

**QUEENSLAND FLOODS**  
**COMMISSION OF INQUIRY**

**STATEMENT OF ANDREW STEWART BRIER**

**ROLLESTON COAL MINE**

I, **ANDREW STUART BRIER** of c/- 400 George Street Brisbane in the State of Queensland, General Manager Strategic Implementation, Coal & CSG Operations, Regional Service Delivery, Operations and Environmental Regulator, Department of Environment and Resource Management (DERM), solemnly and sincerely affirm and declare:

**Requirement from Queensland Floods Commission of Inquiry**

1. I have seen a copy of a letter dated 13 September 2011, which is attachment **ASB-01**, from the Commissioner, Queensland Floods Commission of Inquiry to me requiring a written statement under oath or affirmation, and which details the topics my statement should cover.

**Role**

2. I am currently the General Manager Strategic Implementation, Coal and Coal Seam Gas Operations within the Regional Service Delivery Division in the Department of Environment and Resource Management. I have held this position since 21 February 2011 although I was involved in the management of flood related issues surrounding coal mines from the 10 January 2011 onwards.
3. Between 2010 and 2011 my roles were as follows:
  - 25/12/2009 to 05/08/2010 - Regional Manager GABSI & Major Projects
  - 06/08/2010 to 02/01/2011 - Regional Manager CSG Activities
  - 03/01/2011 to 20/02/2011 - Director LNG Enforcement Unit
  - 21/02/2011 onwards - General Manager Coal & CSG Operations

**Item 1: Department of Environment and Resource Management's activities in respect of each mine's flood preparedness in advance of the 2010/2011 wet season, including whether any particular activities were undertaken as a response to the forecast of an above-average rainfall wet season.**

4. As a regulator DERM's compliance activities are designed to strategically review the performance of individual regulated entities on the basis of perceived risk.
5. DERM undertook pre wet season compliance programs to evaluate water management preparedness ahead of the 2010/2011 wet season. This primarily involved evaluating past wet season performance and preparedness ahead of the

next wet season in terms of having available dam storage capacity to meet the minimum design storage allowance required on the 1 November of any year.

6. Environmental authorities include requirements for companies to prepare Water Management Plans that outline the overall mine water management strategy for their site. The environmental authorities require an annual review of these plans to ensure learnings from past wet season performance are incorporated into forward plans and preparations for future wet seasons.
7. Environmental authorities for mine sites also include dam structural design, construction and operation requirements that are commensurate with flood risks given a mines location, including:
  - a. certified hazard assessment required for all dams;
  - b. must be designed to prevent floodwaters from entering the dam, wall failure and overtopping up to and including a specified flood event based on AEP;
  - c. certified design plans, high risk dams reviewed by DERM technical experts;
  - d. having a marked "mandatory reporting level" above which DERM must be notified immediately, and actions put in place to prevent or minimise environmental harm;
  - e. ensuring that dams are inspected by a suitably qualified and experienced person;
  - f. undertaking reviews annually about the effectiveness of the dam during the preceding wet season and modifying the water management system accordingly;
  - g. monitoring of water quality within the dam prior to the wet season;
  - h. maintaining a register of dams and relevant information.
8. A number of mines were inspected in November 2010 as part of the pre wet season compliance inspection program, specifically addressing on-site water management systems and conditions in the environmental authority (EA) (**ASB-R01-01**) relating to water management.
9. Rolleston Mine was not one of the mines inspected during this time however, a letter (**ASB-R01-02**) was sent to all mines that were not part of the compliance inspection program suggesting the review of the site's water management system prior to the upcoming wet season to ensure that its operations would be in compliance with the EA and the *Environmental Protection Act 1994*. The letter encouraged the site to actively identify all of the environmental risks associated with the activities conducted on the site on an ongoing basis, and to implement strategies to effectively address them. The letter explained that if it was anticipated that the site may be unable to comply with the current conditions of the EA, a representative from the site should immediately contact DERM to discuss these issues.
10. Rolleston Mine's water management plan (**ASB-R01-03**) was received on 4 November 2010. This plan has been progressively implemented during 2010 and 2011 and has included the construction of a number of levees and diversions

designed to segregate overland flow water to bypass mine working areas prior to exiting the mining lease and reduce the likelihood of inundation.

