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TRANSCRIPT OF PROCEEDINGS

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INDEPENDENT PLANNING COMMISSION

PUBLIC MEETING

RE: MOOLARBEN COAL MINE STAGE 1 AND 2 MODIFICATIONS

PANEL: **GORDON KIRKBY**
 PROF GARRY WILLGOOSE
 PROF CHRIS FELL

ASSISTING PANEL: **DAVID KOPPERS**
 JORGE VAN DEN BRANDE

LOCATION: **PARKLANDS RESORT CONFERENCE CENTRE**
 121 ULAN ROAD
 PUTTA BUCCA, NEW SOUTH WALES

DATE: **10.12 AM, TUESDAY, 2 APRIL 2019**

MR G. KIRKBY: Thank you, ladies and gentlemen. Sorry for that short delay. A few technical problems. Good morning and welcome. Before we begin, I would like to acknowledge the traditional owners of the land on which we meet. I would also like to pay my respects to their elders past and present and to the elders from other communities who may be here today. Welcome to this meeting on development applications 050117 modification 14 and 080135 modification 3 in relation to the Moolarben Mine Coal Project from Moolarben Coal Proprietary Limited, the proponent, who are seeking approval to increase the open cut production limits and optimise the coal processing and handling activities with limited changes to its currently approved mining operations.

I'm Gordon Kirkby. I am the Chair of this Independent Planning Commission panel which has been appointed to determine this proposal. Joining me are my fellow commissioners Professor Garry Willgoose and Professor Chris Fell AM and Jorge Van Den Brande and David Koppers who are assisting us from the Secretariat. Before I should – before I continue, I should state that all appointed commissioners must make annual declarations of interest identifying any potential conflicts with their appointed roles. For the record, we are unaware of any conflicts in relation to our determination of this proposed modification. You can find additional information on the way we manage potential conflicts in our policy paper which is available on the commission website. In the interests of openness and transparency, today's meeting was being recorded, and a full transcript will be produced and made available on the commission's website.

The purpose of today's meeting. This public meeting gives us the opportunity to hear your views on the assessment report prepared by the Department of Planning and Environment before we determine the development application. What is the commission and what role do we play in this determination? The Independent Planning Commission of New South Wales was established by the New South Wales Government on 1 March 2018 as an independent statutory body operating separately to the Department of Planning and Environment. The commission plays an important role in strengthening transparency and independence in the decision-making process for major development and land use planning in New South Wales.

Where are we in the process? This meeting is one part of our decision-making process. We have also been briefed by the department. We have met with the proponent, and we will carry out a site inspection later today. After today's meeting, we may convene with relevant stakeholders if clarification or additional information is required on any matters raised. Transcripts of all meetings will be published on the commission website. Following today, the next steps are that we will endeavour to determine the modification application as soon as possible; however, there may be delays if we need – if we find there is need for additional information from any parties.

Just before we start, the ground rules for today's meeting. Before we hear from our first registered speaker, I would like to lay some ground rules that we expect

everyone taking part in today's meeting to follow. Firstly, today's meeting is not a debate. Our panel will not take questions from the floor, and no interjections are allowed. Our aim is to provide the maximum opportunity for people to speak and be heard by the panel. Public speaking is an ordeal for many people. Though you may not agree with everything you hear today, each speaker has the right to be treated with respect and heard with silence. Today's focus is about public consultation. Our panel is here to listen, not to comment. We may ask questions for clarification, but this is usually unnecessary. It will be most beneficial if your presentation is focused on the issues of concern to you.

It's important that everyone registered to speak receives a fair share of time. I will enforce the timekeeping rules of your allocated times upon registration. As Chair, I reserve the right to allow additional time for the provision of further technical materials. A warning bell with sound one minute before the speaker's allotted time is up and again when it runs out. Please respect these time limits. Though we will strive to stick to our schedule today, speakers sometimes don't show up or decide not to speak. If you know of someone who is not attending, please advise Jorge or David.

If you would like to project something onto the screen, please give it to Jorge or David before your presentation, and if you have a copy of your presentation, it would be appreciated if you could provide a copy to the secretariat after you speak. Please note that any information that is given to us may be made public. The commission's privacy statement governs our approach to our information and your information. If you would like a copy of our privacy statement, you can obtain one from the secretariat or from our website.

Audio recording of this meeting is not allowed except for official recording for transcription purposes. Notes made throughout the day on issues raised will be summarised in our determination report. Finally, I would ask that everybody please turn off their mobile phones or turn them to silent, and we will now call the first speaker. And our first speaker today is Bruce Hughes from the Wollar Progress Association. There has been a slight change to the schedule. The most up-to-date schedules should have been handed out when you arrived. Thank you, Bruce.

MR B. HUGHES: Hello everyone. Okay. Good morning, Commissioners. Thank you for the opportunity to present you with the key concerns that the Wollar Community has with the proposed expansion of the Moolarben Coal Mine. Do you want me to start again?

MR: Yes, please.

MR HUGHES: Okay. Good morning, Commissioners. Thank you for the opportunity to present you with the key concerns that Wollar Community has with the proposed expansion of the Moolarben Coal Mine. I am Bruce Hughes, president of the Wollar Progress Association. We lodged a submission of objection to this Moolarben Mine proposal in November 2018 which I trust you have all read. In that

submission, the Wollar Community raised a number of issues that we believe have not been properly addressed in Yancoal's response to the submission report or in the Department of Planning and Environmental Assessment Report that recommends you approve this mine expansion.

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Firstly, we raise the issue of the increasing number of coal trains in our area. We note that the response to our objection is to flip the issue to the Australian Rail and Track Corporation, known as the ARTC. We also note that the ARTC is not an agency that is directly involved in the planning engagement process for large mines in our area like the roads managers – Roads and Maritime Services. The Wollar Progress Association has had many unsatisfactory communications with the ARTC over problems caused by coal trains on the Sandy Hollow rail line that passes through Wollar. Just because Yancoal have received a letter assuring them that the ARTC is happy to sell them more rail access on the Sandy Hollow rail line doesn't mean that anyone has seriously considered or assessed the increased impacts of more coal trains on the community or on the ability of the line to carry the additional load.

I and my wife and many of our neighbours have had our access blocked at the Mogo Road rail crossing in Wollar which is the only access road to our property. Stationary trains can block the road for up to 20 minutes, and this is very inconvenient for people trying to get home before dark or trying to get to town for appointments. We have had – also had access blocked for emergency service vehicles and bushfire brigade volunteers. A comprehensive planning process that we trust you commissioners have been employed to carry out should the assessment of the impacts of more coal trains on the community and also review the ARTCs management of the rail line.

We note that the department assessment is an issue – the issue repeats word for word the response given by Yancoal. The fact that Yancoal received a letter from the ARTC in November 2017 confirming that sufficient rail capacity is available for increased rail movements is immaterial to the assessment of the increased impacts of additional trains. It seems no one has done this assessment. We've had reason to believe that the line is already over capacity and that the ARTC is struggling to keep its maintenance to a safe level.

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There has been two derailments of Moolarben coal train in the last few years. Both Yancoal and the department outline the constraints on the line caused by the Bylong Tunnel. We believe that this very issue is causing trains to be stopped across the Mogo Road crossing. The rail loop before the tunnel is already holding trains or they have been slow in leaving them. This causes a backlog that no one appears to manage. More trains on the line will only make the matter worse. There has been no additional consideration of this issue. We implore you, Commissioners, to look more closely at the management of this rail line.

45 The second issue relating to more trains on the line is more train noise. The department assessment report incorrectly states that the increased noise from additional trains would be below the relevant criteria. The EIS noise assessment

states that the noise levels from current coal train numbers are already above the Rail Infrastructure Noise Guidelines. The Wollar District is a rural area with very low background noise levels. An increase in train noise of at least two decibels already – above the already disturbing train noise levels with definitely be noticed particularly at night and particularly by community members who are regularly woken during the night by very loud passing trains. This sleep disturbance increase during the winter months on still frosty nights with air temperature inversion.

There is currently no monitoring of the rail noise on the Sandy Hollow rail line. Our submission suggests checking the real-time noise monitor set up at various locations around the district to monitor mine noise from the Wilpinjong Mine. These are a source of information that should be used to verify actual train noise during daytime and at night. This suggestion has been ignored by Yancoal's response report and the department's assessment report. The Wollar Progress Association requests that independent assessment of the impact of more coal trains is undertaken.

The second main issue we raise was the deteriorating condition of the Goulburn River. Many of our local residents have property with river frontage. We have lived in the district for much longer than the large coal mines now operating in the river catchment. The combined impacts of Ulan, Wilpinjong and Moolarben Mines that intercept surface run off and groundwater has been very evident over time. The flows in the Goulburn River have changed a lot. Yancoal's response to the submission report does not cover all problems we've raised, and they are not addressed in the department's assessment report.

We raise the noticeable change of the ecology of the river due to the water released from Ulan Mine that does – do not match the prevailing weather conditions. While we agree it is important to replace the loss-based flows, any large discharges during dry times should happen with rainfall. The current discharges from Ulan Mine have caused high growth of algae in some stretches of river never seen before. The assessment of impacts of additional flows during dry times from the three mines has not been done.

At the other end of the scale, it is more likely that the proposed 65 megalitres per day from the three mines will be released during high-flow periods in wet weather conditions. We raise the issue of loss of access due to prolonged flood flows. The response to the submission does not take into account the internal property access issues. A number of our local residents have low-level river crossings to access their property. These are on the river upstream of the major tributary inflows into the Goulburn River. The issue for floodwater flows is not only the height of the water, it's also the speed of the flow. This has not been assessed.

Additional releases of water in high flow of up to 65 megalitres per day will increase the flow rate. The issue of prolonged flood flows due to additional releases have – has also not been addressed. The response to submissions under the issue B3 does not address river heights or flowrate with discharge of 65 megalitres. It only measures the potential height of the proposed megalitres from Moolarben mine at 9.4

kilometres downstream from the discharge point. The problem of increased salt load in the Goulburn River has also not been fully dealt with. While it is an improvement that the EPA has managed to negotiate the EC levels down from 900 to 685, this is still a highly compromised outcome.

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Wilpinjong mine has accepted a salinity limit of 500 EC. This precedence has already been set and should be implemented in the environmental pollution licence for both Moolarben and Newland mines. At times when mine water is the only flow in the Goulburn River, there have been salt slicks on the riverbank for up to 25 kilometres downstream. A salt load of up to 30 tonnes per day for mines is not good and must not be approved. The disturbance of salt in the landscape is a major legacy of coal mining industry and that is not being properly assessed or managed. Many of us in Wollar area rely on the Goulburn River for domestic use, gardens and stock water. Increased levels of salt over the years of increased mining activity upstream has become very noticeable.

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Wollar Progress Association strongly objects to the approval of additional 10 megalitres per day discharged from Moolarben mine. We have not yet – we have not experienced the impacts of the current 10 megalitres approved for the discharge because it has not yet been used. The key argument for additional 10 megalitres is the additional water inflow into the underground fall mine. This new volume has only just been discovered through an updated ground water model. The environmental impacts of this increased flow has never been assessed. Underground 4 was approved 12 years ago on the basis of a very poor water modelling.

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The likely increase in loss of base flow and ground water drawdown under the new scenario has not been assessed. This issue is of great importance to downstream water users in the Wollar community. Wollar Progress Association wishes to make four recommendations to the Commission:

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(1) that an independent study of the impact of additional drains on Sandy Hollow railway line be conducted, including both the proposed trains from the Bylong mine and from Moolarben stage 1 mod 14, stage 2 mod 3;

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(2) that no additional water discharge from Moolarben Coal Mine be approved; that, the current allowable volumes be managed under the environmental flow rules attached to the EPL;

(3) that the EC level of mine water discharge be lowered to 500 EC in the EPL;

(4) that the approval of the Moolarben underground 4 be overturned until a four independent assessment of surface and groundwater impacts is done.

Thank you.

40

MR KIRKBY: Thank you, Bruce. Our next speaker is Phyllis Setchell from the Mudgee District Environment Group.

MS P. SETCHELL: Thank you for allowing me the opportunity to make this presentation. I would like to start with an introduction that's based on the Landscape Heritage Conservation Committee National Trust Registered Listing Report written in July 2013. First of all, 50 ks north of Mudgee just off the Ulan Road on the Goulburn River is the Great Dripping Wall. Locals affectionately call it "The Drip." Impacts on this amazing place by Moolarben Coal Project is the key focus of this presentation. The report describes the area in the following way:

The Drip and corner gorges on the Goulburn River form part of a visually dramatic landscape of sandstone cliffs and gorges located on the western most edge of the Hunter River network. The sculptural rock and ironstone formations drip clear spring water which seeps from a perched aquafer through a porous rock wall, supporting ferns, bottle brushes and weeping grasses. The atmosphere of The Drip is described as having a cathedral like quality.

The report goes on to quote:

In 2007, the independent hearing and assessment panel reflecting public and Government concerns about the potential impact of commercial mining on The Drip and corner gorge concluded that significant cultural, spiritual, historical, educational tourism and recreational values were associated with The Drip and corner gorge. And these features should be protected. They emphasised that official protection and recognition of The Drip and corner gorges and the riparian corridor along the Goulburn River has the support of the Aboriginal Cultural Environment Network, the Hunter River Central Rivers CMA, Mid-Western Regional Council, Mudgee District Environment Group, Central West Environment Network, the New South Wales Government Independent Hearing and Assessment Panel for the Moolarben coal project and the local community.

