstone strata that will influence hydrology. **However, we learn that Hume has 35 km of unpublished seismic data that would have given considerable insight into the degree of fracturing.***
- *The consultant Russell Howarth, supports the mine plan but draws attention to the novel and untested aspects of the operation and the need for specialized equipment. Another concern is the pumpability of the reject slurry and problems that may occur with this process that concern Water NSW.*
- *Another groundwater modeler, Dr Townley, was commissioned to support the Hume work. His major contribution was to attempt to classify the Hume mine as 'brownfields' based on data from the Berrima mine. His efforts are quite unconvincing given the data from Berrima has always been suspect and the hydrogeological studies of the mine are still incomplete.*
- *Dr Townley also supports Hume's position that they have all the data they need to proceed with the mine even though they had plans to drill 90 exploration holes and were only stopped by legal action.*


Hume's proposal March 2014 REF 3

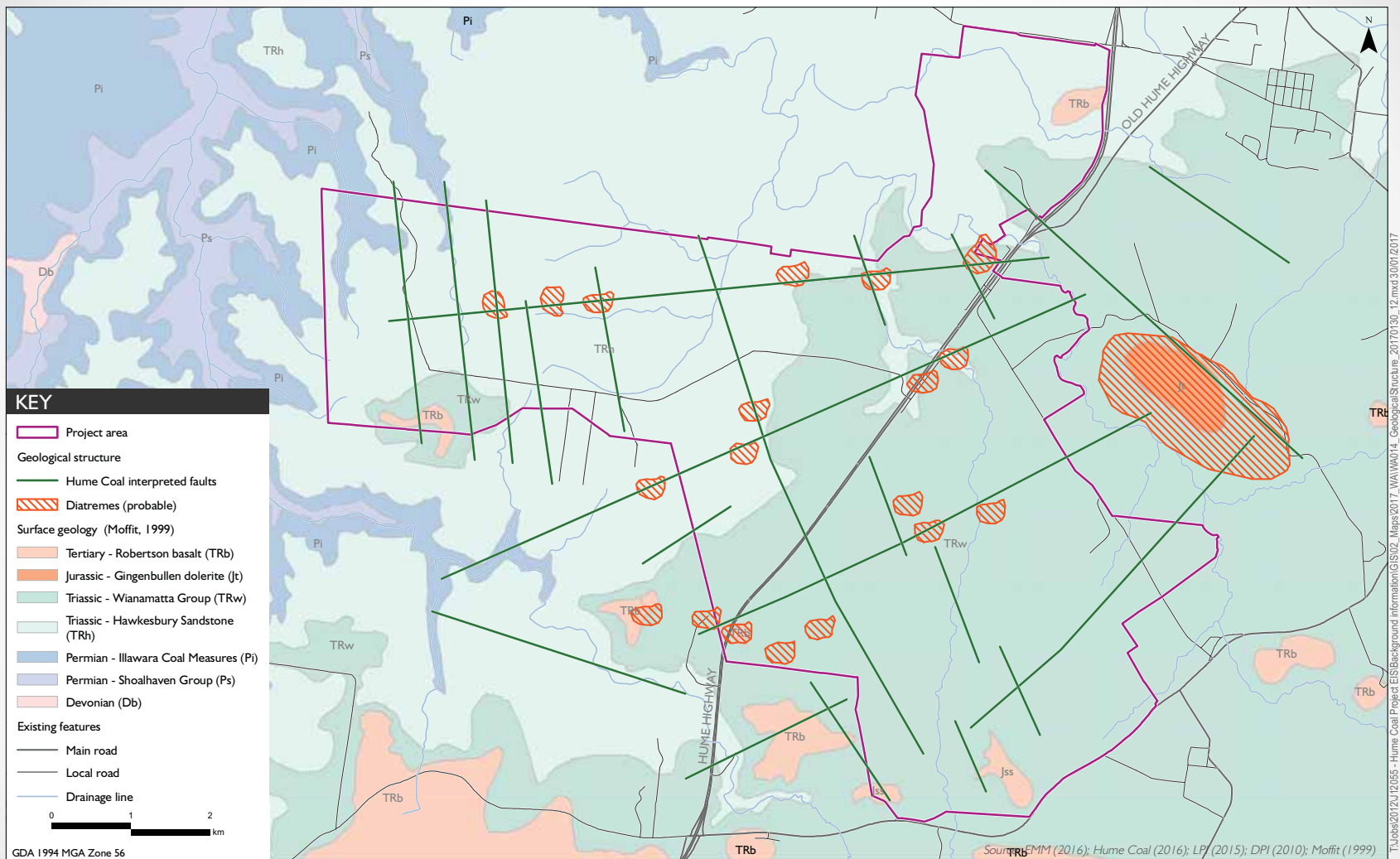
150 drillhole locations nominated
90 to be selected
100 metre radius of flexibility

