Submission No 715

INQUIRY INTO COAL SEAM GAS

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Submission for Coal Seam Gas Inquiry

General Purpose Standing Committee No 5
NSW Legislative Council
Inquiry Into Coal Seam Gas

September 5th, 2011

RE: Submission To The Inquiry Into Coal Seam Gas

Dear Committee Members

I make this submission to The General Purpose Standing Committee No. 5 inquiry into and report on the environmental, economic and social impacts of coal seam gas (CSG) activities, including exploration and commercial extraction activities, allowable under the NSW Petroleum (Onshore) Act 1991 (the Act).

It is unclear from information available at your website whether this inquiry will be taking into account any submissions made to, or outcomes from and/or reports arising as a result of, the NSW Coal and Gas Scoping Paper.

Along with hundreds of other members of Climate Action Groups throughout Australia I contributed to preparing a submission for the Scoping Paper on behalf of the Ballina and Lismore Climate Action Groups. I also had the opportunity to read submissions from other Climate Action Groups and was astounded at the level of scientific detail and consideration of the issues presented in the Scoping Paper.

No mention is made of the Scoping Paper in the Terms of Reference and it would appear to me that many groups and individuals might assume that they have already made a submission to this Inquiry when they made a submission to the Scoping Paper in April.

If this is the case, perhaps consideration can be made by the Committee to also accept any submissions made for the Scoping Paper as a part of this Inquiry, as the content of these submissions are relevant to and addressing the Terms Of Reference for this Inquiry.

I am familiar with NSW planning legislation as it relates to mining activities, having been involved in submissions to the NSW Government regarding atmospheric pollution incidents I witnessed and reported to the NSW Pollution Hotline and other potential environmental impacts and procedural issues emanating from the Lake Cowal Gold Mine, as well as involvement in a court action in the Land and Environment Court regarding Part 3A approvals.

This submission is made in three parts.

Part 1 addresses issues raised specifically with regard to the NSW Petroleum (Onshore) Act 1991 Act.

Part 2 addresses issues raised specifically with regard to the Schedule Of Onshore Petroleum Exploration And Production Safety Requirements that is a part of the Act, referred to in Clause 29.

Part 3 addresses any other information not covered in Part 1 or 2 that addresses The Terms of Reference for this Inquiry.

First and foremost I bring to the attention of the Committee that a huge amount of information about the long-term social and environmental impacts of CSG mining can be obtained from the movie "Gasland".

Following release of the movie, the CSG mining industry exercised it's right of reply. In response to this reply, the Director/Producer of Gasland, Josh Fox, prepared "Affirming Gasland: A de-debunking document in response to specious and misleading gas industry claims against the film".

I have quoted this document extensively throughout this submission and believe that it too should be compulsory reading for all Committee members. A copy of this document can be obtained at www.damascuscitizens.org.

I have also extensively quoted from letters that I have written to two previous NSW Premiers and relevant Government Departments regarding these issues. Should you be interested in a copy of any of this correspondence, please contact me at either or

Yours sincerely

Dan Hamilton

PART 1

1. The NSW Petroleum (Onshore) Act 1991.

1.1 **Clause 20A Waiver of minor procedural matters (p11)**
(1) The Minister may grant or renew a petroleum title even though the applicant or holder has failed to comply with a requirement of this Act or the regulations.

This clause raises the question of the value of minor procedural matters (clauses of the Act) and the consequences to be suffered by those companies who breach these clauses. If the matter were to come before the court, the Director General would be required to demonstrate that the waiving of these procedural matters did not "adversely affect any person's rights under this Act". How is this achieved?

The plethora of regulations to be complied with will result in oversights and non-compliance with the Act. In Williams v Barrick Australia Ltd, it was revealed during the court case that the company had failed to pay its' Lodgment Fees (see Clause 12 of this Act). The judge made an order to correct the breach of the Act, WHICH WAS NOT NOTICED BY THE DIRECTOR GENERAL.

The issue here is that there is no point in having a clause in an Act unless there is a process put in place by the Government to ensure that the Clause can be enforced (which should not be the responsibility of a judge or member of the public). Prima facie, a clause is there to ensure compliance, but what is the point when the Director General can waive the matter, without penalty to the Applicant! This failure to implement effective administration of the Act leaves members of the public with no confidence in the ability of the Act to protect the environment or the rights of the general public.

1.2 **Clause 21 Grounds on which application may be refused (p11)**

The Government is legally obliged to comply with the Precautionary Principle. The precautionary principle states that if an action or policy has a suspected risk of causing harm to the public or to the environment in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action.

This principle allows policy makers to make discretionary decisions in situations where there is the possibility of harm from taking a particular course or making a certain decision when extensive scientific knowledge on the matter is lacking. The principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result. The most important Australian court case so far, due to its exceptionally detailed consideration of the precautionary principle, is Telstra Corporation Limited v Hornsby Shire Council. The case was heard in the New South Wales Land and Environment Court under Justice CJ Preston (24 April 2006).

The Principle was summarised by reference to the NSW Protection of the Environment Administration Act 1991, which itself provides a good definition of the principle:

"If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reasoning for postponing measures to prevent environmental degradation. In the application of the principle… decisions should be guided by: (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and (ii) an assessment of risk-weighted consequence of various options".

To incorporate the Precautionary Principle into this Act would ensure that the Director General has the ability to refuse an application on these grounds.

1.3 **Limitation on challenges to validity of titles (p24)**
Clause 25 (1) The grant of a petroleum title cannot be challenged in any legal proceedings commenced later than 3 months after the date on which notification of the grant of the title is published in the Gazette.

While the industry will argue the necessity of this clause to provide certainty to commence exploratory operations, it is at the expense of the legislative rights of the general public to limit the time period in which legal proceedings can be commenced. Under the Environmental Protection and Assessment Act the public can seek remedy if, for example, they have not received notification of a proposed development that is affecting them or their property and can seek remedy in the courts. This anomaly should be addressed in this legislation and across the board, so that companies and people are operating on the same 'level playing field', rather than legislation that undermines the rights of the general public in favour of corporations.

1.4 **Part 6 Division 1 Environment to be considered before grant of petroleum titles p53**

Clause 74 (1) In deciding whether or not to grant a petroleum title, the Minister is to take into account the need to conserve and protect: (a) the flora, fauna, fish, fisheries and scenic attractions, and
Clause 75 (1) The conditions subject to which a petroleum title is granted or renewed may include conditions relating to the conservation and protection of: (a) the flora, fauna, fish, fisheries and scenic, attractions, and
Clause 76 (1) (a) the rehabilitation, levelling, regrassing, reforesting or contouring of any part of the land the subject of the title that may have been damaged or adversely affected by operations

These clauses and others like them should all include the specific mention of "water ways (surface and sub-surface)" to directly enshrine into the Act the need to take into consideration the impact of water supplies for the environment and other water users. While consideration of the need to protect water supplies is addressed in related Schedules and is also covered under the NSW Clean Water Act, ensuring inclusion as a part of a clause in this Act will ensure that it is taken into consideration. To date, it appears that applications have been approved without any consideration to the impact on underground water supplies.

