Save the Reef

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Submission re the Economic Development Bill 2012

Matters relating to the Economic Development Bill 2012 and its amendments to the Environmental Protection Act 1994

9 November 2012

The Chair,
State Development, Infrastructure and Industry Committee
Queensland Parliament

Thank you for the opportunity to make a public submission. Members of Save the Reef have been very concerned about discharges from the Central Queensland coal fields and took great interest in the environment group submissions to The Queensland Floods Commission of Inquiry.

We are particularly concerned about the following provisions of the Economic Development Bill 2012:

'Part 4A Temporary emissions licences

'357A What is an *emergent event*

'An ***emergent event*** is an event, or series of events, either natural or caused by sabotage, that was not foreseen when—

(a) particular conditions were imposed on an environmental authority; or

(b) particular development conditions were imposed on a development approval.

'357C Deciding application

'The administering authority must decide the application as soon as practicable, but no later than 24 hours after receiving it.

'357D Criteria for decision

'In deciding the application, the administering authority must have regard to the following—

(a) the application;

(b) the extent and impact of the emergent event, including the financial impacts on the applicant if the licence is not granted;

(d) the character, resilience and values of the receiving environment;

(e) the likelihood of environmental harm and any measures necessary to minimise the harm;

(f) the likelihood that the release will adversely impact the health, safety or wellbeing of another person;

Example of a release that adversely impacts another person—

a release of an emission that could affect the quality of downstream drinking water

(g) the cumulative impacts of all releases authorised or directed under this Act, including releases under other

temporary emissions licences that have been issued or applied for;

(h) the public interest.

Our submission firstly outlines the history of environmental harm caused by central Queensland mine discharges into the Fitzroy River systems; the intent of the Queensland Floods Commission of Inquiry Recommendations; how this Bill fails to meet the standards set by those recommendations; and lastly some comments on the reputational risks for the mining sector and the government that rushed and ill-considered legislation such as this poses.

History of mine discharges into the Fitzroy River.

In 2008, 16 out of 39 mines in the Fitzroy Basin released mine waters which DERM categorised as medium to very high risk (leading to potential effects on water supplies, downstream ecosystems and grazing and irrigation water).[1] During the following 2009/10 wet season more than 20 coal mines saw unauthorised water releases caused by heavy rainfall.[2] Then in the most recent floods of 2010/2011, 36 coal mines and 2 coal seam gas operations again breached their environmental authority conditions through their release of contaminated mine and gas water, requiring DERM to approve 'Transitional Environmental Programs' for their operations. These TEPs allow mine and gas sites 'to complete actions outside of its agreed Environmental Authority (EA) conditions.'[3]

Ensham Coal Mine

When Ensham Resources submitted planning documents for expansion of the Ensham coal mine in 2006, the company claimed that they considered their levee banks more than adequate for a 1/50-1/100 year flood. However in three successive wet seasons this mine along with several others in the Fitzroy basin, breached their environmental authorities through release of flood waters from mines. All this points to a serious lack of understanding of the nature of flooding in the Fitzroy, and the potential for increased flooding frequency owing to climate change.

The most disastrous breach followed the flooding of January-February 2008 when localised rainfall across parts of the Fitzroy River basin resulted in the flooding of mines. The Ensham coal mine had 150 gigalitres of trapped floodwater and its levy banks overflowed. In order to de-water its pits, the company was given a TEP to discharge to the Nogoa River, part of the Fitzroy Catchment over a 7 month period. However the

rest of the catchment was in drought and river flows were consequently very low. In order to increase the rate of dilution, the company purchased water from Fairbairn Dam. The volume of flood water from the mine, totalling 138 gigalitres was more than the amount of water expected to be present in the entire Fitzroy system in the dry period (117GL).