DRE rejected this proposal
July 2014 – 25 holes approved

Just 3 holes were eventually
drilled, all west of the highway



		SCALE BAR 0 1 2 4 Kilometers MAP SCALE 1:50,000		REF 3 Planned Borehole Locations AUTH 349	
DISCLAIMER: <small>Hume Coal has identified all due care in the preparation of this map. No liability is accepted for any use of the map for purposes other than those intended. The map is provided as a reference only and should not be used for any other purpose without the prior written consent of Hume Coal.</small>		DATA SOURCES: <small>BASE DATA 15TH OCTOBER 2013 © ARMPY LTD VECTOR DATA © HUME COAL & PROPERTY INVESTMENT © HUME COAL & PROPERTY INVESTMENT</small>		DRAWING NO ENV-0010-REV-A	
SIZE: A3 DATUM: GDA 94 PROJECTION: MGA ZONE 56		DRAWN: AFF CHECKED: APPROVED:		DATE: 13/02/2014	



Geological structure

Hume Coal Project
Water Assessment

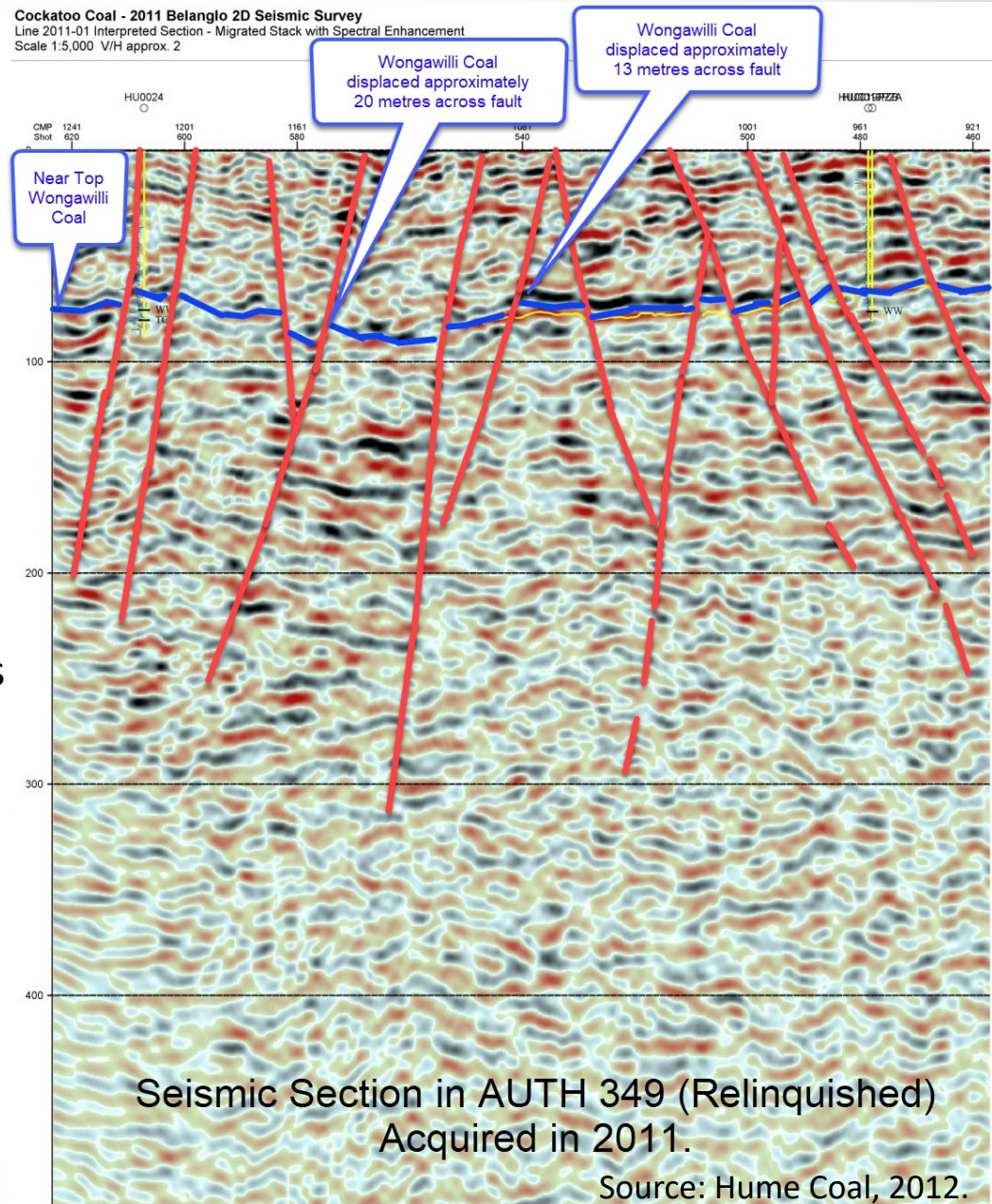
Figure 6.5

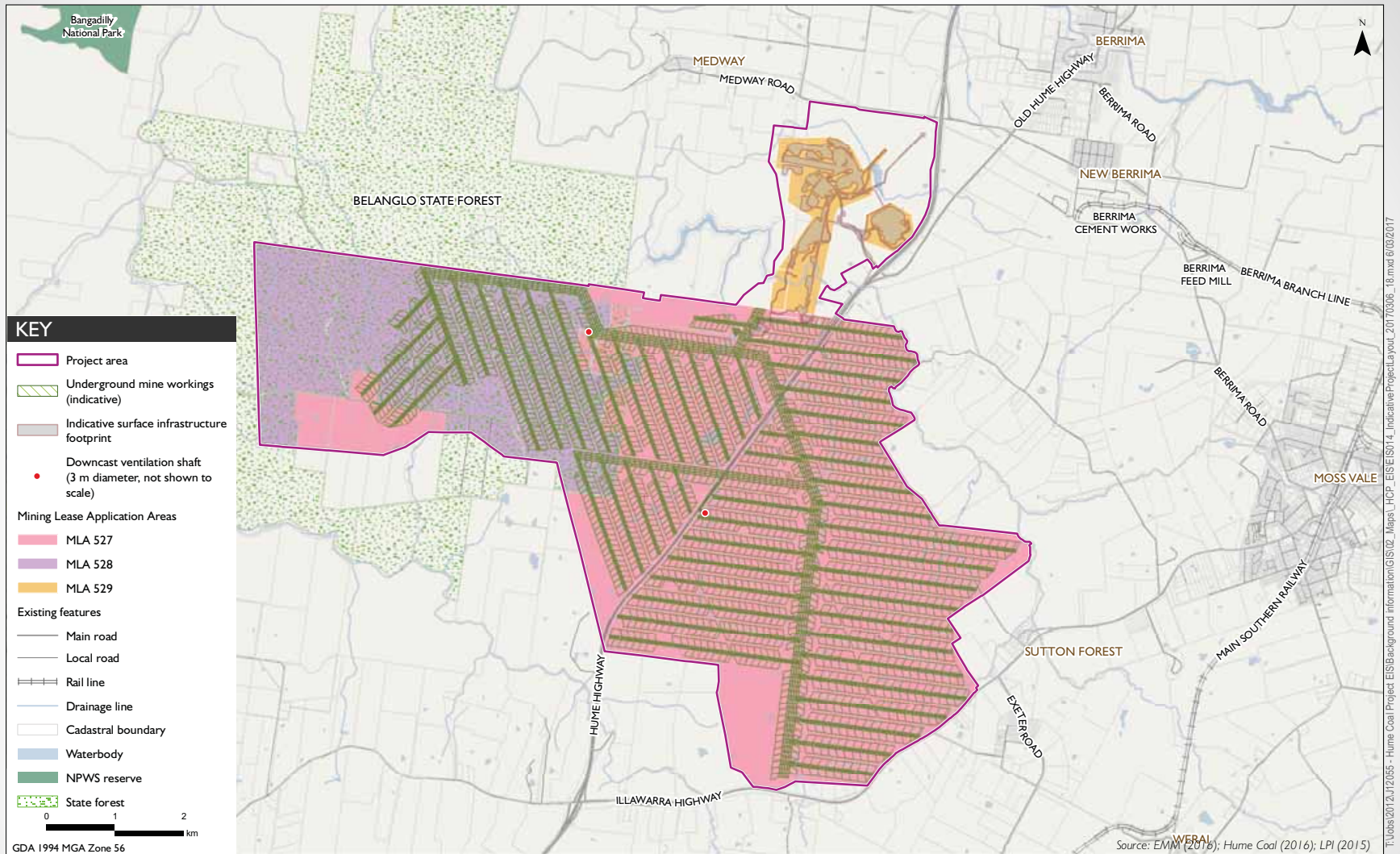
Geological Complexity

- Seismic Data demonstrates that:
 - faulting places the Hawkesbury Sandstone horizontally against the Wongawilli Coal
 - The structure of the top of the Wongawilli coal does not "...dip gently from west to east...at...a grade of 1 in 100"(Fitzsimmons & Doyle, 2017). Rather, it is faulted and is involved in both anticlinal and synclinal features
 - The Wongawilli Coal is highly fragmented into separate and non-contiguous bodies across faults.

CONCLUSION:

- Geological structure within AUTH 349 is much more complex than the Operator has portrayed in the proposals.





Indicative project layout
Hume Coal Project
Environmental Impact Statement
Figure 2.1

Groundwater depletion and 'make-good'

- The Hume GW model assumes a level of precision that glosses over the geological uncertainties of this area.
- The mining method adds further uncertainty. The potential collapse of web pillars is likely to cause groundwater impacts and are not accounted for in the model.

Hume's strategy to force landowners to be part of their make-good process is revealed in appendix K(1) of the IPC response. It has 2 parts:

- Hume wants procedures similar to that for land access for exploration that compel landowners to 'opt in' to their make-good plans. Landowners would be required to enter into legally binding agreements prior to mining impacts occurring or face a punitive arbitration process.
- In situations where make-good cannot be achieved, Hume want a process akin to the VLAMP provisions for noise mitigation. The DPIE Secretary would set the level of landowner compensation for loss of water. However, there are serious flaws with the VLAMP approach.
- *Land access for exploration and VLAMP for noise are legislated but Hume want the Govt to use specially designed conditions of consent in lieu.*
- *DPIE consider this approach unworkable. Conditions of Consent capable of dealing with Hume's risks and uncertainties cannot be developed*

