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SENATE

ENVIRONMENT, COMMUNICATIONS AND THE ARTS REFERENCES COMMITTEE

Reference: Impact of mining in the Murray-Darling Basin

MONDAY, 28 SEPTEMBER 2009

GUNNEDAH

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SENATE ENVIRONMENT, COMMUNICATIONS AND THE ARTS

REFERENCES COMMITTEE

Monday, 28 September 2009

Members: Senator Birmingham *(Chair)*, Senator McEwen *(Deputy Chair)*, Senators Boswell, Ludlam, Troeth and Wortley

Substitute members: Senator Siewert to replace Senator Ludlam

Participating members: Senators Abetz, Adams, Back, Barnett, Bernardi, Bilyk, Mark Bishop, Boyce, Brandis, Bob Brown, Carol Brown, Bushby, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Farrell, Feeney, Ferguson, Fielding, Fierravanti-Wells, Fifield, Fisher, Forshaw, Furner, Hanson-Young, Heffernan, Humphries, Hurley, Hutchins, Johnston, Joyce, Kroger, Ludlam, Lundy, Ian Macdonald, McGauran, McLucas, Marshall, Mason, Milne, Minchin, Moore, Nash, O'Brien, Parry, Payne, Polley, Pratt, Ronaldson, Ryan, Scullion, Siewert, Sterle, Trood, Williams and Xenophon

Senators in attendance: Senators Birmingham, Ludlam, McEwen and Williams

Terms of reference for the inquiry:

To inquire into and report on:

a. the potential impacts of current and projected mining operations on all environmental values in the Murray-Darling Basin and, in particular, the potential impacts upon surficial and groundwater flows and quality in the alluvial flood plains at its headwaters in the Namoi Valley and the Darling Downs catchments; and

b. evaluation of the potential impacts in the context of the Murray-Darling Plan and agricultural productivity.

In these terms of reference, 'mining operations' includes all minerals exploration and all minerals extraction including exploration for and extraction of gas.

WITNESSES

Committee met at 1.59 pm

CHAIR (Senator Birmingham)—Good afternoon, ladies and gentlemen, and welcome, everyone. Thank you very much for coming today. I declare open this public hearing of the Senate Environment, Communications and the Arts References Committee in relation to its inquiry into the impacts of mining in the Murray-Darling Basin. The committee's proceedings today will, as best we can, given our slightly belated start, follow the program as circulated. I apologise to those whom we have kept waiting for a little while.

These are, of course, public proceedings. I note that we have members of the media in attendance today. The committee, however, may agree to a request to have evidence heard in camera or may determine that certain evidence should be heard in camera. I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to the committee. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may, of course, also be made at any other time. With those formalities over, I welcome everyone here.

[2.00 pm]

McDONALD, Ms Rachelle, Director, Environment and Community, New South Wales Minerals Council

TAN, Ms Sue-Ern, General Manager, Policy and Strategy, New South Wales Minerals Council

CHAIR—I welcome the representatives of the New South Wales Minerals Council. Thank you very much for taking the time to speak with us. We have received a submission from the Minerals Council as submission No. 63 to the inquiry. Do you wish to make any amendments or alterations to that submission?

Ms Tan—No, we do not.

CHAIR—Thank you very much. In that case, would you like to make a brief opening statement before we proceed to questions?

Ms Tan—Yes, thank you very much. At the outset: the Minerals Council is very glad to be able to give this evidence before the Senate committee. This is a very serious issue which our industry and we, as the industry association, take very seriously. I also want to quickly note that we were supposed to have Shenhua appearing with us today. They will be providing their evidence in a written form by 9 October. I will just put that on the record. But, obviously, we are their representative organisation as the peak industry association, so please take anything we say to be representative of our members' interests as well.

The New South Wales Minerals Council, as I have said, is the peak industry association representing mineral exploration companies as well as the producers of coal, minerals and extractive materials in New South Wales. The industry, as most of you will know, makes a very significant contribution to the state—although I note that Senator Williams is the only New South Wales representative here. I will just give you a bit of background information, if I may.

In 2008, the minerals production in New South Wales was valued at $14 billion, and we paid an estimated $1.4 billion back in royalties and taxes to the people of New South Wales in 2009. So, in effect, we basically halved the New South Wales government budget deficit for that year, I would note. The industry also directly employ 47,000 people and a further 200,000 people indirectly through the jobs that we support. These jobs are mainly in regional New South Wales, and this greatly contributes to the social, environmental and economic fabric of the communities in which our members operate.

We also want to note that mining is a temporary use of land. In New South Wales, it accounts for 0.1 per cent—so that is 0.1 of one per cent—of total land use in New South Wales. The majority of this mining is located east of the Great Dividing Range. In the New South Wales portion of the great Murray-Darling Basin, there are seven major coal operations and nine major mineral operations, with coal mainly mined in the western coalfields, which are out near Mudgee, and of course, as I am sure most of you will know, the growing development of the coalfields around here in the Gunnedah Basin. There are also major metallic deposits in the basin from Orange through to Broken Hill, Cobar and West Wyalong. We also have mineral sands found between Mildura and Broken Hill.

There are many examples around New South Wales where mining and agriculture form the basis of a strong, diverse regional economy. The Hunter Valley is a strong case in point, where we have one of the world's leading thoroughbred nurseries, a world-class wine industry and a thriving tourism industry, and they all coexist with a world-leading coalmining sector. We also have examples of mining and agriculture coexisting in the Murray-Darling Basin currently. The best examples are in the central west of New South Wales, where Cadia Valley Operations, with what will potentially be Australia's second largest goldmine, are enhancing and growing the Orange region. Down the road from them, the Northparkes mine is significantly contributing to the social, environmental and economic fabric of the Parkes region. Both of these mines are coexisting with thriving agriculture and regional economies.

The Murray-Darling Basin is a unique landscape due to the combined factors of its geology, landscape history, water systems and climate. For this reason, it is essential that any land use development assesses the potential impacts thoroughly, scientifically and on a case-by-case basis, and this should apply to all land uses, including mining and agriculture.

The New South Wales Minerals Council firmly believes that the existing state and federal regulatory framework more than adequately addresses the concerns that are raised by this inquiry. This framework allows for the evaluation and assessment of the potential impacts of any mining project, including impacts on the environment. Water-sharing plans and sustainable yield projects also specifically address the sustainable

management of water resources that are so critical to our major primary industries of mining and agriculture. The New South Wales minerals industry, a leader in water management, is committed to working with landowners and other key stakeholders to ensure the best outcomes from developing the rich natural resources, both agriculture and mining related, in mining areas, including in the Namoi catchment.

I also want to put on record that mining is a comparatively small user of water in New South Wales. According to the recent Australian Bureau of Statistics water account, which was published in 2006, mining operations consumed only 63 gigalitres of the 5,922 gigalitres of water consumed in New South Wales—that is, just over one per cent of all water consumption in New South Wales. By comparison, agriculture uses 70 per cent, and distribution losses in the New South Wales water supply system account for 10 per cent.

The Namoi Valley, just like the rest of the Murray-Darling Basin, is a unique landscape. For this reason, it is also essential that for any land use, including mining, we thoroughly and scientifically assess the potential impacts on the surface and groundwater resources. Only through a case-by-case approach to assessment can all land users continue to ensure informed decision-making.

The New South Wales Minerals Council endorses the draft terms of reference for the Namoi water study which is just about to be undertaken. The study sets a strong framework for collating quality data that will provide greater spatial understanding of underground and surface water flows in the catchment. The study will also undertake a strategic assessment of the likely impacts of both coal and gas development on the quality and quantity of surface and groundwater resources in the Namoi catchment. The New South Wales Minerals Council believes that this study will contribute to the rigorous science based assessment of future development, including mining, in the catchment. We also strongly believe that it is the government that must determine whether the environmental impacts of any development, including mining, are acceptable in considering the economic and social benefits that development will bring.

We acknowledge that there is potential for further improvements in the existing comprehensive regulatory framework. The New South Wales Minerals Council believes that there is a need for a greater focus on strategic land use planning in regional New South Wales, including in this very important basin of the Murray-Darling Basin. Whole-of-government resource plans that integrate natural resource management, conservation planning and the development and heritage objectives of government would promote the development of integrated landscapes and sustainable use of resources and reduce land use conflicts and maximise the productivity of developing regions. The New South Wales Minerals Council understands that one of the objectives of the Murray-Darling Basin plan is to provide this overarching framework to benefit all stakeholders in the region, and we look forward to its release and will contribute if necessary. We believe that the planning and water management processes in New South Wales are also designed to effectively balance this need in light of the principles of ecologically sustainable development which are enshrined in the in New South Wales Environmental Planning and Assessment Act and the Mining Act.

The New South Wales mining industry pays significant royalties and taxes which contribute to the New South Wales government's consolidated revenue and assist in providing schools, police, hospitals and roads to the people of New South Wales. In addition to the enormous economic contribution to the state, the New South Wales minerals industry also plays a vital role in securing and reinforcing the social infrastructure of regional communities in the Murray-Darling Basin and throughout New South Wales. We are committed as an industry to the environmental, social and economic prosperity of New South Wales and, in particular, regional New South Wales.

CHAIR—Thank you. We will now proceed to questions. Senator Williams, would you like to start off?

Senator WILLIAMS—Ms Tan, you say that you are representing Shenhua today.

Ms Tan—They are a member of our industry association.

Senator WILLIAMS—Are you aware that BHP have given a strong indication that they will not carry out open-cut mining on areas of the Liverpool Plains?

Ms Tan—I understand that those commitments were made recently and their exploration licence conditions were amended accordingly.

Senator WILLIAMS—Has Shenhua indicated that it will act similarly?

Ms Tan—I am not aware of anything specific. I should note that, while we are their representative in terms of being an industry association, we are not able to comment on any of the commercial interests of our members. Any specific questions should be directed to Shenhua. I understand that one of their representatives

is in the room today. They can take any questions down and they will endeavour to respond in writing. I am happy to pass on to our member any questions specific to the project.

Senator WILLIAMS—Some weeks ago, Senator Heffernan and I met with Mr Chen and put the proposal to him that a commitment not to touch the plains country in the exploration area would be of great benefit. I am interested to hear whether they are going to respond to that.

Ms Tan—As I said, any specific questions would have to be answered directly by members. Both BHP and Shenhua are currently in the exploration phase of their projects. As we have outlined very thoroughly in our submission, it is important that any of these questions be addressed on a case-by-case basis. It is up to each individual project to look at the particular geology in that area and the resource and the water and make a decision accordingly, and it is obviously important for the government, in considering any application for development, to make the decision accordingly.

Senator WILLIAMS—BHP have planned to longwall mine some of the area they have marked out, and Shenhua have indicated that they wish to open-cut mine. Are you familiar with that?

Ms Tan—I have seen those statements in public.

Senator WILLIAMS—I am concerned about the dust from open-cut mining. Senator Heffernan heard that a mining company in the Hunter Valley bought some dairy farms surrounding the mining site and allowed one dairy farm to continue their operations without any cost. They said: 'You can have that land. It is no use to us. You can keep dairy farming.' It was only a matter of time before dust from the coalmine settled onto the pastures of the dairy farm and contaminated the milk from the cows, and the dairy had to shut down. Have you had any experience with coal dust contamination on local pastures and neighbouring farms?

Ms Tan—I am not aware of the specific case you have referred to. However, dust and all the other impacts from mining are thoroughly monitored and regulated by the New South Wales government. We are controlled by many different lease and licensing conditions. For example, we have not only the consent conditions under the development application approval from the Department of Planning but also the conditions under our mining lease, the conditions under our environmental protection licence and various other management plans that the industry has to operate under. Dust is obviously an impact from mining, particularly from open-cut mining, but the regulation of that is thoroughly controlled. We monitor it is an industry. Many of our members use real-time monitoring of dust so that we can respond immediately to any concerns when there is more dust than we expected or were planning for. We are very well regulated for that, but I am not aware of the particular example you have referred to.

Senator WILLIAMS—Are you familiar with the importance of underground water to the Liverpool Plains?

Ms Tan—Yes, I understand it. It is obviously a very critical resource.

Senator WILLIAMS—Do you know of mines in New South Wales or any other parts of Australia that are mining in country that has underground water, like the land here, and the effects mining has had on it? Do you have any similar areas?

Ms Tan—I do not know if we have anything similar. One thing I do want to note is that in New South Wales, unlike Queensland or WA, we have the good fortune—or, depending on how you look at it, the misfortune—of mining that operates both on top of and underneath a lot of competing land uses. That is just the way Mother Nature has granted the geological resources for us here in New South Wales. Because of that, we are particularly conscious as an industry to ensure that any mining that we undertake, and any of the potential impacts that flow from it, is assessed prior to the mining even taking place and continually monitored throughout the mining. The impact of mining on water, particularly around subsidence, is managed very thoroughly. In New South Wales we have the subsidence management plan, which is monitored by Industry and Investment New South Wales, which is part of the former Department of Primary Industries here in New South Wales. It monitors a lot of those impacts, and everything is planned before we even do it. Rachelle might have some specific examples.