1.5 **Division 3 Directions to rehabilitate land**

In consideration of 1.4 above, this Division should include the words "and water ways (surface and sub surface)", after 'land'.

PART 2

2) Schedule Of Onshore Petroleum Exploration And Production Safety Requirements (August '92)

2.1 Clause 518 Protection of Aquifers p10. The titleholder must ensure that all reasonable steps are taken during operations on a well to prevent leakage or the pollution of aquifers.

With regard to pollution of the environment, the disposal of waste water utilizing tailings dams (also known as evaporation ponds), either unlined or lined with builders plastic, is the environmental Achilles' heel of the entire mining industry in NSW, Australia and internationally.

There is a huge body of evidence of pollution of water ways, both surface and sub-surface (aquifer), resulting from tailing dams and evaporation ponds used by mines all over the world.

I wrote to both NSW Premiers, Bob Carr and Morris Iemma, in 2004 and 2005, bringing this matter to their attention as it related to the Lake Cowal Gold Mine, as well as issues such as the absence in NSW of any legislation dealing with bioaccumulation of toxic chemicals used by mines, the failure to take into consideration the impact of floods on tailings dams, the failure of DIPNR to enforce conditions of consent placed on mines and the conflict of interest that exists when the EPA was merged with the NSW Department of Environment and Conservation (DEC). You will notice that there are no court cases involving the prosecution of the DEC for breaches of various Acts it is responsible for administering since the EPA lost it's status as an independent organisation.

Below is an extract from my letter to Premier Iemma on 3/10/05 regarding the pollution of water aquifers at Lake Cowal Gold Mine.

> ***Seepage Contamination Caused By Drill Shafts Under Cyanide Tailings Dams***
>
> " In my letter of 26/4/04 I wrote: I also advise you that during a site inspection of the lakebed area on 10/4/04 where extensive test drilling has been undertaken, I discovered that the concrete cap on an abandoned drill site had been removed and was lying on the ground in the Game Reserve area. I was concerned about this and placed the cap back onto the drill shaft in case wildlife tried to get inside and would not be able to get back out. The concrete caps seem to be rammed or glued into white PVC pipes like a cork into a bottle. It was hard to determine accurately, however it appeared that the PVC pipes are sunk only several metres into the drill shaft. The video of the drilling rigs also provides footage of these PVC pipes with no concrete caps on them. Should this be the same approach to be used to seal drill shafts under the tailings dams (should there be any) then this does not appear to me to be sufficient to prevent seepage. This is disconcerting as it is proposed that the tailings dams are not to be lined with plastic or any other material and will only rely on the "highly impermeable clay (Commission of Inquiry p36)" to hold the cyanide tailings water.
>
> EPA/DEC Response 13/9/04: "I can confirm that there has been drilling in the vicinity of the proposed tailings storage ponds to ascertain the permeability of the underlying strata. However, the Environmental Protection License requires Barrick to demonstrate that it can meet stringent permeability limits before the ponds may be used."
>
> This response does not address the question being asked. The permeability of the underlying soil strata is irrelevant in this instance. The issue is that the process involved in obtaining this permeability information has resulted in drill shafts being located under the

> cyanide tailings ponds and no assessment has been undertaken as to how to seal those drill shafts to prevent seepage contamination.
>
> Barrick has already demonstrated that its existing methods of sealing drill shafts is completely inadequate and there joint venture mine at Kalgoorlie has just caused environmental contamination by seepage from cyanide tailings ponds. (For further information see the Cooke Report in Attachment 1).
>
> The Commission of Inquiry or the EIS did not take this into account. As the issue of ground water contamination by seepage from drill shafts has only just been identified and no research has been undertaken in effective mitigation measures there is no way of knowing whether these proposed control measures will be effective. Furthermore, it is impossible for any member of the public to make an assessment of the effectiveness of these so called "stringent permeability limits" if the EPA/DEC refuses or is not able to provide any specific information on how this is proposed to be done.
>
> QUESTION 14: Can you clarify if this means that after the 350ha storage ponds are built the developer must prove to the EPA/DEC that they will not seep into the groundwater?
>
> If this is the case I believe that it is too little, too late. The EIS indicates that no plastic lining or any other barriers are proposed to be used in the tailings storage dams at Lake Cowal. As such, it would appear that the issue of sealing drill shafts under tailings dams was not taken into consideration in the EIS or Commissions of Inquiry, and that the EPA/DEC has no idea how Barrick intend to seal the drill shafts that are located under the proposed 350ha cyanide tailings storage dams, prior to the dams being constructed. This proposition is supported by the fact that the development was approved prior to a Cyanide Management Plan being prepared. Construction of the mine has commenced and yet there is no Cyanide Management Plan. This denies the opportunity to utilise design features to address or mitigate the risks of environmental contamination."

I never received a specific response to this question, or any other questions I asked.

"I asked Dr. Anthony Ingraffea, the D. C. Baum Professor of Engineering at Cornell University, whose research for more than 30 years has involved structural mechanics, finite element methods, and fracture mechanics: "Can drilling and/or hydraulic fracturing liberate biogenic natural gas into a fresh water aquifer?"

His reply: "Yes, definitely. The drilling process itself can induce migration of biogenic gas by disturbance of previously blocked migration paths through joint sets or faults, or by puncturing pressurized biogenic gas pockets and allowing migration through an as-yet un-cemented annulus, or though a faulty cement job. The hydraulic fracturing process is less likely to cause migration of biogenic gas; however, the cumulative effect of many, closely spaced, relatively shallow laterals, each fracked (and possibly re-fracked) numerous times, could very well create rock mass disturbances that could, as noted above, open previously blocked migration paths through joint sets or faults." Affirming Gasland Page 8

Dr Luke Connell, an expert on coal seam reservoirs from the CSIRO's Earth Science and Resourse Engineering department has this to say about protecting aquifers "With horizontal wells there is the potential for aquifer impacts". Northern Rivers Echo 14/4/11 p8.

Seeing as this legislation is already in force, the real question here is 'What reasonable steps have been, or are being, taken by the government to prevent pollution of aquifers?' If this clause of this piece of legislation is all that is being done and the government doesn't have the technical expertise to assess how effective the 'reasonable steps' are being taken by a titleholder, then the answer is nothing.

2.3 Clause 521 (3) p11. Prior to the cessation of drilling operations, even temporarily, the well must be made safe in accordance with good oilfield practice.

2.4 Clause 521 (5) p11. The titleholder must ensure that in the event of an emergency or adverse weather conditions requiring cessation of drilling operations, the well must be made safe in accordance with good oilfield practice.