- This discharge added around 100,000 tonnes of salt to the river system. Estimate of the annual salinity for the entire river system was 850,000 tonnes.
- The result was that the water quality in Bedford and Tartrus Weirs (July-Oct 2008) suffered from increased conductivity (2800-1060uS/cm as opposed to Australian and New Zealand Environment and Conservation Council [ANZECC] guidelines which recommend 20-250uS/cm). Aluminium was the only heavy metal concentration significantly above ANZECC guidelines (60-1000 ug/L as opposed to 55 ug/L).[4]

Ensham Coal Mine: Human Impacts

Mine-affected water reached the Fitzroy Barrage in early September 2008, and during October essentially stabilised at a conductivity of around 825 uS/cm and sodium concentration around 120 mg/L.[5]

In October-November 2008 increased salinity and sodium concentrations were as high as 200mg/L at river barrages which provide Rockhampton's drinking water. These levels in drinking water put residents with cardiovascular disease, high blood pressure, and chronic kidney failure at risk. Australian Drinking Water Guidelines state that sodium concentrations should not exceed 180mg/L.[6] The levels had been around 20mg/L prior to the flood. Salinity limits (EC – electrical conductivity) are 746uS/cm for human drinking (aesthetics) but were above 1200uS/cm in parts of the Fitzroy River system from July-November 2008.[7] Some of the health consequences from the mine discharges were:

- an outbreak of viral gastroenteritis in communities in the Central and Western Queensland Health districts, ie townships affected by the mine water discharges, that may have been aggravated by the poor quality drinking water
- The conductivity (salinity) of drinking water supplied to residents of Blackwater, Bluff, Tieri, Middlemount and Dysart was in excess of 1000uS/cm (600-700mg/L) between June-November 2008. This placed pressure on Rockhampton's Dialysis Clinics and home dialysis services which require pure water with very low ionic concentration. Queensland Health issued warnings to potentially affected people not to drink the town water. Many residents were forced to resort to the expense of bottled water.
- Problems also arose in the Central Sterilizing Supply Department at the Rockhampton Hospital owing to calcium carbonate residues on disinfected instruments.[8]

The Department of Environment and Resource Management reported that their assessment of the cumulative impact of the discharges from 39 mines following the early 2008 flood event in the Fitzroy River system was that:

- 16 of the mine discharges were in the medium to very high risk category in terms of water quality with an additional 10 designated low risk.
- The conductivity levels of drinking supplies downstream from these 16 discharge sites were too high for safe human consumption and for irrigation for certain crops such as beans and oranges.[9]

Ensham Coal Mine: Impact on Aquatic Ecosystems

Professor Barry Hart was commissioned by the premier to investigate the water quality issues that arose from the Ensham mine discharges. His report noted the river ecosystem had already been drastically altered but that increased water flows from mine discharges put more pressure on its ecological health. It is difficult

to be precise about effects because no biological monitoring was conducted during the mine water discharge. Some of the issues of concern following the 2008 discharges were:

- the high likelihood that there will be serious adverse effects on the spawning success of Fitzroy Golden Perch (intolerant to higher salt levels). Fish in the Tartrus Weir were in poor health most likely from the effects of heavy metal concentrations – fish tissue contained elevated levels of iron, aluminium and zinc. [10]

- Possibility of algal blooms in the Fitzroy Barrage due to clearer than normal water (due to coagulation of colloidal particles by the higher calcium and magnesium concentrations.)

- Discharge limits were set significantly higher than ANZECC/ARMCANZ (2000) toxicant trigger values for aquatic ecosystems.[11]

- Since monitoring began, concentrations of aluminium in the Bedford Weir consistently exceeded the aquatic ecosystem trigger limits, strongly indicating that the biota of Bedford Weir has been placed under significant environmental stresses. Iron concentrations and selenium levels exceeded the aquatic ecosystem trigger limit on several occasions. Accurate determination of selenium levels is critical because of its potential to bioaccumulate in the environment. Copper and zinc concentrations also exceeded the aquatic ecosystem trigger limit on several occasions. As the analysis was not sensitive enough to accurately determine concentrations less than 0.01mg/L, it is unknown to what extent the aquatic ecosystem trigger limits were exceeded for lead and cadmium.[12]

The Fitzroy delta and Keppel Bay are sites of biological diversity which are important habitat for valued marine species of sea turtles, dugong, crocodiles, Indo-pacific Humpback Dolphins and migratory birds. Of major scientific and environmental concern is the threatened Fitzroy River snubfin dolphin. It was only discovered to be a unique species in 2005 and there is estimated to be a sub-population of only 70 which are endemic to this river.