Ms McDonald—The majority of mining that occurs in New South Wales in some way will intercept either surface or ground water in the majority of cases. There are certainly examples in the Murray-Darling Basin when mining occurs within the aquifer, such as the mineral sands operations down at Gingko. In those particular instances they are saline aquifers that are actually used within the mining process. They use the aquifer to mine in and then rehabilitate progressively behind the mine as the dredging moves forward. So there are certainly examples where aquifers and mines are actually intrinsically linked. There are also aquifers and

groundwater flows throughout the western coalfields, the southern coalfields in the majority of mining in those areas intercept mining or aquifers. There is also very thorough and comprehensive monitoring of those systems. In many cases there is monitoring before and after mining to monitor what those impacts on the aquifer are. That is all done with stakeholders, both community consultative committees and also then working very closely with Industry & Investment NSW to actually look at what the effects are and how the monitoring and management is going afterwards. It is a very comprehensively assessed process.

Senator WILLIAMS—Do you know of any situations where they have carried out the mining and gone through those aquifers and actual pollution and damage has happened? If you are going to drill down or open-cut through them, you are obviously going to disturb the aquifer.

Ms McDonald—Yes, there can be disturbance of aquifers, and often that is part of the assessment process and the government has made a balanced assessment of whether that impact is acceptable or not. Often there is also evidence of that aquifer recovering over time. In the southern coalfields there is a little bit of evidence of groundwater recovery systems, but it is also an area of science that we are still learning a lot about, because every area is different and every geology and every structure is different.

Ms Tan—That is why we reiterate it is critical that it has to be done on a case-by-case basis. I do not mean case-by-case as in the Namoi catchment as a case-by-case but I mean here is a potential mine operations plan, this is what that footprint might look like, here is what the geology is, here is what the water resources are, here is what the other water around that mine operations plan might look like. It has to be that particular and that precise to ensure that it is the most case-by-case and scientific assessment we can possibly provide for any potential mining operation, or any major development, I should say.

Senator WILLIAMS—You are familiar that the federal parliament has passed a regulation that before mining can be carried out in that country a fully independent water test must be carried out on those underground aquifers?

Ms McDonald—I think that was the amendments that were put through at the end of last year to the Water Act.

Senator WILLIAMS—Your industry is well aware of it?

Ms McDonald—I do believe that the majority of the New South Wales regulations actually meet the requirements of what was requested.

Ms Tan—And there is a Namoi water study, as I have already mentioned and is mentioned in our submission. That is currently being undertaken. The industry has committed to partially fund that. I know the federal government has committed $1.5 million as well to fund that study. I am sitting on the ministerial oversight committee chaired by Mal Peters, the former New South Wales Farmers Association president. We are hoping for that study to be commissioned as soon as possible and we will be calling for the experts to be commissioned as soon as possible.

Senator WILLIAMS—How long will it take to carry out a study like that? Would you have any idea?

Ms Tan—The draft terms of reference were decided by the working committee that included not just the mining industry but also the gas industry as well as the Caroona Coal Action Group and Namoi Water, so all the key stakeholders involved. According to the draft terms of reference, we would like that study to be done within 18 months. That is what is actually stated in the plan. But obviously the experts—I am not a hydro-geologist, I am not an expert in that kind of space—will come back to the committee and let us know what is possible. But the agreement by the stakeholders as well as the New South Wales government has approved these terms of reference for the study to be conducted within 18 months of it being commissioned.

Senator WILLIAMS—Thanks. I will have some more later on.

Senator McEWEN—With regard to the Namoi water study, which you say has a timeline of 18 months for that to report, hopefully, at the same time that is going on, the industry is still exploring out there, as we have seen today.

Ms Tan—That is correct.

Senator McEWEN—People are concerned about that. Do you think it would be preferable that exploration and/or mining itself be ceased until such time as this important study is undertaken?

Ms Tan—I will break it up into two. Firstly, obviously the mining operations that exist in the area now have been mining for a long period of time and they have managed their operations and have managed their

impacts, so I do not think you could stop—that is a huge sovereign risk, stopping current existing mining operations from being undertaken while the water study is being done.

I think the exploration activity should continue because it is important, it is gathering data which not only is crucial for specific companies in question but more generally provides us with more information about what the water resources look like in this region and how they all interplay together. I think it is part of an important information-gathering exercise. That data will actually be fed back into the ongoing Namoi water study. I think that process needs to continue and, more importantly, they are legally entitled to do so.

Senator McEWEN—You said that the information that the exploratory activities are gleaning at the moment will also be fed into the Namoi water study?

Ms Tan—That is my understanding. It is all about finding out more. You have to remember that in this region in particular—and I am not an expert on water and I want to make that very clear—my understanding is that there are not that many boreholes that have been drilled to look at what the resources look like. Part of the exploratory work that is being undertaken in the region involves trying to gather more data and more information that is science based to feed back into the process. I think that is very crucial.

Ms McDonald—Just to further clarify that, when the boreholes are being drilled the mining companies are looking at the geological structures. The geological structures will depend on the way the aquifers and the groundwater flow. So being able to feed that information into the studies is a critical part to provide that overall picture so that that three-dimensional spatial understanding, which is one of the aims of the water study, can be gained.

Senator McEWEN—Ms Tan, you said that the mining companies have a legal entitlement to continue exploration—

Ms Tan—I should say with the permission of the landowners.

Senator McEWEN—What is the legal position of the mining companies if, for example, there were changes to either state or federal legislation that prevented further mining activity in this region?

Ms Tan—I think that would raise some very serious sovereign risk questions about doing this here in New South Wales and elsewhere in Australia. As I have already mentioned to the committee, the industry makes an economic contribution and I think that, at the present time, it is important that we continue to give business certainty. A commitment has been made and to then change the legislation and change the rules of the game halfway through the game, I think, would raise some very serious sovereign risk questions for all businesses in New South Wales, as well as in Australia more generally.

Senator McEWEN—Obviously, the presence of mining companies such as Shenhua, BHP Billiton and Santos in this region is controversial and causing some disquiet in the community. Why don't your members just go and do their exploration somewhere else where there are not the sensitivities around the water catchment area in particular?

Ms Tan—I should make it very clear we do not represent Santos. I am not speaking on behalf of the gas producers but on behalf of the minerals producers and explorers in the area. We do not get to choose where our resources are. We do not get to move where the coal, the gold or the copper is, so we are stuck with where it is and we do not get to move that resource. That is the first thing. We do not get to choose. Obviously, it would be much easier if we could just move the mining to somewhere where there is no-one around. But that is not the way it is here in New South Wales. That is the first thing.

Another thing is that there is a resource there that our members are looking at and the industry is looking at. The government has chosen to put those areas up for exploration tender and obviously two of our members are interested in looking at it. It is then up to the government to make the final decision about whether or not any mining operation should go ahead, taking into consideration everything, including the potential environmental impacts, the economic and social contribution of mining and a whole list of other factors as set up in the legislation here in New South Wales. We do not get to choose where it is that we do our mining and where it is that the resources are located. I want to stress that the New South Wales government has put the areas up for tender and companies have responded accordingly, so obviously there is a commercial decision to be made.

Senator McEWEN—But your members do have a choice about where they go and find the resources. Plenty of Senate committees—not this committee necessarily—have heard about the vast amounts of coal resources, for example, in Australia. It is just that a lot of them are not located as close to centres of population or close to export facilities as perhaps the ones here are. What makes this area attractive to your industry?

Ms Tan—My understanding of the preliminary exploration work that is being undertaken in Gunnedah is that it is potentially one of the best-quality coal resources of a world-class standard. It is also potentially the next new large province of a new coal seam, which has not yet been fully explored, which is why the exploration work is being undertaken. I stress it is still at the exploration stage, particularly in this immediate region. We do not get to choose where the coal is, where the good-quality resources are; it is what we are literally given by Mother Nature or just the geology of the earth's surface.

Ms McDonald—Another thing to add is that these resources belong to the community. They are vested in the state, and the opportunity to develop them is for the benefit of society more generally. Currently, these resources in this area are the most viable in New South Wales, when you look at the infrastructure that exists or the proximity to the existing infrastructure and ports, so there are many factors that go into the decisions of where to mine.

Ms Tan—As we have said, that is ultimately a decision for government to make, taking everything into consideration. We do not own the resources; the people of New South Wales own the coal and other mineral resources. We are merely acting on behalf of them in developing those resources and we return our payments back to the government by way of royalties—that is, over $1.4 billion alone for this year. That is a lot of money that the people of New South Wales get back in consolidated state revenue.

CHAIR—On the way through to Senator Ludlam, BHP and Shenhua have paid hundreds of millions of dollars between them for their right to explore. What expectations does the industry have of the future rights to take that exploration further, should appropriate resources be found?

Ms Tan—I do not believe that there are any expectations. The money that was paid was for the right to explore, as you have already said. Any potential development in this area will have to undergo rigorous assessment processes, mainly set out in the Environment Planning and Assessment Act of New South Wales and, if the DA is granted, subsequent to that obviously having to pass through mining leases and getting an environment protection licence et cetera. A licence to explore is not a licence to mine; it is not an automatic equation. I know that there is a misperception within the community that it is, but it is not. It genuinely isn't. If it does not pass through the rigorous assessment process and the government does not think that it does—and there are independent experts involved along the way—and you have to have the science to back it up and, if you don't have that, then you don't and you cannot get it through. That is the reality of it.

Senator LUDLAM—In your experience, how many times have applications for coalmining between exploration and mining phases been knocked back in New South Wales?

Ms Tan—I could not give you an exact number, but I do know that while there may not be a large numerical figure of absolute knock backs, almost all mining applications in their final form are very different to what they look like at the start of the assessment process. That is the reality. Things are modified, things are changed. Mining plans are moved around, the footprint is moved around, different things are looked at as a science. As it goes through that assessment process it gets modified along the way. So while, numerically, there may not be a large number of mining applications knocked back, from what they originally look like to what finally gets approved, very often most of them—if not all of them—are modified in some way, shape or form.

Senator LUDLAM—And mining goes ahead. Are there any that come to mind that have been knocked back on environmental or social grounds?

Ms McDonald—I cannot think of any off the top of my head.

Senator LUDLAM—It may not be zero, but it is a very low number?

Ms McDonald—Absolutely. I should have made that clear. It would not be a very high number. That is true.

Senator LUDLAM—I think that is generally the concern that is being expressed here, that an exploration may not give you a legal title to proceed to mining but there is certainly an expectation that mining will proceed should the resource be found. In New South Wales we have competing priorities or competing land uses of, in this case, food production and mining. What formal assessment is carried out to decide which land use is preferable?

Ms McDonald—Essentially, this would be assessed within the environmental assessment process. Following exploration, and if a decision is made to apply for a mining lease and a mining development, then

cumulative impacts affect competing land uses and local land uses, and social and economic impacts. All of those things need to be assessed during that environmental assessment process.

Senator LUDLAM—It is called an environmental assessment. Does it also assess social and economic impacts of projects?

Ms McDonald—Absolutely. The Environmental Planning and Assessment Act 1979 in New South Wales had the principles of ecological sustainable development enshrined into its objects and there is a definite requirement within each director-general's requirements for project approvals that needs to be undertaken.

Senator LUDLAM—So that would then be undertaken. How are cumulative impacts assessed? You have made quite a strong point that each site needs to be assessed, site by site. We do not want to throw a blanket over a whole region. In an area such as this where you have two quite significant players in the coalmining field with projects that may come online at the same time, who is looking after the combined impacts of those projects?

Ms McDonald—Ultimately, the government does, but the way that the operations assess those cumulative impacts—I will use noise and dust as an example—the background levels that they need to use in their environmental assessments take into account the existing surrounding noise levels or dust levels. So in that way the levels that exist from other operations are taken into account. That is the way the cumulative impacts get taken into account.

Senator LUDLAM—What about levels that could conceivably exist? If we were to assess BHP's existing background noise or dust impact, for example, you would not be modelling those of Shenhua because they do not yet exist, either?

Ms McDonald—Not the proposed. Let us say in this particular example that, hypothetically, BHP gets a project approval and then Shenhua are doing a project approval. Their approval would then take into account those existing levels. We also need to look at the set goals that are based on the national environmental protection measures goals. They set an absolute cap for what the levels in an area can be. Generally, as has happened in the Hunter where there are more and more projects, those projects that come in towards the end of the airshed will need to put in more sophisticated air quality management techniques to ensure that those upper levels are met.

Senator LUDLAM—How does that work in the case of water resources?

Ms McDonald—In a lot of cases at the moment the sustainable yields project and the water management plans that are set down by the state government actually look at the sustainable yields of a surface water resource or a groundwater resource, so it is managed through the legislation under the Water Management Act. And the mining industry needs to work within that act.

Senator LUDLAM—That catches extraction. What about downstream pollution of contaminants, run-off and so on?

Ms McDonald—Downstream pollution would be covered by the Protection of the Environment Operations Act, so any water discharges that occur from a mining operation need to be approved or allowed under an environmental protection licence. A lot of the mining industry across New South Wales works on a nil discharge, so when there are discharges that are licensed they are in accordance with what is allowed by the Environmental Protection Authority. So, essentially, an environmental assessment process has occurred to ensure that they meet Australian and New Zealand Environment and Conservation Council, ANZECC, guidelines.

Senator LUDLAM—Cumulatively, that will be assessed in the same way in terms of two very large projects slated to come up side by side? What if one of the companies goes first and then its pollution impacts are assessed to be as much as that watershed can handle, would that necessarily knock off the second proposal?

Ms McDonald—Water is a little bit different in relation to cumulative impacts because the ANZECC guidelines would always need to be met.

Senator LUDLAM—Are you aware of concerns that the exploration drilling itself is potentially putting the environment at risk in terms of the number of bores that are going in that are puncturing and creating transmissivity between different groundwater bodies?