And may I add, the wider community. The report states that The Drip Gorge is widely used by the community including schools and visitors for recreational, educational and cultural purposes. It allows families to have a wilderness experience on a par to walks in the Blue Mountains Heritage area and similar gorges in the Northern Territory. It has been inspirational to a wide range of people including the artist, Brett Whiteley, who was filmed painting on a rock wall along the Goulburn River in 1970. Despite the impact of regular flooding and time, the forms of those paintings are still visible. And adds that:

The Mid-Western Regional Council area has no other natural asset of this significance and readily accessible from a major road.

They stress that there is an urgent need to recognise and protect this outstanding area for contemporary and future generations. So what I've done next is brought out of their report, attention to the water feeding The Dripping Wall and their report which goes on to say that:

5 *The Goulburn River runs mostly through precipitous of the sandstone ridges. The Drip itself is an extraordinary rock cliff on the northern side – 35 metres high at a point where the Goulburn River corridor is 40 to 50 metres wide. The Drip is fed by a perched aquafer to the north. This Triassic aquafer is highly critical to The Drip in the Goulburn River. They warn that depressurisation of the aquafer system has the potential to impact The Drip and* Gorge. Water continues to percolate through the aquafer which sustains a groundwater dependent ecosystem throughout dry periods. The Drip never runs dry. However, groundwater dependent ecosystems, GDEs, such as –

10 I've lost it –

15 *such as The Drip are recognised by Government, not only as poorly understood systems, but also as critical components of the water cycle. The New South Wales Government asserts the Goulburn River GDEs are among those of the highest risk state-wide. And State and Federal Governments acknowledge that greater effort is urgently required to ensure its sustainable planning and management.*

20 End of quote from the Trust. Part 2: Mudgee District Environment Group wishes to raise with the Commission the following concerns re water issues for the Goulburn River and the Great Dripping Wall. Firstly, in Yancoal's response to submissions – report page 65, issue IDB5, subject Health and Amenity of The Drip. Issued raised:

25 *Concerns regarding MCOs ability to adhere to the New South Wales Government's commitment to preserve The Drip and the requirements of project approvals 05-0117 and 08-10 –*

30 sorry –

30 *0135 to ensure “nil impact at The Drip”.*

35 Yancoal's response was, “This comment is not considered to be relevant to the modification.” MDEG disputes this response. We believe that the additional 10 billion litres per day of water into the mine is an integral part of the modification with a number of proposed changes to water management. This additional mine inflow could directly relate to impacts on groundwater at The Drip. Where will these extra 10 billion litres of water originate from? At this stage no one knows. There is a potential that the increased volume of water now predicted to flow into the

40 underground mine will come from the regional groundwater source that feeds The Drip. This additional water is significant – 10 billion litres per day – and must be addressed for environmental impact. This point is important because there could be even greater inflows to the underground 4 mine than the updated model has predicted.

45 The lack of assessment of where the additional inflows into underground 4 as found in the updated ground water model is a significant issue and is very relevant to the

Commission's decision-making process. The new model has problems as there haven't been any changes in key assumptions. The original water model assessment for underground 4 was not adequate. Under the new information in the updated groundwater model, grave concerns for the Goulburn River and The Drip are apparent. Further assessment of the source of this additional water is needed.

Secondly, the wording in the Moolarben Assessment Report from the Department of Planning is incorrect. On page 41, table 9, the report states that the Stage 1 approval requires no greater than "negligible" impacts on groundwater supply to The Drip. The conditions, in fact, read nil impacts. The conditions of approval for Stage 2, application number 08-0135, proponent – Moolarben Coal Mines Pty Ltd, approval authority – Minister for Planning and Land and Environment – see Appendix 1 Project – Moolarben Coal Project, Stages 2, pages 14 to 17 – includes the condition that there be "nil impact on the water supply to The Drip."

In 2017, MDEG sent letters to the Honourable Gabrielle Upton, the then Minister for the Environment and Heritage; and Richard Kingston, the then acting Director of Conservation Branch Park Programs, National Park and Wildlife Service, concerning detrimental impacts on the water at The Drip like mining activities. MDEG received a letter in November 2017 from Todd Duffy, Senior Team Leader, Reserve Establishment, National Parks and Wildlife Service, saying:

The consent for Moolarben Coal – 05-0117, modification 3 – requires the monitoring of groundwater flows and any other measures to ensure nil impact on environmental concerns on The Drip.

And added:

The enforcement of these conditions is a matter for the consent authority, the Department of Planning and Environment.

Regarding these issues surrounding the nil impact on water at The Drip, it is our considered opinion that the Independent Planning Commission should recommend that because this project, as well as underground 4, cannot meet the nil impact condition, this project should not be approved. Also, the environmental impact of underground mine 4 must be reassessed. Meanwhile, approval for underground 4 needs to be withdrawn and no work proceed until an adequate independent assessment of the impacts on The Drip is fulfilled.

I will now briefly summarise some other issues of concern regarding water impacts on The Drip and the Goulburn River. Firstly, the reverse osmosis plant. In January 2018, the existing Ulan coal osmosis plant broke down and the river ran dry. Nothing was done until there was media attention and locals complained. One of the continuing problems is the lack of adequate monitoring by the relevant Government agencies. Two, increase in discharge to the Goulburn River. Salinity will still be a key issue even with the reduction from 900 EC to 850 – 685. MDEG has received expert advice that 500 ECs would be a better outcome for the health of the river.

Three, effective EPA monitoring is dependent on government providing adequate resources, and this is not evidenced by the current government allocations. Four, the study of water quality needs to be done prior to a decision being made. Five, the quality of the brine management plan is unknown. This must be done and elevated –
5 sorry – evaluated before a decision is made. Six, there are concerns about the cumulative impacts of three large mines on the health of the Goulbourn River.

10 Lastly, The Drip agreement does not protect The Drip as there will be a state conservation area with plans to continue mining activity, tunnels under the river and mining to the north, all of which – and that was with an agreement with the government – all of which cast serious doubt on the government’s commitment to nil impacts. So, please, do all you can to uphold the nil impact promise that we received. Thank you.

15 MR KIRKBY: Thank you, Phyllis. Our next speaker is Julie Imrie.

MS J. IMRIE: Look, while that’s going up, I would just like to thank the IPC Panel for having the opportunity to speak. It is, you know, really good to be able to direct – to directly address the panel. I have actually – just to declare a few interests too, I
20 actually have lived on the Goulbourn River since 1975. I operate a business, Goulbourn River Stone Cottages, with my husband, and, professionally, I have completed a science degree in that period. I have a graduate diploma in water resources, and I’m currently undertaking a PhD or in the final stages of a PhD on the Goulbourn River looking at surface and groundwater and the interaction of climate
25 change and land use with Australian National University. Thank you.

Look, I think it’s important before I launch into the actual project to have a look at the big picture and the impacts of – that we’re dealing with at the head of the Goulbourn River. Now, that’s also the head of the Hunter as well. It’s important to
30 consider the cumulative impacts of all three mines. Moolarben Coal Mine is in the middle between Ulan to the north and Wilpinjong to the east, and, as you can see, the Goulbourn River National Park is – follows the river down 225 kilometres before it meets the Hunter. There are issues with salinity in the Hunter as well, and, as you may be aware, the Hunter Salinity Trading Scheme has a cap of around 900 – of 900
35 EC. The Goulbourn is an issue with that particular scheme.

I think it’s important too from the point of view is that in the past – or still goes on – these developments are looked at in a very piecemeal way. They don’t actually look at the big picture. They don’t look at all the impacts. They always bite it off in little
40 chews. They get their approval, and then they add on. And you can see by Moolarben being up to mod 14, stage 2 and 1 that it’s changed significantly since the original approval in 2007. Now, sorry about the image there. I thought it was perhaps not quite good enough, but that’s the river – Goulburn River Diversion that was set up in – that was put in in 1984. Now, this starts the impact on the river. The
45 diversion was a bit of a disaster. They’ve done a lot more work to it recently, I might add, after going through another approval process. It gave us the opportunity to push that barrow a bit more, but when it was put in, a lot of silt – we were living

downstream – a lot of silt, a lot of very dirty water came down the river in that period.

5 But, most importantly, what it did was it isolated the alluvial flats from the actual river. It also – the longwall mine that it went around actually mined the alluvial flats as well. Now, the reports are very clear the groundwater – the alluvial groundwater dropped from three metres to 43 metres in that period. It has never recovered. Around the same time, towards the late 1980s/early 1990s, the longwall mine started up, and that's sort of in the background. That's where the longwall mine was in that
10 ridge. The longwall mine started to, of course, affect the fractured and porous rock system.

Over time and very quickly, I should say, the increase in water make at Ulan, unpredicted, was getting quite out of hand, and they were releasing water ad hoc.
15 We were getting it downstream, salt slicks on the river. We put up a lot of – I suppose, contacted the EPA, etcetera, over the years, and we have, obviously, had a lot of improvements in that over the years, but that increasing water surplus is now, of course, to quite an extent where they're having to release currently in the dry period 15 million litres a day at the – around – it's around 820 EC at the moment. So
20 they keep it below 900, but what, of course, happens over time is that progressing down the river, the 225 kilometres, it doesn't make it. It parts its way along the way. Now, in this diversion here, there has actually also been sediments measured up over 30,000 EC. So there are issues still with this diversion because it goes around and cuts through quite saline geology.

25 Okay. So these are some very recent shots of salt slicks. It's caused, you know, by sort of the wicking-up up the bank's capillary action. This is on my property downstream. It's about eight ks downstream or 10 ks downstream. During dry weather, what happens is it capillitates – the salt progresses up the bank and then in
30 the dry – the water dries out and therefore you get this salt incrustations. Now, the water is under 900 that's flowing past there, but – probably more like around 820 or something like that – but you're getting – we're getting these capillary actions of the salt. And that's – I think one was in 2014; one was in 2017, those two examples.

35 So just to give you a bit of idea the amount of salt that is embodied in the discharge – mine discharge water, between 2012 and 2016, a total of 12,850 tons of salt went down the river. That was, of course, on top of the natural background salt produced by this catchment. It is a saline catchment. There are lots of issues; however, some of the water is very good quality, and that's associated with the Triassics. Okay. So
40 cumulative impacts on water resources, Moolarben – I look at in tonnes of salt with their discharge – six tonnes per day; Ulan, 18 tonnes per day. This is their licenced maximum, I might add, and Wilpinjong Coal is around three because they've got their 500 limit. I'm not quite sure how much they release, but when I looked it up, it seemed to be about three tonnes per day of salt.

45 So the total daily salt export could easily 27 tonnes per day. That is on top of a catchment that is already vulnerable to salt discharge. Okay. Mine extraction

licences currently 14,000 megalitres per – sorry – per year. Now, that’s a huge amount at the top of the catchment there. The extraction licences probably aren’t going to be enough for Moolarben’s project. They have to find some more, and that is mainly in the fractured – in fact, virtually, you could say all of it is in that fractured porous rock system – okay – which is very important for the Goulbourn. The Goulbourn does actually have – is highly connected to its groundwater system.

In regards to groundwater inflows to the mine, they’re modelled to reach about 48 million litres per day as well over time. There’s an unquantified, that is, unmeasured, loss of river base flow. They model it, and there’s a whole variety of predications. Some point naught something usually when it’s a new modification. There was one 7.5 megalitres a day which, I think, one of Moolarben models looked at from the point of view of all the mines, but it really is unquantified. They don’t have the equipment to try and measure this installed. They really do need better gauging stations as one way perhaps of getting a bit of a handle on it.

Now, this is just a bit of an idea to show how the river now is really controlled by what is released at – sorry – Ulan Coal Mine. You’ve got the black line there which is the actual downstream flow. It’s about eight to 10 kilometres between the release point where Ulan releases which is the red dotted line and the black line, and you can see it’s very closely coupled. This is 2014 which was a relatively dry year. So most of the flows were coming from the mine, and the river in that part of the – was always referred to as a permanent river.

It wasn’t a river that dried up. It was a permanent flow. It’s not quite permanent any more, but the interesting thing here is where you can see the red line exceeding the black line. Now, that’s an indication we’ve got leakage. It didn’t happen before. So between the release of water upstream and the gauge picking it up downstream, we’ve got a loss of flow. This is of concern and, I think, really needs a bit more investigation, but so far, I haven’t had any success there.

So getting onto Moolarben – sorry to take you through that, but I think it’s important just to get that big picture and that background. The Moolarben Coal – these are sort of the three areas of concern I will be looking at in my presentation. That increase in coal of three million tonnes is equivalent to another mine. Like, it’s not a little increase; it’s a big increase. There’s certainly more than Glosda. So – and that got knocked back on climate change aspects. The discharge is 6.9 tonnes per day. That’s what we’re looking at with the 15 megalitres at 685. That’s still a lot of salt, and, of course, the disposal of the RO plant into the groundwater, I really find that hard to believe that they even suggest doing that in the position that they’re doing.

Now, I think where that excess water is coming from, which Phyllis did touch on, is a really good question. The independent hearing in 2007 raised a lot of serious concerns, and I actually have their two reports that I put on the – which – along with a report that I will be submitting to back up my presentation and action report which if you need – want to read it, please do. There’s also one by Phillip Pells who was representing us at that stage. They lacked confidence in the groundwater models.

They were unable to comprehend with sufficient certainty the magnitude and extent of the impacts on the aquifer system from the longwall.

5 Fracturing was a big issue – this was up into the Triassic levels – and the groundwater response to that fracturing, and it said if the mining was found to impact on the Triassic aquifer system, the mine layer would – may need to be modified. Now, they – the – Moolarben has always worked on the assumption that the cracking will not exceed 122 metres above the coal seam, and their models reflect that. Ulan – in Ulan’s mine’s case, the total dewatering of the Triassics has occurred, and I
10 don’t know how they can argue otherwise because we’ve got a model that’s a theory and we’ve got reality. So I know which one that I usually believe.