Intent of the Queensland Floods Commission of Inquiry Recommendations

This history was taken into account by the Department of Environment and Resource Management in revising its management of the river and mine discharges. The Floods Commission of Inquiry [FCI] accepted submissions from DERM, DME, QRC as well as environmental organisations regarding the impact of flooded mines on Queensland's waterways and water resources and their impacts on all Queenslanders.

One of Professor Hart's recommendations had been the need for long-term study of the downstream effects of mine discharges on aquatic ecosystems but the FCI found that no government or industry body was undertaking this monitoring. Its report noted:

> DERM considers that it is the responsibility of the Great Barrier Reef Marine Park Authority to monitor the marine environment of the Great Barrier Reef.[94] That authority's monitoring program is aimed at detecting agricultural chemicals and fertilisers, not possible toxins from mines or coal seam gas projects.[95] DERM undertakes monitoring[96] upstream and downstream of mines, and requires mine operators to conduct monitoring and report results to DERM.[97] But it appears that DERM's water quality testing program undertaken in the Great Barrier Reef area in response to the 2010/2011 floods was restricted to testing for pesticides.[98] This omission in monitoring is concerning; it may make it impossible to determine the cumulative impacts of mine discharges on the marine environment ...
>
> **The Commission considers that DERM should determine, as far as possible, the contribution, if any, that mine discharges made to the environmental harm observed. Such a conclusion is vital to inform DERM's response to future flooding at mines in Queensland.**

This was the background to its Recommendations 13.5 and 13.6:

> 13.5 The Queensland Government should work collaboratively with the Commonwealth Government and mine operators to ensure co-ordinated and effective monitoring of salts, metals and other contaminants in marine environments that may be affected by mine discharges.
> 13.6 The Queensland Government should determine, as far as possible, the impact of mine discharges during the 2010/2011 wet season on freshwater and marine water quality and fauna and flora.

Until there is a realistic scientific assessment of long term impacts of mine discharges on the Fitzroy Delta, Keppel Bay and the southern Great Barrier Reef it is irresponsible to proceed with massive discharges of contaminated mine water.

The estimated volume of water currently held in mine pits ranges between 281,000 megalitres and 350,000 megalitres.[13] Until cumulative impacts and continual exposure effects are known with some scientific certainty, even slow releases timed to coincide with maximum flows and maximum dilution, could cause irreversible harm to riverine and marine environments as well as to agricultural and human health.

This was recognised by the FCI in recommendation 13.8 which noted that governments could choose to refuse any discharges to public waterways.

> Unless **the Department of Environment and Resource Management has decided not to permit discharges**, it should assist each mine operator in its application for an environmental authority to ensure, as far as possible, that each authority includes provisions for discharges during times of heavy rainfall and flood.

In the event of the Department of Environment and Heritage approving mine discharges recommendation 13.7 was clear that specific parameters must be set and that these should be publicly available.

> The Department of Environment and Resource Management should assist mine operators in their applications for amended environmental authorities to ensure, as far as possible, that each environmental authority contains **a tailored version of Table 4 of the model conditions**. The Department of Environment and Resource Management should provide to mining companies its monitoring data and its suggested values for Table 4 on the basis of an assessment of the catchment which takes into account the cumulative effect of different operators' releases.

Table 4 was included on p. 359 of the FCI's final report and gives a precise formula for determining discharge limits in low, medium and high rainfall events.

How this Bill fails to meet the standards set by FCI recommendations

1. Definition of **an emergent event**.

We are concerned that the Bill defines 357A an 'emergent event' as a series of natural events that were not foreseen. The Fitzroy Basin like almost all Australian catchments is defined by its variability. Flood and drought are natural events that coal mine operations should treat as normal, not abnormal, situations. Approval for mines should not be given unless there is evidence of planning for extreme weather events as a normal condition of operations in Queensland.

Of even greater concern is the open-ended nature of the definition. Recommendation 13.11 of the FCI was clear that it intended emergency situations to allow for release of mine discharge **before or during a flood**, not an unrestricted period following a flood.