**Item 2: the water management sections of the environmental authority applicable at the mine during the 2010/2011 wet season, including:**

- a) **Any concerns held by him or the Department of Environment and Resource Management (DERM) regarding its terms and the ability of the mine operator to comply with it**
  - b) **Any terms that the mine operator has indicated it is unable to comply with, or breached**
  - c) **Any terms that had to be amended from the Fitzroy model conditions because the model terms were unsuitable for this mine site**
  - d) **Any terms that he or DERM consider do not adequately promote environmental protection and dam safety**
- a) **Any concerns held by him or the Department of Environment and Resource Management (DERM) regarding its terms and the ability of the mine operator to comply with it**
11. Rolleston Mine was not included in the list of mines to be inspected prior to the 2010-2011 wet season. This list was developed following an assessment of all coal mines in the region and the risk of a non-compliant discharge from each site on the receiving environment. Rolleston Mine was therefore defined as a low-risk site.
12. Rolleston Mine originally submitted a voluntary transitional environmental program TEP (**ASB-R02-01**) on 30 September 2010, with an updated version being received electronically on 18 October 2010. This TEP is discussed further in paragraph 14 with reference to associated documentation. This TEP was submitted to address water management issues on the Rolleston Coal Mine site and allow for the dewatering of Spring Creek pit which was in-undated during rain events over the 2009/2010 wet season. The Mine indicated the need to release water in order to maintain sufficient storage capacity in the water impoundments prior to the commencement of the 2010/2011 wet season, in order to avoid later uncontrolled discharges.
13. DERM did not have any specific concerns that the mine would be unable to comply with the water management conditions of their EA and their granted TEP at the time.
- b) **Any terms that the mine operator has indicated it is unable to comply with, or breached**
14. Rolleston identified that the release of significant quantities of water from Spring Creek dam was not possible under the conditions of the EA, mainly due to the natural flows in Bootes Creek being too brief and the volume too small to be able to discharge the volume of water required to significantly lower the water level in Spring Creek dam before the wet season begins.

15. As a result, and as discussed in paragraph 10, Rolleston submitted a voluntary TEP on 30 September 2010 to address water management issues on the Rolleston Coal Mine site and allow for the dewatering of Spring Creek pit which was inundated during rain events over the 2009/2010 wet season. The Mine indicated the need to release water in order to maintain sufficient storage capacity in the water impoundments prior to the commencement of the wet season, in order to avoid the potential of uncontrolled discharges at a later date.
- c) **Any terms that had to be amended from the Fitzroy model conditions because the model terms were unsuitable for this mine site**
16. The Rolleston Mine EA was amended on 30 November 2009 to contain the 'Model Water Conditions for Coal Mines in the Fitzroy Basin'. There is a potential that Rolleston Mine will apply to amend the EA to include the most recent Model Water Conditions however, there has not been an amendment application received to date.
- d) **Any terms that he or DERM consider do not adequately promote environmental protection and dam safety**
17. To the best of my knowledge, I do not consider the Rolleston Mine EA to contain terms that do not adequately promote environmental protection and dam safety.

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**Item 3: any transitional environmental program (TEP) issued or refused or any emergency direction (ED) given or considered regarding either mine during the period 1 October 2010 to 30 July 2011 related to water management, and for each, the following:**

- a) **Information received from the mine operator**
  - b) **Any relevant dam safety issues**
  - c) **Relevant correspondence with the mine operator and other stakeholders**
  - d) **Whether and, if so, how DERM consulted with stakeholders**
  - e) **What considerations DERM took into account in making the decision**
  - f) **Whether, and if so, how DERM balanced environmental considerations and economic consequences of mines being non-operational**
  - g) **Whether, and if so how, DERM took account of downstream effects, including cumulative effects**
  - h) **The terms of the TEP issued or ED given**
  - i) **What actions were taken by DERM to advise emergency management personnel, including local and regional disaster management groups and local residents downstream of the dam about the TEP and any discharges or effects**
  - j) **Reasons for the decision given to the mine operator**
  - k) **Any breaches of the TEP or ED by the mine operator and DERM's response**
- a) **Information received from the mine operator**