So I believe the underground floor needs to be reassessed on these – this basis: the concerns – and I go into more detail in future slides – but concerns of the original
15 IHAP have not – have been confirmed. The mine was approval as a nil discharge mine. We’re far from that now. The mine’s plan or footprint have changed substantially. There’s the failure of the – obviously, the groundwater modelling to predict those inflows into underground 4 and also with the mine that they have actually worked on underground 1 and the need to dispose of the increasing volumes
20 of mine water make. Now, this is equivalent to, you know, thousands of tonne of salt go into the Goulbourn River every year, somewhere between two and three already. Put the rest of the – of Moolarben’s on top of that, and, of course, it’s going to go higher and also this disposal of the waste into the ground – basically into the groundwater system is what they’re suggesting by putting it into underground 4.

25 So the failings in the groundwater model, now, I think this is interesting that Moolarben Coal’s inflows for their underground 1 – do you want to flip to the next slide quickly just to show – now, underground 1 you can see is the underground on the bottom of the screen there. Underground 4 they haven’t actually started to mine
30 yet. You can see where the river – where The Drip is which sits right on top of underground 4. It’s within 500 metres. The actual edge of the river you can see is probably about 200 in places, quite close to the river in other places, and, of course, there’s the national park on the right. And if you look just above underground 4, there’s PZ179. Can you see that piezometer there? I will be referring to that in the
35 next slide, and, look, I would also like to point out just the proximity of Ulan Coal Mine’s east pit which I think is another player in this which is really of concern.

So the underground 1 was predicting to have a less than a megalitre a day
40 production. It was very quickly in the first few months was producing over five times that amount. I think it’s up to six or seven megalitres a day now. This, of course, is during a very dry period. We’re not talking about capturing a lot of surface water here. It’s definitely from groundwater. Monitoring bore was about four kilometres away – that’s the PZ179 – was showing a decline, and my next slide
45 will show that.

The new recalibrated model was set up because they realised they were producing a lot more water, and so the predicted inflows were up to now 17 million litres or over

that actually per day when the original models were showing a maximum of five to six. So we've got a trebling in there. Underground 4 predicated water make is the reason for the need for the mine to discharge and send all that salt down the river. It's the reason. Like, when you look at it, underground 4 is the problem, significant
5 differences in assumed parameters too in the modelling between Ulan Coal Mine's model and Moolarben's, and I will talk about that in a couple more slides.

Okay. So this is the decline. You can see the Triassic groundwater levels at the top have dropped by between sort of four to six metres. That's the – you can see this –
10 it's a vibrating wire piezometer. So this is all three in the same hole. The – obviously, the coal seam is the most at 35 metres because they've dewatered the coal seam, but you can see there is a definite connection to the Triassics up there. Now, this is three or four ks away from the working mine. It's not in the footprint. It's outside the footprint.

15 Now, this is the groundwater model, and this one always puzzles me to be quite honest. It's a little bit complicated, but you've got your strata. Anyone – you're probably aware of modelling, but you've got your different strata referred to in the models, and they allocate permeability and hydraulic qualities to them both
20 horizontally and vertical. The ratio is important because that's basically how quickly the water gets through the landscape, and for the Triassics – the two Triassic layers there, you can see Ulan has given the ratio of two, Moolarben 5000. Now, that basically means it has got to go five kilometres before the water can drop a metre while Ulan – in Ulan's model, it's two metres and the water drops. This is the same
25 geology in the same area, same groundwater systems, very different modelling parameters. Bit of a puzzle to me.

Okay. But basically what it means is that Moolarben has restricted the vertical drainage of its water in its modelling, and this is in spite of the fact that Triassic
30 geology has really strong vertical jointing. And that's why we get cliffs and gorges in Triassic geology. It's a really important part of that landscape, and they seem to deny that there is a lot of vertical movement. I think I'm just pointing out here there's a piezometer PZ105 near The Drip. I'm going to be talking about that just from the point of view of the location in PZ105, and there's PZ191 down the bottom
35 there. So – sorry. I did – wanted to have a – be able to point these out, but, anyway, you get the idea.

Okay. This one basically is looking at PZ105 or the different piezometers over underground 4, and it's – there's some really good water there. And I just really – it
40 really actually quite annoys me the way that the reports just dismiss the water as being, you know, not even sort of worth – it's all low-quality saline water. It's not. Sorry. PZ105, which is directly opposite The Drip and right near the river, its EC is between 265 and 317. That's the median levels that they've been getting. The pH is fine. It's good water. Four litres a second, I think, was one of the earlier pump test
45 yields on it as well. So it's below the five litre per second but only just, and I think if you had a closer look at it, you would realise the water is actually higher than that.

It does get locked up in the sandstone porous rocks. So it's not quite as extractable, but there's a lot of water there. And I think that's pretty evident from the point of view of the amount of water that they're producing in these mines; however, there is a – and in the middle of underground 4, PZ103C, it's good too, all the – both the
5 lower Triassic and the upper Permian, 350, 438. I mean, Ulan seam is 580. Pretty good quality water. All under 800, and, as you're aware, 800 EC is drinking water quality. So – but when you have – get a bit closer to the mine and particularly opposite the old open cut at Ulan and close to the new Moolarben's underground, PZ191, it went from 298 up to 1840. So there is, I think, some sort of seepage
10 happening there, some sort of contamination, and with a pH of 2.91, that's quite low.

So the disposal of RO brine residue into the highly disturbed strata – I think this is one of the, I think, questions you can have about the modelling that they've used. In a depressurised groundwater system, it's high risk. There's the potential for mixing
15 that fresh groundwater, which I've just referred to, a good groundwater source, as the groundwater system restabilises, and it's quite impossible to predict with any real certainty. You've got to remember it's the headwaters of the catchment. It's a long way as the water moves through the landscape. Discharge to surface is definitely a possibility over time.

20 Now, the reason I've got that slide, you can see the purple line or the blue line at the top. It says PZ08, PZ04 and PZ24. Now, that's – I've done a transect through those piezometers, and the reason why I haven't gone straight across to the longwalls is because there isn't any monitoring bores there. That's the only monitoring bores that
25 are actually in that part of the world, and they – we do have a few years on them so we can get a bit of an idea on how the groundwater has been affected, the hydraulic gradient of the groundwater between Ulan's active longwalls which is – well, they're actually above – outside the picture now and to a point at the river.

30 So if you look along the bottom X-axis, that's distance from the river – that's the river and further away. The vertical axis is height and you're looking at years. So the top line is in 2005, then 2011, you can see it's dropping down. The line on the – going across it is the edge of the longwall, the approximate position of the longwall, until you get to 2017 you can see it's that – the groundwater levels have dropped
35 substantially. But the important point here is that within 500 metres or 200 metres of that end of the long – edge of the longwall mine, you've got at least 15 metres of groundwater decrease – standing water levels decrease in the groundwater.

40 So getting close, if you move that situation to the other side of the river with Ulan is under – sorry; Moolarben's underground 4, you're going to have drops of earth around 15 metres easily under the river and under The Drip in the groundwater system. Now, they deny that the Triassic is going to be affected. I can't see why it's not going to be affected. I would like to see – I really would – no, I wouldn't like to see it, actually, but I find it hard to believe a 165-metre deep longwall mine that
45 they're not going to get cracking all the way to the surface and there's plenty of experts that would agree with that done a lot of work on that. Okay.

- I will have the next slide, thanks. So experience shows the complete draining of the Triassic groundwater and depressurisation of underground 4 mine, I think that modelling based on a bit of experience, I would say I put my money on that. It will extend under the river and The Drip. There's a high risk of riverbed leakage, I would suggest, and also interception and drawdown of the aquifers that feed The Drip. Now, this may be just by interception, but definitely if you take the water pressure out from underneath, over time there is a likelihood that it will start to capture the water that feeds The Drip. There is – I haven't shown the slides here, but there is evidence that that Drip – the water comes from at least a kilometre away.
- It's more an intermediate water system; it's not just perched on the edge of the river and I think there's lots of science behind that which I can supply if you would like to have that. Next one, thanks. So I think we need to – I really agree with the EPA on this one – we need an independent scientific organisation to have a look at the cumulative impacts of mining and post-mining implications. We've got to look at flow losses in the river and in the groundwater resulting from the sustained depressurisation of the groundwater system over time. This doesn't go away; these things get worse over time.
- The impact of the direct and diffuse salt discharge on the river and the biotic – aquatic biota and the pollution from what could be quite a mix of different salts – have different toxins – and also fine sediments and algal blooms which we referred to earlier – you do get more algal blooms which we would like to know where they're coming from. Next one, thanks. So the underground 4 poses a considerable threat to the Goulburn River and The Drip. Longwall mining will remove a valuable and productive fresh groundwater system which I don't think they have recognised and I don't think that that has been actually assessed sufficiently.
- Underground 4, I think, needs to be – the assessment needs to be reassessed, or the approval needs to be reassessed. We need a new model, not one that they just keep adding to; we need a new model. And any loss of groundwater production is compensated by stage 2 and other expansions. They've already had – they've gone from 8 million tonnes to 22 million tonnes, so I think they've been well and truly compensated since stage 1 was approved. There's one more slide, I think.
- Now, the proposed mine expansion directly conflicts – this is on a higher level – with the United Nations High Level Panel on Water. In 2018, they released Every Drop Counts, recommended action to value and protect our rivers and connected groundwater systems. Well, we're certainly not doing that around The Drip. Just so – because you won't get there, I know – The Drip is on the left, the Corner Gorge is on the right. This is the type of country we're talking about. It's pretty dramatic. It's pretty special. You've got to leave that up there for my husband's talk too, thanks. Yes. Thank you.
- MR KIRKBY: Thanks, Julie. I think there's just one question, Julie.

MS IMRIE: Yeah, sure.

PROF C. FELL: Sorry. Thank you. I was just trying to do a mass balance on the salt under present conditions.

MS IMRIE: Yeah.

5 PROF FELL: You mention 27 tonnes a day.

MS IMRIE: Yeah.

10 PROF FELL: You mention licences of what are 48 megalitres per day but the actual I think is a lot less than that, is it not?

MS IMRIE: Well, you've got different ECs. So, for instance, Ulan is 900. I usually work it out at about eight - - -

15 PROF FELL: No, I didn't mean the concentration, I meant the volume.

MS IMRIE: The volume of water?

20 PROF FELL: Volume, yeah.

MS IMRIE: It's about 48 million litres. Sorry, what was it again?

PROF FELL: Don't worry now, but - - -

25 MS IMRIE: Yeah.

PROF FELL: - - - I'm interested in that issue. And just - - -

30 MS IMRIE: Look, I will talk to you about it later.

PROF FELL: Yeah, I'm happy to. And one other question, if I might, briefly.

MS IMRIE: Yes.

35 PROF FELL: Salt – primarily chloride or primarily bicarbonate, or what?

MS IMRIE: It's a real mix. There's sulphates in there; there's bicarbonates – a lot of bicarbonates, and yes, there's a whole mix. So this is why the EPA said it really does need to - - -

40 PROF FELL: Which dominates?

MS IMRIE: Well, it depends. Sulphates – look, there hasn't been enough work done on this, to be quite honest, and it depends where it's coming from, the salts. Like, for instance, the from the Merriwa Plateau, bicarbonates dominate. With the

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mine it varies. It has got both bicarbonates and sulphates would be the two main ones.

PROF FELL: Okay. Thank you.

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MR KIRKBY: Thank you, Julie. Our next speaker is Colin Imrie.

MR C. IMRIE: Thanks for the opportunity to have my say. This proposed expansion is not a minor one. It will increase the coal to be burnt amounting to more than the annual tonnage proposed for the Rocky Hill mine in Gloucester. That proposal was recently refused, in part because of the contribution of new coal projects to the dire risk of climate change. The Moolarben proposal is being put forward at a time when all evidence clearly shows how the world's climate is changing. It is now well-established: this escalation of global temperature and climate cannot be explained by past natural cycles. Without any doubt, this is due to human actions. This catastrophic process is our creation and it is fuelled by our decisions.

A 2018 by the International Energy Agency identifies carbon dioxide emitted specifically from coal combustion as the largest single source of global temperature rise. International climate targets are predicated on the fact that continuing past practices by routinely approving ever-expanding greenhouse gas emissions constitutes an existential threat to our way of life. In short, the cost of further expansion of mining coal may prove more than the value of the resource. Equally objectionable is what appears to be an inherent part of this expansion to produce unknown, probably large quantities, of brine waste of unspecified chemical composition and to dispose of this waste underground.

The proponent's case for acceptable safety standards on the stratification properties rely on the stratification properties observed in undisturbed salty water. The behaviour and mixing of multiple levels that connected groundwater and collapsed highly modified strata is extremely complex, with outcomes impossible to predict or prevent in the chaotic underground environment that Moolarben is planning to create by longwall mining. It's hard to believe that the stable conditions required for saltwater to stratify can operate effectively or survive for very long. There is an unacceptable risk that the disposal of RO Brine residue within the mined underground 4 will be a time bomb legacy for future generations.

There is a self-justifying assumption in this proposal that groundwater beneath underground 4 is limited and low quality. Julie dealt with this earlier. The location of this proposed dumpsite is within underground strata presently containing groundwater of good quality and quantity in close proximity to The Drip and the Goulburn River gorges. MCM justification that, they are returning these salts back where they came is not a valid comparison. On the one hand, pre-mining, these salts are safely sequestered. This is supported by the available information showing the associated groundwater and the Goulburn River nearby of always being of good quality.