> 13.11 The Queensland Government should consider amending the *Environmental Protection Act 1994* so that it allows for the relaxation of environmental authority conditions, by transitional environmental program or otherwise, as to discharge of water:
> • pre-emptively, **in advance of rainfall or flooding** events, or

This timing was to maximise dilution and the capacity to flush contaminants down the river system when it is at maximum flow.

Without the long-term scientific assessments of mine discharges on the delta and in Keppel Bay as called for by Professor Hart and the Queensland Floods Commission of Inquiry, Save the Reef does not believe that mines should be permitted to discharge and that they should have alternative emergency plans in place.

However, for the state government to allow mine discharges to be released at any time following a period of flooding will simply repeat the mistakes of past mine discharges. The wording of 357A sets no time limit so that a series of storms in successive wet seasons following upon a flood would fit the definition of an emergent event. The wording of this clause would allow immediate discharges from coal mines, despite public comments by Environment Minister Andrew Powell denying this point.

2. By way of contrast **357C Deciding application** is far too restrictive in the time set for a government officer to assess an application for a temporary emission licence.

In the event that we are in the midst of a cyclone or flood and the relevant officer is uncontactable, this provision presumably allows a company to proceed without authorisation. 357A gives mines enormous leeway with which to define 'an emergent event' while 357C ties the government hands with unrealistically short time frames that will favour the mining companies ahead of all other stakeholders of the Fitzroy Catchment.

A government officer not wanting to take responsibility for a decision with dire environmental consequences simply needs to be unavailable and the companies will be free to proceed. Alternatively if a government officer has not had time to evaluate the negative impacts on downstream industries and communities the companies will be allowed to proceed. This is the very antithesis of the precautionary principle.

3. **Criteria for decision** are similarly incongruous with the unrealistic timeframe of 357D. Of even greater concern for us is the inclusion of financial impacts on mine operators and its elevation ahead of all other interests in the system.

Sub-point '(b) the extent and impact of the emergent event, including the financial impacts on the applicant if the licence is not granted' should be removed from the Bill. It is inconsistent with the government's duty of environmental care and regulation to impose such a condition on state government officers.

The Queensland Government has responsibility for maintaining the health of the Fitzroy and the Great Barrier Reef Marine Park for present and future generations. It should not be weighing up private interests when the health of a resource common to all is at stake. The boards and shareholders of mining companies have to weigh up the risks when they invest in a highly variable environment, the people of Queensland should not be expected to pay for the costs of their risks through environmental harm.

The priorities of 357D should be revised to prioritise the Department of Environment and Heritage's responsibilities for:

- Drinking water protection
- Aquatic ecosystems protection

- Clean food production

Reputational risk (Government and Resource Industry)

Save the Reef is concerned that the reputational risk of this bill in its current form has not been carefully considered. The cumulative impacts to surface and ground water quality, threatened ecological communities, threatened species and terrestrial and aquatic ecosystem have the potential to harm industry reputation and the government's reputation.

Central Queensland is the engine room of the state economy but its reputation can be destroyed very rapidly. The major water quality parameters of concern associated with coal mining are salinity (based on electrical conductivity usually measured in μS/cm), heavy metal and metalloid ion concentrations (mg/L) and acidity/alkalinity (pH). If the mines were to discharge their waste, the cumulative impact has the potential to affect the drinking water of resource towns like Middlemount, Blackwater, Tieri and Dysart again as it did in 2008. The taste and quality of water in Rockhampton the largest town on the Fitzroy may be affected.

The Fitzroy Basin includes grazing, agriculture as well as townships and it has been a boast of the Australian mining industry that it can co-exist with other productive industries. Heavy metals in particular bioaccumulate in the environment and in a study downstream of Mt Morgan mine site, levels of heavy metals typically exceeded ANZECC/ARMCANZ (2000) guidelines. Their persistence in the environment leaves a quantifiable mark. Science can then be used to implicate both officials and mine management in "pollution scandals" and legal challenges can occur years or even decades later. As an example high lead levels found in children of Mt Isa, and high lead in environmental samples taken from their yards has had a major impact on the community, the company and government officials and the litigation continues to this day.

