

## **APPENDIX 5**

### **Commission's Questions to Proponent and Agencies**

11 April 2014

Mr David Harriss  
NSW Water Commissioner  
NSW Office of Water  
GPO Box 3889  
SYDNEY NSW 2001

[hemantha.desilva@water.nsw.gov.au](mailto:hemantha.desilva@water.nsw.gov.au)

Dear Mr Harriss

### **Wallarrah 2 Coal Project**

The Planning Assessment Commission has been directed by the Minister for Planning & Infrastructure to conduct a review of the proposed Wallarrah 2 Coal Mine Project near Wyong, NSW. The Commission has so far met with the Department of Planning and Infrastructure, the relevant Local Government Authorities, and the Proponent and has also held a Public Hearing at Wyong.

This is a highly controversial project and the most controversial aspect is its potential impact on water supplies for the Central Coast.

Most of the information available to the Commission regarding water and subsidence is strongly contested. In broad terms the Commission needs to be confident that it has identified: the possible sources of impact; the quantum of impact from each possible source; when each impact might commence; and the likely duration of each impact. At this point the Commission is aware of three possible sources of impact: operational requirements of the mine; subsidence impacts on the alluvial aquifers leading to loss of baseflow to the streams; and (possibly) loss of baseflow to streams as a result of mine-induced groundwater depressurisation. These are discussed further below along with a series of questions in relation to Central Coast water supplies.

Wyong Council and multiple presenters at the Public Hearing raised major concerns about the risk of any loss of water from the GWWSS. The principal reasons given were the history of severe water restrictions in the Central Coast (in 2007 only 10% supply remaining with doubts about the accessibility of the last 4% of this), the fact that the long-term records show far worse droughts than 2007, and the substantial increases in population forecasts for the area supplied by GWWSS (up to 27%).

There are two 'subsidence-related' impacts. The first is the impact on the alluvial aquifers and the second is on the deeper aquifers that contribute to mine-water make and the filling of the goaf voids.

Dealing with the first of these, the Department of Planning & Infrastructure's Preliminary Assessment Report (PAR) states that, as a result of subsidence impacts, 270ML/y will be lost from the Jilliby Jilliby Creek source and 30ML/y from the Central Coast Unregulated Water Source (see p.33). The Department's PAR does not indicate the likely duration of this subsidence-related impact.

The Proponent contends that the impact of 270ML/y on the Jilliby Jilliby Creek source is the maximum impact and that it occurs in year 10 of mining. It states that in other years the impact will be less, that re-charge of the alluvial aquifer will occur rapidly and implies that there will be no further impact once this occurs. Presumably this can only be correct if there is no connection between the alluvium and the zone of depressurisation caused by extraction of the coal. This is a contested issue and will be discussed further below.

The proposed solution in the PAR to this water loss is the purchase by the Proponent of water licences ('probably for irrigation or some other farming purpose') and NOW is stated to have confirmed that sufficient transferable licences exist to cover the deficit. However, Wyong Council and many other submitters have asserted that the purchase of licences as a solution fails to address three issues:

- (i) the subsidence-induced loss is not controllable (i.e. it can't be turned off);
- (ii) some of the licences available for purchase will not have been in use (i.e. 'non-active') and therefore there will be a loss in real terms from the system; and
- (iii) that in dry times there is insufficient water in the system to meet the needs of the existing population (i.e. water restrictions come into force).

The Proponent's response on the water loss<sup>1</sup> can be summarised as:

- (i) the Water Sharing Plans (WSP) are designed to ensure that all licensed users can take their maximum allowance and still maintain ecosystem health (but far less definitive phrases are also used, i.e. 'satisfy basic landholder rights'. 'generally consistent with extraction limits', etc.<sup>2</sup>);
- (ii) that the distinction between active and non-active licences is immaterial and that it would in fact be detrimental to remove active licences from the system;
- (iii) a long-term extraction limit of 36,750ML/y applies to the GWWSS and the availability of water for town supply is therefore governed by the WSP, not the quantity of water in the dams; and
- (iv) the subsidence impact on water flow in Jilliby Jilliby Creek would be temporary with the exception of some small areas where flow would be redirected.