With regard to the above 2 clauses and many others like them, the intention to ensure safe well operations (in this case after drilling operations are completed or during emergency situations) is clear, however, having such open ended clauses means that the miners can implement the cheapest and most minimal measures, that may be ineffective, yet they are still complying with the act and will avoid prosecution for breaches of their consent conditions or subsequent ministerial orders.

As an example, Barrick Gold were required to provide a phone number for members of the public to ring in the event they witnessed a pollution incident at the mine. Barrick complied with the request and placed an advertisement in the public notices section of the local newspaper. I lodged a complaint to DEC that this was insufficient as I was not a local and even if I was, I could easily have missed the advertisement and that what would be really effective to meet the requirements of this clause was for signs to be erected at the mine site. As it was impossible for me to ascertain what the number was, I requested in writing to the DEC that they provide it to me. I received the phone number 12 months after my initial request. To this day, there is still no way for any member of the public to know that this service exists and if they do know, to be able to find the number, as it is not listed in the phone book or any other place. Besides which, lodging a complaint with the company that causes the pollution is a nonsense. We need an independent EPA.

2.5 Clause 521 (7) p11. The titleholder must ensure that an abandoned well is sealed by filling from total depth to top with cement or other sealing programme as approved by the Director-General.

Providing an option to include "other sealing programmes" AFTER development approval has been granted, denies the opportunity for community input and scrutiny of modifications to the development application. Most of these modifications are classified as "minor" and don't require notification and comments from the public or effected parties. In the case of sealing abandoned wells, this issue could be critical to prevent ground water contamination. What method will be used to seal wells used for fracking? Has any research been conducted or information provided by the applicants regarding this?

This Regulation should be extended to include the filling from total depth to top with cement, abandoned exploratory drilling sites located under tailings dams. Despite bringing to the attention of the NSW DEC that any exploratory drilling sites located underneath the absolutely massive 350ha toxic tailings dam at the Lake Cowal Gold Mine should be sealed to prevent contaminated water from seeping into groundwater supplies, no such conditions were imposed on the company.

2.6 Clause 524 Disposal of Waste Fluids p12 The titleholder must ensure that all waste materials from work on a well produced from a well as it cleans up (whether or not contaminated with oil) are disposed of in accordance with good oilfield and environmental practice.

The wastewater from CSG mines is known as 'produced water'. It is highly toxic; containing a cocktail of the chemicals used in fracking and naturally occurring chemicals such as salt. There is no foolproof/safe method of disposal of 'produced' water. CSG mining produces massive amounts of 'produced' water.

"Up to 4 million gallons are used for each Marcellus Shale well. Disposal of wastewater from the wells has caused problems throughout Pennsylvania, including TDS (total dissolved solids) readings that exceeded federal safe drinking water standards in the Monongahela River last winter and this year". Affirming Gasland Page 34.

In Queensland, Dayne Pratzky from the Tara Estate in the Darling Downs claims "He discovered that produced water (the water first pumped from the coal seam) contains contaminants infused from the coal and is sometimes pumped directly into creeks and rivers." Northern Rivers Echo P1 7 April 2011. This can hardly be described as "being in accordance with good oilfield and environmental practice".

The overflowing of tailings dams/evaporation ponds is another facet of the problems encountered in dealing with toxic wastewater from mining operations.

This extract is also from the same letter to Premier Iemma referred to above.

> *It is very lucky that the Timbarra gold mine was not operational when the dam overflowed. If the mine was operating the cyanide levels in the tailings dam water could have been far greater and a serious threat would have been posed to the Clarence River.*
>
> *This incident is not unlike the pollution in Romania in 2000 when tonnes of cyanide laced water and heavy metals spilled into the Tisza and Danube rivers wiping out all river life for 75 kilometres downstream into Hungary. This pollution was caused as a result of the overflow/collapse of cyanide storage dams during a heavy rainfall and/or flooding event. The cyanide storage dams were the responsibility of Australian mining company, Esmerelda Gold (WA). This accident has been described as the worst environmental accident in Europe since the Chernobyl nuclear disaster.*
>
> *If the same event were to happen at Lake Cowal during a flood of the magnitude experienced in the 1950's then the tailings dams at Lake Cowal would be surrounded by floodwater. The tailings dams could overflow into the floodwater and cause an environmental catastrophe on a scale not yet seen in Australia in an internationally significant migratory bird area and would make its way into the Murray Darling River.*

As a result of extensive flooding caused by Hurricane Katrina, thousands of CSG evaporation ponds were inundated by floodwaters, releasing the toxic 'produced' water into the environment. The entire sand mining industry in NSW went out of business when the Land and Environment Court ruled that the companies had to ensure no radioactive materials were released into waterways DURING flood events. A Clause needs to be introduced into this and other Acts that stipulates that no evaporation ponds/tailings dams are permitted to be built in areas known to be effected/inundated by floods.

Another example of both seepage and overflow of toxic water from tailings/evaporation dams in Australia is that of the Ranger Uranium Mine.

A 2003 Senate Committee report found that there had been 110 pollution incidents and numerous breaches of environmental requirements since 1981 and that the mine was failing to comply with

safety guidelines. That's an average of 1 incident every 3-4 months for the life of the mine. The mine was fined $125,000 for polluting the Kakadu National Park with wastewater.

Earlier this year, the Ranger Mine's operations were suspended due to persistent water management problems and environmental risks (overflowing of tailings dams) posed by heavy rain. There is more than 10 billion litres of contaminated wastewater on the Ranger site, which is upstream from Aboriginal communities and internationally recognised wetlands.

It was also revealed " For 30 years about 100,000 litres of contaminated water a day has been leaking from the tailings dam into fissures beneath Kakadu but an 18-month review completed last year failed to establish where the water had gone or whether it would damage the environment in the future.

Geoff Kyle, an industrial chemist and science officer working for the Mirarr Aboriginal traditional owners of Kakadu, said pumping water from the tailings dam was a last resort for ERA, which the company is trying to avoid by asking the mine's regulators to relax environmental standards.

Mr Kyle said the company had proposed "deliberately allowing seepage into a local aquifer and has submitted detailed plans for remediating the damage it believes will be caused". Sydney Morning Herald 15/4/11.

It is totally unacceptable that a dam containing both toxic chemicals and radioactive pollution that has been leaking for 30 years has not only gone unnoticed for such a long time, but there is no way to determine where the seepage has gone and there are no plans to remedy the situation. There may not even be a way to remedy the situation (see below). Amazingly, the company has not been fined or bought to account. It's just business as usual. The situation is well summed up in this follow up article:

"The build-up of water prompted the decision in January to suspend processing for 12 weeks as a "precautionary measure" to ensure the operations tailings storage dam remained below its authorised operating level. Further rain has forced a suspension to late July.

ERA's response is a $367 million water-management program, increasing the height of the tailings dam and building a brine concentrator for accelerated evaporation of process water. Given Ranger is in its 30th year of operation, the question has to be asked: why weren't these actions taken earlier?