18. There were a number of dealings related to mine releases authorised by a TEP between the dates specified.
19. Rolleston Mine submitted a voluntary draft TEP on 30 September 2010, with an amended version received electronically on 18 October 2010 (MAN10919) (**ASB-R03-07**). This amended TEP was assessed by DERM and a request for statutory approval (**ASB-R03-08**) was forwarded to the delegate for approval on 28 October 2010. The approved TEP, certificate of approval and notice of decision (**ASB-R03-09** and **ASB-R03-10**) were forwarded to the mine on 28 October 2010.
20. Rolleston Mine submitted an amended TEP (MAN11099) on 18 November 2010 (**ASB-R03-11**). This amended TEP was assessed by DERM and a request for statutory approval (**ASB-R03-12**) was forwarded to the delegate for approval on 29 November 2010. The approved TEP, certificate of approval and notice of decision (**ASB-R03-13** and **ASB-R03-14**) were forwarded to the mine on 29 November 2010.
21. Rolleston Mine submitted an amended TEP (MAN11779) on 19 January 2011 (**ASB-R03-15**). This amended TEP was assessed by DERM and a request for statutory approval (**ASB-R03-16**) was forwarded to the delegate for approval on 31 January 2011. The approved TEP, certificate of approval and notice of decision (**ASB-R03-17** and **ASB-R03-18**) were forwarded to the mine on 1 February 2011.
22. Rolleston Mine submitted a TEP (MAN12019) on 1 February 2011 (**ASB-R03-19**). This TEP was assessed by DERM and an assessment report requesting statutory approval (**ASB-R03-20**) was forwarded to the delegate for approval on 22 February 2011. The approved TEP, certificate of approval and notice of decision (**ASB-R03-21** and **ASB-R03-22**) were forwarded to the mine on 23 February 2011.

**b) Any relevant dam safety issues**

23. To the best of my knowledge, there were no relevant dam safety issues associated with the Rolleston Mine between the dates specified.

**c) Relevant correspondence with the mine operator and other stakeholders**

24. There are a number of documents that detail DERM's formal correspondence with the Rolleston Mine between the dates specified (**ASB-R03-23**).

**d) Whether and, if so, how DERM consulted with stakeholders**

25. DERM consulted with the Fitzroy Water Quality Advisory Group (FWQAG) on three occasions during the dates specified to discuss the releases from all mines in the Fitzroy Basin. This consultation formed part of the agenda at meetings of the FWQAG held in Rockhampton on 16 December 2010, 4 February 2011 and 7 April 2011.
26. The FWQAG is made up of a number of stakeholders including the mining industry, community groups, conservation groups, local government and DERM.

One of the key roles of the group is to provide advice to State Government agencies relating to water quality management in the Fitzroy River Basin.

27. DERM also consulted with Qld Health regarding mine water discharges. However the Rolleston Mine releases would not have been individually referred to as the discussions were based around whole of catchment water quality issues. The Rolleston Mine discharges would only have been discussed if there were specific water quality issues downstream of the mine.
28. The Director Environmental Health from Qld Health was also placed on the distribution list for the weekly Fitzroy Basin water quality report compiled by DERM (**ASB-R03-18**) in an effort to keep Qld Health informed of the current situation across the Fitzroy Basin