Ms Tan—We have made further plans. The thing with that is that before any exploration activity is undertaken that itself is also regulated by the New South Wales government. They need to do a review of

environmental factors under the Mining Act to ensure that any potential impacts of mining have been taken into account. We also have rehabilitation bonds for any of the exploration activity work we do, in addition to the rehabilitation bonds that the New South Wales government currently hold, which is over $1 billion, for actual mining operations. We also do that for our exploration work.

Senator LUDLAM—But this activity is all going on in the absence of a water study that you have only just decided on terms of reference for, so how can you be certain that the damage is not already being done?

Ms Tan—Before you can even do the drilling of the exploration hole, you do an assessment prior to that hole being drilled. The Namoi catchment water study is a large scale study over the entire Namoi catchment area, which is huge—for example, the Caroona project is only one per cent of the entire Namoi catchment region—and it is looking at the whole thing. It is looking at all of the potential geological resources that sit underneath it. I understood your question to be very specifically about the concerns around individual exploration drill holes. Was that correct, or did I misinterpret the question?

Senator LUDLAM—The cumulative impact of dozens if not hundreds of them, yes.

Ms McDonald—Any environmental impacts of the exploration process would be assessed by Industry & Investment NSW under the exploration lease, so a review of environmental factors would be done on what those impacts would be.

Senator LUDLAM—So you are completely confident then that the exploration activities that are underway are not causing significant damage to the environment or to the groundwater resources?

Ms Tan—The activity that they are undertaking has been reviewed by the government and has been authorised by the government to occur.

Senator LUDLAM—Chair, I will come back later if there is a time.

CHAIR—Continuing on there for a moment: what precautions do you understand the exploration licence holders to be taking in their drilling when it comes to protecting groundwater supplies?

Ms McDonald—I am not sure of the specifics around it, but the drilling of holes into groundwater resources is quite well understood. It would occur up here with a lot of the agricultural industries as well; they sink bores. Industry & Investment NSW certainly have guidelines on what needs to occur when exploration drilling occurs so that would need to be met.

CHAIR—Is there any difference between the mining exploration activities and those of oil and gas?

Ms Tan—I could not answer that directly. I think there is a different act, or do they come under the Mining Act as well?

Ms McDonald—I think they come under the Mining Act in some cases. We are not representatives of oil and gas so we are not very familiar with their practices.

Ms Tan—Yes, so we should not answer the question.

CHAIR—That is fine. I realise some of those questions maybe are not quite up your alley, but in the absence of any companies appearing, it is hard to get—it would be nice to get something on the record, and we hope that the written material that comes to the committee will provide on the record some of those practical steps that are being taken by the companies in that regard. Have you reviewed the report by the former department of soil conservation scientist Robert Banks that was undertaken for the Caroona Coal Action Group?

Ms McDonald—No. I have seen reference to it in Tim Duddy's submission made on behalf of the Caroona Coal Action Group, but I have not read the attachment. I have not even printed it out yet, unfortunately.

CHAIR—The report makes certain estimates about the impact on water resources as a result of activities and suggests:

Significant changes of land use within the areas of the exploration leases could cause highly significant reductions to both surface and groundwater flows, [without consideration of] damage to the irrigation aquifers themselves.

Looking there purely at surface and groundwater flows, it says there could be 'significant damage'. These are issues that you would expect would be considered and assessed by the independent study that has been commissioned.

Ms McDonald—In some respects—

Ms Tan—Do you mean the Namoi water study?

CHAIR—Yes.

Ms Tan—That is looking at the groundwater and surface water interaction. There was a lot of rustling in the background, so I did not quite hear the start of your question. So it is looking at the water discharged from exploration activities or mining activities?

CHAIR—No, it is looking at the impact the changes in land use that mining activities could have on both surface and groundwater flows.

Ms McDonald—Certainly if it is not looked at in the water study, any project that would go ahead or be looking at doing an environmental assessment would need to evaluate the impact on those surface and groundwater flows if it was in that area.

Ms Tan—The other crucial thing is that impacts on the resources would depend very much on what the potential development application looked like, so it would depend on the particular mining footprint and the style of mining—a whole series of very particular questions and the particular geology involved to be able to look at what the potential impact might look like. I am not quite sure how the doctor reached his conclusions, but I would have thought that to really understand what the impact on the water flows would look like, you would have to understand what the particular development is in question.

CHAIR—Who are the community representatives on the Namoi water study?

Ms Tan—On the ministerial oversight committee there is representation from the mining industry; from the agricultural industry, there is someone from the farmers association and there is someone from the irrigators council; and someone from—I am going to get this wrong, I apologise—what is like a regional development board for this area. I cannot quite remember, but I believe it was formed relatively recently; I can get that information for you. I understand community representative advertisements have gone out in the local paper for the stakeholder advisory group, where there will be community representatives as well as representatives from the agricultural industry and the mining industry and the petroleum industry and the local Indigenous community as well as the local councils.

CHAIR—All of those groups will be represented in the stakeholder advisory group.

Ms Tan—That is correct.

CHAIR—In the ministerial oversight committee, are there council or community representatives?

Ms Tan—I should know the name, but it is like the northern regional development board. There is someone from the irrigators, the farmers as well as us. But I should stress the ministerial oversight committee is literally a project manager for the project, so it just facilitates the tender and all the rest of it. The actual consultation is taken through the stakeholder advisory group. We have also been tasked to develop a more comprehensive, because obviously not everyone is represented on the stakeholder advisory group, community engagement process, which will be critical.

CHAIR—It has been put in some of the submissions that the New South Wales Mining Act does not mention water at all. Do you feel that the other acts and regulations that apply to water adequately cover that, or that the Mining Act is perhaps somewhat outdated in that regard?

Ms McDonald—Absolutely that water management is captured in other legislation, both in the Water Management Act and in some cases the Water Act 1912, although New South Wales is moving over to the Water Management Act. There is also protection of waters under the Protection of the Environment Operations Act. There were also amendments to the Mining Act last year, some of which will not come into place until the regulation has been gazetted, and that is in the process of going through consultation in the next few months. That is hoped to be in place early next year. That will allow the amendments that were passed last year to come into play, and they specifically mention water in the rehabilitation definition—essentially that the Mining Act makes it very clear that it covers rehabilitation of disturbed land and water—and also in broadening out the definition of environment within the Mining Amendment Act so that it incorporates all elements and aspects surrounding humans. It broadens the definition of environment to cover water.

CHAIR—At the top of page 14 of your submission, you state:

[The council] believes the potential impacts upon surface and groundwater flows and quality in the alluvial flood plains at its headwaters in the Namoi Valley are addressed within the existing regulatory framework.

I am curious about that statement because I do not see elsewhere in your submission where you talk about what those potential impacts upon surface and groundwater flows might actually be. I am wondering if you

could take me through that statement and what you see those potential impacts being and how they are addressed in existing regulatory frameworks.

Ms McDonald—Essentially what we are alluding to there is the fact that the existing regulatory framework allows those potential impacts to be thoroughly assessed when and if those of mining operations come into being needing approval.

Ms Tan—That is what is critical, and it comes back to—you are going to hate me for repeating it—this case-by-case issue. The way the regulatory framework is set up currently in New South Wales is that every project has to be assessed on its merits and it goes through and looks at its potential impact on everything, including the environment. Those potential impacts cannot be assessed unless we know what the development in question is, whether it is a block of units, a mining operation, a big agriculture activity or whatever. With every one of those things, you have to look at what the potential impacts are in relation to that specific proposed development application. Doing it on any other basis does not result in an accurate assessment because you just do not know until you can do the science to look at 'If you mine here and it potentially disturbs this land, that is what it might mean, because the water here is linked to this particular area,' et cetera. So you need to do it on a case-by-case basis, and that is what this relates back to.

CHAIR—Would you expect that applications for mining activity in this area, at the headwaters of parts of the Murray-Darling system, would trigger EPBC Act approvals?

Ms McDonald—I am not sure if this area is listed on the matters of significance. We would have to have a look at that.

CHAIR—In the act?

Ms McDonald—Yes, within the act.

Senator WILLIAMS—Ms McDonald, in your submission you say that mining is a 'temporary use of land'. From what I have seen with rehabilitation of lands, if you do an open-cut mine and take out the dirt and whatever it is you require—coal, gold, iron ore, whatever—when you put that land back, the land heaps up; in other words, you cannot put the same amount of soil back in. Have you ever seen rehabilitation of farming country? I refer to farming country, not grazing country. Do you know the difference?

Ms McDonald—Not the specific difference that you are getting at.

Senator WILLIAMS—Farming country is generally where you plough the country; you might grow crops et cetera. Have you seen rehabilitation of farming country that was open-cut mined?

Ms McDonald—Would you classify land under lucerne or hay production as farming country?

Senator WILLIAMS—Yes.

Ms McDonald—There is certainly an example—I have not seen it physically, but I know of the example—in the Hunter Valley, where alluvial flood plains were mined and then essentially rehabilitated.

Senator WILLIAMS—Open-cut mined?

Ms McDonald—Open-cut mined, along the banks of the Hunter River. One of the rehab objectives in that particular case was that they had to meet the region's average production of hay per hectare. That was met for three years, back in the 1990s.

Senator WILLIAMS—What was done with the excess soil that would not fit back in the hole?

Ms McDonald—I would have to look at the specifics, but what is very important in rehabilitation is that the topsoil is saved and saved in such a way that it can then be reapplied, so that the seed bank—if you are using it for native ecosystem restoration—is still alive. In this case, I am not sure that that would have been essential. But the soil was then reapplied and the soil stratification was put in such a way that the agricultural productivity could be maintained after that mining had passed.

Senator WILLIAMS—Shenhua will put in a written submission in the next 14 days. Is that correct?

Ms Tan—That is what we have been advised—by 9 October.

Senator WILLIAMS—The reason I asked that question prior is my concern about the permanent damage that may be caused if they open-cut mine flat farming country. I do not know if you have seen that country out here. To put at risk any of that country, where Mother Nature has constructed those flood plains over millions of years, would be, in my opinion, stupidity. Perhaps it would be interesting to go and have a look at it one day.

Ms McDonald—Certainly we can arrange that.

Senator LUDLAM—I assume you are referring to the case study that was on page 14 of your submission, where it says 38 per cent was reinstated. What happened to the other 62 per cent?

Ms McDonald—I am not sure. I would have to find out.

Senator LUDLAM—I have not actually ever seen a large open-cut mine rehabilitated. Once these holes in the ground are there, they are almost never filled back in again with the spoil. That was one thing that bugged me a little bit about your submission saying 'temporary use of land'. It is one of the few land uses that I can think of where the impacts are actually permanent across a large amount of the mine's footprint.

Ms McDonald—We take a different view, in that a lot of the land can be rehabilitated. In some cases, it is back to natural forests and ecosystems, and there are a lot of examples in the Hunter Valley where that is underway. In this particular case, yes, the agricultural land was replaced. In some cases, a lot of grazing country—to your point, Senator Williams, it is just grazing cattle—is still able to be used. That is essentially what we mean when we say that mining is a temporary use of land. In many cases, it can then be used for forestry or agriculture, whether that be grazing or otherwise, or for biodiversity purposes.

Ms Tan—Importantly, as well, the rehabilitation requirements are set by the government prior to any mining taking place, so there is actually a rehabilitation plan set up for what will happen. Yes, the mine life of a typical mining operation will continue for 30 years, for example. But that plan is set upfront as to what we have to rehabilitate it back to. The bond is held in place by the government to ensure that, if for whatever reason the company goes bust or whatever and disappears, there is enough money that is held by the government to rehabilitate it back to the condition that is required. So we are doing it as required, and everything is done upfront before the mining even takes place, in terms of setting the rehabilitation plan.

Senator LUDLAM—Yes, I am aware of that. Your case study here was for a 165-hectare mine, and 38 per cent of that was rehabilitated, as you described. Is that the largest case study you are aware of of mining land being rehabilitated back to farming condition?

Ms McDonald—No. We would have to look at that. But that is our one particular example on alluvial flood plains, which I know are of particular interest to this committee.

Senator LUDLAM—Yes. So what would the long-term kinds of care and maintenance obligations of companies be if they were to be operating out here on a much larger scale than you have noted here? After the companies walk away, what would their obligations normally be in New South Wales?

Ms McDonald—It is very dependent on what the agreed land use is at the end of that mining life, and there are a lot of environmental conditions that need to be met, essentially that either the land is self-sustaining or, if it is an ecosystem, it is on a trajectory to become self-sustaining, so it does not need long-term maintenance. There are also often conditions around water discharges from sites, particularly with issues like acid mine drainage that occurs in some of the metals industries. So all of those sorts of environmental factors would be part of the mine closure plan, and Industry and Investment NSW would be very involved. They are the jurisdiction within New South Wales who manage that. They would be very involved in monitoring that on an ongoing basis until they were happy and would relinquish that lease. Sometimes that can be many years.

Ms Tan—And you do not get the rehab bond back until the government is happy that you have satisfied all of the requirements set upfront.

Senator LUDLAM—I am a little bit more familiar with how mining law operates in WA, but perhaps you can help me out in the New South Wales context. What protection policies do you have in place if the government decides for strategic reasons that agricultural or rural lands deserve to be set aside from mining or other land uses? What is the legal framework for that?

Ms Tan—Sorry, in which act would you have to do it?

Senator LUDLAM—Yes—

Ms Tan—Sorry, I am having trouble—

Senator LUDLAM—As the mining industry, what particular legislation would you have to be negotiating if the government has decided to set aside agricultural land? Does that happen here under any legislation?