Heavy metals and other toxins that bioaccumulate have the potential to cause cancer, birth defects and other health problems in people. Reputation is damaged when something is done that causes stakeholders to lose trust in an organisation. It does not matter whether it is real – it is the perception that counts. The risk of perceived harm in communities is increased due to the abnormal taste of the water. Even though the health risk may seem small to government and resource companies, communities especially ones already concerned may have a distorted view of the risk. The combination of poor tasting drinking water and bioaccumulation of heavy metals leaving a scientific footprint that worries communities about health risks further damages the reputation of companies and officials involved.

This bill has the potential to damage the reputation of both the government and the resource industry in its current form. The potential long term backlash if another pollution event were to occur may contribute to harsher restrictions which further impact the resource industry. We would urge caution and prudence. Further environmental damage or drinking water problems may have far greater impacts on the reputation and the social license to operate than occurred previously.

It was poor tasting water that led to multiple investigations that ultimately led to stricter regulations after the Ensham investigation. The media around the Ensham Mine release and the polluted water led to reputational damage to both Ensham and the government of the day. It significantly affected their social license to operate and even its own workers were concerned about what its company was doing to the towns they lived in. In effect that Ensham mine release led to multiple enquires and the ramifications and the cost to rebuild reputation was significant. Ensham led to stricter regulations which caused major concerns for the whole coal industry.

These amendments are so open-ended that they will remind Queenslanders (and other Australians) of the white shoe brigade of the 1980s. They give the appearance of a government and an industry which does not respect a balance between economic development and environmental protection. Loosening those regulations and allowing contamination of drinking water in communities that have previously been affected needs to be viewed from the reputational risk perspective. As the communities are primed, if the water is affected again, there is a high potential for targeted attacks on reputation through media and calls for further enquiries. This risk has to be considered as real and it has the potential to harm both government and the resource industry to a greater extent than 2008. The legacy of Ensham is a concerned central Queensland public and environmental movement and hence the concern already voiced in the media about the change to this law even before it has been implemented.

We would like to remind the committee of a media release after the Ensham incident in 2008:

> **Bligh government fails to notify towns of drinking water contamination ...**
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> *Queensland's environmental watchdog failed to warn a string of regional population centres, including the city of Rockhampton, about the discharge of contaminated floodwater into their drinking supplies.*
> *A damning report into the Environmental Protection Agency's handling of billions of litres of chemical-laden floodwater discharged from the Ensham Mine, near Emerald, says the EPA did not issue any warning that the event would cause problems with high sodium levels in drinking water. The EPA issued a permit in February for the water to be discharged but failed to inform Queensland Health, local councils or residents of problems associated with the floodwater's impact on drinking supplies. By August, Queensland Health was forced to issue a health alert about increased sodium levels in the town supplies of residents whose water supplies are drawn from the Fitzroy River.*

Already this article has appeared in the *Courier Mail* 5 November 2012.

> ## Plan puts water quality at risk
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> The drinking water of more than 100,000 central Queensland residents is threatened by a State Government plan to make it easier for mines to discharge flood waters, says an environmental medicine specialist. Dr Andrew Jeremijenko yesterday said the waste was contaminated with salts and heavy metals that might cause cancer, birth defects and other health problems.
> The Economic Development Bill introduced in Parliament will allow mines to discharge water in emergency situations, with the term emergency yet to be defined. Mines are currently holding 300 gigalitres of water, more than half of Sydney Harbour, accumulated during last year's floods and preventing full operations to resume. Under current Environment Department regulations, the water can be released only under permit during rain events when polluted water can be diluted. Environment Minister Andrew Powell hit back at Dr Jeremijenko, a Green's Party identity, saying the changes were flood inquiry recommendations.
> ''The (inquiry) found issues with the way existing legislation limited government's ability to make timely decisions in the event of an emergency and made specific mention of mines in relation to flooding,'' he said.
> Opposition environment spokeswoman Jackie Trad said miners would need to make no more than a phone call to disperse water and the Government was using the flood inquiry as a cover to loosen standards.

Deputy Premier Jeff Seeney said Labor also had agreed to implement the inquiry recommendations.
Water quality would be the Government priority although it was separately looking at other issues whereby miners could argue an economic hardship case to release water. The Government's long term aim was for all mines to have engineering solutions in place, such as bund walls, to prevent further flooding. Queensland Resources Council chief executive Michael Roche has argued that if the water was released, it will allow further mining, leading to an extra $300 million in revenue.