**e) What considerations DERM took into account in making the decision**

29. Transitional environmental programs (TEPs) are specific programs that, when complied with, achieve compliance with the *Environmental Protection Act 1994* (EP Act) for an activity by reducing environmental harm, detailing the transition of the activity to an environmental standard or detailing the transition of the activity to comply with a condition of a development approval, an environmental authority or code of environmental compliance. The requirements for TEPs and the process for assessing and approving them is set out in chapter 7, part 3 of the EP Act (**ASB-R03-e00a**). Specific considerations with regard to the Rolleston TEP are contained within the individual requests for statutory approval for each TEP application attached in paragraphs 18, 19 and 20 above.
30. Draft TEPs may be submitted voluntarily by a mine operator, or DERM may require an operator to submit a draft TEP if it is satisfied that an activity or proposed activity is or may cause unlawful environmental harm. In either case, the draft TEP is prepared by the operator. DERM's role is to assess the draft TEP against the requirements of the EP Act and either approve the TEP, approve the TEP with conditions, or refuse to approve the TEP.
31. Section 338 of the EP Act (**ASB-R03-e00b**), provides the framework for considerations that the administering authority must make in deciding whether to approve or refuse a draft TEP or the conditions (if any) of the approval. In making its decision it:
  - must comply with any relevant regulatory requirement and
  - subject to the above, must also consider the following:
    - the standard criteria
    - additional information given in relation to the draft TEP and
    - the views expressed at a conference held in relation to the draft TEP.
32. DERM has produced guidance material to support regional officers and delegated decision makers in assessing draft TEPs. A two part procedural guide; Part 1- Notice requiring a draft TEP (**ASB-R03-e01**) and Part 2-Considering and making a decision about a draft TEP (**ASB-R03-e02**) is attached. Supplementing the guidelines are two correlating assessment report templates Part 1 Assessment

Report (**ASB-R03-e03**) to assist officers to record the information considered by DERM when deciding to issue a notice requiring a TEP and Part 2 – Assessment Report (**ASB-R03-e04**) to assist users to evaluate the content of a draft TEP and make a decision to either approve (with or without conditions) or refuse a draft TEP. Prior to the procedural guides and assessment reports coming into effect, a draft Administrative Practice Note (**ASB-R03-e04a**) and a Request for Statutory Approval template (**ASB-R03-e04b**) was utilised by regional officers to assist with the TEP assessment process.

33. If an approved TEP authorises the holder of the TEP to do or not do something, the holder may do or not do that thing despite anything in a regulation, an environmental protection policy, an EA held by the holder of the TEP, a development approval, a standard condition of a code of environmental compliance for a chapter 4 activity or an accredited environmental risk management plan.
34. Prior to making its decision, DERM may also (and as a matter of practice often does) enter into discussions with the proponent of a draft TEP and suggest amendments to the draft TEP.
35. Mine operators typically voluntarily submit TEPs to DERM when they are seeking authorisation to discharge water from the mine site in circumstances where the discharge is not authorised by the EA.
36. DERM typically requires mine operators to submit a draft TEP where DERM becomes aware that there is a non-compliance at the mine site that will require a significant amount of time and/or investment by the operator to rectify.
37. Once a draft TEP is submitted to DERM there is often a discussion between the environmental officer involved in the matter and the mine operator about the contents of the draft TEP. This is an opportunity for DERM to raise any concerns with the draft document, and for the operator to take steps to address those concerns before DERM makes a decision about the draft TEP.
38. DERM has produced guidance material to assist environmental officers in assessing draft TEPs (**ASB-R03-24** and **ASB-R03-25**).
39. When assessing and deciding on a draft TEP the assessing officer also seeks advice from other business groups within DERM such as the Aquatic Ecosystem Risk & Decision Support unit who provide specific scientific advice in relation to proposed TEP conditions and guidance as to the downstream impacts of mine affected water releases to the environment.
40. In the case of the Rolleston Mine, DERM considered a number of issues such as:
  - The distance of the release points at the mine to the nearest large watercourse;
  - Discharges of water with EC of up to 700uS/cm into dry ephemeral streams;
  - The background water quality parameters in the streams surrounding the mine;

- Downstream water quality in Bootes Creek, the Comet River and the Mackenzie River, being mindful of the DRAFT environmental values and water quality objectives for those streams;
- Water users located downstream of the mine and their requirement for water;
- The economic impacts of the mine being unable to mine effectively due to inundation; and
- Impacts of any releases on access to properties.

