Submission to Inquiry into the impacts of mining in the Murray Darling Basin

To: Senate Standing Committee on Environment, Communications and the Arts

From: Wade and Sally-Ann Bidstrup

Background

We are farmers from the Haystack Plain, north of Warra, on some of Australia's most productive, naturally fertile farming land. In 2008, the Haystack Plain was subjected to a Mineral Development License (MDL383) from the wholly State Government owned Tarong Energy. If this were allowed to proceed it would mean the open cut mining and utter devastation of one of Australia's best pieces of environmentally sustainable, non-irrigated farmland.

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Submission

The Murray Darling Basin is home to the majority of Australia's most fertile farming lands which must not be put at risk if mining were to proceed in an unplanned, unsustainable manner. Currently there are massive amounts of mining and gas extraction activities that have just commenced or are being planned, which have the potential to devastate portions of the Murray Darling Basin. This submission is going to talk about the impacts of Coal Seam Gas extraction, the mining of coal on fertile floodplains and the importance of maintaining productive farmland for future generations.

IMPACTS OF COAL SEAM GAS EXTRACTION

The extraction of Coal Seam Gas (CSG) occurs when water is pumped out of underground coal seams. This reduces the partial pressure in the coal seam and liberates the gas which is collected at the surface and used for power generation or export.

The water extracted from these coal seams is typically very saline and must be dealt with on the surface of the ground. This water has been stored in large dams (ringtanks), where evaporation leaves a very concentrated salt solution. Recently, the Queensland State Government has responded to concerns about the effectiveness of these ponds and required that the water needs to be treated (typically through reverse osmosis), so the brine solution can be dealt with separately from the water.

There are however, a number of serious flaws with these scenarios. It has been estimated that by the time the Government's legislation to have all water coming from CSG wells treated, there will be between 50 000 and 200 000 hectares of land submerged by evaporation ponds. While clearly this land is destroyed forever, the scenario whereby this salt leaches into underground aquifers or finds it's way into river systems has the potential to devastate much larger tracts of land. As a result of this concern the state Government mandated that these ponds be lined to prevent seepage, however, at a land access public forum held in Dalby on 1st of November, 2008, Dr Ian Wilson, the Queensland Government EPA director of Technical Operations said he thought 7 years was adequate as long term for planning purposes when confronted with questions about the long term implications of these developments. Can they seriously believe that because a plastic lining will hold the salty water in a pond for seven years it will do so indefinitely? These ponds are now here forever, what happens if the plastics ruptures in 15 years time? Even if the plastic lining lasts for 100 years, which is extremely unlikely, the problem is still there. The brine still ends up in the soil, underground aquifers or rivers of the Murray-Darling Basin with detrimental consequences. It is highly unlikely that any gas company will be there to foot the bill for these outcomes in years to come, and the motivation for them to clean up ponds as soon as the gas fields are depleted is very low, given that the Queensland Government charges these companies a bond for these ponds that equates to less than 50 cents per tonne of salt. While a plastic lining may well hold the brine in the pond for a number of years, dam walls can rupture at any time, particularly given the varying soil types across the millions of hectares of land over which these gas fields are situated, and, as happened in Central Queensland, massive flooding can occur which has the potential to breach poorly located ponds.

The compulsory treating of water does very little to alleviate the risks posed to the Murray Darling Basin by the salt. It has been estimated that over 1000 tonnes of salt will be brought to the surface every day from these gas fields and the question has to be asked 'what will they do with it?' While the purified water will be of some use to towns or agriculture (albeit the water, once treated is far too expensive for both councils to acquire for town water and for any agricultural endeavours to make a return from), something will still need to be done to dispose of the concentrated brine. It has been said that this brine will be reinjected back into the coal seam from where it came, however this cannot be done while the gas field is still in operation, so it will need to be piped to a disbanded field or stored in ponds. The impacts of injecting the

brine underground on sub-artesian aquifers are unknown, and the sheer scale of these projects means that regulation would be exceedingly expensive and ineffectual.