Ms McDonald—In New South Wales, the Environmental Planning and Assessment Act and the many environmental planning instruments that sit within that have primacy in many cases. It could be within that

framework or within the Mining Act framework. I think earlier this year there was a private member's bill or a Greens bill passed, or at least introduced—

Ms Tan—Introduced.

Ms McDonald—into parliament.

Senator LUDLAM—Which is different to passed.

Ms McDonald—Yes, definitely; it was not passed.

Ms Tan—Yes, very different to passed. Otherwise—let us not continue down that path!

Senator LUDLAM—We might.

Ms Tan—So you are asking which legislative framework? Is that what you are asking? Which bills would need to be amended to ensure this?

Senator LUDLAM—No. You have said the regime in New South Wales at the moment is working perfectly, so I want to know what allows the state government to set aside prime agricultural land. Is there any provision for that to happen—to set it aside from mining uses?

Ms McDonald—I would say it would be primacy under the Environmental Planning and Assessment Act. There are certainly, within the state environmental planning policy, which sits within that act, certain areas that we cannot mine now.

Ms Tan—For example, we cannot mine under national parks.

Ms McDonald—Yes, national parks or—

Ms Tan—We cannot mine in national parks. That is set.

Senator LUDLAM—Yes. Are there any examples where you cannot mine—

Ms Tan—Sorry, I cannot quite hear you, Senator; there is a lot of background noise.

Senator LUDLAM—I am not quite sure whether maybe the mikes are not working or I should yell. Are there any examples that come to mind where the mining industry here has been prevented from mining in, around or under agricultural land rather than environmental reserves?

Ms McDonald—I do not believe agricultural lands—there is certainly an example in the Lake Macquarie area that is not related to a national park and where you cannot mine.

Ms Tan—You cannot mine west of Lake Macquarie; is that right?

Senator LUDLAM—What is that related to?

Ms Tan—It was a decision that was made by government a couple of years ago, maybe in 2005 or 2006.

Senator LUDLAM—On the basis of agricultural land uses?

Ms Tan—No.

Ms McDonald—No, it was not agricultural.

Ms Tan—But it was also not a national park.

Senator LUDLAM—I understand. I am trying to pin down here whether you can point to any examples at all where agricultural land use has taken precedence over mining and prevented mining activity from taking place anywhere.

Ms McDonald—Not that I am aware of.

Ms Tan—But obviously there might be cases, and we would have to get the research done for you. There might be cases of mining operations which have been approved which have been amended since what was originally conceived by the company, for example, by the proponent—which have been amended because of concerns around particular issues such as agricultural land, water or community concerns that might have been raised.

Senator LUDLAM—Maybe. But nothing is coming to mind?

Ms Tan—No, we do not have a specific example.

Senator LUDLAM—So, if land were set aside in this particular catchment because it is prime agricultural land, that would be the first time that that had occurred?

Ms Tan—In New South Wales?

Senator LUDLAM—Yes.

Ms McDonald—Potentially.

Ms Tan—Potentially.

Senator LUDLAM—If it turns out that that is not the case, would you be able to get back to us—just take that on notice?

Ms Tan—Yes.

Senator LUDLAM—It seems that there is some uncertainty.

Senator McEWEN—I just have one question. I think, Ms McDonald, in your evidence earlier on, when talking about rehabilitation, you mentioned rehabilitation of disturbed water. I am just curious about what you mean by that. Can you give us any examples? If either you have disturbed the water by polluting it and then that water has gone downstream, say to South Australia, or you have disturbed the water by diverting it away from its natural aquifer and thereby perhaps disadvantaged people downstream because there is less water there, how do you rehabilitate that situation?

Ms McDonald—This is a new provision in the Mining Act, and I will be maybe in a better position to answer that question after we have seen the regulations on how the government actually intends to regulate that specific definition.

Senator McEWEN—But you must have turned your mind or your members must have turned their minds to how they are going to comply with that regulation, surely?

Ms McDonald—We have not seen the regulation yet. It is still within the government. We are just expecting that that is going to come out in the next few months for consultation, and then that framework will be in place at the beginning of 2010.

Ms Tan—Obviously, though, any potential impacts on water for a particular project proponent would be considered by the project proponent in terms of what the impacts might look like and how that might be managed. Is that your question? There is obviously a legislative piece that is happening which we cannot comment on because we are still waiting on the regulations, but in terms of what exists currently there is a requirement upon project proponents to look at the potential environmental impacts of their proposal, including water, and they would then have to assess using science and report back to the government, presenting the science to the government, about how they could manage that, what the impacts would look like et cetera.

Senator McEWEN—All right, I guess you will have to wait and see. The other thing I want to raise is that you mentioned the plethora of acts and regulations that cover mining activity. This committee has dealt in the past with inquiries dealing with those kinds of acts and regulations, including both federal and state governments. What is on paper looks brilliant, but, when it comes around to governments actually monitoring the implementation of those acts and regulations, they are found to be wanting, perhaps, because of lack of resources on the part of the government, or, in instances where, for example, mining companies have to, if you like, self-start those kinds of processes, that does not happen. What is your view on that? I think that is leading to people saying, 'Well, yes, the acts might be in place, but who's actually going to get out there and monitor it, particularly when there's a lot of reliance on the industry itself to kick-start some of those processes?'

Ms McDonald—In New South Wales, we do have annual reporting, and in some cases there needs to be quarterly monitoring. That occurs with different departments. The EPA, which is part of our Department of Environment, Climate Change and Water, receives an annual return. It has the ability to do an audit at any point in time, and we know that it does that. Industry and Investment NSW receive an annual environmental management report and also regularly do site visits, particularly if mines are rehabilitating or they are going through the process of progressively rehabilitating and talking to government about their criteria, objectives and what they are aiming to do. The Department of Planning certainly receives a copy of that annual report every year.

Most modern project approvals have a three-year independent audit requirement. They sit down with the Department of Planning; Industry and Investment; and now also the EPA to basically go through and look at who the independent experts are that will audit that site. Then, once that audit report is in, there are more discussions about continual improvement and things that might need to change in relation to the environmental management of that site. So I think in New South Wales, certainly, that process is definitely taken very seriously within the mining industry.

Senator McEWEN—Can you think of any instances off the top of your head where mining companies have been fined under those processes?

Ms McDonald—There are certainly charges that have occurred. We could provide examples. It is quite an iterative process. I am aware that there has been recent court action even in this area generally for a breach of the licence conditions. So they certainly occur and there is certainly action by government.

Ms Tan—We could take that on notice if you would like more specific information.

CHAIR—I have couple of quick final questions. Firstly, in terms of being quite clear about going forward and the future impact of studies and otherwise, if the study into the Namoi catchment comes back and shows that mining operations would be unsustainable in this region, or if the basin plan developed in accordance with the Commonwealth Water Act comes back and finds that in some way, shape or form mining operations here would in some way impact too heavily on the resources of the Murray-Darling Basin, would be a case of your members simply having to cop it?

Ms Tan—If it is done on a scientific basis. As an industry we have always said that it has got to pass whatever the science says—it has got to go through that process, if the science is out there. I would be very careful in making any commitment—and I am not trying to fudge the answer—but I want to be very clear that the Namoi water study is a study looking at the entire Namoi catchment at that high level about the impact. We would still reiterate that any potential application would have to look at the individual mining proposal that is being done, what that footprint looks like, what the impacts are, the type of mining, where that is located et cetera.

CHAIR—Noting that that could work for or against you, depending on what the study said and what the site was.

Ms Tan—Absolutely. I do not know whether we are quite at the same intention, so I should not say 'absolutely' too quickly. The purpose of the Namoi water study is to get more of the science based knowledge out to get some facts into the debate. That is very important not just for our industry but for the other industries in the Namoi catchment more generally to find out exactly what is happening with the water resources. But at the end of the day the particular application depends on the particular application. Any proposal still needs to be assessed on a case-by-case basis. Even on that basis, if the science does not fit, then the science does not fit and that is that—the mining proposal cannot get up.

CHAIR—Okay. I want to go to a technical mining question, which may or may not be up your alley. BHP has accepted conditions that prevent certain activities of longwall mining and open-cut mining. By what other means would you expect coal to be extracted from an area such as this?

Ms Tan—I would not want to go into answering that question. There is a reason why, when you are talking about mining, it is not just longwall mining. There are lots of definitions of mining, because they talk about tunnelling work and road access work.

Ms McDonald—There is bord and pillar mining. There are other techniques.

Ms Tan—I am not a mining engineer and neither is Rachelle. There are different types of mining, but the most common form of mining is longwall or open-cut.

CHAIR—Could you perhaps, either through your members in the information they provide or otherwise, give us a little bit more information on that. That would be helpful.

Ms Tan—I do believe there was some questioning around that by the committee led by Senator Heffernan. BHP gave answers more specifically on that there as they had a technical expert with them. But we are happy to endeavour to get you more information on that.

CHAIR—Thank you. We can attempt to review that *Hansard* as well. If there are no further questions, can I thank you both very much for taking the time to join us today and travelling to Gunnedah to do so.

Ms Tan—Thank you very much.

[3.05 pm]

DUDDY, Mr Timothy, Spokesman, Caroona Coal Action Group

NANKIVELL, Mrs Rosemary Margaret, Chair, Coal Seam Methane Subcommittee, Caroona Coal Action Group

CLEMENTS, Mr John, Executive Officer, Namoi Water

CHAIR—I welcome representatives from the Caroona Coal Action Group and from Namoi Water. The committee has received the CCAG submission as submission No. 56. Do you wish to make any amendments or alterations to that submission?

Mr Duddy—No, we do not.

CHAIR—I now invite you to make a brief opening statement.

Mr Duddy—Good morning. Today we are on the Liverpool Plains, an area of some 12,000 square kilometres in the north-west of New South Wales 400 kilometres from Sydney that is bound by the Great Dividing Range, the Liverpool Ranges to the south and the Warrumbungles to the west. We have a sedimentary flood plain that has been laid down over several million years that provide a very rich, fertile flood plain area that is extremely well endowed with enormous underground water resources.

Annually our plain produces 233,000 tonnes of sorghum for cattle and chicken feed, 29 million kilograms of beef, 77 million kilograms of chicken and 77,000 tonnes of pork. The crops in this area consistently produce 40 per cent above the national average. Annually we have grown 183,488 tonnes of wheat over a 16-year average, which equates to 365 million loaves of bread; 63,709 tonnes of barley, which equates to 144 million bottles of beer; 19,829 tonnes of sunflower seed, which is eight million litres of oil; and 29,018 tons of corn, which is 68 million boxes of cornflakes. This area has produced 36 crops out of the last 40, and over the last 20 years, taking irrigation out of the equation, this area has only had two seasons that could be classed as complete failures.

Currently we are facing a coal exploration licence in these areas by BHP and the Chinese owned Shenhua, and gas and petroleum licence by Santos. This is the first of many steps and many other exploration licences that are about to be given in this area. To consider that we would compromise these prime agricultural lands and their value to this state or, for that matter, this nation, is something that can only be seen as incredible. As the mineral boom pushes towards prime agricultural lands and water resources, this committee needs to consider very carefully what is appropriate future production and what is not.

CHAIR—Thank you, Mr Duddy. Are there any other opening remarks? Mr Clements?

Mr Clements—Having heard some of the evidence before, one of things I would like to bring to this hearing is that this development in terms of New South Wales, possibly Australia, is vastly different development. We heard some evidence about mining development in aquifers. We have a map here which will show the extent of the aquifer development in New South Wales—in this case, in the Namoi Valley. We are talking about an underground ocean of water. Miners have not been given exploration licences over areas of this water significance before in New South Wales. That is one of the differences. There are a number of things that are different about these developments proposed in this valley. The first is that we have a three-dimensional landscape here that has vast quantities of water trapped in gravel. That water can be extracted in a sustainable way courtesy of some processes over the last few years. I think the Caroona Coal Action Group submission notes that some 280,000 megalitres of groundwater licences have been retrieved by the government to ensure sustainability. So there is a sustainable use of a very significant resource—a very different resource from that which miners have encountered before.

They have approached these processes as if they are the same processes as everywhere else they have been before. They are not. The great concern in this community over the last three years is that the state government and the miners have walked up to this new development as if it is something that they have encountered before and something that they understand. They do not understand it. Answers to your questions here today again show those of us who work with this resource that these people do not understand what they are dealing with.

The acts of parliament are insignificant in terms of this development. They are inappropriate acts and have inappropriate standards to cope with what is a deliberate intent to modify the entire landscape. When miners enter these landscapes they modify the three-dimensional nature of the landscape. They actually collapse the landscape over many kilometres. When they entered the Namoi Valley they entered an area where, three

dimensionally, there is a vast quantity of water held in gravel. This is a three-dimensional landscape different from anything they have worked in before. We are not talking about little, tiny streams of underground water and we are not talking about fractured rock. We are talking about vast bodies of liquid, of basin water. We are talking about a pool of water held in the underground.

Their lack of understanding of that from day 1 is something that has raised the concern of the community in a way that I am sure you will have understood, if you had a tour today. You will have seen the permanent blockade. You have all certainly seen attempts in the Senate to deal with this. There is a reason for that. We are planning chaos in this state in terms of this type of development.