On the other hand, we're told that an activated and mobilised mixture of salts, metals and other pollutants will be put back into the broken, collapsed and oxidised landscape created by long wall mining processes. This is just not acceptable. Achieving a sustainable future depends on the preservation and adequate
5 management of our precious water resources. I first came to the Goulburn River in the early 1970s. On that day, Julie showed me the corner gorge and for the first time, I stood at that ancient place of soaring stone and bright water running over sand. It was a turning point in my life. Over the years that followed, our commitment to this place has deepened. We establish our farm stay business building three cottages with
10 the help of family and friends. We learnt many hard lessons, providing all services ourselves like water and electricity and trying to find a sustainable way of running cattle and harvesting timber. Through all of this, our way of life and business in which we depend, a viable river and groundwater system has been crucial.

15 I clearly remember the shock of the first mine expansion before all the people living near us moved away. Young and naïve, we attended a public meeting at Ulan School where I expressed concerns that the proposed river diversion may erode and be unstable. Mr Flannery, representing the new mine, dismissed my concerns and reassured everyone that the diversion would be stone lined in a permanent structure.
20 For many years of clay eroding into the river and millions of dollars spent trying to fix the worst of the failures of that appalling river diversion are a matter of public record and shame.

Now, we're more than 30 years later and we're told that this latest coal mine can
25 safety be allowed to put seven tonnes of salt a day into the river, than an increase of millions of tonnes in carbon pollution shouldn't concern anyone and that we can mine right alongside the river and then store toxic waste down there. What could go wrong? I would just like to add, I request that the independent panel consider and honour commitments made by New South Wales and Australian Government to
30 sustainable water management to protect and restore rivers and aquifers. Thank you.

MR KIRKBY: Thank you Colin. Our next speaker is Beverley Smiles from the Hunter Communities Network. Thanks, Bev.

35 MS B. SMILES: Thank you, Commissioners. The Hunter Communities Network is an alliance of community based groups and individuals impacted by the current coal industry and concerned about the ongoing rapid expansion of coal mining in the region. It's of considerable concern to the community that we have to continually respond to mining expansion creep on a modification by modification basis that
40 appears to be never ending. To have a 14th modification of a major coal mining complex before you over a 12 year period is a strong indication that there is something wrong with the assessment and approvals process in New South Wales for State significant developments associated with the coal industry.

45 The justification for this proposed expansion is basically that an additional three million tonnes per annum of coal could be squeezed out of the open cuts while also attempting to fix the problem of increasingly large volumes of unpredicted water

make into the underground workings. While we support some elements of the proposed modifications, we consider the environmental impacts of increase loss of critical habitat and increased mine water discharge into the Goulburn River will not be effectively avoided, minimised, mitigated and/or compensated or that the recommended revisions to the conditions of approval provide a comprehensive, strict and precautionary approach as claimed by DPE.

We also consider that the ongoing incremental creep of significant social impacts from the large Moolarben mine complex have never been adequately assessed or mitigated. We note that there is an indication in the response to submissions that more property acquisition has occurred since the modification application was made. The map in appendix 5 of the draft conditions, figure 5.1, relevant landownership, demonstrates the scale of loss of private property and associated loss of members of a rural farming community that once supported the Ulan bushfire brigade now disbanded. A general store now closed down. A church now demolished. And Ulan School who's number have dropped dramatically.

These social impacts have been replicated from Ulan to Bylong over an extensive area of Mid-Western Regional Council area. The cumulative, negative social impacts of coal mining in the region have never been assessed or given any weighting in the decision-making process. The loss of entire communities with generational connection to place including Aboriginal heritage connections has been afforded no value in the approvals process. The neighbouring community and the region in general has had to cope with increasing levels of air pollution from coal mining. We note that the DPE assessment report confirms that the cumulative increase in dust pollution from these modifications has the potential to be above the average 24 hour PM₁₀ criterion at the closest private properties.

We also note that the EPA has identified a number of concerns with the air quality assessment, particularly for the dangerous PM₁₀ dust particles and with MCOs dust management plans. The EPA recommends that you, the consent authority, note that the MCO responds to submissions does not provide additional and robust analysis to demonstrate that the current reactive management system effectively prevents all additional exceedances of 24 hour average PM₁₀ and PM_{2.5} impact assessment criteria. The ongoing issue of passing an increased health impact burden onto the surrounding community is reprehensible and needs to cease. Community health needs to be better valued in the approvals process for coal mining. A relentless incremental increase in toxic emissions from coal mining is morally unacceptable. The increase in dust pollution associated with this proposed increase in coal extraction by three million tonnes per year until 2038 will not be managed effectively through conditions of approval and EPA, EPL or any other form of regulation.

Air pollution impacts from the modifications are justification alone to reject the application. We note that the issue of noise pollution from the Moolarben mine complex has been relegated to the other issues status in the DPE assessment report. Yet, there have been regular complaints to MCO about mine noise since operations commenced. The DPE report acknowledges that the proposed extension to open cut

pit boundaries will bring mining operations closer to private neighbours and that there will be increased noise. We also note that reference is given to attended monitoring and an independent review of mine noise in relation to low frequency noise emissions. The attended monitoring only occurs for 15 minutes on a monthly basis. And the independent reviews are equally as cursory based on monitoring at two properties in 2016.

The majority of noise complaints are based on low frequency noise disturbance that interrupt sleep and cause distress. The fact that people near the mine have been regularly complaining about noise impacts means that this is an issue and should be better considered. The cumulative impact of noise from Ulan and Moolarben mines has not been adequately assessed. This issue is an ongoing aggravation for community members because often neither mine is prepared to accept responsibility for noise disturbance. The community has raised concerns about additional train movements on the Sandy Hollow rail line from both the Bylong mine proposal still to be determined and these Moolarben modifications.

Glencore lodged a strong objection to additional trains on the line from Bylong outlining threats to current contracts and demurrage. It stated that the rail line is constrained with current access holders unable to rail their contracted trains due to losses on the line. The ARTC responded with a letter to the IPC that outlines how the Hunter Valley Coal Network Access Undertakings provides the framework for negotiating rail access and that the Bylong Mine has been included in the annual Hunter Valley Corridor Capacity Strategy since 2012.

However, the letter does not respond to the key issues of current constraints outlined by Glencore, and the assessment of Bylong Mine does not refer to the key issues raised by the community. Likewise, these same issues have been raised in regard to additional trains from the proposed Moolarben modifications. Again, the response has been a letter from the ARTC dated October 2017 confirming that sufficient rail capacity has been made available for the additional trains; however, there have been a number of train derailments since that time that demonstrate that the rail maintenance is not being kept up to a safe level and the line is failing to carry the current contracted loads.

The most recent derailment on the Sandy Hollow rail line at Baerami in January this year was a loaded Moolarben train. It derailed on a place where travel speed on the line had been decreased to 20 kilometres per hour for safety reasons. It took a week for the train and spilled coal to be removed and the line repaired. Additionally, a regular line maintenance closure also occurred immediately afterwards. Meanwhile, the three mines currently contracted to use the rail line continued to produce coal while having no rail access.

The coal stockpiles at the three mines are now at bursting point and getting close to filling their approved stockpile footprint. If there are any more immediate problems with the rail line between Ulan and the Port of Newcastle, the three mines may have to cut back production. The reality is the line is down more than it is up to keep it

maintained, and the maintenance is not coping with the contracted loads. Something has to give somewhere. The outcome of this is that ARTC strategies and undertakings are failing its current customers on the Sandy Hollow Rail Line and there is no capacity for any additional trains on the line.

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The community is greatly concerned that rail safety is being compromised, and this could have ramifications at level crossings. The level crossing on the Golden Highway at Denman has sunk once and been repaired, and it's reported anecdotally to be sinking again. A train derailment at a level crossing could have major safety implications for the community. Numerous impacts have been raised in regard to train movements on the Sandy Hollow Rail Line that have not been assessed and are not addressed in correspondence from the ARTC.

10

The DPE assessment report refers to the EPA/EPL that regulates rail noise, however there is no monitoring of the rail noise in rural areas to inform whether these conditions are being met. Hunter Communities Network supports the call from the Wollar Progress Association that the Commission conduct an independent review of the impacts of additional trains on the Sandy Hollow Rail Line, including the cumulative impact of the proposed Bylong line and the Moolarben modifications. Water management issues are the major problem with the Moolarben mine complex, because of the poor assessment and approvals process in the past. In regard to impacts of the modifications on the Goulburn River, the DPE assessment report states that:

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The Department and the EPA accept that it is difficult to establish what its natural flows are in the upper Goulburn River catchment given the changes that have occurred within the catchment as a result of mining operations and the diversion of the Goulburn River. It is also acknowledged that there is a lack of reliable daily flow data from the Goulburn River upstream and

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downstream of the proposed discharge point.

This is a recognition of a fact that the community has been raising for the last 20 years: the Goulburn River has been severely impacted by mining. The river should not be subjected to any more irreversible, damaging impacts. The fact is that the Goulburn River is now more like a regulated river because of the capture of base flows and rainfall runoff into the mines. At times, the only flow in the river is mine discharge water. The DPE report recognises that:

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The key potential surface water impacts would be associated with the increased volume of controlled water released to the Goulburn River, which could affect water quality, the flow regime, channel stability, and flooding.

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In regard to water quality, there has been significant focus on the salinity levels of mine water discharge without taking into account the current cumulative salt load in the river from mining activities. DPE outlines the result of negotiations that have occurred between MCO and EPA in regard to discharge salinity levels. EPA have recommended that a water study be undertaken by an independent, scientific

organisation to determine the long term salinity EC limit for discharges from Moolarben Coal Mine. Hunter Communities Network stresses that this independent study must be undertaken prior to a final determination on the modifications.

- 5 The study must also include consideration of environmental flow rules to be included in the EPL that control the hydrological impacts of the timing of flow releases. This water must be discharged to return some of the natural flows to the Goulburn River to mitigate the severity of the mining impacts that have been acknowledged by DPE. We support the approval of the reverse osmosis plan to manage water quality of mine discharge water, however we do not support any additional increase in the volume of discharge water and we strongly object to brine being disposed of in any underground mine. Brine should be disposed of in clay lined tailing stands in a manner that it cannot report back to the environment.
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- 15 We note that the key reason for the proposed increase in approved discharge volume is the additional water now found in the updated groundwater model to inflow into underground 4. This, again, indicates the poor assessment process used to approve this mine in the first instance. We also note the hypothesis that some of this additional water is migrating from the east pit at Ulan. Glencore contests this position and must be consulted on the issue of connectivity of groundwater between the two mines. This additional doubt over water in underground 4 highlights the importance of a reassessment of the approval of additional mining impacts adjacent to the Goulburn River.
- 20
- 25 And there are a number of errors in the DPE assessment report in regard to water matters. On page 13 it incorrectly reports the Wilpinjong discharge limit as five megalitres per day when it is 15 megalitres per day. And on page 41 there is an incorrect reference to conditions of approval in regard to The Drip, the mining operations are to have nil impact. There is little justification for the increase in land disturbance to extract a further 3 million tonnes per annum of ROM coal or for the increased impact on water sources. The only advantage to the broader community is the possibility of an approximate \$82 million in royalties, or \$69 million at current net value. There is no certainty that this small addition to the State's coffers will be realised given the state of the thermal coal industry and predicted fall in coal prices.
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- 35 The DPE executive summary claims that cumulative impacts will be minor and the increased production limits will ensure the security and continued employment of the existing workforce. Why the existing workforce isn't secure, based on information provided in the last 13 modifications of the Moolarben Mine is not explained. There are significant issues with these modifications that remain unsolved and need further assessment. Hunter Communities Network considers that the cumulative environmental, social, and economic impacts of this proposal have not been adequately assessed or mitigated.
- 40
- 45 There are significant issues around loss of community and ongoing impacts from increased air and noise pollution that are not mitigated. The loss of base flows to Moolarben Creek and ongoing changes to the hydrology and water quality of the

5 Goulburn River through proposed increase mine water discharges has not been mitigated. There is no understanding of the source of the additional water now predicted to flow into underground 4. Any increase in salt load in the Goulburn River will have an economic impact on downstream water users and industry participants in the Hunter River Salinity Trading Scheme. The loss of high conservation value remnant vegetation providing habitat for a range of critically endangered species has not been adequately offset.

10 There is too much important assessment and decision-making being left until after the approval. We do not agree that the recommended draft conditions provide a comprehensive and precautionary approach that ensures the project will comply with performance measures and standards. The predicted residual impacts are too great and need reassessment. We trust that the Commission will take careful consideration of the issues raised by the community today and undertake the necessary additional investigations requested.

15 So, in conclusion, the following assessments must be conducted prior to the determination decision: an independent water study of water quality and necessary environmental flow rules; a reassessment of the source of water inflows into underground 4, and the associated environmental impacts; and an independent assessment of the management of train movements and maintenance of the Sandy Hollow Railway Line. Thank you.

25 MR KIRKBY: Thank you, Bev. Our next speaker is Chris Pavich from the Central West Environment Council.

30 MR C. PAVICH: Yes, good morning, IPC Panel and audience. I represent – my name is Chris Pavich. Thank you. Yes, I've introduced myself. Chris Pavich representing on behalf of the Central West Environment Council. I have a background – I have a degree in earth sciences at Macquarie, and I've worked as an engineering geologist in Scotland and Northern England. In Australia, I've – New South Wales, I've worked between Tibooburra and Lord Howe Island for national parks and have a wide experience in land management and geomorphological interests.

35 The Central West Environment Council is an umbrella organisation representing conservation groups and individuals in Central West New South Wales working to protect the local environment for future generations. The council objected to the proposed modifications to Moolarben Coal Mine as presented on the grounds of ecological sustainable development principles. We have reviewed the proponent's response to submissions, the government agency responses and the Department of Environment and Heritage final assessment report. We are very concerned that there are many outstanding unresolved issues with this proposal that the Independent Planning Commission must consider before making a final determination.