At this stage of the Review the Commission is not convinced that the purchase of water licences will offset the impacts of the mine on water supply under drought conditions.

The second issue is the deeper groundwater impact associated with voids in the goaf, at least some of which manifests itself as mine-water make (i.e. water predicted to be pumped from the mine daily). This amounts to 2.5ML/d plus possibly another 0.5ML/d from the fractured zone.

The Department's PAR at p.25 suggests that there would be no direct connection (i.e. no connective cracking) between the surface and the mine and that any indirect connection would not be significant 'in terms of overall drawdown, groundwater inflow and (most importantly) surface water resources'. This is a strongly contested issue. At the public hearing on 2 April 2014 Professor Pells<sup>3</sup> made the following points:

- (i) the predicted 2.5ML/d inflow to the mine includes 0.04ML/d from the hard rock aquifer, but the source for the rest of the 2.5ML/d is unstated. It must come from somewhere and that

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<sup>1</sup> Response from Hansen Bailey to DP&I Issues, dated 18 March 2014. (Attached as Annexure 1.) This arose from the Commission seeking further information from the Department on a number of issues arising from the Commission's initial review of the Department's Preliminary Assessment Report..

<sup>2</sup> Emphasis added

<sup>3</sup> Professor Pells was the Wyong Shire Council expert on water issues. The presentation at the public hearing was as a representative of the Australian Coal Alliance. The relevant slides from his presentation are included as Annexure 2.

'somewhere' must be in equilibrium with natural recharge and therefore must ultimately affect river flow;

- (ii) there will be substantial changes in the groundwater regimes caused by the post-mining zone of depressurisation with substantial drops in bore levels. These changes to groundwater will cause a decrease in base flow to Jilliby Jilliby Creek;
- (iii) flows in Jilliby Jilliby Creek vary substantially with seasonal conditions. In dry times the flows are consistently below 1ML/d for long periods and for the time since 1972 the flows for 20% of the time have been below 0.74ML/d.

In relation to potential impacts from the zone of depressurisation there are three issues for the Commission:

- whether there is, in fact, a connection between baseflow to Jilliby Jilliby Creek and the zone of depressurisation;
- what the quantum of that impact might be; and
- when the impact might occur and its duration.

The Commission's questions are:

1. Can NOW comment on the duration of the direct impact of subsidence on the alluvium and the loss of baseflow to the streams contributing to the GWWSS?
2. If the duration depends in part on the effective sealing of fractures beneath the alluvium, what robust evidence does NOW have that would convince the Commission that there would not be a continuing impact?
3. Dealing only with the above source of loss, how will the purchase of irrigation (or similar) licences result in no loss for the GWWSS in extended periods of drought?
4. In the context of (3), is NOW able to prioritise access to water allocations under the WSP in times of drought? If so, how does it classify (a) the loss of baseflow from subsidence, (b) the operational requirements for the mine in comparison to priorities for agricultural and domestic purposes and the GWWSS water supply offtake?
5. The Department's PAR states that the loss attributable to the mine is 0.7% of catchment flows of 45,600ML/y (i.e. 320ML/y). This is presumably made up of the 270ML/y loss from the Jilliby Jilliby Creek source, 30ML/y from the Central Coast Unregulated Water Source and around 20ML/y off-take for operational purposes. The Department states that this is not significant for the GWWSS. Does NOW agree that this is not significant given the recent history of water restrictions in the Central Coast, the fact that these water restrictions were in force in a period that was well below the severity of some earlier droughts, and the projected increases in population to be supplied by the GWWSS?
6. In the context of the possible impacts of the zone of depressurisation on groundwater, can NOW indicate whether it accepts the drawdown figures indicated on Professor Pell's diagrams showing hypothetical bores at year 0 and year 20 of mining? If not, why not?
7. Does NOW accept the Department's proposition that there will be no impact of the zone of depressurisation of the mine on the baseflow to the streams supplying the GWWSS (a) during mining and (b) at any time in the future. If the answer to either (a) or (b) is positive, can NOW Please provide details of the likely impact and when it might occur?