Conclusion

Save the Reef is gravely concerned about the way in which this Bill has interpreted the Recommendations of the FCI so loosely and in a way which benefits only one user of Queensland waterways, the mining industry. The current wording of this Bill has the potential to socialise the costs especially the degraded environmental effects of mining operations to all Queenslanders while the profits of private mining interests are protected and elevated as government priorities above our common good.

It also shows a disturbing lack of understanding of the interaction of Queensland's coastal river systems with the declining health of the Great Barrier Reef. This is not responsible legislation. It shows a complete disregard for the urgent need to dramatically turn around the health of the Great Barrier Reef which a scientific assessment published in October 2012 indicated is in severe crisis.[14]

The aims of environmental legislation is to protect precious natural resources for all Queenslanders including those involved in farming, fishing, tourism and consumers of town water. Amendments which distort this intent to favour one industry above all other users is irresponsible governance.

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[1] The State of Queensland (Department of Environment and Resource Management) *A study of the cumulative impacts on water quality of mining activities in the Fitzroy River Basin*, 2008. Available at http://www.fitzroyriver.qld.gov.au/pdf/cumulativeimpactassessment.pdf

[2] 'QRC labels water discharge laws too restrictive', *Australian Mining*, 11 February 2011. Available at: http://www.miningaustralia.com.au/news/qrc-labels-water-discharge-laws-too-restrictive. Accessed 28 March 2011.

[3] Fitzroy Basin Coal Mines Water Discharges: Transitional Environmental Program (TEP), available at: http://www.fitzroyriver.qld.gov.au/updates/tep/bowenbasin-coal.html. Accessed 28 March 2011.

[4] ANZECC/ARMCANZ (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. The Australian and New Zealand Environment and Conservation Council (ANZECC) Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ). National Water Quality Management Strategy. Australian Government, Canberra. Available at http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality. Accessed 28 March 2011; C*umulative impacts on water quality*, pp. 33-36.

[5] B. Hart, *Review of the Fitzroy River Water Quality Issues: Report to the Queensland Premier*, November 2008, p. 16. Available at: http://www.fitzroyriver.qld.gov.au/pdf/fitzroyriverwaterqualityreport.pdf. Accessed 28 March 2011.

[6] NHMRC (2004). *Australian Drinking Water Guidelines.* National Health and Medical Research Council. Natural Resource Management Ministerial Council. National Water Quality Management Strategy. Australian Government, Canberra. Available at: http://www.nhmrc.gov.au/publications/synopses/eh19syn.htm . Accessed 22 February 2011.

[7] Hart, *Review of the Fitzroy River Water Quality*, p. 14.

[8] Hart, *Review of the Fitzroy River Water Quality*, pp. 15-16.

[9] *Study of the cumulative impacts*, pp. 19, 33. http://www.fitzroyriver.qld.gov.au/pdf/cumulativeimpactassessment.pdf

[10] Hart, *Review of the Fitzroy River Water Quality*, pp. 20-21.

[11] *Study of the cumulative impacts*, p. 28.
http://www.fitzroyriver.qld.gov.au/pdf/cumulativeimpactassessment.pdf

[12] Hart, *Review of the Fitzroy River Water Quality*, p. 10; see also Queensland Conservation Council, Decline of the mighty Fitzroy River, Queensland's Murray, available at: http://www.qccqld.org.au/index.php?option=com_content&task=view&id=192&Itemid=36. Accessed 28 March 2011.

[13] The first figure is the Rockhampton *Morning Bulletin*'s estimate as 3 November 2012; the second was the estimate by the Capricorn Conservation Council as cited by the *Morning Bulletin* 3 November 2012.

[14] GlennDe'ath, Katharina E. Fabricius, Hugh Sweatman, & Marji Puotinen, 'The 27–year decline of coral cover on the Great Barrier Reef and its causes' *Proceedings of the National Academy of Sciences of the United States of America*, October 1, 2012. [doi: 10.1073/pnas.1208909109]