**f) Whether, and if so, how DERM balanced environmental considerations and economic consequences of mines being non-operational**

41. The EP Act and subordinate legislation governs the responsibilities of DERM in the environmental regulation of mining activities in Queensland. The objective of the EP Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. This is referred to as ecologically sustainable development (ESD). Accordingly, DERM is required to balance environmental, economic, social and equity considerations when making decisions.
42. When making any decision under the EP Act, including whether to approve a draft TEP, DERM must consider the "Standard Criteria" (ASB-R03-f01) as specified in Schedule 4 of the EP Act. The standard criteria specifically require environmental and economic considerations to be balanced and considered. Part 2- Considering and making a decision about a draft TEP procedural guide (ASB-R03-e02) provides further guidance on some of the principles on evaluating ESD. In addition further direction is provided on other considerations of the standard criteria, relevantly the financial implications for an applicant in complying with a TEP (and any conditions that may have been imposed) and the character, resilience and values of the receiving environment.
43. Furthermore, part 2 and 3 of the *Environmental Protection Regulation 2008* (EP Reg) (ASB-R03-f02) stipulate requirements for all environmental management decisions and additional regulatory considerations with respect to imposing conditions relating to a wide ambit of environmental and economic considerations including but not limited to monitoring, and releases to waters or land. Decisions must also consider any relevant Environmental Protection Policies (EPP) such as the *Environmental Protection (Water) Policy 2009* which sets out to achieve the objective of the EP Act with respect to Queensland waters. It does this by identifying environmental values and management goals and providing a framework for making consistent, equitable and informed decisions about Queensland waters.
44. In accordance with the provisions of the EP Act, when making an environmental management decision in relation to a TEP DERM must consider the economic or financial implications of the program and any conditions to be imposed on the holder. This part also requires the financial implications of the holder not being granted a TEP. When assessing the Rolleston Mine TEP's and when processing



amendments to the approved program DERM did take into consideration the economic and financial implications of the mines inability to extract coal if a release could not be authorised. This was primarily in relation to the decision to grant the TEP, however in conditioning the TEP, managing unacceptable risks to the environment was the major consideration. .

**g) Whether, and if so how, DERM took account of downstream effects, including cumulative effects**

45. When assessing the Rolleston Mine TEPs DERM took into consideration the downstream impacts of the proposed releases by ensuring the conditions of the TEP required adequate dilution to achieve downstream Electrical Conductivity (EC) targets. These targets included drinking water quality guidelines and aquatic ecosystem guidelines to ensure the protection of waterholes and refugia in the Comet River.
46. DERM also took into account releases from other mines into the system along with background water quality parameters to ensure cumulative impacts were minimised and downstream water users were adequately protected. DERM also took these other releases into account to ensure other mines were afforded the opportunity to releases water where required under similar programs.

**h) The terms of the TEP issued or ED given**

47. The terms of the approved TEPs have been noted in Item3 (a) above. No emergency direction was issued to the Rolleston Mine.

**i) What actions were taken by DERM to advise emergency management personnel, including local and regional disaster management groups and local residents downstream of the dam about the TEP and any discharges or effects**

48. A condition of the TEP Certificate of Approval (MAN10919) required Rolleston Coal Mine to notify the Ranger-in-Charge of the Albinia National Park, Central Highlands Regional Council and any other relevant/potentially effected users/landholders downstream of the discharge into Bootes Creek, under TEP MAN10919, prior to the discharge taking place. The notification process must be documented and include:
  - written documentation of notification including dates, contacted persons and any pertinent comments; and
  - details of discharge information provided to the stakeholders.
49. Due to parameters set in the Certificates of Approvals, DERM did not consider it was necessary to brief local and regional disaster management groups about the release.

**j) Reasons for the decision given to the mine operator**

50. The reasons for the decisions are contained within the TEP approval documents noted in Item 3 (a) above.

**k) Any breaches of the TEP or ED by the mine operator and DERM's response**

51. The Rolleston Mine did not breach any conditions of its TEPs. There were no emergency directions issued to Rolleston Mine during this period.