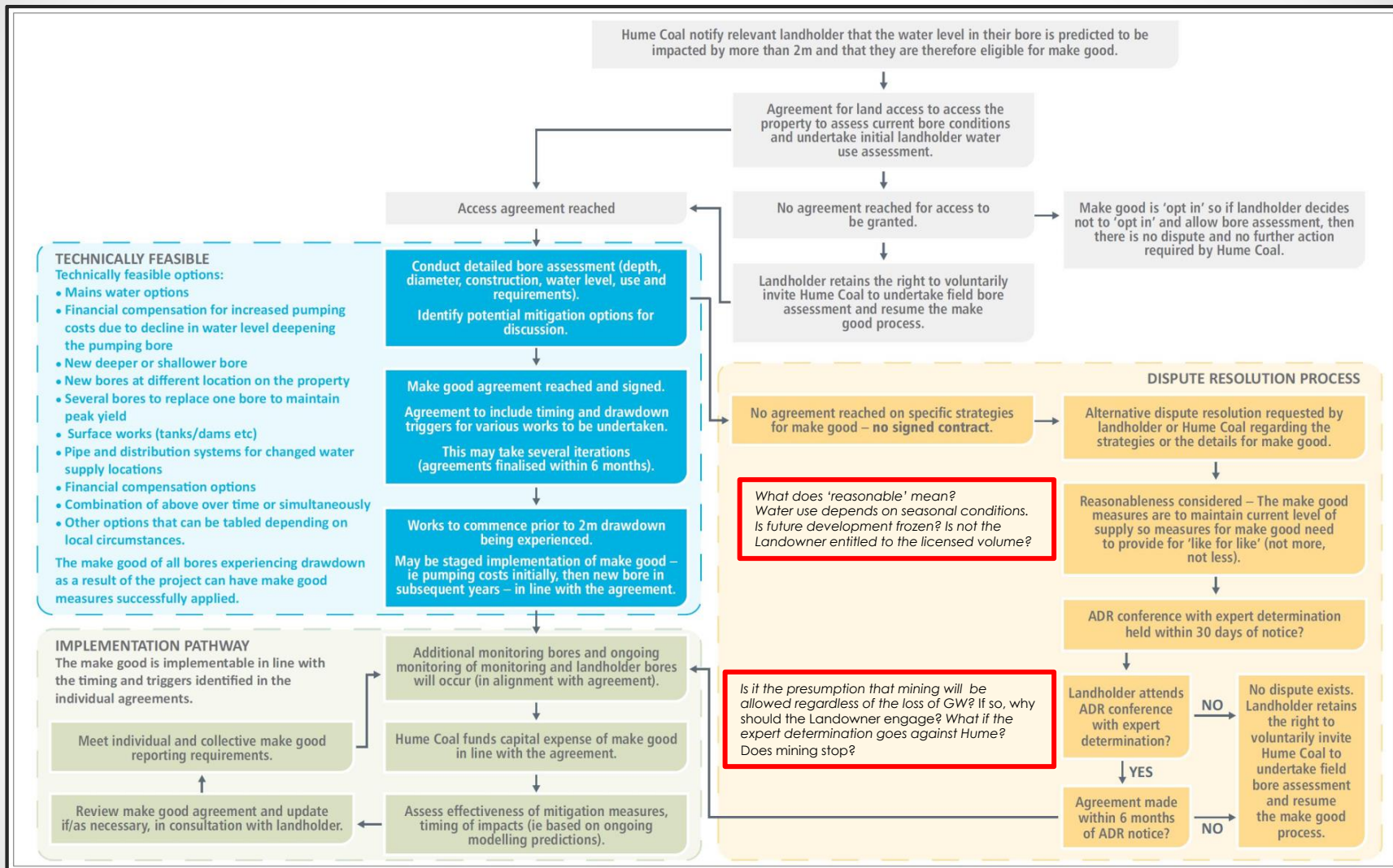


Figure 5 | Make Good Strategy Flowchart (Source – Hume Coal Response Report)