If Ranger were a goldmine in outback Western Australia, the occasional flooding and possible breaching of its tailings retention system would not be a big deal.

But Ranger is a uranium mine, inside a national park and smack bang in the middle of the Alligator River system. There should be no chance of it being caught out. But as Rio's briefing notes to analysts last week showed, seriously heavy wet seasons have been a regular occurrence in the region since 2000-01.

Had Ranger been configured for exceptional rain, ERA would not be suffering its current horrors". Sydney Morning Herald 7/6/11.

These problems extend to dams built for other purposes and a key factor that appears to be a common flaw in all dam designs was reported on 11/6/05 in the Weekend

Australian. On p7 the Chairman of the Barton Group, Mr Paul Perkins, believes that poor planning is to blame for the Sydney water crisis. He argues that the use of averaging rainfall to determine dam water storage filling rates (and, I presume, for determining dam storage capacity) is at the root of the problem. The article states, "In the face of such great variability, "this silly notion of averages is the fatal flaw. You have to do worst case-scenario planning".

A clause should be introduced into the legislation that requires all dams built for the storage of CSG 'produced' water must employ 'worst case-scenario planning'.

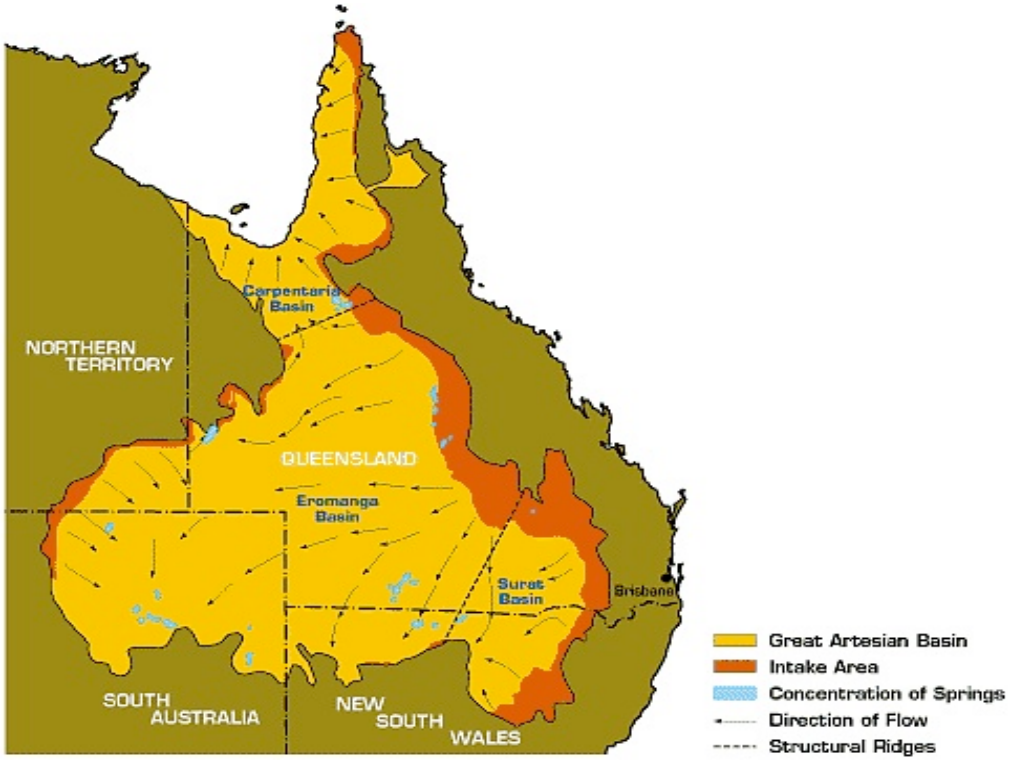
Other issues regarding poor pond/dam design are revealed in the following articles.

"In another unreported mishap at the mine, in December 2009 a poorly engineered dam collapsed, spilling 6 million litres of radioactive water into the Gulungul Creek, which flows into Kakadu". The Age 24/5/2010. Yet they still permit the mine to continue operating.

" The Office of the Supervising Scientist today told the committee that water seeping from underneath the dam has about 5,400 times the level of uranium than the natural background level. Greens Senator Scott Ludlam says the environmental regulator told the committee about 100,000 litres of water seeps from the tailings dam every day. Mr Ludlam says the water has been leaking from the dam for years. He says the regulator says it will be impossible to rehabilitate the site.
"The uranium concentration in the billabong surrounding the mine are about three to five parts per billion," he said. "But the uranium in the processed water that is leaking from beneath the tailings dam is 27,000 parts per billion. So it's roughly 5,500 times as much uranium in that water as there is the surrounding environment and that means the company has got a huge problem." (ABC Feb. 9, 2010) Yet they still permit the mine to continue operating.

Herein lays the problem and lessons for NSW. Once a mining company has established itself, the regulators will bend over backwards to accommodate them, even if it has been proven time and again that they are not able to comply with environemtnal safety regulations.

Contaminated water that escapes into aquifers in the NT, could surface in a little spring thousands of kilometres away in NSW. In the case of the Great Artesian Basin, inflow areas in the Surat Basin, where 40,000 CSG wells are planned, direct sub-surface water via aquifers to NSW and SA.



2.7 Clause 702 p12 The titleholder must ensure that operations for:
(c) the disposal of produced formation water; and
(d) or the injection of petroleum or water into an underground formation,
are not carried out unless in accordance with good oilfield practice and the terms and conditions of the lease granted under the Act.
This regulation needs to specifically address CSG mining in NSW. Given the lack of scientific analysis of the impact of CSG mining in NSW, it can hardly be expected that "**good oilfield practice and the terms and conditions of the lease granted under the Act"** are sufficient or adequate to prevent pollution events from occurring.

The CSG mining industry often claim that 'There has never been a proven case of water contamination caused by hydraulic fracturing.' Affirming Gasland at Page 5 makes the following statement.

"Industry representatives and lobbyists said this over and over again in the film. It's a carefully worded sentence that contains two major deceptions:
1) The word "proven" — How can you prove something that has never been investigated? Hydraulic fracturing has never been investigated fully by the EPA. The fact that non-naturally-occurring chemicals specifically associated with hydraulic fracturing fluids and drilling muds are showing up in people's water supplies is the first level of proof; E-I-D denies the testimony of the citizens. Very tricky wording, which belies the real truth. Quite deliberately.
2) The words "hydraulic fracturing" The industry here defines hydraulic fracturing here as the moment underground fractures are split — and not the entire drilling process. The industry could never claim that there has never been a proven instance of water contamination due to the whole process of GAS DRILLING, but when they confine their definition to the single moment of the underground fracturing — a part of the process that has never been investigated — they can legally deny the obvious.
E-I-D also claims here that hydraulic fracturing does not inject toxic fluids directly into drinking water supplies. Not true! Of course it does; in fact, that is the biggest problem with hydraulic fracturing — and it is exactly what the SDWA exemption allows".