Another impact of the CSG developments is the grid work of roads and pipes between wells. This grid work has the potential to cause significant local water flow problems, including erosion, flooding as well as the reduction of beneficial flooding caused by formed up roads. These problems would be particularly severe on floodplains and would make many farming operations inefficient and unsustainable. Other problems include the spread of noxious weeds and compaction of farming lands.

OPEN – CUT COAL MINING ON FLOODPLAINS AND FERTILE FARM LANDS

Open – cut mining of floodplains and prime farming lands poses a number of insurmountable challenges to the coal mining industry, and a number of devastating impacts on the environment. While these impacts will be different from area to area, this submission will focus upon the impact open cut coal mining would have on the Haystack Plain area in Queensland.

The Haystack Plain is an extremely flat area (less than 0.02% slope) known for its fertility. Indeed, the flat nature of the area has contributed to the fertility of the area over the ages as floodwaters spread out over the plains, slowed down and deposited nutrient – rich soil. Today the flatness of the area is used to great effect by the farmers through the allowing of beneficial flooding of vast tracts of land. This means the soil moisture profile is often filled and means that, despite the fact that no irrigation occurs on the floodplain, top quality, very high yielding crops are consistently grown here. This combined with relatively reliable rainfall that falls throughout the year, allowing both summer and winter crops, makes the Haystack Plain area one of Australia's most productive areas. To this end, the approx. 13000 ha of land encompassed by MDL 383 last year produced enough wheat to make 68 million loaves of bread, enough feed grain to produce 14 million chickens as well as thousands of tonnes of birdseeds, Mung Beans and Chick Peas – a major food of many subcontinent countries. Add to this enough cotton to make 675 000 pairs of jeans and it quickly becomes apparent how rare an area this is, especially given that no irrigation whatsoever occurs here.

Open cut mining on the Haystack Plain, with its extremely low slope, would result in massive disruption to water flows both in the area encompassed by MDL 383, as well as a much larger area around it. Overburden piles would stall the flow of water, causing flooding upstream, would cause severe erosion on the sides and the starvation of beneficial flooding downstream. This would negatively impact on many tens of thousands of hectares around MDL 383, and severely limit agricultural production here.

Of more concern however, is the subsoil conditions of the floodplains and the impact this would have on the Murray Darling Basin if these were brought to the surface. The subsoil within the MDL 383 area is extremely sodic, acidic and quite saline. There is over 31 t of Chloride per hectare in the top 4.5 metres of soil, and much more at depths greater than that. Combine with this the leaching of acid sulphates that would occur if these subsoils were exposed to the elements on the ground surface, and

the potential impacts on the nearby Condamine River would be devastating.

Mining companies continuously spruik their ability to rehabilitate mining sites. It is strongly believed by people in this area that this would be impossible. When mining companies are asked to provide details of where rehabilitation has occurred in the past they have not been able to. At the mining summit in Dalby on the 21st November, 2008, the deputy CEO of the Queensland resources council, Greg Lane, stated that he was sure that there was some mined land in Queensland that had been reclaimed to its previous status, but he was not sure where it was and what percentage of the mined area of the state was involved. He undertook to find out, and numerous letters have been written to him since asking for details and an invitation to visit the site. Unsurprisingly there has been no reply. He also stated that there have been large areas reclaimed in the Hunter Valley where farmers and miners happily coexist on grazing country (not prime cropping land). These claims have been rubbished by farmers and scientists alike. Indeed there are no examples of prime farming land being rehabilitated to their former self, and it is also true that second rate grazing country has not been rehabilitated to its former capacity. A program aired on Radio National recently saw an exchange between Professor Neil Menzies and Mitch Hooke from the Australian Resources Council. Needless to say, Mr Hooke gave no indication of where rehabilitation had occurred and Professor Menzies made it quite clear, using a scientific based argument that it would be next to impossible. The full interview can be heard at -
http://www.abc.net.au/rn/australiatalks/stories/2009/2637485.htm

Even if mining were to occur on the Haystack Plain, the depression resulting from mine, after the ground had settled over a period of years, would mean that the area would resemble some sort of swamp, as the extremely flat nature of the area would mean that drainage would be impossible. Also, the compaction caused under the overburden heaps would take decades to overcome, and may indeed be impossible to rectify given the subsidence of this ground due to the weight of soil above it.