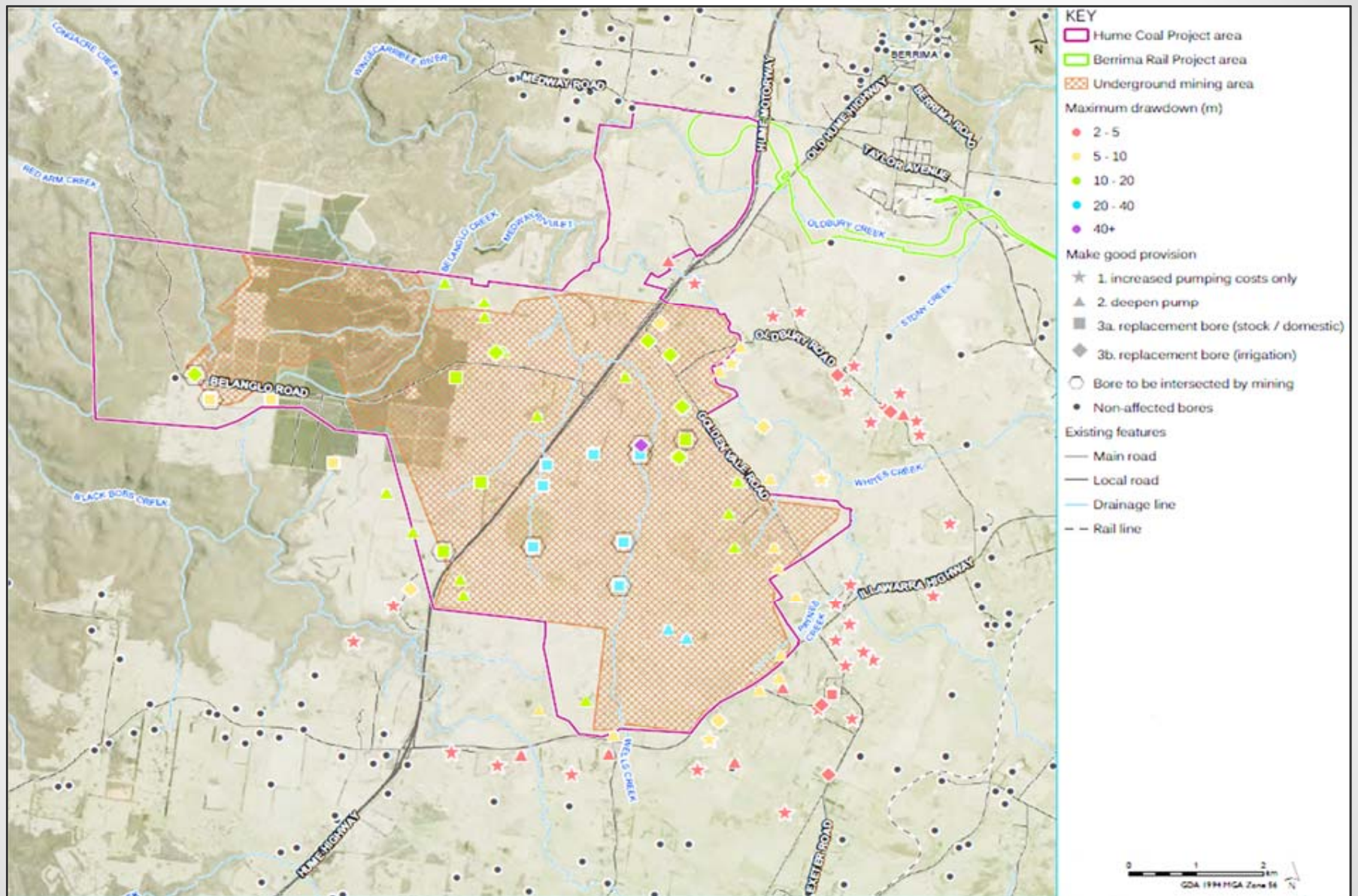


Figure 11 | Project drawdown and proposed 'make good' provisions

Other Issues

- While the DPIE FAR has broadly covered many of the issues raised by the first IPC panel, they deserve particular credit for focusing on the issues that are crucial to the determination of the approval of this project.
 - The adequacy of the Groundwater modelling and the proposals to make-good on GW impacts to individual landowners.
 - Issues with the mine design and the implications for safety and groundwater security in the short and long term.
- However, one aspect that has been a disappointment to CFSH has been the evaluation of the proposal to pump pulverized washery rejects into the mined voids. The water transporting these rejects will be heavily contaminated and it is inconceivable that having this contamination sitting in contact with a valuable sandstone aquifer defies logic. The current example of the need for water treatment for the flows out of the nearby Berrima mine should tell us something.
- The social issues that have been raised by the 11 yr fight against this mine did not receive as much attention in the DPIE FAR as they might have deserved.

Final Comments (1)

- The Hume Coal Project proposal is for a relatively small, greenfields mine producing just over 50% metallurgical coal and the rest lower value thermal coal. The mine would have a 19-year life.
- The economic return to State and Country would be minimal. It is also highly unlikely that the mine will prove to be profitable for the proponent.
- It is a shallow mine in a difficult geology and will be an expensive to operate. Hume has adopted the novel 'pinefeather' approach to mining which effectively adapts the 'high wall' system for surface mining to a more dangerous underground setting.