2.8 Clause 708 (2) p 15 The titleholder must ensure that where, on the commencement of this

schedule, a reservoir is already in production, a reservoir management plan for that reservoir is prepared and submitted for approval within one year after the commencement of this schedule, and Clause 708 (3) p15 The titleholder must ensure that if it is not practicable to comply with paragraphs (1) and (2) a program of work to carry out such an evaluation during the course of production is submitted for approval.

As detailed previously, there is a major flaw in enabling legislation that permits the submission of management plans AFTER approval is given as it denies members of the public the opportunity to comment on those plans, and their adequacy, and renders impossible the implementation of site design solutions to mitigate environmental impacts.

This clause and all others like it should be modified to require that all Management Plans be submitted as a part of the EIS or other environmental assessments PRIOR to approval and that any subsequent modifications to those Management Plans be made available to the public for scrutiny. To date I still have not received one single copy of any management plans or any other documents requested from DIPNR or the DEC in relation to the Lake Cowal Gold Mine. I wonder if Barrick Gold has had the same problem that I do with getting information from these government departments? Is it any wonder NSW residents and property owners believe that favouritism is given to corporations by government departments that are meant to be serving the people.

2.9 Clause 725 Waste or Contamination p19
(1) Where there is a reasonable possibility that: (a) oil, gas or water is being wasted; or (b) oil, gas or water is being contaminated, the Director-General may require the titleholder to carry out specified tests to determine if waste or contamination is occurring.
(2) A titleholder must carry out the tests required under sub-paragraph (1) within the time directed by the Director-General and if, as result of those tests, it is established that waste or contamination is occurring, the titleholder must take such steps as may be necessary to remedy or prevent the waste or contamination.

It is either impossible or prohibitively expensive and the generator of massive carbon emissions to remedy a polluted aquifer. Can any person or organisation provide any peer reviewed scientific evidence that polluted aquifers in NSW can be remedied? This is why CSG mining companies in the US are supplying potable water by truck to families whose water supply has been contaminated by CSG mining. Within the context of this legislation, the only option is to prevent the waste or contamination from occurring in the first place.

"In NSW a derisorily inadequate 60-day moratorium on exploration licenses has been forced on the government by public opinion, but in Queensland, where the government has justified its preferential treatment of the mining companies by arguing that they will 'make good' any damage they cause to the environment, there is the beginning of a fight back. The absurd 'make good' pretense is being challenged by 13 farming families on the Darling Downs. Supported by the National Farmers' Federation, they have mounted an action against the Environment Department that gave Arrow Energy, the foreign-owned CSG giant, authority to drill beneath their irrigated farms". Editorial Byron Shire Echo p10 17/5/11

"Of course, what all this means is that the industry is acknowledging that they are injecting toxic chemicals in huge quantities underground. Most of this fluid stays under the ground. Only 25 to 50 percent of the toxic, non-biodegradable material is recovered. The rest is just left there, infused into the landscape forever or until it can be cleaned, which is enormously expensive and high in energy costs as well". Page 13 Affirming Gasland

The requirement of Clause 725 (1) to 'carry out specified tests' is futile if the government has no idea what chemicals are being used in the wells. In a recent interview on "Sixty Minutes", the Queensland Mines Minister, Stephen Robertson, answered "No" in response to the question "Do you know what chemicals are put down into those wells, what chemicals are used".

Later in the interview it was revealed, "Of the 23 most commonly used chemicals by fracking companies, only 2 have ever been assessed by the National Regulators."

Mining companies in the US are claiming that the chemical cocktail they use for fracking is considered "proprietary" and so they are not required to reveal what chemicals they are using. However, there is no such requirement or legislative loopholes in NSW or Australia. There is nothing stopping the government from demanding a list of chemicals used in specific fracking operations, except that they don't want to be seen by miners as siding with environmentalists! In any event, you do not want to bite the hand that feeds you (with royalties). With no independent EPA in NSW, there is no one to enforce such regulations or prosecute the government. While an individual can take a court action, why would they take the risk of losing a court case and being required to pay compensation? Especially when the case is being fought in the 'public interest'.

However, it is remiss of the government to permit the use of any chemicals that have not been assessed for this use by the National Regulator. There is nothing stopping the National Regulator from issuing 'Stop Work Orders" on these miners for using chemicals that have not been approved for that use. But will they do that? Of course not, there is no incentive or requirement for them to do so.

A Clause should be introduced to the Act requiring that PRIOR to the commencement of exploratory drilling, a list of all chemicals proposed to be used in the entire production process be supplied and that only chemicals approved by the National Regulator for that use are permitted to be used.

2.10 Clause 726 Waste Liquid p19 The titleholder must ensure that all formation water, and other waste fluids produced from a well, are disposed of in accordance with good oilfield practice, and in no case is the disposal of formation water, drilling fluid, waste petroleum or refuse from tanks or wells allowed to constitute a risk to public health or safety, or to contaminate water or land not specifically designated for waste disposal.

There is no information available to determine which methods are being used by existing NSW CSG miners and how effective those measures are. However, there are claims in areas where CSG is well advanced, such as Queensland, where public health has been compromised (see Part 3 1g below).

The health impacts of CSG mining in America are detailed at
http://ithaca.wishingwellmagazine.org/blogs/tompkins-weekly/2010/03/health-impacts- gas-drilling-examined.

"Most of the water generated from natural gas production contains too many naturally occurring minerals, such as salt, to be recycled effectively. There has been some success in recycling the first 5% of produced water during flow back operations. However, by the end of the first few days after fraccing (and in some cases a few hours), salt content of the produced water can reach as high as 70,000 parts per million (ppm), more than twice the salinity of seawater (30,000 ppm). The majority (95%) of the produced water returned from the well, with its high salt content, is too saturated to make recycling currently economically viable. Chesapeake and others in the industry are constantly evaluating opportunities to treat produced water, so that less of it will need to be injected into saltwater disposal wells." Affirming Gasland Page 31

2.11 Clause 729 Control of Quality of Discharge Water p20
(1)The titleholder must provide details to the Director-General of the means by which the quality of

water discharged will be controlled to ensure compliance with the Clean Waters Act 1970 and Regulation 28.
(2) The titleholder must ensure that a record is maintained of the quality of water discharged.

This regulation needs to be tightened up and made more specific to the NSW CSG industry. In America fracking companies were successful in obtaining exemptions from the Safe Drinking Water Act. Have any exemptions from the NSW Clean Waters Act 1970 been granted to mining companies in NSW and if so, will those exemptions result in pollution of any waters in NSW?