The Water Management Act 2000 is directed entirely at agricultural water use. It is an environmental act that captures the needs of an industry under an environmental act. So, in terms of irrigated agriculture, we are looked for under an environmental act and we are dealt with under that act. The Water Management Act 2000 does not talk about mining. The Commonwealth's Water Act 2007 does not talk about mining. The National Water Initiative 2004 does not talk about mining. None of these huge water initiatives in the last decade talk about mining. So we have these planning processes where the speciality of water, the understanding of water, is dealt with in an agricultural and an environmental context. Mining is not there. We have a mining act in New South Wales that had a couple of little cobbled together amendments a year ago to attempt to make it look like an environmental act. It is not. It is an act that describes the security and operations of miners. That is the purpose of the act. It is an act to set the security of an industry to a standard. It is not an environmental act. There is no cross-referral.

Why are we concerned? Something new is here: we have a three-dimensional landscape filled with water; we have inappropriate planning processes; we have planning acts with no cross-referral; and we have mining companies that have just turned up as if they are going to do business as usual in a landscape they think is the same as the other landscapes that they are in. That is why we are concerned.

What about the cumulative impacts? The answers to all your questions on the cumulative impacts were about dust and noise—things they understand and things they have dealt with before. There is a bigger cumulative impact possible in this valley which you can see when you look at these maps. You can see that the damage to a three-dimensional landscape will mean that water will stop flowing. That is a cumulative impact that you did not hear in the answers. You heard: 'Polluted water we deal with under the EPA Act.' That is fine. We are not talking about polluted water discharging from a discrete mine site. We are talking about an entire three-dimensional landscape altered and damaged and cumulative impacts that will flow thousands of kilometres, and we have a couple of acts of parliament in New South Wales that cannot talk about that, do not talk to each other and do not recognise that we are in a new situation here.

That is why we are here today. There is no other reason. The Water Management Act 2000, the Commonwealth Water Act 2007 and the National Water Initiative are all entirely deficient in terms of recognising and picking up the issue of mining and its impacts on water. Thank you.

CHAIR—Thank you, Mr Clements.

Mrs Nankivell—Good afternoon. I am the chairman of the Coal Seam Methane Subcommittee of the Caroona Coal Action Group. Because my topic is slightly different, I wondered whether you might want to run these two together and to put me after, or do you want to keep going with the coal seam methane issue intermingled with the coal issue?

CHAIR—I recognise the differences; nevertheless, I think it will be easier if we take your opening remarks now, Mrs Nankivell, because I am fairly sure that senators will jump to questions across issues.

Mrs Nankivell—First of all, the people of New South Wales might share this coal resource, but their first entitlement is to quality food and fresh water. The water from this area is not just the water from this area; it is the water that feeds into the Murray-Darling Basin, which ends up in South Australia. I believe these are the first rights. The coal seam gas industry is a highly speculative industry seen by many as a bridge between the fossil fuel industry and the creation of the renewable energy industry. It has been bolstered by an ailing stock exchange. Woodside's Don Voelte, an experienced gas and oil man, is outspoken in his criticism of the speculation surrounding coal seam gas stocks on the Australian Stock Exchange. He describes the costs emerging for aspiring coal seam gas companies as horrific. He states that the past resource boom has shown that not all of the proposed high-profile coal seam gas projects will stack up, with the costs emerging for the aspiring coal seam methane companies being horrific. He claims that a shortage of capital and firm sales agreements will delay some. However, the technical issues are the tripwire that Voelte claims will catch most

of the coal seam proposals. These technical issues include the industry's failure to provide environmentally sound solutions to the dirty technology they use and their massive extraction and disposal of salt and water. There is no quick fix to these problems.

In the meantime, the state government continues to issue exploration licences. The review of environmental factors for PEL 452 is a desktop submission that does not address the impacts of exploration and drilling on groundwater or steps to mitigate those impacts. In light of the unique qualities and the importance of the soils on the Liverpool Plains to agriculture, it would be expected that the review of environmental factors would cover this at a much greater depth. On my initial reading of the review, I was appalled that eight towns were said to be located in the exploration licence when the only town in our area, Murrurundi, was excluded. However, I now have it on good authority that this review of environmental factors was exactly the same as those for PEL 1, PEL 12, PEL 450, PEL 452 and PEL 456, with just a few changes of names throughout. Surely these areas require studies of greater depth than this. To me, that is an example of how this exploration drilling can keep on going. There is a massive range of countryside in that area and it has just been given a blanket treatment—cut and pasted. The reports are appalling.

The coal seam methane industry is largely unregulated. For example, government authorities such as DECCW are powerless to intervene on environmental concerns until production reaches five petajoules for commercial purposes. Our local shires hold little influence. The industry cannot go unchecked and must be fully regulated with stringent environmental regulations to protect our environment and the catchment areas of the Murray-Darling Basin. It is essential that government adopt a solution of careful stewardship and that every action taken in catchment areas of the Murray-Darling Basin be carefully addressed with vision and foresight for the long term. The health of our rivers and streams must not be sacrificed in favour of the short-term extractive industries.

In answer to your question, the onshore petroleum act is the act that governs coal seam methane gas. On a parallel issue, I read the report of the Water Commission for 2006-07 and actually rang the consultant who did it. He claimed that the agricultural industry used more water than any other industry. I said, 'What about the mining industry?' and he said to me that it was not included in the terms of reference because they are physically unable to measure the dewatering of aquifers, which is what happens in the mining industry.

CHAIR—Thank you for that, Mrs Nankivell.

Senator WILLIAMS—Thank you for your attendance today. Mr Clements, for the *Hansard* record, could you give us a brief outline of the underground aquifers under the Liverpool Plains and how they link up to the Murray River?

Mr Clements—In terms of management processes, the Namoi is divided into three areas of groundwater management. The upper Namoi starts around Quirindi and Caroona, where I think you had a tour today. The aquifer is recharged there and that water flows down through Gunnedah, where we are now.

Senator WILLIAMS—This is all underground flow?

Mr Clements—Yes. There is some interconnectivity with the surface systems, but the underground flow passes through Gunnedah, where there is a geological restriction which starts to constrict it. It is constricted quite tightly near Boggabri. If you are familiar with the area, which you are, you will know there is a Boggabri gap and you can actually see the geology squeeze in.

Senator WILLIAMS—The rock formation underneath?

Mr Clements—Yes. The water is actually squeezed in and then spread out again in the lower Namoi. Our understanding becomes limited once we get out of these intensely managed areas. Our understanding and our assumption to some degree is that it then flows on because water flows and groundwater flows. Groundwater, in the end, flows to the ocean. Groundwater interconnects with the surface water, which we are increasingly understanding. Groundwater itself actually flows. It flows downhill. It gets into the ocean. It may never get to the surface, but in the end groundwater gets to the ocean. That is what it does. That is what all water does.

Senator WILLIAMS—Obviously, if mining were carried out in this area—and I am referring to the Caroona area, of course—and mistakes were made, with drilling, cutting and digging and that water being polluted, that water would actually run into the Murray River.

Mr Clements—Through interconnectivity it will get into the Namoi and other systems. What it will do further down in terms of interconnectivity we do not know, but certainly it will get into the surface water systems. It will effectively become a diversion. The CSIRO sustainable yields study showed that extraction of

groundwater was effectively a diversion from the river systems through limiting the amount of water that flows into the river. Damage to a groundwater aquifer by mining is effectively a diversion but an unrecognised one under the National Water Initiative, the Water Act 2007 and the Basin Plan. I heard mention of the Basin Plan earlier on. The Basin Plan will not be able to look at diversions due to damage caused by mining. It is simply not in their charter.

Senator WILLIAMS—What is your opinion in relation to the proposed mining at Caroona? You are obviously very familiar with the water in the Namoi Valley. You have worked on the water issue for many years and you have seen many irrigators surrender a lot of their irrigation licences. I believe they have surrendered up to 70 per cent of their groundwater.

Mr Clements—Yes.

Senator WILLIAMS—You are obviously very experienced in the field. What is your opinion? If damage were done to an underground aquifer, could that be repaired?

Mr Clements—It is not possible. You are talking about three-dimensional alteration of landscape. Miners actually drop the landscape by a metre to two metres, depending on the development. You may fracture; you may discompact. These are flowing streams underground. They are pools of water that aggregate and flow, sometimes through constrictions and sometimes quite broadly. You cannot alter the entire landscape and expect those flows to continue. If I may, my opinion in general is that the area should not have been released. I think the state department is negligent in releasing exploration licences in rectangles and then expecting the miners to go out and have a guess at what level of risk they are willing to undertake. That is what the government is asking the miners to do. That leaves landholders and communities in great uncertainty. The government is doing that in the full knowledge that there is not adequate cross-referral from the management acts in Australia. Australia has a series of water management acts; none of them recognise mining and none of them are cross-referred with mining. We know this. Why are we releasing these ELs and asking the miners to work out where they should and should not be in terms of water resources when we know there is no cross-referral?

Senator WILLIAMS—Good point.

Senator McEWEN—Mr Duddy, you mentioned in your evidence that you know there will be more ELs allocated in this area. Is that right? How do you know?

Mr Duddy—Yes. There were nine earmarked to be released in this area and two of those nine have now been released. Those are 6505 and 7223, known as the Caroona and the Watermark licences. Nine others were laid down by the department as potential areas for release.

Senator McEWEN—So you are expecting them to be released?

Mr Duddy—I would not have expected the Watermark licence to be released after the Caroona issue blew up, so I could not imagine whether or not they will. I sincerely hope that they do not until the spatial understanding of the water resources has taken place.

Senator McEWEN—I wonder whether any of you—Mr Duddy, perhaps—could explain what is happening in the purchase of properties by mining companies. I am asking about the extent of the purchases, the kind of money that is being paid for the acreage if you know and what that means for the other landholders.

Mr Duddy—To date, within the Watermark licence area, five properties have been purchased. There are negotiations—and this is all hearsay, so I cannot confirm its accuracy—on another 13 properties, and they are being paid in excess of four times what that land is worth. That land is currently valued at around $1,000 an acre. Now that there are exploration licences, the land within those grazing areas is being bought at four or five times that amount of money. With regard to the people who have been left behind, I think this is putting them in a very invidious position of being faced with leaving their farm or having a mine at their kitchen door. I cannot begin to imagine what they are experiencing. We are fortunate in the Caroona area because only three land sales have taken place, but it is considerably different in the Watermark area.

Senator McEWEN—If full mining approval were refused to those projects for which the mining companies have purchased land, would the mining companies be able to sell that land back at the same price?

Mr Duddy—I am sure they can. Although it is only hearsay, I believe that one of the conditions of the purchase was that, if it was not allowed to be developed for mining, they were not allowed to retain that land. That is something that I would need to supply to the committee on notice, but I have a feeling that one of the

conditions of the Foreign Investment Review Board was that, if they were not allowed to mine, they were not allowed to keep the land. But that condition may well change in the event of a mine not being approved.

Senator McEWEN—Do any of the properties that they have purchased have water licences?

Mr Duddy—If they do, they would only be minor water licences in that area for stock and domestic purposes, because they have only purchased properties on the ridge area to date.

Senator LUDLAM—Obviously, the principal concern here is whether full-scale mining goes ahead. Can you spell out for us—and there are two separate questions here: one from the coalmining side and one from the coal seam gas side—the risks that you see in the exploration activities that are currently underway, irrespective of whether or not mining goes ahead?

Mr Duddy—The Caroona community were extraordinarily concerned, following the experience that the district had with water exploration. You must remember that people in this area have been digging holes in the aquifers since the 1960s. During that period of time, there have in fact been accidents where water resources have been damaged through bad drilling practices. They are not common here but they certainly have occurred. We observed the practices of the mining company and the way in which they explored for coal resources in the area and, as a community, we were gravely concerned about those practices. We had some hearings in Gunnedah before the New South Wales Chief Mining Warden and the issues that came out in evidence before that court certainly did not allay our fears.

We believe that the mining company is drilling in this area in the same way that they would explore in areas that do not have these vast underground water resources. They constantly compare it to exploration for water and damage done by the farmers. Personally, and on behalf of the community, I do not believe that to be the case. We believe that their drilling practices leave a lot to be desired with regard to exploring safely in the water resources of which we are speaking about.

Senator LUDLAM—Just before we move on, how many different exploration boreholes are we talking about between all the different activities that are going on?

Mr Duddy—They have dug 130 holes in the Caroona area to date. Until a couple of weeks ago, the Shenhua licence had dug something like 12, and I am not sure how many gas exploration holes have been drilled in the area.

Senator LUDLAM—Ms Nankivell, did you want to add a couple of comments here, because I know that the impact from coal seam gas is distinct from coal exploration.

Mrs Nankivell—The coal seam gas exploration holes are at much greater depths. They can go from 850 metres onwards. I have heard stories of 1,500 metres and more in this area. It bears no similarity to water drilling because most of the water bores around here go to about 80 metres—and that is if you are unlucky. A huge amount of the drill fluid is used in drilling for coal seam methane gas, which, naturally, is not recovered and which contaminates the underground aquifers.

Senator LUDLAM—What proportion of that fluid is not recovered?

Mrs Nankivell—It varies. Santos claim not to know but, if you look at the overseas experience, they talk about recovering a third of the fluids.

Senator LUDLAM—They claim not to know? They do not know how much of that stuff they are losing?

Mrs Nankivell—They claim not to know how much drilling fluid they lose down the drill holes. Overseas experience shows that they lose up to two-thirds.

Senator LUDLAM—So there is a commitment here from Shenhua, and I think there is also something similar on record from BHP, that they do not intend to mine on the black soil but would stay in the ridges, in the high country. What is actually the concern here? If they have said that they are going to stay out of the sluiceways where the underground floods are occurring, what is the problem exactly?