45 This submission will focus on the issues of land based biodiversity impacts and mine rehabilitation. I will add that I've attended mine rehabilitation conferences in the

Hunter Valley in the last number of years and am quite familiar with what happens at various rehabilitation projects across the Hunter Valley as well as being a member of the CCC for the Ulan Glencore Mine and observing impacts and rehabilitation there.

5 This submission will focus on those issues, and this cannot – the council, the Central West Environment Council also has concerns about the cumulative impacts on the health of the Goulburn River, increased greenhouse gas emissions further exacerbating climate change impacts in central west New South Wales and the lack of responsible cost-benefit analysis. The proposed modifications would disturb
10 approximately 82 hectares of land, mostly associated with the open cut number 2 and open cut 3 pit extensions. This area includes 39 hectares of bushland containing seven hectares of two critically endangered ecological communities consisting of grassy box gum woodland and Central Hunter Valley eucalypt forest and woodland.

15 This bushland provides habitat for a significant number of threatened fauna species, being 42 species, including 28 bird, three mammal and 11 bat species. These include the koala and critically endangered Regent Honeyeater and brush-tailed rock wallabies. A number of these species threatened with extinction are listed for protection under federal environmental legislation and have triggered a controlled
20 action. The proposal to offset most of the biodiversity credits for this loss of critical habitat is through the Gilgal property 10 kilometres to the south of the mine and already purchased by the proponent. There is a commitment made in the department’s final assessment report with recommended conditions to secure the property as a biodiversity stewardship site under the New South Wales Biodiversity Conservation Act. And this will be done by 2021.
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However, this property has a petroleum exploration licence and a minerals exploration licence over it. The Department of Geosciences and Resources required an undertaking that the biodiversity offset would not have a significant impact on
30 current or future extraction of mineral or energy resources. This undertaking includes not by limiting access to, or impeding assessment of, these resources or be compatible with current – or be incompatible with current or future exploration. I will repeat that that’s a property which is supposed to be under a biodiversity stewardship site. Letters from the exploration licence holders, namely Santos,
35 Hunter Gas and Bowdens Silver, are provided as additional information to the department.

These letters state that the biodiversity offset arrangement is unlikely to impact on prospecting or other activities. This then begs the question: how secure will the
40 biodiversity stewardship site be if exploration and mining can occur on it? There are no assurances anywhere that the 1033 ecosystem credits calculated to be offset on the Gilgal property will not be disturbed by exploration and mining activities in the future. We note that the response to submissions report states that the proponent’s preference is to use credits generated by the Gilgal property to satisfy as much of the
45 modification offset liability as possible, with any residual credits to be satisfied by other mechanisms provided by the framework for biodiversity assessment.

- The biodiversity stewardship site will only be secure if the portions of PEL 456 and EL 8159 falling on the Gilgal property are removed from the licences. In addition, the Gilgal property does not fully offset all the biodiversity values to be disturbed. The proposal is to offset 28 per cent of the credits on mine rehabilitation. I will
- 5 come back to mine rehabilitation later. The modification proposes to relinquish an area of bushland currently approved to be disturbed by a permanent overburden dump. The proposal now is to backfill the open cut areas of the overburden and to leave an area of remnant vegetation in place.
- 10 CWEC, the Central West Environment Council, supports this aspect of the modification as a demonstration that mining can be undertaken with a smaller disturbance footprint. This change in mining operations should have been adopted in the initial Stage 1 approval. This relinquishment of a currently approved vegetation disturbance has been accepted by New South Wales government as a method of
- 15 accounting for additional offset credits. However, the Federal environment agency has not accepted this approach and requires the full proposed disturbance and the modifications to be calculated and offset. These complex issues appear to have not yet been resolved.
- 20 The council is concerned that very creative accounting has been used to justify the ongoing loss of critically endangered biodiversity values in the area through a very weak offset proposal with no protection. This juggling act of credit calculations and highly questionable biodiversity offsets is based on the extraction of a small proportion of run-of-mine coal over the life of the mine. The justification for this
- 25 access to additional coal resources is also highly questionable, particularly when considering the urgency needed to slow down climate change.

The council recommends that the additional disturbance of 82 hectares of land in extensions open cut 2 and open cut 3 to access another 30 million tonnes of coal not

30 be approved. This will negate the need for the Gilgal property to become a biodiversity stewardship site that has no security. We note that Moolarben Stage 1 biodiversity offset properties approved in 2007 have still not been protected under the required covenant arrangements. There is no certainty in the current approvals process in New South Wales that biodiversity offsets will ever be fully delivered or

35 protected. There is no certainty.

We also recommend that the proposal to backfill the open cuts with overburden rail and stockpiling it permanently out of pit is a vast improvement to the mining operation, and should be approved as a main modification to the Moolarben Coal

40 Mine. In regard to rehabilitation, it is proposed to reinstate hundreds of hectares with some elements of the disturbed endangered ecological units to make up residual credits. There are several scientific papers in the peer-reviewed literature. I have copies here. There are several scientific papers in the peer-reviewed literature that clearly show how successfully recreating natural ecosystems on former mine lands is

45 improbable, for example, Doley and Audet 2013, Erskine and Fletcher 2013, Lamb & Others 2015, Diduki and Nelder.

That's all in the materials I've left behind – those references. Ecological experts, for example, Stephen Bell of Eastcoast Flora Survey, therefore do not believe that proposed mine rehabilitation objectives or expected environmental outcomes will be achieved or the satisfactory re-establishment of cleared, threatened ecosystems on mine land will occur. Novel ecosystems, as described by Doley and Audet 2013, Erskine and Fletcher 2013, will be established in their place, which are unlikely to provide an adequate offset for cleared, threatened communities.

The Office of Environment and Heritage commented that rehabilitation can be used to generate biodiversity – offset – to generate biodiversity credits provided there are good prospects of biodiversity being restored. We consider this to be highly doubtful and unproven, as argued in the scientific papers I've referred to already. There are no examples in New South Wales where grassy, boxed-gum woodland, critically endangered ecosystems, have been successful re-established on mine rehabilitation. This ecological community is extremely difficult to re-establish on undisturbed land.

Overall, there is no certainty that the proposed disturbance of critical biodiversity values will be adequately offset. There will be no residual offsets needed on rehabilitated mine land if the pit extensions are not approved. In regard to the justification that the pit extensions are needed to ensure stability of some of the pit walls, we consider this to be an indictment on the original assessment and approvals process for Moolarben Stage 1. This problem could be solved by changing the new current shape of the pits within their approved footprint through the mine operations plan. The pit extensions are not necessary to improve the safety and stability of the open cut high walls if as above occurs.

There are a number of other aspects and modifications, one I wish to comment on. Firstly, the council supports the introduction of reverse osmosis plant to remove salts from mine waste water before being discharged into the Goulburn River. However, we do not support the proposed increase of volume from the approved 10 megalitres per day. The justification for this increased volume of mine water discharge is, again, an indictment on the poor assessment process for Stage 1, underground 4. The additional water predicted through an updated groundwater model is a significant, unassessed environmental impact.

We agree with the EPA that the proposal to store the brine residue in the underground mine is unacceptable. We also recommend that the approved salinity level for mine water discharge is lowered to 500 EC to be consistent with the most recent approval at the neighbouring Wilpinjong mine. The significant issue of water management on the Moolarben mine site and proposed unacceptable cumulative impacts on the Goulburn River has been caused through inadequate groundwater modelling. This issue must be addressed and independently reviewed before a final determination can be made.

The council recommends that the approval of underground 4 be overturned, because the impacts of the increased mine water predicted by the upgraded groundwater model are unknown and have not yet been assessed. The likelihood of vastly

increased losses of base flows to the Goulburn River and greater drawdown of the regional groundwater source is too great an impact to be left unassessed. The Independent Expert Science Committee and the OEH science report highlight the critical nature of cumulative impacts on the Goulburn River through increased salt load, unassessed heavy metal pollution, changes in the natural flow regimes and various other river health issues. In summary, the Central West Environment Council wishes to make the following recommendations to the commissioners for consideration in the final determination of these modifications before you:

- (1) reject the proposed extensions of open cut pits 2 and 3;
- 10 (2) require the exploration licences to be removed from the Gilgal property to provide additional undisturbed biodiversity values adjacent to the Munghorn Gap Nature Reserve;
- (3) approve the removal of the overburden emplacement to pit 3 to decrease the mine disturbance footprint and improve the rate of pit backfill;
- 15 (4) require a reshaping of the high walls in open cuts 2 – in open cut pits 2 and 3 within the current disturbance footprint through the mine operation plan;
- (5) approve the reverse osmosis plant;
- (6) lower the EC level to 500 for water release into the Goulburn River;
- (7) reject the additional 10 megalitres a day water release;
- 20 (8) cancel the approval of underground mine 4.

Thank you very much.

MR KIRKBY: Thank you, Chris. Our next speaker is Derek Finter, and then we might have a 10-minute break after that.

25 MR D. FINTER: Is it still morning or afternoon?

MR KIRKBY: One minute left.

30 MR FINTER: Thank you. Good afternoon, commissioners. Please consider the following aspects of what we're about here today. The big picture. Global. Every week sees the release of reports that reinforce the fact that climate change is rampant. Temperature records continue to be broken. Catastrophic weather events increase in frequency, with massive financial cost and tolls of human lives. Corporations are at last beginning to realise that their profits and their shareholders' returns are
35 increasingly at risk. Insurance companies are among the most threatened. Last week, QBE Insurance, a local company now with offices in 37 countries, announced it will not insure any new coal mines, and plans to exit its thermal coal insurance business by 2030.

- The UBS Group, the largest Swiss banking institution, has recently predicted a global downturn in mining activity. Shareholder pressure on companies like Glencore is having an effect on planning new ventures. Adani's problems with finance are well known. The local picture here, New South Wales. Financial issues.
- 5 The only financial benefit from these proposed modifications is an estimated \$82 million of royalties. The latest resources and energy quarterly report produced by the Federal Government predicts a fall in coal prices. So this may be an overestimate of the financial benefit. The estimate equates to annual royalties of a mere \$4.3 million over the life of the mine.
- 10 No cost-benefit analysis of the proposed modifications has been done. Therefore, the adverse long-term cost of impacts on the Goulburn River and the Great Dripping Wall and related impacts of increased greenhouse gas emissions on the state economy are not known. For instance, the current extreme drought in western New
- 15 South Wales, with towns running out of water and rivers dying, is an enormous long-term cost to the New South Wales economy. These costs will greatly exceed the annual 4.3 million of royalties expected from this additional coal production. Any extra profits to the company will be taken offshore, with no tax paid.
- 20 What about jobs? There will be no new jobs created. So there will be no boosts to the local economy. There's no mention of the number of people currently employed at Moolarben mine compared to the predictions made in past assessments. Jobs in the coal industry are among the least secure. Two ex-long-term miners from
- 25 Kentucky in the USA, when speaking in Singleton recently, told of how 3500 miners were laid off in one day and eight mines closed as coal companies reacted to lower profits and competition from cleaner energy sources. Their message to Australia was, "Don't trust the mining companies." Yet Yancoal maintains that job security will be increased if these modifications are approved.
- 30 What, then, about the validity of past assessments and approvals for stages 1 and 2 regarding employment until 2038? Local environmental impact. We have been assured the Great Dripping Wall will not be affected. However, the water-related issues connected with these modifications are serious and must be examined further to guarantee this. Greenhouse gas calculations are incorrect. There will be a
- 35 production increase of four million tonnes of coal per annum. The assessment has been made on proposed additional three million tonnes of run-of-mine extraction. This assessment must be redone to properly consider the true figure of 22 million tonnes per annum until 2038.
- 40 Overall, the environmental impacts of underground 4 must be totally re-evaluated. When deciding on these modifications, you must consider all these impacts. There is already a huge cost to the environment. Also, commissioners, consider this. The children are marching and demanding action on climate change. You are on the
- 45 frontline. Listen to them, as well as to us here today. Thank you.
- MR KIRKBY: Thank you. We might just have a 10-minute break. We will reconvene at about 20 past. Thank you.

RECORDING SUSPENDED

[12.04 pm]

RECORDING RESUMED

[12.19 pm]

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MR KIRKBY: Ladies and gentlemen, we might reconvene. You can come back down. Our next speaker is Jan Davis from the Hunter Environment Lobby. Thanks, Jan.

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MS J. DAVIS: Thanks, Commissioners I will just check this microphone.

MR KIRKBY: Can we just have a bit of quiet, please.

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MS DAVIS: Is that fine? I don't want to get too close, but – it pops if you get too close.

MR: Yes, I know.

20

MS DAVIS: Just down a bit with it. Is that fine?

MR: Yes.

MR KIRKBY: Yes. That's fine.

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MS DAVIS: Okay. Thanks, Commissioners, and audience thank you. So I'm Jan Davis from Hunter Environment Lobby, or HEL. We acknowledge we stand on the lands of the Wiradjuri Nation; we acknowledge their elders past, present, and emerging, and note that this land was never ceded. It remains Aboriginal land.

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Hunter Environment Lobby Inc, or HEL, is a regional, community based environmental organisation that has been active for well over 20 years on the issues of environmental degradation, species and habitat loss, and climate change.

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Hunter Environment Lobby lodged an objection to the proposed expansion of Moolarben Coal Mine, including an increase in water discharge into the Goulburn River. We find that many of our concerns have been echoed by the New South Wales Government and Federal Government agencies. Hunter Environment Lobby does not support the Department of Planning and Environment evaluation of the Moolarben modifications. This presentation is a summary of our more detailed submission that outlines our reasons for disagreeing with the department's recommendation that the modifications be approved. Hunter Environment Lobby is interested in the wider regional implications of this project, and the fact that rigorous, cumulative impact assessment has not been undertaken.