"The context of Josh's statement is that all drillers must drill through Underground Sources of Drinking Water (USDW) to get to the natural gas. Josh's statement is accurate: the "Halliburton loophole" exempted hydraulic fracturing wells from being tested under the Safe Drinking Water Act (SDWA) for their mechanical integrity, which would have determined if they were adequately sealed to prevent hazardous materials from entering directly into a USDW or into an adjacent USDW (which could happen if the hydraulic fracturing well releases methane and hazardous materials upwards into a USDW). Affirming Gasland Page 6

2.12 Clause 730 Subsurface Safety Devices p20
The Director-General may require the titleholder to ensure that a well that is capable of producing petroleum by natural flow is equipped with an approved subsurface safety device, which:
(c) is operated and tested at intervals specified by the Director-General being not less than once every 3 months and not more than 6 months.

The media have reported that CSG wells in NSW and Queensland have already experienced blowouts and explosions. Jeremy Buckingham was witness to one such event that threatened Sydney's water supply. This clause specifically applies to the production of natural gas and should be extended to specifically include safety devices being installed in CSG wells.

PART 3

Terms of Reference for this Inquiry

Below are comments that address the Terms of Reference, that were not able to be incorporated into the legislation referenced in Part 1 or 2.

1. The environmental and health impact of CSG activities including the:
a. Effect on ground and surface water systems,

Arrow Energy, who operate CSG mines in NSW and Queensland, have available the following information from their website:

"About 99.5 per cent of the material pumped into a frac well comprises water and sand. The remaining 0.5 per cent is made up of minor quantities of additives used to:
enhance fracture initiation
help lubricate the flow of the sand into the fractures
prevent microbial or chemical reactions following introduction of surface water
prevent formation of scale deposits that may affect the well or pumps.

Different additives may be used in different wells depending on the local conditions. In general, the additives used in fraccing fluids are made of substances commonly found in many household products. The fraccing fluids used by Arrow are:
acetic acid, food grade (the basis of vinegar, also used in herbicides)
gutaraldehyde (also used to disinfect medical and dental equipment)
surfactants (also used in soaps and toothpaste)

cellulose (also used in wallpaper paste and paper)
bactericides (to inhibit the formation of bacteria that may corrode steel and cement well casing, also used in agricultural treatment of crops)
guar gum (from the guar bean, vegetable gum is also used in ice cream and fed to cattle).

Like many common household products these additives can be toxic in highly concentrated forms, however in fraccing they are heavily diluted and present minimal risk as they remain isolated throughout the process. All additives used for fraccing are handled in accordance with the appropriate legislation covering health, safety and environmental management.

Arrow ensures that the fraccing fluids we use do not contain:
benzene
toluene
ethylbenzene
xylenes.

Arrow believes fraccing is a useful technique for extracting gas and, when conducted with the right controls, presents negligible risk to people or the environment"

In Affirming Gasland, at page 14, is the following statement: "The industry can claim that 99.5 percent is sand and water or that a particular hydraulic fracturing fluid only contains 12 chemicals, but since the industry doesn't submit any of its hydraulic fracturing fluids for government testing due to proprietary claims, this remains an unknown by any state or the EPA. That is the point of the FRAC Act, to require that disclosure.
Note that guar gum is food for bacteria underground, so a biocide is always used in hydraulic fracturing fluids that contain gaur gum to prevent bacteria from fowling and clogging the well. Of the 596 chemicals on Dr. Colborn's 2009 list, approximately 2/3 lack either a CAS number or have a CAS number but lack any published toxicity information in the scientific literature (source: personal communication with Dr. Chris Poulet, ASTDR toxicologist in Denver.) Dr. Colborn's current list is just under 1000 chemicals. According to basic arithmetic, this 0.5% is actually 20 tons of chemicals per million gallons of water".

At Page 4 in Affirming Gasland is this: "The volume of water used: two to seven million gallons per frack, with Multi Stage Fracks lasting up to three or four days, at 1,000 gallons per minute".

So this means that 40 to 140 tonnes of chemicals are being pumped into the ground every single time a well is fracced and the same well can be fracced multiple times over its' lifespan.

b. Effects related to the use of chemicals,

"In spite of the fact that the fracking companies were not supposed to use diesel to frack, they did it anyway. As reported by The New York Times in February 2010, "Two of the world's largest oil-field services companies [Halliburton and BJ Services] have acknowledged to Congress that they used diesel in hydraulic fracturing after telling federal regulators they would stop injecting the fuel near underground water supplies." Affirming Gasland Page 6

"Where guar gum is used as a thickener, it is used along with a borax-type cross-linker and requires significant addition of biocides to prevent microbes from feasting on the guar gum. Then, when it's time to 'break' the gel, breaker additives — all of them toxic — must be used to thin the slurry so it can return from the well. A popular blend with guar gum includes "hydrotreated light petroleum distillates" (deodorized kerosene). This mixture is extremely toxic." Affirming Gasland Page 14

Bio Accumulation of Environmental Contaminants

In September 2010 a draft report prepared by the Federal Environment Department on major projects in Queensland outlined "significant concerns" about "the ability of proponents to accurately quantify their individual and collective impacts' from projects that could run for 30 years."

In NSW there is no legislation or regulations that address bioaccumulation of toxins in the environment. This issue was raised at the Lake Cowal Gold Mine due to the impacts of the accumulative effect 20 years of dust emissions containing heavy metal contaminants would have on the Lake and its' ecology. Below is an extract from the same letter I sent to the Premier in 2005.

> **"3.2) Absence Of Guidelines For Preventing Bio-Accumulative Heavy Metal Contamination**
>
> In my letter of 26/4/04 I wrote: ...the logbook concurs with the Dust Management Plan (DMP) that the wind has been predominantly coming from a south-westerly direction. This is of concern as it indicates that during mine construction and processing, when large amounts of dust will be generated, that most of the dust will blow over the Lake and/or towards the bird breeding areas located "some 4.5km to the north of the Project area (DMP p16)", particularly in summer when the strong westerly winds blow all afternoon from noon until dusk.
>
> from the EPA/DEC, advised that there are no guidelines as to acceptable levels of dust deposition to avoid causing accumulated environmental toxic build-up that could affect the health of the birds and aquatic life (as occurred with DDT). Furthermore, they were relying on the Department of Housing's guidelines for dust pollution in residential areas."

In the case of CSG mining, the issue becomes even more complex due the vast array, and combinations of, chemicals being used in the fracking process. Furthermore, the cumulative effects cannot be assessed on a state-by-state basis. Underground aquifers such as the Great Artesian Basin cover four different states and so a national approach needs to be used to assess the cumulative impact.

c. Effects related to hydraulic fracturing,

"This is a common industry tactic, to claim that hydraulic fracturing has been used for 60 years. This is deliberately misleading.
The new hydraulic fracturing that has brought about so much attention in the last few years is different in many ways from the historic fracturing:
1) the pressure used is much higher and the duration of the frack job is longer. Today hydraulic fracturing employs typically 13,500 pounds of pressure per square inch, whereas earlier hydraulic fracturing was less than 10,000 pounds per square inch.