**Item 4: the effects on the environment, drinking water quality and public health downstream of each of the mine sites (as far as the Great Barrier Reef Marine Park) as a result of discharges of water under a TEP or ED.**

52. The potential effects of releases of water from mine sites are assessed prior to the grant of environmental authorities or transitional environmental programs. In applying to receive approval to discharge to a surface water, applicants must prepare information to support the application which identifies the environmental values, water quality objectives and management intent (that is, the goals to be achieved in terms of meeting water quality objectives and protecting environmental values) of the surface water. This framework is provided in the *Environmental Protection (Water) Policy 2009* (EPP Water) (ASB-R04-01).

Applications must be able to demonstrate that the management intent for the receiving water will be met despite the discharge occurring.

53. All applications for environmental authorities and TEPs submitted for the approval of discharge to surface waters must be assessed by DERM against the requirements of the EP Act which includes the EPP Water, including an impact assessment to ensure that environmental values of any surface water will be protected. In conducting these regulatory assessments, DERM has developed a number of decision support tools including the guideline "Protecting Environmental Values from CSG Water Discharged to Surface Waters" (2010, ASB-R04-02) Conditions for Coal Mines in the Fitzroy Basin – Approach to Discharge Licensing (June 2010) and the Operational Policy "Waste water discharge to Queensland Waters" (2007, ASB-R04-03) and associated procedural information (ASB-R04-04 and ASB-R04-05). DERM has also prepared an "Interim Decision Support Matrix Release of water produced in association with Coal Seam Gas activities to surface waterways" (2010, ASB-R04-06) which informs assessments and resultant authority conditions

54. The approach used by DERM throughout the 2010-2011 wet season aimed to be consistent with state/national water quality guidelines e.g. The Queensland Water Quality Guidelines (2006), ANZECC/ARMCANZ Guidelines for Fresh and Marine Water Quality 2000, the Australian Drinking Water Quality Guidelines and the October 2010 released Draft for Consultation – Establishing Environmental Values, Water Quality Guidelines and Water Quality Objectives for Fitzroy Basin Waters.

55. Controls and limitations are placed on authorities as conditions such as limits upon the volumes discharged, timing of discharge and required dilution and mixing zones for discharges. Conditions also include comprehensive contaminant monitoring programs for discharge quality which is supplemented by detailed receiving environment monitoring programs.
56. Releases of water from a dam at a mine site can be authorised by the conditions of an environmental authority or via specific permission under a transitional environmental program. Regardless of the statutory instrument, for releases of water from a dam at a mine site to be authorised, the assessment procedure described above would apply.
57. The EP Act and the subordinate *Environmental Protection (Water) Policy 2009* EPP Water provides for drinking water values for Queensland waters. Accordingly, the protection of these values must be demonstrated prior to any authority being granted authorising a contaminant release to surface waters. Conditions of the environmental authority or TEP will provide quality limits and environmental monitoring to ensure that discharge quality is sufficient to protect drinking water values.
58. During the 2010/11 wet season, DERM staff liaised with Queensland Health on a regular basis to ensure that any authorised or un-authorised discharges from mine sites were managed to ensure the protection of drinking water quality.
59. TEPs issued during or as a result of the 2010/11 wet season also considered the effects of any mine site release on drinking water and were conditioned to ensure that the discharge was managed in such a way as to ensure the protection of drinking water supplies.
60. DERM has observed that salinity (measured by EC) in all water courses in the Fitzroy basin has increased following the 2010/2011 wet season. The high rainfall resulted in extensive recharge to the groundwater in the Fitzroy basin which increased contribution of groundwater to base flows in streams high in the catchment. At times, the salinity of this water is quite high (in excess of the EC 2500 micro Siemens per centimetre (uS/cm)). As a consequence, salinity in base flows in the larger streams of the Fitzroy catchment is higher than has been experienced in recent years when there was little or no groundwater contribution to stream flow.
61. DERM does not believe that discharges from mine sites as a result of the 10/11 wet season have contributed significantly to the currently elevated EC of the Fitzroy river system. Discharges from mine sites have been closely monitored in accordance with conditions set on both EAs and TEPs to ensure water quality downstream of mines remains within acceptable limits.
62. This rising salinity is currently causing some minor issues in drinking water supplies in the lower Mackenzie and Fitzroy Rivers. The EC in the Fitzroy Barrage, which supplies drinking water to Rockhampton and the Bedford Weir, which supplies drinking water to Tieri, Middlemount, Blackwater, and Bluff has

risen to levels above 600uS/cm. At these levels part of the population are able to detect taste difference to the water normally supplied from these storages.