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A number of regional assessments and strategies have been recently undertaken in regard to water sources and water security in the Hunter. The Bioregional Assessment on Coal Mining and Coal Seam Gas, Hunter subregion, 2018 was

conducted by the Federal Government and provides a high level assessment of the impact of mining on water sources in the Hunter region. It found that a significant area of the Hunter region has been subject to hydrological change due to the impacts of coal mining. Also, that mining interception will result in increased system losses.

5 Key finding 6 of the report found that modelled changes in ecologically important flows indicate a higher risk to the condition of riverine forests and wetlands along the Goulburn River compared to other riverine forests and wetlands in the subregion.

The report makes a number of predictions in regard to the impacts of the Ulan, Moolarben, and Wilpinjong mines, plus the proposed Bylong mines, on the hydrology of the Goulburn River. We consider that the cumulative impact assessment of the Moolarben modifications on the Goulburn River has not been rigorous. This is supported by the OEH science advice and the independent expert science committee advice. On Greater Hunter Region Water Strategy 2018, released

10 by New South Wales Department of Industry and Water, has a focus on water security in the Hunter Region. It makes some reference to the influence of coal mining on water sources.

A key outcome of this study is that climate change impacts are likely to significantly increase risk to all water users in the Hunter. This is a strong argument, in itself, to not approving any more expansion of coal mining in the region. The report found that drought security was confirmed as the primary economic risk facing the Upper Hunter. This risk extends to all sectors, including urban, agriculture, mining, and power generation. It also found that reductions in the base flows of rivers have

20 occurred, and will continue to occur, as mining intercepts surface runoff and lowers groundwater levels near rivers. The report describes that mining operations take water from a number of supply sources: direct take, incidental take, interception take, and indirect take. No one actually knows what volume of water this all adds up to across the region.

30 There has been no assessment of this cumulative volume of water taken from the Goulburn River catchment, including from the proposed Bylong Mine. The current cumulative loss of surface and groundwater inflows into the Goulburn River has not been assessed by the New South Wales Government. The three approved mines on the headwaters have 70 square kilometres of open mine disturbance through rainfall and runoff capture, and 120 square kilometres of underground mine disturbance through subsidence and groundwater drawdown.

The Bylong Mine, if approved, will add another 27.61 square kilometres to this mining footprint, pushing the total to over 200 square kilometres of impacts on the catchment. The community has been calling on the Department of Planning to commission an independent investigation into the impacts of coal mining on the Upper Goulburn River water source for at least 20 years. All that has happened over that time has been ongoing expansion of coal mining in the catchment on a mine by

40 mine basis, modification by modification basis, and with no concerted effort to rigorously assess cumulative impacts. The fact that today we are commenting on the 14th modification of Moolarben Mine, over a 12 year period, is a case in point.

Commissioners, we strongly urge you to conduct this independent research, because no one else will. It is imperative that you have a full understanding of the cumulative impact of mining on the Goulburn River before you can make an informed determination of the proposal before you. Our previous submission raised concerns in regard to the Hunter River Salinity Trading scheme. There is no evidence in response to submissions that the cumulative salt load from all mines and proposed mines in the Goulburn River catchment has been adequately considered. The response to this issue merely repeats the findings of the 2017 assessment and refers to the fact that the salinity target downstream of the Goulburn River/Hunter River confluence is 900 EC.

However, the bioregional assessment notes that the Glennies Creek reference point, downstream from the Goulburn River confluence, salinities have exceeded 1200 EC on a number of occasions since 2007 and have regularly exceeded 900 EC since 2007. Measurement of salt load within Goulburn River at the midstream Coggan gauge have demonstrated an increase in flow heights with salinity levels above 900 EC. The potential loss of dilution flows from the Bylong River, plus an increase in salt load if the Bylong River mine – Bylong Mine is approved must also be taken into account. The EPA Hunter River Salinity Assessment Report 2013 identified areas where additional monitoring and assessment is required to better understand rising salt levels in the river system.

These include a more comprehensive and representative groundwater monitoring program for the Hunter catchment, studies to fully understand the environmental effects of the different components of mine and power station discharge water – that is, example, ionic composition, metals, metalloid contaminations, etcetera – and strategic real time monitoring of flow and salinity in the Upper Goulburn River catchment. We are very concerned that none of these actions have yet been implemented and that the Hunter River Salinity Trading Scheme could well be under threat from this modification. There are numerous complex issues relating to the management of water impacts from the Moolarben Mine.

The updated groundwater model has predicted a much larger water inflow into underground mine 4. There is no indication that key assumptions in the model relating to permeability, vertical connectivity, and flow pathways, and rainfall recharge rate, have been independently reviewed and updated. The prediction of an additional 1000 megalitres per year inflow could still be a conservative prediction. Underground mine 4 was approved in 2007 based on very poor groundwater impact assessment. The community commissioned an independent expert report that pointed the key failings of the groundwater assessment. This was ignored by decision-makers.

The belated discovery of additional water through the updated groundwater model confirms our original objections. Our full submission has a number of other detailed statements on this issue. We consider that the environmental impact of additional water inflow must be reassessed before any determination of the modifications before you can be finalised. This reassessment should form part of an independent

study of the cumulative impacts of mining on the Goulburn River. In regard to water licences to account for the base flow losses in Moolarben Creek and the predicted additional water intake, the commission must be confident that MCO has or can demonstrate ability to obtain all required water licences before making a final determination.

Our submission also details a number of exemptions to the mining industry in New South Wales water policy that results in the holding of water licences not necessarily mitigating the environmental and social impacts of water interception by mines. We do not support the proposal to increase the volume of water discharged into the Goulburn River to 15 megalitres per day and more during wet conditions. Moolarben mine currently has approval to discharge 10 megalitres per day; this should be adequate to manage the site water balance. This volume of discharge will also minimise the issue of brine management onsite. All discharges from the site must be managed under a set of environmental flow rules that reflect the antecedent conditions in the catchment.

This should be regulated under the EPA environmental pollution licence. We do not support the proposal to limit the salinity level to 685 EC. To protect the river health and downstream water users, including other mines and the power stations participating in the salinity trading scheme, the limit must be lowered to 500 EC. This is consistent with the EC limit on the Wilpinjong Mine. We support the introduction of a reverse osmosis plant to manage the salinity levels in the water discharge offsite. However, we strongly oppose the storage of brine in underground mine 4. We note that the EPA has also objected to this proposal. The best way to solve all these water management problems and cumulative impacts on the Goulburn River would be to reverse the approval of underground 4 based on insufficient environmental impact assessment.

In regard to biodiversity impacts, we do not support the proposed extension of open-cut pits 2 and 3. The significant impact on seven threatened species listed as matters of national environmental significance will be avoided if these extensions are not approved. The Gilgal property, as other people have said, is not secure as a biodiversity offset, with two exploration licences over it allowing impacts of mining exploration and extraction. The relinquishment of biodiversity credits on mine rehabilitation is unproven and not appropriate to offset the loss of critically endangered ecological communities.

We do not support the people to remove the approval out-of-pit overburden emplacement at open-cut – sorry; we do support the proposal to remove the approved out-of-pit overburden emplacement at open-cut pit 3. This change in mining operations will save a stand of high biodiversity value remnant vegetation on this mine site. The proposal to improve the backfill rate of overburden is commendable. Improved stability of the open-cut high walls could be achieved within the current approved mining footprint through the mine operations plan.

The assessment of greenhouse gas emissions needs to be corrected and based on the proposed four million tonne per annum increase in product coal to 22 million tonne per annum. We do not support this increase in coal extraction or greenhouse gas emissions at a time when we were being warned by the global science community to reduce the use of fossil fuels. In conclusion, the cumulative impacts of mining on the Goulburn River must be independently assessed and the environmental impacts of underground mine 4 must be reassessed before an informed decision can be made on these modifications before you. Thank you, commissioners.

10 MR KIRKBY: Thank you, January. Our next speaker is Tane Schmidt.

MR T. SCHMIDT: Thank you for the opportunity to speak to the commission. I am lodging this submission as a local person affected by the negative aspects of the coal industry in our region. I and my wife and family have lived on the Goulburn River at O'Briens Crossing for 25 years. The Sandy Hollow rail line is nearby and follows the river around. I am a carpenter and joiner by trade and have sourced most of my work doing house renovations in the immediate district around Wollar and Bylong until the mines moved in and bought out most of my customers.

20 The ongoing piecemeal increase of coalmining in this area has had a major effect upon remaining local residents. The social and economic impacts on us is not recognised or accounted for in the decision-making process. We are sick of being treated as second-class citizens with the main focus being on mining jobs to the detriment of everybody else. There is no balance in the process. Our property is between the Wilpinjong mine and the yet-to-be-approved Bylong mine. The increase in road traffic and particularly the increase in coal train movements caused by the mine expansion has affected us greatly. We feel that our safety on the road is constantly under threat.

30 We are regularly held up at rail crossings by more and more trains. There are no warning lights, bells or boom gates on the rail crossing that we have to use on Ringwood Road. This is particularly dangerous on foggy mornings. I do not support the proposed increase of train movements from Moolarben Mine. There are already too many trains on the line, mostly running at night and all weekend. This is to fit in with other train movements on the Hunter main line during weekdays. However, there can be random trains at any time. The noise from these long heavy trains at night is horrendous and causes loss of sleep. Before the mines moved in, we lived in a quiet rural area with no background noise at all.

40 The noise from the coal trains carries long distances, particularly in winter. Sleep disturbance is a known and well-studied health impact. The belief that people will eventually get used to train noise does not work at our place. This is because there is no regularity in train movements. Sometimes they can be about 20 minutes apart for days. Then there will be a welcome silence for days before they start up again.

45 Because of the current load on the rail line, it has to be prepared more regularly. We get the rail grinding machines in the middle of the night with the argument from the ARTC that this is the most convenient time for them to do the work.

Again, the impacts of this sleep disturbance on neighbours to the rail line is not considered. The fact is Sandy Hollow rail line is already over capacity with coal trains. The ARTC are not the right people to be asking about this issue. Their funding comes from selling space on the line and they will most likely continue to agree to do this. I agree with others that the Commission needs to do an independent review of the capacity of the rail line including the recent spate of derailments that show a poor safety record. On another front, the Goulburn River has deteriorated significantly over the period of time we have lived on its banks. This has coincided with the approval of major coal mine development on the head waters. No one has seriously looked at how much water is being taken from the river.

Ulan and Wilpinjong mines currently dump water into the river when it suits them. This needs to change, so that water is returned when the river needs the flow to suit the weather conditions. I don't agree with the argument that O'Briens Crossing won't be affected by mine water discharge during flood flows. There have been times when the major source of flows have come from rainfall at Ulan and not in other parts of the catchment. In the 2010 flood event, all three mines were given approval to release water outside the rules of their licences. This caused the flood flow across O'Briens Crossing to be extended for a longer period of time. Moolarben already has approval to release up to 10 megalitres a day. They have not used this to date. There should be no additional water releases approved from this mine.

Finally, I am worried about climate change. It is highly irresponsible for any decision-maker to be approving an increase in coal extraction when global scientists are warning us of the dire consequences. Yancoal already has approval to sell up to 18 million tonnes of thermal coal every year until 2038. I find this to be completely outrageous. I have a new grandson, only nine months old. I grieve for the future he is facing with wilder damaging storms, longer heatwaves, more severe droughts, bigger fires for longer periods, raging floods. How can anyone seriously be prepared to inflict this life on our children? The Moolarben modifications must be rejected.

The mine is already too big with too many adverse impacts that will not be fixed. There are no additional jobs. More impacts on the river and neighbouring communities and greater economic costs through increased greenhouse gas emissions. There is no justification for this increase in coal production. 14 modifications of the Moolarben mine over a 12 year period shows how poor the planning process is in New South Wales. I thought the purpose of the Independent Planning Commission was to improve the process. I trust the Commissioners will take notice of my objections and take a serious look at the implications of the proposal before you especially the issues about the trains, the Goulburn River and climate change. Thank you.

MR KIRKBY: Thank you. Our next speaker is Virginia Nicholas.

MS V. NICHOLAS: Thank you, Commissioners. I'm here today representing Mudgee District Environment Group. We sought advice from the New South Wales

Environmental Defenders Office in regard to the relevance of recent land and environment court judgment that refused the Rocky Hill Coal Mine. I have a letter from the EDO that I will table for the Commission and give a verbal summary. The letter states that in relation to climate change impacts of the Rocky Hill Coal Mine project, the court accepted Professor Will Steffen's expert opinion and found that the direct and indirect greenhouse gas emissions of the Rocky Hill Coal Project will contribute cumulatively to the global, total greenhouse emissions. Significantly, Professor Steffen's evidence was not contested by the Minister for Planning in the Rocky Hill case. We note that Professor Steffen has provided equivalent evidence in the consideration of the IPC in relation to the proposed Moolarben Coal Mine Stage 1 Modification. And I think the microphone is slipping into my navel. I'm sorry.

MR KIRKBY: We can hear you.

MS NICHOLAS: Can you? I was so provided equivalent evidence for the consideration of the IPC in relation to the proposed Moolarben Coal Mine State 1 Modification 14 and Stage 2 Modification 3. Rosemary Hadaway will be presenting this expert report on behalf of the Mudgee District Environment Group shortly. But the EDO letter also states that:

The court found that there is a causal link between the Rocky Hill Coal Project's cumulative greenhouse gas emissions and climate change and its consequences. Therefore, the cumulative impact of the Rocky Hill Coal Project's direct and indirect greenhouse gas emissions on global climate change were relevant considerations to be taken into account in the court's decision to refuse development consent for the project. Similarly, the Mudgee District Environment Group submits the cumulative impact of these modifications direct and indirect greenhouse gas emissions on global climate change is a relevant consideration to be taken into account by the IPC when assessing the modifications.