MAINTENANCE OF PRODUCTIVE FARMLANDS

The argument to maintain fertile farming lands for future generations is compelling. While Australia has never experienced famine or food shortages, the same cannot be said for the rest of the world and it is our moral responsibility to keep producing food for the rest of the world to consume.

Until this year, the world had consumed more than it had produced for the previous 7 years. World grain stockpiles were the lowest they had been for the previous 50 years despite a string of record crop yield brought about by GM technology, improved farming techniques and ideal growing seasons in most of the major food producing countries, especially the US, Brazil, China, countries bordering the Black Sea and Russia. World grain stockpiles have improved slightly this year, however the last 36 months has seen food riots in no less that 37 countries, brought on by the increase in the price of food.

The worlds population is expected to double in the next 40-50 years, and Professor Julian Cribb, an Adjunct Professor in Science Communication at UTS, said at the recent NFF conference that in 2050 the world's farmers will need to feed the

equivalent of 13 billion of today's people given the rise in population and change in dietary habits. Meanwhile, the FAO says that 1.02 billion people currently go to bed hungry every day, including 642 million in the Asia Pacific, which it describes as "a threat to world peace".

China is a country that claims to be somewhat self sufficient, however, researchers at the University of Leeds recently found that if China increased it's imports of grain due to drought, flooding etc by just 5%, it would consume the entire worlds grain stockpile. Since 2000, some 8% of China's arable land has been consumed by urbanisation. The full article can be seen at - http://qcl.farmonline.com.au/news/nationalrural/grains- and- cropping/General/major-shift- in- chinas- grain- output- to- impact- on- world-markets/1417512.aspx?src=email

If the world's countries were to clear all their forests, including the Amazon and put every hectare of available ground into production, then the total area that could be farmed would only increase by 13%. The question has to be asked 'How will the world feed itself in 50 years time?'

While someone dies roughly every 7 seconds from starvation, the worlds farmers are facing challenges brought about by climate change (due in large part by the use of coal for power generation), urban encroachment, land degradation (especially throughout Asia), and a dwindling supply of nutrients. At the recent NFF conference, Professor Julian Cribb also outlined that peak Phosphorus has passed. If the worlds farmers have reduced access to Phosphoric fertilisers, and nothing is done to recycle some of the nutrients from cities back into farmlands, then the world can expect a decline in yields at the very time an increase of gigantic proportions is needed. This is another reason why our most inherently fertile soils cannot be lost to, or put at risk by mining.

Sylvia Burwell from the Bill and Melinda Gates foundation said recently, "We are at a watershed moment in world history where we will be united or divided depending on food policy and production" and "We will have world war or peace depending on our food policy and production"

At the recent community cabinet meeting in Highfields, Premier Anna Bligh told the audience that Queensland had enough coal to keep exporting for another 300 years. Why then, are they contemplating allowing mines that jeopardise the nations, and the worlds, food production when there is ample coal? If, in 250 years time the coal is beginning to run low and the State Government decides they need coal more than food, then the coal will still be under these prime farmlands, ready to be extracted. Of course this scenario won't play out with Climate Change meaning an end to the coal industry long before then. Coal production is a short term industry mining a product that is damaging the environment and quickly falling out of favour. Meanwhile, the extraction of Coal is permanently destroying food producing land and putting at risk much more throughout the Murray Darling Basin at the very time in the worlds history when we can least afford it. This is an argument between yesterdays fuel and tomorrows food.

Summary

Mining developments should be very well planned in the Murray Darling Basin so that they cannot impact the Murray Darling Basin's waters and food producing land. The current practices have the potential to have severe long term impacts on the whole Murray Darling Basin – Australia's food bowl.

From the Mineral Council of Australia's website, the Brundtland Commission's definition of sustainable development – "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" seems appropriate.