- DPIE experts with a history of providing advice to Government on mine safety recommend against the mine in its current configuration. Hume has refused to make changes.
- Various Hume Coal submissions have acknowledged the risks and uncertainties with the pinefeather approach to underground mining. However, they contend that any problems arising from the operation can be managed by post approval conditions of consent. The DPIE has reject this approach in these circumstances.
- The Resources Regulator have unresolved mine design issues has expressed concerns at the impact of the mine design on critical infrastructure..

Final Comments (2)

- Groundwater and surface water
- The Hume mine faces serious groundwater challenges. The number of affected bores far exceeded prior NSW experience, and with some of these bores the make-good GW volumes cannot be achieved.
- The proposals put forward to resolve GW disputes are unacceptable to the DPIE and CFSH. They would amount, in some cases, to a government mandated acquisition of legally held landowner water licenses .
- The DPIE considers the Hume proposals on the management of groundwater issues to be unworkable. The DPIE supports the concerns of their experts on the risks associated with the mining process. There is concern on the social impacts of this mine on the local community.
- Water NSW that the mine design and lack of water treatment could result in contamination of water catchments.
- **CFSH agrees with DPIE conclusion that post approval conditions of consent are inappropriate and unworkable for this project.**
- **The mine is contrary to the public interest and should not be approved.**