We note that in this case, the modifications involve a request for an expansion of the project output, yet continue to permit mining operations to be carried out in the site until 13 December 2038 as reflected in the draft considerations of consent. In relation to climate change impacts of the Rocky Hill Coal Project, the court further found, amongst other things, that consideration of the principles of ecological sustainable development can involve consideration of climate change. Although GRL submitted that scope 3 emissions should not be considered in determining GRLs application for consent for the Rocky Hill Coal Project, I find that they are relevant to be considered.

The judgment states that the consent authority's task determined the particular development application and determined whether to grant or refuse consent to particular development, the subject of that development application. Where the development result in greenhouse gas emissions, the consent authority must determine the acceptability of those emissions and the likely impacts on the climate system, the environment and people. The court concluded that the Rocky Hill Coal

Project – poor environmental and social performance in relative terms justifies its refusal and that included the greenhouse gas emissions of the Rocky Hill Coal Project and the likely contribution to adverse impacts on the climate system, environment and people.

5

EDO submits that the issues raised in the judgment also form relevant considerations in relation to the modifications before you. The letter provides much more detail on the judgment that I won't refer to now, but trust the Commissioners will take this correspondence into account as part of the Mudgee District Environment Group's submission to the community consultation process. The Rocky Hill Coal Mine Project was to produce 21 million tonnes of run-of-mine coal with 13 million tonnes of product coal over a 21 year period. The majority of the coal is coking coal used for steel making. This was production rate of less than one million tonnes of coal per year.

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In comparison, the Moolarben mine complex has approval to produce 21 million tonnes of run-of-mine coal per year, with an annual product coal limit of 18 million tonnes per year. All this coal is for thermal use through power stations. The modifications proposed to increase the run-of-mine coal by an additional three million tonnes per year up to 21 million tonnes, and the product coal by an additional four million tonnes per year up to 22 million tonnes. The modifications in themselves are a three times greater volume of annual run-of-mine product than the Rocky Hill Project over – and over a four times greater volume of annual product coal.

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The proposed annual production of 22 million tonnes of thermal coal for a 19-year period until 2038 will produce a vastly greater volume of greenhouse gas emissions than the Rocky Hill Coal Project. We submit to you that the Land and Environment Court judgment refusing the Rocky Hill Coal Project on the grounds of climate change impact is highly relevant for your consideration when assessing the application before you. I will table the EDO letter and have given you the court judgment on the Rocky Hill Coal Project for the Commissioner's consideration. Thank you very much for your time.

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35 MR KIRKBY: Thank you, Virginia. Our next speaker is Barry Hadaway.

MR B. HADAWAY: Do you have my presentation?

MR KIRKBY: Yes, on an

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MR HADAWAY: All right. Well, thank you for the opportunity to address the Commission today. I will just put up there some details. You're probably all familiar with the details of what the modifications are seeking, including the 18 to 22 million tonnes increase in annual coal production limit. So when it comes to considering things like greenhouse gas emissions, I'm not quite clear, from reading the documentation, as to whether we should be using three million tonnes or four million tonnes, and I think that needs to be clarified. But either way, the

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modification would have a major impact on greenhouse gas emissions, which I don't think is ecologically sustainable in any way, and on that basis alone, the modification shouldn't be approved.

5 Go to the next slide. Now, just using three million tonnes, my rough estimate of the increase in greenhouse gas emissions would be that it adds up to 8.7 million tonnes per annum. In the company's documentation they do show in section 495 the greenhouse gas emissions part of the environmental impact statement, the figures for diesel usage and electrical, and they show the burning of coal as 7.3. There's no
10 mention of the CO2 equivalence from methane emissions. Now, methane emissions were taken into account when the original approval for the Moolarben mine was granted back in about 2007. The company's documentation from 2006 shows the factor there I've used in note 2 of 45.5 kilograms per tonne of coal produced as the basis for calculating the methane emissions.

15 So for whatever reason, the environmental impact statement is somewhat light on in its assessment of the greenhouse gas emissions. Now, in section 495 also, it's suggested that we shouldn't worry about the emissions from burning coal as, to quote the company's document:

20 *These scope 3 emissions would not physically occur in New South Wales or Australia as product coal would be exported to overseas customers.*

25 So we shouldn't worry about greenhouse gas emissions because it will be burnt overseas. Well, that's very comforting. I didn't know until I read that that Australia had a separate atmosphere from the rest of the planet. Can we go to the next slide, please. They also argue there's no increase in emissions over the life of the mine. But the big consideration here, really, is the increase in emissions in the short term. If we're going to limit warming to two degrees, we need to be reducing emissions
30 now, not increasing them. Can we go to the next one, please. This graph represents our challenge in reducing greenhouse gases. The IPCC has adopted an approach in explaining this of talking about a carbon budget.

35 And the graph shows what needs to be done, depending on when you start reducing emissions. So if we had started back in 2016, we would have had 25 years to reduce emissions to zero. If we start in 2020, we've got until 2040 to reduce the emissions to zero. If we delay another five years to 2025, we've got to reduce emissions to zero by about 2035. So the task of transforming the whole global economy becomes absolutely impossible. Now, I don't think people should forget the fact that we've
40 only experienced one degree of warming up to date. And that's causing enormous problems. Two degree of warming is going to give us a world that will be vastly different from the one we have now, and the damage from cyclones and all the rest of it is probably something we don't even want to contemplate.

45 But two degrees is the best we can achieve if we start reducing emissions from 2020. If we keep delaying and we keep increasing emissions – as Australia has for the last three years – then goodness knows where we're headed. So the message is, we really

have to start now, and approving this modification application is certainly not reducing emissions. If we go to the next one, please. Now, I guess you're familiar with these implications of global warming: the bushfires, floods, heat stress, cyclones. But if I can just expand on this a little bit. As with many people locally, I'm in the local RFS, and the fire season starts a month early these days – just been extended for another month.

And in December, our brigade captain was going around the district, looking at all the dams on properties, trying to find one that had water in it. We've got equipment, we've got men to fight fires, but you can't do much if you haven't got water. The floods in Queensland, you've seen that on the news, hundreds of thousands of cattle drowned after seven or eight years of drought. Now, the heat stress one, this is something people might not be fully aware of. Heat stress is the biggest cause of deaths from natural disasters in Australia already, but if you think about the tropical areas up in the north, the absolute temperatures that you see on the weather reports are not what matters. It's the wet bulb temperature. And a temperature of 35 degrees is critical, because that's when you cannot cool your body from perspiring.

And, as you know, body temperature is about 37. If you expose people to a wet bulb temperature of 35 degrees or above for any length of time, even fit, healthy people will eventually – well, not eventually; in a few hours, they can die. Now, back in 2015 in India and Pakistan, 5000 people died in a heat wave when the wet bulb temperatures were in the range of 29 to 31 degrees. So a couple of degrees is pretty critical. Once you start to go up, when you get to, you know, 31 to 33 degrees wet bulb, you've got tens of millions of people at risk. So it is something that, you know, so one or two degrees of global warming, the implications are just enormous.

Can you go to the next one. Apart from the weather, which gets all the headlines, so one area I'm concerned about is the impact of warming on food production. Drought is obvious. Floods are obvious. Grain probably not so. At higher temperatures you get reduced pollen viability and seed set, so productivity from grain crops will go down. Bees – I'm a beekeeper and I know some of the professional beekeepers in Mudgee. They've already lost hives in recent years just from excess temperatures physically melting the wax and the honey, and it's running out the front of the hive. Bees pollinate 40 per cent of the food plants we eat, and if we start to lose the bees then, you know, availability of food goes down there.

Animal stress. Chickens will drop dead if they're exposed to high temperatures for any length of time, and the humble chicken is one of the most important sources of protein to people worldwide, through eggs and meat. So it's not a frivolous thing to put reference to chickens up there. It's very serious. And the final one, inundation of river deltas. They're the most productive farmlands we have. Can we go to the next. Now, sceptics say that, you know, the modification will only add a little bit of global gas warming and that, and it shouldn't really matter, but that's nonsense.

Total greenhouse gas pollution is the sum total of thousands of such mines, and back in 2006 in Moolarben's response to submissions, they actually stated that in practice,

however, the effects of global warming and associated climate change have a cumulative effect of thousands of such sources. So, in the past, the company itself has admitted this does matter. Next one, please. Right. Now, very quickly, we're focussing on coal production because most of the coal is used for power generation and it is something, as the information there suggests, that we can easily find alternatives to. We could convert Australia to 100 per cent renewables by 2030 with existing technology. Next one. I've got two more slides, if that's possible.

MR KIRKBY: Yes. Just quickly.

MR HADAWAY: Sceptics argue there's no point in Australia moving to renewables if China is going to continue polluting. This doesn't hold water, as Australia's race – as China – sorry – is leaving Australia behind in the switch to renewables, as per all the information up there. They're committed to getting 15 per cent of their electricity from renewables by 2020. Building a new grid, they put a million cars – electric cars – on the road last year, and they're building large vanadium redox batteries for grid stabilisation. The next one. All right.

Now, you're familiar with the requirements of the New South Wales Protection of the Environment Act which defines ecologically sustainable development, and, considering the reality of climate change, the Moolarben modifications don't meet any of these ESD tests, and I think, on that basis alone, they should be rejected. The next one. Now, I wonder, if proposals such as this are so clearly in conflict with the principles of ecologically sustainable development, how do they get through the Department of Planning in the first place? And I can only assume they're justified on the basis of the triple bottom line, but this concept doesn't work in practice.

Time and again, a so-called balance is struck by sacrificing a bit more of the environment. The environment that sustains us and a lot of living things is suffering a death by a thousand cuts. In recent months, we've seen bushfires, floods, cyclones, massive fish kills in the Darling, algal blooms in the Karuah, 20,000 flying foxes drop dead in extreme heat. So using the triple bottom line to justify all this, to justify bad decisions, just has to stop. So I would conclude by saying that the Moolarben modification asks for approval to increase greenhouse gas emissions at a time when emissions needs to be reduced.

To deliberately exacerbate the extreme problems that global warming is creating would be madness. It would be a betrayal of our children and grandchildren and all future generations. Please do not approve this application. Send the government a message. Enough is enough. We have to start reducing greenhouse gas pollution and we have to do it now. Thank you.

MR KIRKBY: Thank you, Barry. Our next speaker is Rosemary Hadaway.

MS R. HADAWAY: I'm a little short, sorry. Is that – that sufficient there? Thank you. Thank you, Commissioners, for this opportunity. My name is Rosemary Hadaway, and I'm a member of Mudgee District Environment Group – MDEG. It's

my privilege to present an expert report today, written by Professor Will Steffen. His name has already been mentioned. Professor Steffen is an emeritus professor at the Phoenix School of Environment & Society, the ANU. He's the senior fellow at the Stockholm Resilience Centre. MDEG is very grateful for the time and effort put into this document by Professor Steffen, and we extend our thanks to him.

He is currently a climate counsellor with the independent, publicly funded Climate Council of Australia. He has a long history in research, and his interests span a broad range within the fields of sustainability and earth system science. There's an emphasis on the science of climate change and the history and future of the relationship between humans and the rest of nature. His CV, including his relevant qualifications and publications list, is attached as an appendix to the paper. There are 33 references cited for this paper. They are from peer reviewed journals, Australian Government departments, the CSIRO, the Bureau of Meteorology, and the Intergovernmental Panel on Climate Change, the IPCC. Thank you.

His executive summary gives us five key matters. Climate change is real, it poses serious threats for the wellbeing of our societies. These risks rise rapidly, and non-linearly, with the rise in global average surface temperature. In other words, the risks rise hugely and greatly beyond an increase in that surface temperature. Number 2 is that recognising the risks to the wellbeing of unchecked climate change, the risks are too high. Governments have agreed through the Paris Accord to limit warming. They give a range of one and a half to two degrees, two degrees being the absolute maximum.

So to work out how those targets work in practice, in point number 3, he tells us the carbon budget approach is the most robust way to determine and achieve a rate of emissions reductions, and this approach actually limits the amount of additional CO₂ emissions that can be allowed. His point number 4 tells us that to meet a two degree carbon budget a very rapid phase out of all fossil fuel usage, by 2050 at the latest, is required. The one and a half degree carbon budget is smaller and therefore more stringent: it requires an even more rapid phase out. This means that – on the next slide – his final point in the executive summary is very clear: most of the world's existing fossil fuel reserves must be left in the ground. Most. Unburned. No further fossil fuel developments, or extensions to existing mines or wells, can be allowed.

This paper provides a clear picture of our global predicament and, as you can see, gives a sobering challenge to us all, particularly planning decision-makers. Professor Steffen spends some time in his paper explaining climate change, the greenhouse effect and so forth, and gives extensive data as to the current impacts for our given situation now. There's some significant data on the slide there. This is known, recorded fact. Some sobering things there. Further data is given on the next slide, and he also narrows down this global picture to our Central West region. The number of heatwaves are – days are increasing. The duration of the longest heatwave is increasing. The hottest day of a heatwave is becoming hotter.

What sort of a projected future does this give us, then? This is what the data is telling us is happening now. Here in the Central West we can see the projections give us a strengthening of the conditions we are currently experiencing: greater impacts, hotter days, warmer spells, all those sorts of negative aspects to our climate and our life experience are given with a very high confidence. That's what we predict, that's what is known from looking at the projections. Also, the next slide gives us a bit more of that picture for the Central West. He is suggesting – well, sorry, not Professor Steffen. His evidence tells us that there will be a decrease in winter rainfall. Yes, that's probably likely. But there will be an increase in intensity of extreme rainfall events, and a harsher weather fire climate. Not a good scene. Not the sort of future we want.