63. There is no evidence to suggest that any plant or animal species has been adversely impacted by the increased salinity in waterways across the Fitzroy River system.
64. Whilst there have not been major impacts on electricity generation there has been some minor inconvenience and increased costs on electricity generation at the Stanwell power station. An increase in salinity in the raw water supply results in fewer cycles for cooling water. Consequently, to achieve the same levels of electricity generation increased volumes of cooling water sourced from the Fitzroy River are required.
65. DERM has been informed that Stanwell Corporation have been able to handle the increase in salinity in their raw water through a temporary amendment to their Development Approval (DA). The amendment allows Stanwell to use larger volume of below down water at the same time not exceeding their current water quality discharge limits.
66. There is no evidence that rising EC in stream flow in the Fitzroy river system or mine water discharges across the state as a result of the 2010/11 wet season have had any adverse impact on the environment. DERM has investigated a number of breaches of conditions of both EAs and TEPs and has concluded that no environmental harm has resulted from any non compliant release.
67. Where salinity has risen in drinking water supplies in the lower Mackenzie and Fitzroy Barrage, there is some concern in particular for those people who are on low sodium diets and kidney dialysis in Tieri, Middlemount, Blackwater, Bluff and Rockhampton. Bio medical services of the Central Queensland Health Service District have also reported that adjustments have had to be made to dialysis and other equipment as a result of the associated increase in hardness.
68. Monitoring has shown high EC levels in a number of local catchments upstream of mines. These levels are therefore not influenced by mine water discharges. DERM believes that the major cause of this increase in salinity and hardness is the increasing contribution of groundwater to stream flows rather than the effects of mine water discharges

**Item 5: details of how the new Fitzroy Model Conditions negotiated during 2011, or any other discussions with DERM, will resolve any issue raised above 1, 2, 3, or 4**

69. The new Fitzroy Model conditions may provide more opportunities for the Rolleston Mine to release mine affected water to the environment. This may have the effect of reducing the volume of mine affected water stored on site, increasing the capacity of the mine to deal with rainfall events without pumping water to active mining pits.

70. I am informed that Rolleston Mine is likely to benefit from the new Fitzroy Model Conditions as a result of increased flexibility in mine affected water discharge conditions that can be applied to mines close to the boundary of a catchment.

**Item 6: an explanation as to whether the new Fitzroy Model Conditions negotiated during 2011 are advantageous or disadvantageous to the mine operator in the management of water at the mine, the downstream environment and safety issues.**

71. With regard to the Rolleston Mine, the new Fitzroy Model Conditions may provide the mine operator additional opportunity to discharge mine affected water to the environment through possible amendments to water quality limits and stream flow triggers.
72. Additional discharge of mine affected water may prove advantageous, giving the Rolleston Mine more flexible discharging arrangements.
73. The new Fitzroy Model conditions have been developed in an attempt to provide mine operators with additional flexibility to manage mine affected water on site through discharges, whilst maintaining minimal impacts on the receiving environment. Individual mine sites will need to conduct a relevant analysis to determine the detailed impacts or benefits of adopting the new model conditions.

**Item 7: any briefing (written or oral) given to any Minister or Director-General regarding a TEP or ED related to water management or non-compliance with an environmental authority at the mine and the reason for that briefing**

74. To the best of my knowledge, there were no specific written briefings provided to any Minister or Director General in relation to this mine. A number of general briefings were provided in relation to mines and the 10/11 wet season and these are attached as items **ASB-D07-01** to **ASB-D07-06**. A weekly report on TEPs was provided via email to key departmental and ministerial staff during the time period requested and a copy of the latest report provided prior to 20 July 2011 is attached as item **ASB-D07-07**. It is possible that there were other written briefing material provided during this period but this is the best information DERM staff were able to gather within the timeframe permitted for submission of this statement
75. There were a significant number of oral briefings provided to the Minister for Climate Change and Sustainability and the Director General of DERM in relation to TEPs during the wet season period of which there are no written records. In general, these were primarily in relation to the mining/CSG industry as a whole and the number of TEPs issued or currently being assessed. Individual mines were discussed at several of these briefings but I am unable to provide an accurate transcript or meeting notes from these briefings.