As already indicated, the Commission considers that availability of water for the GWWSS is its highest priority issue to resolve in the review of this mining application. The Commission is inclined at this stage to recommend a nil impact on the GWWSS as a condition of consent. This will involve consideration of all the issues discussed above. It will also involve consideration of possible

mechanisms to augment the supply at the Proponent's cost consistent with any impacts it cannot avoid.

One possible solution to the risk of impacts on supply is to have the Proponent treat the mine water to an acceptable standard for return to the catchment rather than the currently proposed discharge of treated water to Wallarah Creek. The water for discharge to Wallarah Creek will be processed through a Reverse Osmosis plant and will already be required to meet the water quality guidelines applicable to that creek. Conceptually it should be possible to increase the level of treatment to meet any further requirements of raw water supply. Theoretically there should be 2.5ML/d available if required (i.e. more than enough to offset the predicted losses to GWWSS). The options would be to discharge the treated water to the impacted stream(s) or to discharge the water in close proximity to the weir. Does NOW have any views as to whether the return of treated water to the catchment would be acceptable and whether either of the discharge options suggested could work? If not, what other options could be pursued?

The Commission must report by mid-May so any response will be required no later than 4 May 2014.

If NOW considers that a meeting to discuss the above matters (or any other residual concerns with this proposed project) would be beneficial the Commission is available to meet in Sydney on either 28 April or 29 April 2014. To arrange a meeting, please contact Mrs Paula Poon on (02) 9383 2101.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Neil Shepherd', with a large, stylized flourish to the right.

Dr Neil Shepherd AM  
Chair, Wallarah 2 Coal Project Review

14 April 2014

Mr GJ Cole-Clark  
Chief Executive Officer  
Mine Subsidence Board  
PO Box 188G  
NEWCASTLE NSW 2300

Dear Mr Cole-Clark

### Wallarah 2 Coal Project

The Commission is conducting a review of the proposed Wallarah 2 Coal Project. The Minister's Terms of Reference are attached. At the Public hearing held at Wyong on Wednesday, 2 April 2014, significant concerns were raised in multiple submissions about potential subsidence impacts on built infrastructure and the role of the Mine Subsidence Board in providing compensation for some of these claims.

A large number of residences are predicted to be impacted (some 245) and the Commission must carefully consider this in light of comments by the Chief Judge of the Land and Environment Court about the number of people impacted by noise in the recent Warkworth case<sup>1</sup> and the extent to which this (and the problems with mitigation options) influenced the decision to refuse approval in that case.

The main concerns expressed by submitters are outlined below. The Commission at this point has no basis on which to dispute the concerns and would therefore seek your response to the issues raised.

- (1) Residences or parts of residences constructed before declaration of the MSD may not be covered by compensation arrangements if not built to MSB requirements.
- (2) A high rate of claim rejection (the attached *Newcastle Herald* article was tendered to the Commission<sup>2</sup>).
- (3) Claims for ongoing damage after initial repairs are generally disallowed and 'reactive soils' are cited as the cause.
- (4) Assessment is carried out by MSB employees or contractors (i.e. non-independent assessment).
- (5) Lengthy delays in having repairs completed causing significant stress and health impacts.

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<sup>1</sup> *Bulga Milbrodale Progress Association Inc. v Minister for Planning and Infrastructure & Warkworth Mining Limited* [2013] NSWLEC 48 ([Warkworth](#)). This decision was recently confirmed on appeal to the Supreme Court.

<sup>2</sup> Annexure 1

In planning approvals for mining projects, the approach to investigation of impacts, assessment of damage, and repair and compensation is relatively standardised. It consists of appointment of an independent assessor to investigate and report to the Proponent and the affected party, an opportunity to dispute the assessment by appeal to a neutral party (usually the Director-General of P&I) and a requirement for the Proponent to implement the final determination.