Mr Clements—I might talk about this, if I could, Senator. In terms of your question on drilling activity, I just want to reinforce that agricultural drilling is to a maximum of 100 metres, and generally far less, and runs through potable water. Some of the very shallow water is saline and that is routinely cased off. The activities of miners and the gas exploration companies is that they do not run through potable water; they run through potable water and water that is not potable—water that is heavily contaminated and that, in some cases, has naturally occurring elements such as arsenic and other things that are quite noxious. So it is a very different activity.

There is a concern, which others will speak to, about the caveats on how much the restriction is to be applied on the black soil plains. It is current technology. We have a bit of a question about what that means. With the area that is still identified, it is unknown as to whether or not that is a significant recharge area. Government maps such as the one I have here suggest that it is. Again, you cannot expect significant recharge areas to continue to be that when open-cut practices or longwall mining practices, which alter the landscape, go into these areas. An aquifer, an underground basin of water, is nothing if you cut off the recharge. That is something that the water study will find out. I heard evidence today that the water study is just a generalistic thing—not in our view. In our view, it is a very specific study to understand the three-dimensional nature of the landscape and to look at risks.

Senator LUDLAM—Just to shift the focus a bit, the New South Wales Minerals Council, which we just heard from, basically said that the regulatory regime as it currently applies is great and is doing everything that we are talking about here—that is, it adequately addresses the concerns raised by the inquiry's terms of reference. They do not go so far as to say that we are wasting our time, but certainly from the mining industry's point of view there is no problem. Can you spell out for us what the breakdown is within the state legislation here in New South Wales? Is there a point at which you are asking for Commonwealth intervention? What are you actually proposing that this committee recommend?

Mr Clements—If I could be so bold as to comment here. The breakdown is that this is a significant area of water resource. They have not mined in areas with as significant a water resource as this. It is something new; it has not been contemplated by the legislation. Effectively, the breakdown point is right there. There is no cross-referral. The water management acts and processes of which I have outlined a few are skilful in terms of water management acts but are not able to be linked through any legislative process to the mining act. In relation to the planning process in New South Wales, you will hear evidence that the miners are required to submit to the planning process and that all these things are looked at, but—I am sorry—the water management acts again do not have cross-referral to the planning process and, therefore, the skills and knowledge contained in those agencies and in the delegation of power of those acts are actually not able to be deployed into the development processes that we are looking at.

Yes, we would like Commonwealth intervention. The Commonwealth has intervened, with the acceptance of the states, through the intergovernmental agreement in 3 July 2008. I have said in my evidence that there is no referral to mining in the Water Act 2007. Obviously there is an amendment, but it is a very specific amendment, about mining development. It is not an amendment that carries to the heart and soul of that act, which is a water management act. It is just tacked onto the act. The water management process itself should be looking at mining and gas developments and the potential impact on the sustainable yield of water within the Murray-Darling Basin and that is the language we are using. They are the planning processes we are now deploying except that mining is still exempt from that—it still sits out and it should not.

Senator LUDLAM—That sounds like a fairly specific piece of law reform at New South Wales state level. What form of intervention are you seeking from the Commonwealth?

Mr Clements—The Water Act 2007 should instruct the basin plan to look at the potential for diversions. It does not and it cannot currently. It should actually instruct the basin plan and seek from the basin plan diversions under the heading 'Intervention through mining'. We are not talking about a miner with a licence to extract some water to wash coal; we are talking about a mistake made by a miner, a risk—and this is the word—the risk associated with the development needs to be examined by something other than the planning processes of New South Wales—I am sorry—which are beholden to coal royalties.

CHAIR—If I can jump in for clarity, there is difference between an act not instructing the consideration of the impact you have just described in developing a basin plan and an act prohibiting consideration in the development of a basin plan. You said in your evidence that the Water Act does both, that it does not instruct and it prohibits consideration of.

Mr Clements—It prohibits through lack of any discussion in the act and any authority given in the act for that process. The authority given to the Murray-Darling Basin Authority is very much about sustainable yields and the activities of irrigated agriculture. It is described quite thoroughly in the act that that is the purpose of sustainable yields and a basin plan. Mining is not mentioned in that process. I can assure in my discussions with the Murray-Darling Basin Authority at a board level and a staff level that they are not going to look at mining. It is not on their agenda. It would be considered an inappropriate use of their budget to do so because it is not something that the act authorises or instructs them to do.

Senator LUDLAM—If these developments go ahead as proposed, if there is no further assessment, if, as the mining industry has just told us, everything is basically okay with the current forms of assessments and we get two very large coalmines not too far from here, what exactly are you concerned about? What will the picture look like in 10 years time if these developments get up?

Mr Clements—Other evidence will be given on that by people who are landholders in that area. In terms of the water, the concern I have is that we will have aquifer damage and we will have altered the landscape and the natural flood flows, which are still maintained—agriculture land is not allowed to restrict natural flood flows. We will have damaged to the underground aquifer and it will have changed the natural surface flows.

Mr Duddy—I think one of the greatest concerns is that we potentially will lose our underground water supplies, not necessarily quantity, because we may still have water supplies in quantity, but quality. Quality is such a major issue in this particular instance. We have had instances before where bores have changed their structure through bad drilling practices over the years, which are the things I alluded to earlier, where bores that were very viable water resources suddenly became toxins and if you watered plants with them they simply died, bores that accumulatively brought salt to the surface. If that were to occur, agricultural production in this region would be destroyed as we know it.

Something I think the Commonwealth needs to do is to make sure we have a land definition as to what a flood plain is. When BHP gave evidence last week before the previous committee, one of the things they said was that what is a mine and what is a flood plain are all things that are up for discussion. So they can build a tunnel through a coal resource underground and remove the coal from that resource but it is not a mine. And is a flood plain a slope of three per cent, four per cent, five per cent or less than one per cent? What actually forms a flood plain? In that maps that were attached to our submissions we used three per cent as being the figure and that is what we believe is a flood plain but it is not defined under any federal act. I think it needs to be done as a matter of urgency.

Senator LUDLAM—Thank you very much.

CHAIR—Obviously you all heard the evidence of the Minerals Council. They put great store in the individual assessment process that would be required for any mining development to proceed, be it a coalmine or a coal seam methane mine. Why, as it would seem to me, are your groups all so concerned that the arguments you believe you have, to demonstrate that there would be irreparable damage from such activities in the region, would not stand up and therefore ensure that an assessment of those individual mines would come to a negative conclusion for the applicants?

Mr Clements—The Cataract River, a river with a fractured base, no surface stream flow in the fractured area and methane emitting into the residual pools. That would be the reason why.

Mr Duddy—To the degree that you can light the water and fry eggs on the water. Actually you can cook breakfast over a water pond.

Mr Clements—Carried out under those same rigid standards that will prevent anything from ever happening of this nature.

Mrs Nankivell—And in the instance of coal seam methane they just deny that there is any risk. It is frequently advertised as the new clean, green, fantastic industry and that is not true. There is no recognition of the damage, the de-watering, the lowering of the water table, the cracking and the destruction of the aquifers. They are things which the coal seam methane industry is just conveniently putting under the carpet, yet there are government studies, all sorts of studies which clearly illustrate these things.

Senator LUDLAM—I think the parliament defines it as renewable energy, you will be pleased to know!

Mrs Nankivell—It cannot possibly be classified as a renewable industry because renewable is wherever the factors stay the same, that it is going to renew constantly. After you have de-watered an aquifer, you have pumped it out. It is not the same factor and so it is not a renewable industry.

Mr Duddy—When you look at the Hunter Valley—and many families in this area had relations in the Hunter Valley who had diary industries and grazing industries, coexistence and reparation existed by means of the cheque book. The day you went down to start your bore and there was not water for your dairy cows and you had to sell those cows and move, you rang the company, they came down with the cheque book and that was coexistence.

Mrs Nankivell—If you were lucky.

Mr Duddy—If you were lucky. There were many families that did not even experience that. The instances that have been given of coexistence between farming and agriculture are grape production in the Hunter Valley where, when the land subsides, they re-strain the poles to make the trellises for the grapes to be sound again. It is a completely different instance talking about no-till farming and irrigation farming on flood plains because here to drop something majorly is to drop it three or four centimetres, not three or four metres. You cannot simply go out there with a pair of wire strainers and think that you are going to be able to re-farm this country. The instances that have been given of coexistence are completely irrelevant to farming on the Liverpool Plains of the magnitude that it is here.

Senator WILLIAMS—Mr Duddy, taking it back to the land being offered by some of the people on the ridge country to Shenhua, if they have 1,000 acres, their standard price might be $1 million and they might be offered $4 million, so they are jammed between a rock and hard place. Obviously their position is, 'We either stay here and reject the huge offer and live alongside a mine, if it goes ahead, or we take the money and go.' You could probably understand why they are doing that, couldn't you?

Mr Duddy—Absolutely and certainly the community has no issues with those people taking those choices for their families. Many of those people are retirement age. However, no matter who has bought what and who owns what, it makes no difference unless the spatial relationship between coal and the water resources of this area are proven to not be damaged by the coal extraction, then it cannot be on the table to be a proposed use for this land here.

Senator WILLIAMS—To take you back to the point you made about the Hunter Valley about the dairy farming pumping water from a bore and all of a sudden the bore was dry, do you know of situations where that happened?

Mr Duddy—Yes, I know of many situations of that, at least 20 that I can think of.

Senator WILLIAMS—And it was obviously the mining that interfered with that water flow that sent the bore dry?

Mr Duddy—Well, there had never been mining before. The bores had never gone dry but once the mines start the bores go dry. There was certainly circumstantial evidence that would point to the fact that that was it when the others went dry in the area as well.

Senator WILLIAMS—Do you know whether there were any studies carried out on that? Could we get details or reports from studies on those sorts of water issues in the Hunter Valley?

Mr Clements—We could put you in contact with individual landholders who could talk about their view as to impact of the mines on the bores. You know, Senator Williams, that bores are odd things in droughts, that they are variable, but these people are certain. There were all sorts of contamination of water prior to the water running out which would indicate certain mining activities—

Senator WILLIAMS—Perhaps you could take the question on notice. Could you give us four or five landowners down in the Hunter who found themselves in that situation? I would certainly be keen to give them a ring to have a chat to them? That would be good, Mr Clements.

Mrs Nankivell—Senator Williams, I am sure you are well aware that in the case of coal seam methane gas companies do not buy properties. If a gas field is set up in your area and you are adjacent to that area, the value of your property can drop by up to 21 per cent, if you take the British Columbia experience. In terms of bores collapsing, they will vary rarely renumerate it or take any responsibility for that bore collapsing, even though I have evidence from a farmer near Baan Baa who was sitting there, heard the explosives go off, went outside to turn his bore on and his bore had collapsed. That gas company will not take responsibility for that. I have his name and number as well.

Senator WILLIAMS—That is incredible.

CHAIR—There are no further questions. Thank you all very much for your time today, in particular, to Mr Duddy and Mrs Nankivell for your time throughout the day and your assistance in ensuring that the committee saw a bit of the land in question. It has been greatly appreciated and beneficial to all of us.

Proceedings suspended from 3.48 pm to 4.13 pm

BLOMFIELD, Mrs Kirrily, Private capacity

GALLAGHER, Mrs Bridget Louise, Private capacity

CHAIR—I welcome a couple of individual submitters to the inquiry. Thank you very much for joining us today. We have received submissions from each of you, Nos 45 and 59 respectively. Do either of you wish to make any alterations or amendments to those submissions?

Mrs Blomfield—I just wanted to add something to mine. There was a native vegetation clearing application that I refer to in my submission and I wanted to submit that as evidence.

CHAIR—Thank you. I will make sure we all get access to it. If there is anything in particular you wish to refer to out of that during today's evidence, just let us know. We will try and get copies now anyway.

Mrs Gallagher—I have a map that I want to include.

CHAIR—Thank you very much.

Mrs Blomfield—I do not know if this is actually an addition to my submission, it is more notes to accompany my talk today.

CHAIR—That is fine. If you going to give us an opening statement then we can proceed with that. If you want to give us copies of that, that is good. Thank you both very much. Would you each like to make some opening remarks?

Mrs Blomfield—I am from a cattle grazing property in the Caroona coal exploration area. I have three main points to make today: firstly, we must protect the ridges of the Liverpool Plains from mining as they are recharge areas for the aquifers which feed the Murray-Darling Basin; secondly, we must protect the ridges as they contain shallow aquifers which are critical for ridge country management and, in turn, the river system inflows; and, thirdly, you may have been somewhat misled into thinking that just ridge country is still included in BHP Billiton's targeted exploration area at Caroona.

With regard to my first point, I want to quote from the notice of refusal of our application to clear pine trees on our farm in 1996. We were refused permission to clear because 'these ridges are recognised as being recharge areas for aquifers of the Liverpool Plains'. This was the state government's then Department of Land and Water Conservation telling us that these were recharge areas for the Liverpool Plains area. In the accompanying notes that I have just handed to you, there is a map of the licence area. It comes from BHP's interim report to stakeholders. The yellow hatched areas are their supposed targeted areas. The red dot I have placed there is the area on our farm where we applied to clear trees—and we were refused on the grounds that it is a recharge area. It is only a small dot on that map, but many of the ridges on that map are similar geologically and would have similar recharge properties. Likewise the Watermark area, which Shenhua have the exploration licence for, is also sandstone ridges, as is the ridge at home. So, in my mind, the same applies: it is a recharge area for the flood plains.