The next slide is perhaps a little complex, and I hope you can bear with me for a moment. If I draw your attention to the vertical axis on the left-hand side, we can see it's in degrees of increase warming. The green dotted line, horizontal, tells us where we are now, at one degree of warming. We can see there is impacts on our natural ecosystems already; there are, indeed yes, extreme weather events. We're not quite at the tipping points yet. That's the far column to the right. But if the Paris Agreement targets are reached by everyone, that's the broad band across the middle in blue, we're looking at one and a half to two degrees warming, yes, we're at risk of the tipping points.

And by that Professor Steffen is referring to the feedback loops in our climate system whereby the Greenland ice sheet melts, the methane is released from the melted peat in the northern hemisphere, the summer arctic ice disappears, all of which will give us feedback loops that will intensify the increasing of the temperature. But we're not quite there, perhaps, at two degrees. But if we look at the column on the left, our natural ecosystems, well, we're in big trouble. But where's Australia in all this? We're not doing nearly enough to meet our obligations under the Paris Accord which we have signed.

If every country followed Australia's level of action, we would all be on a trajectory to reach that red dotted line towards the top at four degrees. I don't think we want that world, and I don't think the royalties expressed by Moolarben, payable to our government, are going to repay any of that expense. Let's have a look at the Paris Agreement, then. 197 countries, including Australia, agreed, "Yes, this is a problem. We need to limit the global average temperature rise to well below two degrees and try and keep it down to about one and a half." But, sadly, Australia's target is inadequate to meet those obligations. Australia's climate change authority has analysed the policy and programs and says that, "No way."

An appropriate target would be a 45 to 65 per cent reduction. Wow. That's a long way different from our current policies, plans, and actions. This idea of a carbon budget is just an easy way of assessing that CO₂ and temperature are relatively linear. They go along approximately hand in hand, so therefore we know to prevent or stop at a given temperature we need to stop emissions at a given point. That's budgeting. I'm sure we've all done it. "No, kids, there's no pizza tonight. Not if you want to go

on a holiday next month.” Okay. Let’s have a look, then, at where we might be going. This visual just illustrates that linear relationship, and if I can draw your attention to the vertical axis, again on the left-hand side, showing the temperature.

5 These colours – sorry. I should mention the coloured plume represents the spread of results across a range of climate change models. So they’re all broadly saying yes, emissions at various levels, that’s the temperature that we’re going to get. The numbers in the coloured boxes are probably a little hard to read, but if we look where the two degrees is on the left and come across, you will see a cluster of boxes there.
10 That’s the years given as 2030, around about 2040. That’s when we need to reduce and stop emissions. It needs to start to go down, our emissions budget, because we haven’t got any time beyond that. If we continue to increase emissions, then obviously we would move to something disastrous like the four or even five degrees as indicated that the models tell us would happen.

15 So if this is the projected information that the best models and scientists around the globe are telling us, how does that inform our actions now? I draw your attention, on this graph, to the shape of the curves. We can see fossil fuel is coming in on that grey line, yes. That’s where our emissions have been, our emitted carbon that we need to budget severely because we want to have a liveable planet in the future.
20 That’s our goal with this budget.

Most of the world’s existing fossil fuel reserves must be left in the ground unburned. 2016 is the blue triangle and the blue line on the graph. That’s already gone. We’ve
25 missed the boat on that. Opportunity lost. But the orange one, 2020 – hang on, that’s next year – let’s see. If we peak emissions at that point, yes, yes, looks like we could manage emissions technologically and economically at that point. Maybe. It’s going to be a steep, downward rocky road, but don’t leave it till 2025. How could we manage that descent?

30 So how does this carbon budget approach relate to Australia and the Moolarben modifications before us? 62 per cent of the world’s existing fossil fuel reserves need to be left in the ground unburnt. I’m sounding a little like a broken record. But that is what is required to remain within the carbon budget. So not only operating mines
35 that are in existence now, and gas wells need to be closed before their economic lifetime is completed – sorry, that’s the life of it, though, if you’re a miner – but also, that no approved but not yet operating, no proposed projects, nor any increased production from existing mines can be implemented.

40 Professor Steffen makes that very clear in his report. This analysis, then, applies to the proposed Moolarben modifications – if we could move to the next slide – and is particularly relevant given that the proposal is to expand the annual output and maintain an approval until 2038. Dear. I wonder how on track we are for reaching that target of maintaining our global temperature rise of containing that by budgeting
45 our emissions. Professor Steffen concludes:

Australia's existing fossil fuel industries must be phased out as quickly as possible –

not expanded –

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with most of the fossil fuel reserves left in the ground

We simply will not be able to achieve that reduction in emissions and therefore maintaining our temperature if they are taken out, mined, exported, moved, washed, 10 burned anywhere in the world. It doesn't matter. We live in a global system. His second conclusion is that development of new fossil fuel reserves, or increased production from existing mines, no matter how small, is incompatible. That's assuming we want a fifty-fifty chance of meeting that temperature target. And mind 15 you, two degrees, if you recall from the column graph, shows some pretty major changes to our natural ecosystems, to our problems of our most vulnerable peoples in the world being impacted in a negative way, and the risk of increasing our tipping points, which will provide a more serious feedback into our system.

His third conclusion is that, obviously, based on this analysis, the approval of the 20 modifications is simply inconsistent if we wish to stabilise our climate. I didn't dwell greatly on the current impacts or the projected impacts – I think we've heard that from Tane and Barry and others through the morning – of the increased global average surface temperature and the changes in the dynamics of our weather system and the global air patterns, such as the Jetstream and the gulfstream. It's a global 25 world we live in. Professor Steffen is aware that the Moolarben modification paperwork includes two arguments that are commonly put forward as to why coalmining might proceed.

He claims they are fallacious. "Well, my emissions are too small. It doesn't really 30 matter. No, it's just a little increase over here." Well, I'm not sure the tax office would quite agree if I use that as an analogy and say, "Excuse me, ATO, my small personal income tax isn't really a big deal." I don't think they would accept it. No. And neither should they. Neither should we accept this fallacious argument. Global 35 greenhouse gas emissions are made up of millions, probably hundreds of millions, of individual emissions around the globe. All emissions are important. They contribute to the whole. The second argument suggests that some other coal resource will be developed. No, sorry, that's not actually valid. It assumes there is going to be a continuing or a new demand.

40 Global production peaked in 2013 and has been in steady decline since. Come on, guys. No. The recent judgment in the Gloucester Resources Limited on the Rocky Hill mine recognised the flaws in these arguments. MDEG believes that Professor Steffen's report clearly and irrefutably explains why the Moolarben coal 45 modifications cannot proceed. We believe it presents also a case for complete removal, complete reassessment of underground 4, which has not even commenced yet. It is due to commence in 2020. But wait a bit. That's the year where we should

be peaking our emissions. It doesn't make sense. We commend his paper to you, and we urge you to refuse this application. Thank you.

5 MR KIRKBY: Thank you, Rosemary. Our next speaker is Vivienne Armitage.

MS P. SETCHELL: Obviously, I'm not Vivienne, but I was speaking with her last night. Can I speak for two minutes on her behalf.

10 MR KIRKBY: Sure.

MS SETCHELL: Just very briefly.

MR KIRKBY: Yes. I will allow it.

15 MS SETCHELL: Vivienne spoke with me last night as she was preparing her report, and I just want to very briefly say to the Commission that she is a woman of extreme talent and a very valuable person of the community who has been personally impact by the noise of the Moolarben Mine developing in the Moolarben Valley, near where she lives, and increasingly it has affected her ability to function in our
20 society, in our community, and we see this incredibly talented woman daily going downhill through lack of sleep and stress from the noise levels that she is having to live with, and nobody takes any notice every time she complains. Thank you.

25 MR KIRKBY: And our final speaker in a personal capacity is Bev Smiles. Thanks, Bev.

MS SMILES: Thank you, Commissioners, and thank you for the opportunity to speak on my own behalf as an impacted local resident with property fronting the Goulburn River downstream from the three large coal mining operations on our
30 doorstep. I would just like to give you a little bit of background on my experience with New South Wales Government water planning processes and environmental regulation. I held a position as a community environmental representative on the Hunter River Management Committee that developed the rules for the Hunter Regulated River Water Sharing Plan and the Hunter Unregulated River and Alluvial
35 Water Sharing Plan. I was a trustee on the Hunter Catchment Management Trust until it was disbanded in 2004. And I was also a community environmental representative on the EPA board until it was disbanded in 2011.

I have been raising the issue of mining impacts on the Goulburn River in these
40 forums for at least the last 20 years and more. There has been concern expressed amongst industry players in the region that the Goulburn River is not included in the Hunter River Salinity Trading Scheme and that management of mine interception and mine discharge has been unsatisfactory. The application for mine expansion on the headwaters of this major tributary of the Hunter appears to continue unabated and
45 propped up by support from government planners.

The community knows that the environment agencies, OEH and EPA and water managers in DOI Water are under constant pressure to negotiate compromised outcomes to allow coal mining projects to get through the approvals process. The Independent Planning Commission – you, Commissioners – are the only body to stand above political pressure. We rely on you to take a bigger picture look at the cumulative impacts of these large mining footprints and the permanent damage being perpetrated on water sources. It seems to me to be a form of suicidal madness to be approving increased greenhouse gas emissions while further destroying critical water sources at a time when more intense droughts and water shortages are worsening through carbon intensive climate change.

I have lived in this area for almost 50 years, well before any large scale mining operations were approved. The degradation of the Goulburn River over the past 40 years has been very evident. When Ulan Mine was first approved in the mid-1980s it was touted as the largest coal mine in the southern hemisphere. Ulan now has approval to mine 20 million tonnes per annum and has caused significant damage to the Goulburn River. It took community campaigning, that started in 1994, to get limits placed on water discharges and salinity levels, and it took us until 2010 – with the approval of the large Ulan West expansion – for a condition of approval to require Glencore to rehabilitate the river diversion. This work has finally been completed.

I'm also a community member on the three community consultation committees, or CCCs, that operate at the three mines: Ulan, Wilpinjong, and Moolarben. The relationship between the three companies and interconnected impacts on the community and environment is highly complex and often poorly managed. The lack of transparency around various arrangements signed off by government is disturbing. In regard to the ongoing decline of the health of the Goulburn River, it should not be impacted by any more additional salt load. As a landowner with basic rights, the increasing salinity levels in the river threaten my soil, stock, and domestic appliances.

The EC limit for the current volume of mine discharge should be reduced to 500 EC to match the latest approval at the Wilpinjong Mine. There should be no additional volumes approved for discharge from Moolarben. It is important, as stated by a number of presentations today, that mine water discharge into the river system be carried out under a set of rules that provide for seasonal, hydrological needs of the river and its dependent ecosystems. Water importing to the mines is from the surrounding landscape. Replacement flows to the river need to provide environmental benefit. Currently, the three mines have approval to discharge water into the environment when it suits the mining operations.

This water management needs to be turned on its head so the water released from the mines occurs when the river needs the flow. This should be triggered by antecedent conditions in the catchment, particularly during times of low and medium rainfall events. The community has been calling for an independent water study of mining impacts on the Goulburn River for at least the last 20 years. It is heartening to see

the EPA has recommended this in regard to water quality management, and that DPE has also recognised the need. This study must be done to inform the decision-making process, and not post-approval. It should also include consideration of the environmental flow releases needed to improve the hydrological health of the river.

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Now, you've also heard a bit about trains today, and I'm constantly impacted by train noise at night. The ARTC and EPA assessment tool of impacts up to 500 metres from the line is not appropriate for rural areas with no background noise levels. We have the train noise echoing off the high sandstone escarpment in our valley, and it is highly disturbing at 1 am, 2 am, 3 am in the morning. I also find myself more frequently held up by very slow train movements across level crossings. This occurred last Friday when I was travelling into Mudgee to attend the funeral of the last teacher at Wollar school, which was closed in December last year because of the social impacts of the Wilpinjong mine.

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The sandy, hollow rail line is already dangerously overloaded with coal trains, and has no capacity to take more. An increase in coal production cannot be approved, because Moolarben coal stockpiles are already full. It is time that some balance is brought back into the decision-making process so that social and environmental impacts are given the same weight as perceiving economic benefit. The key beneficiary of the proposed modifications is Yancoal. This is backed up by DPE in the executive summary of the final assessment report that states that increased production limits will allow annual revenue to increase.

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There are no additional social benefits through increased employment, and the proposed royalties cannot be assured. The social and environmental impacts of the increased coal production will not be mitigated. By all means, approve the reverse osmosis plant and the proposal to eliminate open cut free overburden in placement, but please do not increase the approved discharge volume, and reduce the salinity limit to 500 EC. Commission the independent water study to inform your decision-making. This should also increase a rigorous assessment of the newly-predicted inflows into Moolarben underground workings and their environmental impacts on regional groundwater systems.

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This application to modify Moolarben Stage 1 and Stage 2 approvals give you, Commissioners, the ideal opportunity to fix what is wrong with this poorly assessed mining complex and its current inadequate conditions that have not managed its impacts. As the final determining body, you have the power to strengthen the conditions of approval so that they better manage the significant impacts of this giant mining operation. Thank you.

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MR KIRKBY: Thank you, Bev. That was our – that brings to a conclusion the speakers for today. I would just like to thank everybody for coming along today, particularly those that got up and spoke. There are a lot of issues that have obviously been put before us to take on board as part of our assessment. As I said in the opening address, we will endeavour to determine this matter as soon as practicable. Obviously, from our point of view, we need to take into account everything raised

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today. It's likely we may have to go back and get clarification on some of the matters raised today, so this won't be a quick process. We will take our time to get the decision right. Once again, I would just like to thank everybody for coming along and participating. Thank you.

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RECORDING CONCLUDED

[1.37 pm]