2) the volume of water used: two to seven million gallons per frack, with Multi Stage Fracks lasting up to three or four days, at 1,000 gallons per minute
3) the combination of hydraulic fracturing with horizontal drilling, a huge new aspect, and
4) the complexity of the chemical cocktail used in the process.

However, the industry frequently contradicts itself, wanting to tout both the reassurance that this technique is tried and true and that it has created an innovative technology that unlocks gas that was previously not considered recoverable. The industry touts the "new technological breakthrough" of hydraulic fracturing as unlocking the Marcellus shale in ways that could not have been done years ago." Affirming Gasland Page 4

d. Effect on Crown Lands including travelling stock routes and State forests,

There are already proposals to open up NSW State Forests for CSG mining. State Forests are multiple use areas. CSG mines will, for safety reasons, need to exclude access of the general public to large tracts of areas where mining in being undertaken. What compensation is being paid to the public for loss of access to these areas?

e. Nature and effectiveness of remediation required under the Act,
f. Effect on greenhouse gas and other emissions,

See 3b below.

Environmentalists from Northern NSW are claiming that 40% of existing wells tested for methane leaks from CSG wells are leaking methane into the atmosphere. On the 60 Minutes segment on CSG mining, the leaks were so severe they presented an immediate danger to the film crew, who had to evacuate the area quickly.

g. Relative air quality and environmental impacts compared to alternative fossil fuels.

The major difference between CSG and alternative fuels is that the production of alternative fuels does not carry with it the much higher risks of contaminating ground water supplies.

The Gasland movie documents the collection of contaminated water samples and health effects on residents from all over the USA.

In Australia, residents living near CSG mines are reporting fugitive emissions so bad they are effecting the health of humans and livestock. In an interview on 60 Minutes, Dayne Pratzsky from Chinchilla advised, "My place is unlivable. I've been gone now for about 6 days, my headache I've had for 5 weeks is gone".

2. The economic and social implications of CSG activities including those which affect:

a. Legal rights of property owners and property values,

NSW property owner, Ian Gaillard, from Keerong, had the following statement regarding his rights printed on the front page of the local paper, The Northern Rivers Echo, on 14/4/11. Ian was a part of a group who "managed to penetrate the corridors of power in Canberra ….. to speak to senior ministers and advisors regarding their concerns about the coal seam gas industry".

"We find ourselves speaking to elected representatives who don't know what an aquifer is, State

government representatives who have accepted the companies self interested assurances and Federal members who have fallen prey to the high powered lobbying process of mining companies," he said. "Our basic human rights to clean air and water, as stated in the United Nations Charter, have been usurped by the legislative system and their dealings with the companies".

Fox notes in Affirming Gasland at Page 9:

"Frustration among citizens with their state agencies was very common in my travels, in Colorado, in Pennsylvania, in Texas, and in Arkansas. Citizens pointed out time and time again how they felt their state environmental agencies were not up to the job, or even worse, were in cahoots with the gas companies. In Dimock, Pennsylvania, we were told that Cabot Oil and Gas and DEP reps often walked in together with an air of camaraderie; in Texas, complaints about the Texas Commission on Environmental Quality (TCEQ) and the Railroad Commission were rampant. It is indeed part of the thesis of Gasland that state agencies are either overwhelmed or not to be trusted when it comes to gas drilling. Mike and Marsha make that point quite clearly. Among folks living in gaslands, state agencies are not living up to their responsibilities to protect citizens and are widely suspected of corruption".

My experience with dealings with the NSW Government regarding the Lake Cowal Gold Mine left me feeling much the same. After investing years of my time undertaking site visits, reading all the relevant documents and legislation and writing to the government, the bureaucracy slowly ground me down to the point where I could not afford to keep fighting a system that clearly favored economic development over protection of the environment.

In America, citizens have been required to trade their 1st Amendment Rights (freedom of speech) for access to clean water. "In Dimock PA, the contamination of ground water supplies from coal seam gas mining has resulted in "Cabot Oil and Gas supplying water to 32 families as ordered by Pennsylvania Department of Environmental Protection. In Hickory PA, replacement water is rampant, with some reports stating that over 200 families are receiving replacement water in exchange for non- disclosure agreements (NDA). Why should people have to sign an NDA to get clean water after a multi-billion-dollar corporation contaminates their water? Is it right for people to have to trade their silence for what should be their right"? Affirming Gasland Page 11

The situation has gotten so bad in in the US, that new not-for-profit community groups such as Shale Test (www.shaletest.org) are starting up in order to help raise the money required to undertake environmental testing for low income families and neighborhoods that are effected by natural gas exploration and production. They are also acting as an independent body to collect samples, and provide an evidence trail to and from the testing laboratories, to ensure statistical validity so that the results of the sampling can be used as evidence in court cases to sue the mining companies for contamination of their underground water supplies.

There also exists a Facebook Cause called 'Global Ban on Hydraulic Fracturing'. It has over 4600 members.

When the mining companies and government departments work in partnership with each other and there is no independent EPA to initiate court actions for breaches of the relevant Acts governing the developments, the only redress for effected parties is the courts. So the only rights that I, as a NSW property owner, really have are to take the government and/or corporation to court. However I can't afford the costs to bring an action and the risk of having to pay the other parties costs if the judge makes such an order, so I have no rights at all.

b. Food security and agricultural activity,

Apart from the obvious risks to water supplies required by farmers, the construction of gas pipelines, as proposed by Metgasco in Northern NSW, could impact on the viability of farm enterprises and even whole industries. Once a pipeline has been constructed, all the areas along the pipeline then risk the opening up of new CSG mining operations. What farmer would purchase land for farming that in the near future would be subject to CSG mining? The end result of the Metgasco pipeline, which will traverse prime agricultural land in Northern NSW, is that there will be a huge reduction in prime agricultural land being used for food production.

c. Regional development, investment and employment, and State competitiveness,

If the practices of fracking companies in America are any indication of what will occur in Australia and NSW, entire regions will be bought up by the fracking companies as farmers and residents are forced to leave those areas.

In Queensland, Darlz Mackenzie from Gladstone made this comment on the Lock The Gate Alliance facebook page the other day:

"My family will be homeless in 14 days along with multiple other families in Gladstone, due to the social impact of the APLNG pipeline construction Our community is in crisis. Families are sleeping in their cars in the streets, rents have gone thru the roof and those who can afford to leave town are, leaving our hospital without surgeons, schools without teachers and an escalating crime rate…and the list goes on...".

And residents of Tara Estate, where drilling is well advanced, say that the noise from drilling rigs and trucks as well as contamination of air from methane emmissions have resulted in a huge loss of residential amenity.

d. Royalties payable to the State,

The payment of royalties to the State creates a conflict of interest, as the State government departments cannot act impartially with any matters regarding the applicant as the State will seek to maintain the payment of royalties for as long as possible.

e. Local Government including provision of local/regional infrastructure and local planning control mechanisms.