My second point was that we must protect the ridges for the shallow aquifers that lie beneath because the shallow aquifers are critical for the grazing management of this ridge country. The grazing techniques that we use on our farm under holistic management principles mean that we have created increased ground cover. We have increased infiltration in the areas that are recognised recharges for the flood plains. We have natural tree regeneration. We have increased carbon sequestration. Where we do have surface flows, they are slower moving and there is less erosion and clearer water. You may recall the photo in my written submission which shows the clearer and better quality water going into the Murray-Darling Basin.

To enable the grazing management that we have on our farm we have received funding from Liverpool Plains Land Management. As I have explained in my submission, there are a further 16½ thousand hectares in the Liverpool Plains that have also been funded by LPLM, which have funded changes like this, and those growers are aiming for outcomes similar to ours. That is a big area. We are talking about better water quality and high infiltration. On top of that the Namoi Catchment Management Authority has also funded 36,000 hectares of land for perennial pasture establishment and best management practice in the Namoi catchment, according to its 2008 annual report. All of these perennial pasture areas would, in my mind, be relying on these shallow aquifers to provide bore water for the cattle grazing in this area. Without the shallow aquifers, the land cannot be grazed and managed properly to get quality flows into the Murray-Darling Basin.

Do not be fooled into thinking that there is not as much water there just because they are shallow aquifers. Our bore at home yields 8,100 litres per hour when being pumped. As you probably saw on your tour this

morning, the Liverpool Plains is not just a big area of plains surrounded by ridges; the ridges run through the middle of the plains area. I suggest that you ask the mining companies how they intend to protect these shallow aquifers so that all this ridge country can be managed properly so that we have quality inflows and better infiltration of the aquifers that go into the Murray-Darling Basin. My understanding is that the mining companies have no regard for the shallow aquifers. Subsidence is a recognise part of longwall mining—and that is not denied by the miners—and would most definitely affect these aquifers.

My third point was that you could be misled into thinking that only ridge country is included in BHP's targeted exploration area at Caroona. The green area on the map is an area on our farm which we call our plains country. On the next page you will see a photograph of that green area on the map. You can see that it is still in the target area of exploration. If you look at the photo you can see that it is undeniably plains country. So do not be fooled into thinking that it is just rocky ridge country in the target area, because the whole expanse of the plains is still in it.

In conclusion, you may hear a lot of talk about protecting the flood plains but, in my mind, if you do not protect the ridges you are not protecting the flood plains and if you do not protect the two of these then you are not protecting the Murray-Darling Basin.

Mrs Gallagher—I moved into the Liverpool Plains district in late 2000. I was struck by the difference in agronomy and agriculture. I hail from the South-West Slopes and the Riverina district surrounding Wagga Wagga. The soils I was used to were mostly red loam, not unlike what most of you have just tasted twice with the dust storms over the last week. The majority of the soils on the Liverpool Plains are black and dark brown basalt. These soils are highly fertile and have an incredible ability to retain moisture. Therefore, the timing of rainfall is not as crucial as it is with sandy and red loamy soils for both crop and pasture production, as long as both rainfall and irrigation are available. That is part of the reason why the Liverpool Plains has such fantastic yields—40 per cent higher than the national average—and why the area produces both good-quality summer and winter crops and beef and lamb.

Food security is going to become an issue in the future. The world's population is expected to increase to more than nine billion by 2050, increasing by 70 million a year. The US Department of Agriculture estimates that China will produce 114.5 million metric tonnes of wheat this year and consume 101 million metric tonnes. China is the largest producer of wheat globally and also the biggest consumer. Large stocks are the only reason why the market was reasonably relaxed in February, when China was in drought. Further concerns were raised about whether they actually had 60 million metric tonnes in stocks, which was reported in February.

If we are starting to see the potential future of food shocks already, what is Australia going to do if large tracts of our agricultural land are irreversibly damaged by coal seam gas exploration and production and coalmining? We may not be able to rely on importing food if the world population is nine billion in 2050. This area may yet be required to grow more important crops such as fruit and vegetables just to sustain Australians, particularly if the food bowl lower down the Murray-Darling Basin is threatened due to climate change.

Beef production is our main enterprise. Our traditional source of water, a hole in the Warrah Creek, dried up in the 2007 drought—for the first time in 97 years. We still had pastures but were limited by water availability. To solve this we invested in a new bore. The reliability of bores from shallow aquifers is crucial to our farming enterprise. In the late-eighties, irrigation from five licensed bores on the old Warrah Station, now situated on Windy Station, about 500 metres from Merriwa Road, led to an important local observation of Warrah Creek and its underground system.

The most obvious was the water levels of the creek next to the Warrah Creek hall, five kilometres higher up the catchment from the irrigation activity. This saw water levels drop two days after irrigation commenced. It was also observed that, when pumps broke down, water levels increased. This was so evident to the farmers and graziers on Warrah Creek that, when a proposal was put forward in 1988 for increases in irrigation and a dam to be placed one kilometre north of Warrah Creek hall, a community meeting was held to object. People feared that their water supplies for both household and stock would be depleted. A temporary embargo on further water irrigation licences was put in place in August 1989 and a water study was commenced by the Department of Water Resources, titled *Water resource assessment, Warrah Creek, New South Wales, the Barwon region*.

Part of the conclusions states: "After allowing for inaccuracies due to the lack of hard data, it is apparent that potential extraction from the licensed bores is less than the average annual groundwater recharge. Water stored in aquifers buffers the extraction and recharge relationship, but in the long term the situation must be a cause of concern due to the increasing demand. The significant number of unlicensed and improperly licensed

bores in the valley compounds the local groundwater supply situation. Despite the popular belief that licensed irrigation bores are responsible for the seasonal draw-down of many shallow bores, the study shows a natural gravitational drainage of groundwater is the main cause of reduced water levels along the valley."

How much water travels under the creek is not known to me, but it is obvious that there is a link between the creek and the underground aquifers. The ridges, the location of the headwaters of the upper Mooki catchment, are linked with the creek and the plains, and damage done to the ridges will impact on the water flowing in the plains and further down into both the Namoi and the Murray-Darling Basin.

The hydrologist who did this study contacted people after he had completed this and spoke about how he believed there was a gravel bed that travelled under the creek and it was significant in that, if this water gets damaged, polluted, it will cause huge issues. I will come back to that.

It is known that coal seam gas production results in large volumes of waste saline and heavy metal soaked water dragged up from three kilometres in depth, often resulting in water tables dropping. If this water enters our aquifers and waterways, both stock and cropping potential will be impacted on, and food produced could be contaminated.

If the water table drops, the security of agriculture in this area will be irreversibly damaged. No-one can guarantee that mining will not damage our waterways or our agricultural production abilities. I have a young family—two boys, a two-year-old and a six-month-old. I would like to see them have the choice of being farmers on the Liverpool Plains, particularly on our property. I would like them to grow up healthy in an area that is unaffected by pollution from coalmining and coal seam gas mining.

Part of the reason that I introduced the water study, which I only came across this morning, is that it really shows how fragile the systems are with the water. In the ridge country, we are at the head of the Mooki. We are where I believe the recharge starts. If this area gets contaminated, if Santos makes a mistake and ends up polluting the water, it will flow all the way down. It will be underground, in aquifers and in the surface water. Warrah Creek is one of the few creeks at the head of the upper Mooki that actually flow all the way through into the Mooki and into the Namoi. There are lots of little creeks in that area, but a lot of them disappear onto the flood plains. Warrah Creek is one of the few that actually go all the way through.

I just think it is really important. I know there is a water study that has been commissioned, but it needs to be done properly and independently. Santos and any other company that comes in to do coal seam gas exploration really need to make sure that they look after water systems, because otherwise it is going to ruin agriculture in this area.

CHAIR—Thank you, Mrs Gallagher. Mrs Blomfield, I would like to clarify and get a little bit more information around the refused application for land clearing that you talked about. When was that application refused?

Mrs Blomfield—The letter is dated 1996. I am not sure of the month. There is a letter accompanying—

CHAIR—I think that one is still on the copier. I might save some questions on that and come back to that when I can have it in front of me as well. Mrs Gallagher, you are a landholder within the Santos exploration area. Has Santos undertaken any drilling on your property as yet?

Mrs Gallagher—They have not. They contacted us in order to put down a bore, and we said that we would rather that they did not. They basically said that, if they had to, they would come back, but at this stage they have walked away. In that application they indicated that the exploration hole would be 1.5 kilometres deep, which, when you do the maths for the area in which they were proposing to put the borehole, would mean it would be deeper, I would consider, than the Warrah Creek plains area anyway. I know that it is probably an issue with the coalmining, but Santos do not really care whether it impacts on plains country or on ridge country, because the depth that they go will be below the plains level anyway. If there is a link between those systems it is an impact.

CHAIR—So there has been no further communication between Santos and your family since you said, 'We'd rather not'?

Mrs Gallagher—No.

CHAIR—Thank you.

Senator WILLIAMS—Mrs Blomfield, I am interested in your holistic grazing. In 30 seconds could you explain to the committee was holistic grazing is?

Mrs Blomfield—It is a planned grazing program whereby we condense the cattle into one mob so that we can get a lot of impact in the soil with hooves, which creates more germination et cetera of plants. Having the cattle in one mob means they move around the property, so it might be three months or five months before they come back to the same paddock. Doing that allows for full recovery of the plants. Allowing full recovery of plants before they are re-grazed is just the most important thing for maintaining pasture species and for increasing the biodiversity of plant species.

Senator WILLIAMS—In other words, instead of having five large paddocks to run 300 head of cattle on, you might have 50 small paddocks and have the mob of 300 move every couple of days from paddock to paddock.

Mrs Blomfield—That is right. To do that we need to have water on all those small blocks.

Senator WILLIAMS—That is what I was getting at.

Mrs Blomfield—You just cannot do that with a dam, so you rely on having that bore water piped to all those smaller blocks.

Senator WILLIAMS—The trampling of the grass when you heavily stock for those couple of days would build up carbon levels in the soil substantially, wouldn't it?

Mrs Blomfield—That is right. We have lots of dry matter as well as the grass there being trampled down. We have one paddock that previously was just red, fairly sandy soil, and we now have a layer of brown soil on top, which is carbon. You are building soil.

Senator WILLIAMS—Have you measured the carbon in that soil?

Mrs Blomfield—No, we have not, but it is obvious to see.

Senator WILLIAMS—And the more carbon in the soil the healthier the soil.

Mrs Blomfield—That is right. You get better water-holding capacity and greater infiltration into those areas, which are recognised recharge areas.

Senator WILLIAMS—I take you to the red mark on your photograph here. You were not allowed to clear those trees because it was a recharge area for the Liverpool Basin. Is that correct?

Mrs Blomfield—Yes.

Senator WILLIAMS—But, if miners take over and mine that country, they can clear out any trees they want. Is that correct?

Mrs Blomfield—That is right.

Senator WILLIAMS—So there are two sets of rules in New South Wales for timber. One set of rules is for farmers, who are not allowed to clear if they wish to; they have to seek permission. Yet when it comes to mining, the trees are irrelevant.

Mrs Blomfield—Yes. I would say that it does not pertain just to tree clearing. I think there are a number of different areas.

Senator WILLIAMS—Would you like to expand on those things. We have talked about timber and virtually the kick-off of section 46, and then it progressed into the legislation and the threatened species act et cetera. Farmers have very stringent regulations on them about clearing timber and have to approach the CMO for permission for the plans. If that country were to be approved for mining, they would have no problems just taking the timber out.

Mrs Blomfield—That is right. In our particular scenario they are only proposing longwall mining, so it is possibly not relevant in that specific area. But in the case of Watermark, which also has sandstone ridges exactly the same as in this area here that I am referring to, that is for open-cut mining, and all the trees would be gone.

Senator WILLIAMS—Can you think of any other examples where there are basically double standards when it comes to environment management, as the one we have just talked about?

Mrs Blomfield—I think John Clements alluded to something, and I cannot say the details, in regard to water flows going off your farm, something to do with that. I think there may be some double standards there. And I think farmers in recent years have really made an effort with the introduction of Landcare and those sorts of things and are really trying to move forward with improving the environment of their properties.

Mrs Gallagher—Along our district in Warrah Creek there have been three that I know of farmers that have gone for enviro funds, our business being one included, and also got funds from Liverpool Plains land management and CMA. We got a new bore and part of that was with the enviro fund. That was so that we could actually fence off the creek so that cattle were no longer watering on the creek and so protecting the riparian area along the creek. Then we were pumping water up into troughs because the dams were not very reliable. It also meant that we could fence off the areas around the dams. A lot of the dams were in catchment areas and we were then protecting those areas. So there is a lot of money that has been put into the environment by these farm managers that had not been done previously. A lot of the businesses are now looking at environment as an important part of their productivity as well.

Mrs Blomfield—There is current funding—I am not sure if that is what Bridget is referring to—of white box areas which are part of the Liverpool Plains area for protecting white box country. As you say, that would not matter if the mine was there. If white box was there it just would not be relevant.

Senator WILLIAMS—On your family relations, Mrs Blomfield, how many generations have been farming in this area?

Mrs Blomfield—My children are only the fourth in our place.

Senator WILLIAMS—There are many farms in the area with fifth, sixth and seventh generations.

Mrs Gallagher—My children are the fifth generation.

Senator WILLIAMS—Obviously a huge bond or a sentimental attachment to the land over that period of time has developed where generations wish to continue their practices basically carrying the baton in a relay race as farming sort of thing. Each generation hands the baton on to the next generation looking after the land. Obviously there is something to be very proud of about the long-time generational care of that land. Would that be correct?