**Item 8: DERM's opinion as to whether the mine operator should be managing water at the Mine other than by storing it in dams or ponds, including by using desalination plants, purification procedures or any other means**

76. To the best of my knowledge I believe that the storage of mine affected water at the Rolleston Mine in dams and ponds is an appropriate management strategy and is consistent with the strategies used across the coal mining industry in Central Queensland.
77. Using another method such as desalination or purification may provide additional opportunities to discharge water from the site that is better quality and does not have a significant impact on the receiving environment. It is of DERM's opinion that Rolleston Mine is not impacted in the same way when compared to other mines in the Fitzroy Basin, with regards to water quality. Water in contact with coal and/or mining waste rock and spoil at the Rolleston Mine does not increase in salinity to the same degree as water at other coal mines across the Bowen Basin. Typical EC concentrations of mine affected water are less than 1000uS/cm the Rolleston Coal Mine.

**Item 9: an explanation of that which is involved in managing water at the Mine other than by storing it in dams or ponds, including by using desalination plants, purification Procedures or any other means**

78. On-site water management practices should be integrated with mining activities and should provide for the collection, storage and disposal of water on a mine site.
79. Effective mine site water management should follow these general principles:
- Limit the extent of site disturbance and limit catchment areas that report to site water management infrastructure.
  - Recycle water in the process circuit or for other uses, such as dust suppression, as much as possible.
  - Optimising the volume of water discharged from the site (having regard to the mass and concentration of contaminants expected to reach the receiving waters).
  - Segregating water by quality or source and reducing contaminant concentrations in water where possible.
  - Avoiding the accumulation of large volumes of contaminated water on-site.
  - Undertake a risk assessment that meets with DERM's requirements when sizing and designing storage dams.
  - Protecting groundwater resources from contamination.
  - Protecting the mine workings and infrastructure from floodwater inundation.
80. The management of mine affected water at the Rolleston Mine using methods such as desalination or purification, and not dams or ponds may require the EA holder to amend conditions of the current EA.

81. Any amendment to implement measures such as desalination or purification may also require the EA holder to make amendments to the associated Environmental Management Plan (EM Plan) and Water Management Plan (WM Plan) to detail how the environmental impacts of these methods will be managed by the mine.
82. Any amendment that would constitute a significant increase in harm would be subject to public notification.
83. The use of a desalination or purification plant does have potential additional environmental impacts such as brine generation, which must be effectively managed to minimise the risk of brine being released to the environment either through uncontrolled releases or through seepage from containment structures. This is one specific issue that must be considered should the Rolleston Mine decide to implement such measures to manage mine affected water.
84. Also, when making the decision to amend an EA under the EP Act, DERM must consider the "Standard Criteria" (ASB-R09-01) as specified in Schedule 4 of the EP Act. Furthermore, part 2 and 3 of the EP Regulation (ASB-R09-02) stipulate requirements for all environmental management decisions and additional regulatory considerations with respect to potential emissions from proposed activities.
85. DERM defines brine as saline water with a total dissolved solid concentration greater than 40,000 milligrams per litre. For comparison, good quality drinking water has total dissolved solids values of up to 500 milligrams per litre. The total dissolved solids value of sea water is between 36,000 and 38,000 milligrams per litre.
86. If desalination or purification was to be implemented at the Rolleston Mine, storage options would need to be explored for containment of brine. Such storages would be required to be designed and constructed in accordance with the 'site water management' section of the document titled 'Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland' Department of Minerals and Energy, 1995 (ASB-R09-03).

I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

Signed  .....  
Andrew Stuart Brier

Taken and declared before me, at Brisbane this 27th day of September 2011

 .....  
Solicitor/Barrister/Justice of the  
Peace/Commissioner for Declarations