3. The role of CSG in meeting the future energy needs of NSW including the:

a. Nature and extent of CSG demand and supply,
b. Relative whole-of-lifecycle emission intensity of CSG versus other energy sources,

Prof. Robert Howarth of Cornell University (USA) argues that development of gas from shale rock formations produced through hydraulic fracturing – brings far more methane emissions than conventional gas production. Enough, he argues, to negate the carbon advantage that gas has over coal and oil when they're burned for energy, because methane is such a potent greenhouse gas.

"The [greenhouse gas] footprint for shale gas is greater than that for conventional gas or oil when viewed on any time horizon, but particularly so over 20 years. Compared to coal, the footprint of shale gas is at least 20% greater and perhaps more than twice as great on the 20-year horizon and is comparable when compared over 100 years," states the upcoming

study from Howarth, who is a professor of ecology and environmental biology, and other Cornell researchers.

c. Dependence of industry on CSG for non-energy needs (eg. chemical manufacture),
d. Installed and availability costs of CSG versus other stationary energy sources,
e. Proportion of NSW energy needs which should be base load or peaking supply and the extent to which CSG is needed for that purpose,
f. Contribution of CSG to energy security and as a transport fuel.
4. The interaction of the Act with other legislation and regulations, including the Land Acquisition (Just Terms Compensation) Act 1991.

Other legislation that may interact with this Act include the:

a) Environmental Planning and Assessment Act 1979,
b) Protection Of The Environment Operations Act 1997,
c) Mining Act 1992,
d) Mine Health and Safety Act 2004,
e) Explosives Act 2003,
f) Coal Mine Heal and Safety Act 2002, and
g) Occupational Health and Safey Act 2000.

Regulation 28 Clause 208 (1) (b) of this Act states there is a Code of Practice applicable under this Act, however I was unable to find it on-line.

I have already outlined above how some of these Acts are not being enforced by the DEC or DIPNR and that when the EPA was merged with the DEC, this resulted in a conflict of interest. As if one department of the DEC are going to implement a court action against another department of the DEC for failure to comply with legislation.

In America, the government controls the EPA by threatening and implementing budget cuts to the Departments if they don't comply with their demands.

"It should be noted that generally the state DEP (Department of Environmental Protection) or DEC (Department of Environmental Conservation) or DEQ (Department of Environmental Quality) or DEQC (Department of Environmental Quality Control) does not have adequate budget or staff to investigate, inspect, or monitor hydraulic fracturing wells — especially as they are spreading so rapidly. Exempting hydraulic fracturing from federal law leaves this responsibility to the states that have been overwhelmed by the drilling. For example, in New Mexico there are only 18 inspectors to deal with 99,000 gas wells. It's simply not possible for so few people to track so many wells". Affirming Gasland Page 7

The "EPA relied on an expert Peer Review Panel whose members had potential conflicts of interest.

a. Once again, EPA did not follow its own science policy.
b. EPA's policy is that peer reviewers should be free of real or perceived conflicts-of-interest and there should be a balancing of interests among peer reviewers. Obtaining a fair and credible peer review is essential to maintaining the credibility and scientific validity at EPA.[5]
c. Yet most of EPA's 7-member expert peer review panel appear to have conflicts of interest: An engineer at Halliburton, A manager of an industry-funded group that previously

worked for Halliburton, An engineer at BP Amoco, Two academics who had worked for the industry, A state regulator who also worked for Amoco. The 7th panel member is from DOE's Sandia National Labs.

d. It's a hand-picked, conflicted small group, who failed to even read the final report and met only once.

e. This is not peer review — this is a mockery of what is supposed to be an independent and balanced review. This is the thin veneer cover to a scientifically unsound study while the scientific process of Peer Review was abandoned. Page 33 Affirming Gasland

My experience with the EPA/DEC is much the same. In the same letter to Premier Iemma referred to above, I noted:

"EPA Not Able To Investigate Dust Pollution Complaints

When I spoke to the EPA/DEC (

prior to the written response of 13/9/03 I made it clear that it was impossible for the EPA/DEC to conduct an investigation on this basis. This is because it would take the EPA/DEC 4 hours to drive from Canberra to Lake Cowal and dust pollution events resulting in plumes of built-up dust clouds arising from construction activities are blown away by strong winds within 5-15 minutes, after the plume has built up over 15 to 30 minutes. This dramatic event was recorded on the video footage that was supplied to the EPA/DEC. To this day the EPA/DEC has not seen the tape or made any effort to obtain another copy of it, claiming the tape was damaged.

QUESTION 11: Can you explain what is the point of supplying video evidence to the EPA/DEC if they don't even look at it or if the video is damaged, they fail to inform you that this is the case so that you can provide another copy?

stated that the EPA/DEC did not have the resources to send personnel to undertake a more thorough investigation that may take 2-5 days.

QUESTION 12: Is this true and if so, what is the reason for this occurring?

QUESTION 13: Is it remiss that a Commission of Inquiry can endorse a development requiring conditions of consent and yet not provide the resources required to ensure that the developer is complying with the conditions of consent?

QUESTION 14: Will you give consideration requiring that developers fund the costs of compliance to ensure that your government departments have the resources to

> effectively monitor the potential polluter for which the EPA/DEC has issued a licence to pollute?"

That the government does not require developers/mining companies to pay for the cost of enforcing compliance on their construction projects is a recipe for disaster and makes a mockery of having any legislation in the first place. Why should NSW taxpayers be paying the compliance costs of international mining companies that send all their profits overseas?

5. The impact similar industries have had in other jurisdictions.

The impact, or perceived impact, coal seam gas mining has had in France has resulted in the entire industry being banned.

It was reported on July 1st 2011 at www.bloomfield.com/news/2011-07-01/fracking-shale-for-natural-gas-oil-extration.html that France has outlawed hydraulic fracturing, revoking all permits already issued. For a country that is technologically adept at handling such dangerous activities such as the operation of nuclear power plants, it really brings into question the risks associated with coal seam gas mining. It would be remiss of the Committee to not conduct a thorough investigation of the reasons why the French government chose to ban coal seam gas mining.

An unexpected impact the CSG mining industry has had in the US is summed up as follows "The nine major fracking companies are currently being investigated by the U.S. Congress. The EPA has been examining water contamination in Pavillion, Wyoming for the past year and is now scoping a major two-year study of hydraulic fracking at the behest of Congress". Affirming Gasland Page 6. Does the NSW Government really want to get involved in a similar situation as the US?

In closing, I would like to suggest that perhaps another moratorium should be put in place by the NSW Government until the results of genuinely independent peer reviewed scientific research on the social and environmental impacts of CSG activities, funded entirely by industry proponents, is completed. This will enable all parties to make informed decisions and to establish legislation that is effective and enforceable.