Mrs Blomfield—I think being a farmer or grazier has got to be one of the most important jobs in the world. You are producing food for everyone. I do not think there is a more important job.

Mrs Gallagher—Good-quality food too. That is something that this area is renowned for. It would be a real shame if contamination of water supplies affected the quality of the food. We are proud of the food we produce in this area. I am happy to eat the food that we produce and I would like to think that every Australian is proud to eat the food that comes out of the Liverpool Plains and are not worried that it might have something in it that is not good for them.

Mrs Blomfield—In regard to what the Minerals Council lady said in regard to open-cut areas that have been rehabilitated in the Hunter, I would not want to eat the beef that comes off that country. With the heavy metals and things that are associated with mining which would come out in the dust and things and end up in the country around it, I would not want to eat that food, because I know what heavy metals can do to your brain.

Senator McEWEN—On that matter of pollution, Mrs Gallagher, you mentioned polluted water arising from mining activities and the possible detriment that could have. What kinds of pollutants do you understand could arise from coalmining and coal seam methane gas extraction? What tolerances do your crops and animals have for those possible pollutants? And how long would it take you as agriculturalists to recognise that there was a problem with polluted water, coming at it from the point of view that if something went wrong at a mine or at a gas extraction plant, it could be a while before anybody knew there was a problem in the aquifer?

Mrs Gallagher—I have a study here. It is a literature review entitled *Potential exposure-related human health effects of oil and gas development*. It has a list of things that have been found in oil and gas contaminants. Some of these will come from the drilling sludge, because there are chemicals added when coal seam gas boreholes go down. They will include things such as arsenic, lead, mercury and selenium sink and possibly radium and uranium radiation.

Senator McEWEN—Has that study looked at the type of mining we have been talking about that is done in the Liverpool Plains?

Mrs Gallagher—No. I would like to have a look to see if I could find something that would.

CHAIR—How old is that study?

Mrs Gallagher—It was written on 1 August 2008.

Senator McEWEN—It is not necessarily Australian based?

Mrs Gallagher—No, it is not. Sorry. It is not an Australian based study. I do believe that a lot of the chemicals that are found in coal are common across the board, but I would have to have a look at that.

Senator McEWEN—What about the actual impact on crops or beasts? Could you tell us how you would ascertain whether there was a problem?

Mrs Gallagher—I think it would probably be on how the cattle performed after drinking the water, particularly considering that the waste product of the water is generally very salty. You not only have issues with these heavy metals; you also have large volumes of salt. You might ascertain fairly quickly if stocks start becoming sick because they are getting salt poisoning. It probably depends on the level of contamination, but if it is fairly severe then you will probably notice straightaway because it will make them sick. With cropping, I think it would be interesting to speak to some of your millers as to what quality of tests they do with grain when it is received. They do fairly extensive tests to make sure it has good quality. If they start getting grain from a particular area—and a lot of those millers actually buy ex-farm—they may well be able to pick that up. But you would probably have to speak to a miller for the detail on what they do.

Senator McEWEN—You do not do any testing of grain, crops or beasts yourselves?

Mrs Gallagher—No, we do not.

Mrs Blomfield—I think that is a great point that you make, because these things are not tested for on a regular basis. That is the scary thing. Do we know when they start getting into our food chain? I cannot answer specifically what some of those things do for cattle. Maybe you would not pick up lead in a beast but if you fed it to a small child, with a small body and a much lower tolerance for some of the heavy metals, you would get behavioural problems like ADHD. You would get depression and neurological problems in adults. There are all sorts of problems. You may not even pick it up when it goes into the grain and the crop because nobody tests for it. Then it enters our food chain and no-one knows about it.

Senator LUDLAM—Thanks very much for your evidence and for coming in today. Have either of you or have your neighbours had offers from any of the companies concerned to buy your land?

Mrs Blomfield—We have not. In our area they are likely to just longwall mine under our farm. They do not want to buy it. It is highly likely that the shallow aquifers that I am referring to would be damaged, which will make much of our country useless in that we will not be able to graze it or manage it. There will be on-flow effects to the river systems.

Mrs Gallagher—Santos had a meeting out at Blackville in May. We have not been approached, but she stated that in cases of coal seam gas production they generally did not plan to buy properties at all for that.

Senator LUDLAM—So it is more just for the coalmining. In the case of longwall mining, as far as you are aware with BHP's activity around your farm, how far below the surface of the earth is the mining actually taking place?

Mrs Blomfield—I think it is around 600 metres.

Senator LUDLAM—Is that in general or is that your understanding of what they—

Mrs Blomfield—That is in that area. It varies. On the eastern side of the exploration area, it is much shallower. I think it is even as shallow as 100 metres.

Senator LUDLAM—Is there any process at law in New South Wales where agricultural land can be nominated for protection as high value? You can nominate land as having high conservation value and it can be put away in a reserve. Is there any process whereby that can occur in New South Wales?

Mrs Blomfield—Not that I am aware of, no—that is, not that it is protected from mining.

Senator LUDLAM—I imagine you would know if there were.

Mrs Blomfield—I think we would be following it up. We only own the top foot or so of soil. We do not have the rights to the deep stuff.

Senator LUDLAM—But there is no system in New South Wales for the assessment and protection of particularly important agricultural country?

Mrs Blomfield—No. I think that needs to happen. It can be important agriculturally from a food production point of view or from a water point of view. It makes it a safer producing area if you have the water.

Senator LUDLAM—To me it is starting to feel like a real gap in the legislative framework that we have processes for nominating ecologically important land but not for land that is important for farming purposes. There was a bit of discussion earlier in the day about the Namoi Water study. Are you participating in that? Are you generally supportive of how that is taking shape?

Mrs Blomfield—I will make a comment. Senator McEwen questioned the Minerals Council on the bores. The information from BHP's exploratory bores is to be fed into the study. That concerns me a little. I do not have a great understanding of the intricacies of the drilling methods, but from what I understand of the methods that they use to drill the they pull out what is called cuttings. It is soil that is sort of sat in a blob on a tarp. They do not actually take a core sample. That method of drilling I think involves using water. If they are actually using water for the drilling and they are not taking core samples, how do they actually know whether or not there is water in that top portion? If this is the information that is being fed into the study, how do they actually know, using the methods that they are using?

Senator LUDLAM—My understanding also was that some of that data would be held commercial-in-confidence for a period of time. Is that your understanding?

Mrs Blomfield—I do not know about that. I am not sure.

Senator LUDLAM—That is okay. Getting back to the question: are you generally favourable as to the terms of that study and what it is setting out to achieve?

Mrs Blomfield—Yes. I am in favour of what they are trying to find out. I am not sure how in agreement I am with some of the intricacies of this information being fed in. The study is not going to be any good unless the information being fed into it is accurate. I am definitely supportive of the outcomes that they are trying to achieve, yes.

Senator LUDLAM—The Minerals Council folk earlier this afternoon said that, if the science came in and it showed that it was not possible for mining to coexist with agriculture, they would walk away. I guess there starts to be quite a bit hanging on the outcomes of that study. That is quite a big thing for them to say. Are you confident that that would be the case?

Mrs Blomfield—That they would walk away?

Senator LUDLAM—Yes.

Mrs Blomfield—They said earlier that they could not speak on behalf of the mining companies, so no.

Senator LUDLAM—Can you give us some advice on what kinds of recommendations you would like to see come out of this committee? What are you actually seeking? We cannot necessarily make strong recommendations on law reform in New South Wales, but what Commonwealth involvement are you seeking and what specifically is broken at the state level that you are seeking to have remedied?

Mrs Blomfield—I see at a state level that all the monitoring programs that the Minerals Council representatives referred to involve state bodies overseeing what is happening—the very state that wants the money and the royalties from the mining. I just do not see that those watchdog processes are adequate. I do not know what sort of power the Commonwealth has over the state in terms of whether they can override state laws on the protection of prime agricultural land. In saying that, the definition of prime agricultural land is important in that the whole region needs to be protected because we have heard, and the state themselves have said, that the ridge country feeds the aquifers that are part of the Murray-Darling Basin.

Senator LUDLAM—The representatives this morning suggested that a mining proposal is almost never knocked back once it has been applied for. In New South Wales law they can be modified, but they are very rarely prevented from occurring. If the mining company was able to show that they could mine sustainably or without damaging those water resources, do you think there is a possible outcome of coexistence in this case or is it one or the other?

Mrs Blomfield—Not in my mind, because in the case of an open-cut mine we are not only talking about quantity of food production, we are also talking about quality. The heavy metals and contaminants that would end up in the farming country and contaminate the food are just not acceptable.

Senator LUDLAM—You are not confident, for example, that the amount of money they have put down by way of rehabilitation bonds would somehow be able to clean up that damage once it has been caused?

Mrs Blomfield—Not at all. The bond money is just a joke really. It is a tiny amount—it might be one farm's production.

Senator LUDLAM—It sounded like you were almost suggesting before that there is a bit of a conflict of interest operating within the New South Wales government that would prevent them from properly assessing projects like this because they are too beholden to royalties. Is that putting it too strongly?

Mrs Blomfield—That is what I am inferring.

Senator LUDLAM—Thanks. I will leave it there.

CHAIR—I have put this to other witnesses: obviously the Minerals Council put great faith in the individual assessments of applications. Are there any circumstances in which either of you could see yourselves being accepting of mining operations proceeding in the region?

Mrs Blomfield—In the case of open-cut mining I would say no, because of what I have just explained about the contaminants. If we knew there was an absolute guarantee that, in the case of the longwall mining, no water would be lost from any sort of aquifer then maybe, but I cannot see how that guarantee could be given.

Mrs Gallagher—With coal seam gas production, the studies from the US show that subsidence can be a huge issue 20 to 40 years later and there is the possibility of the contamination of water. Then there is the amount of water that gets pumped out of the coal. I had a geologist from Santos pull me aside at the Blackville meeting and say, 'Look, Santos won't say this because they do not like to use the word guarantee, but I can guarantee you that we would never contaminate your water and you would never have those issues.' If they decide to go ahead and use ponding—and I am not sure how they are going to get rid of the polluted waste water—all it needs for it to crack is an earthquake. We are on the Mooki fault line, so it is not an impossible thing. I would not be comfortable because I cannot see how they can guarantee it.

Senator WILLIAMS—Mrs Gallagher, going back to the contaminated water. Santos would obviously have samples of that water and have tested it for heavy metals and contaminants et cetera when they were test drilling; would that be right?

Mrs Gallagher—Possibly. Out at the Jones's they may have water, but I am not sure.

Mrs Blomfield—I am sorry. Can you please repeat the question?

Senator WILLIAMS—Santos have been doing their testing around here. How many test holes have they drilled? Have they actually proceeded to drill any test holes?

Mrs Gallagher—I know there is one out near Blackville, and I think there is another one somewhere else.

Mrs Blomfield—I do not know exactly how many. In the case of Santos, I do not know. But in the case of BHP, I think Tim said that something like 130 bores have been drilled. I believe they are supposed to monitor the bores in some way, but it took until the 60th or 80th hole had been drilled before any sort of monitoring was done at all. So to know any quality issues, having already drilled that many holes, when they have not even tested prior to that seems madness.

Senator WILLIAMS—Perhaps, Chair, it might be in our interest to request Santos to give us any information on their drilling fluids and what contaminants and heavy metals are in them. They could forward to us a report on those fluids to see exactly what is in them and what the levels are of any contaminants and heavy metals.

CHAIR—We can certainly ask them for that tomorrow when they appear, and anything they cannot provide at the time I am sure we can ask them to provide over the coming weeks.

Mrs Blomfield—Senator Williams, might I suggest that it is not just the drilling fluids that are the issue. In the case of some of the ponds they create—

Senator WILLIAMS—When they draw the water out of the ground to allow the gas to flow?

Mrs Blomfield—Yes. That is water coming from a great depth. At that depth there are the sorts of things that Bridget was talking about, such as cadmium and lead. So it is not just what is in the drilling fluid but also what is in the water they are pumping up. There have been cases in Queensland where they have had problems. The wall of a pond they built was not holding so they pumped the water out into another dam, and what you are left with is all the salt in the bottom of the dam. They then had an incredibly windy day—look at the dust storms that we have just had—flicking up all this salt. It is just blowing salt that could be full of lead, cadmium and other heavy metals across the landscape.

Mrs Gallagher—That could end up on our crops and pastures where cattle and sheep are feeding. How do you control that?

Mrs Blomfield—But the point is that it is in the water, and if you are drilling a hole that deep does it not then cross-contaminate other layers and other aquifers.

Senator WILLIAMS—Especially at 3,100 kilometres.

Mrs Gallagher—It is a long way.

CHAIR—Mrs Blomfield and Mrs Gallagher, thank you very much for the time you have taken to provide your submissions and for the additional information you have furnished us with today. In particular, thank you for coming and sharing your perspectives. It is always helpful at these types of inquiries to hear from the people who are on the properties in the areas directly affected. We appreciate and value your time, effort and evidence today.

Mrs Blomfield—Thank you.

Mrs Gallagher—Thank you.

CHAIR—This is the end of our hearings in Gunnedah today. I thank all the people who provided assistance to the committee in allowing us to see the local area and who appeared during the course of the day. Is it the wish of the committee to accept as evidence the additional documents and information we have received today? There being no objection, it is so ordered. I declare today's hearing closed.

Committee adjourned at 4.59 pm