Given the substantial number of properties potentially affected by subsidence from this mining project and the importance in the Warkworth case that the court attached to the efficacy of mitigation strategies, the Commission needs to understand the extent to which the MSB system for investigation and compensation for subsidence impacts differs from the system outlined in the previous paragraph and, if it does, the reasons for the differences. As a guide to the specific areas of interest the Commission would like to understand whether the following are characteristics of the MSB system:

- (i) pre-mining dilapidation reports on all potentially compensable structures that may be impacted. If so, who does these and who pays for them?
- (ii) Whether the burden of proof that subsidence caused/did not cause damage rests with the landowner or the MSB. If it does not rest with MSB, why is there no *prima facie* position that, if the residence or structure was within the potential zone of affectation of a Longwall, the damage was caused by the Longwall unless it can be proved otherwise?
- (iii) Independent assessors agreed by both the MSB and the landowner with a dispute resolution mechanism available.
- (iv) An appeals process.

In addition, the Commission wishes to understand how the MSB deals with damage that arises from multiple Longwalls. In the case of the project under review at least three (or more) Longwalls can impact an item of built infrastructure. Under the current mine plan this would take at least 3 years before stability was established and more if the pillars do not yield as expected (either extent or timeframe).

In relation to the risk of subsidence-induced damage to infrastructure that was constructed prior to the declaration of the two relevant MSDs (Hue Hue and Wyong) does the MSB have records of these structures? If not, how is it determined whether a structure was constructed before the MSB was declared?

The Commission would be prepared to meet with MSB representatives on either 28 or 29 April 2014 if this was considered useful. The Commission's report is due mid-May so written responses would be needed by 2 May 2014. To arrange a meeting, please contact Mrs Paula Poon on (02) 9383 2101.

Yours sincerely



Dr Neil Shepherd AM  
Chair, Wallarah 2 Coal Project Review

# Request to the Planning Assessment Commission Wallahah 2 Coal Project

Section 23D of the *Environmental Planning and Assessment Act 1979*  
Clauses 268R and 268V of the *Environmental Planning & Assessment Regulation 2000*

I, the Minister for Planning and Infrastructure request the Planning Assessment Commission to:

1. Carry out a review of the Wallarah 2 Coal Project, and:
  - a) consider the Department of Planning and Infrastructure's assessment report of the merits of the project;
  - b) consider the EIS for the project, the issues raised in submissions, the formal response to submissions and any other relevant information provided on the project during the course of the review;
  - c) assess the merits of the project as a whole, paying particular attention to potential water and biodiversity impacts of the project; and
  - d) recommend any further measures required to avoid, minimise, and/or manage the potential impacts of the project.
2. Conduct public hearings during the review as soon as practicable after the Department of Planning and Infrastructure provides a copy of its assessment report for the project to the Planning Assessment Commission.
3. Submit its final report on the review to the Department of Planning and Infrastructure within 6 weeks of the public hearings, unless the Director-General of the Department of Planning and Infrastructure agrees otherwise.



**The Hon Brad Hazzard MP**  
Minister for Planning and Infrastructure

Sydney

16 JAN 2014

2014

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(20) Wayne  
 Michael  
 McCarty

**A DECADE OF CLAIMS**

Mine Subsidence Board claims accepted and refused, 2002-2012

Year	Accepted	Refused	Not undermined so refused	Works done to eliminate danger	Total
2002-03	66	178	58	83	385
2003-04	59	149	46	66	320
2004-05	57	170	24	89	340
2005-06	101	150	42	55	348
2006-07	108	165	33	92	398
2007-08	65	153	49	151	418
2008-09	153	140	56	116	465
2009-10	102	213	64	76	455
2010-11	73	286	55	113	527
2011-12	44	210	43	141	438



# Sinking 'not subsidence'

## Board boss dismisses responsibility

By **DONNA PAGE**

MINE Subsidence Board chief executive Greg Cole-Clark broke his silence yesterday and dismissed as "simply incorrect" claims his organisation was responsible for assisting an elderly Waratah couple with their waterlogged home.

Mr Cole-Clark's state government organisation - which is funded by levies on the coal industry - has come under the microscope for its dealings over more than 30 years with Allen and Claris Watson.

The elderly couple's Bridge Street home is being inundated by water seeping from a disused coalmine located just metres from their back fence.

For decades the case has been handballed between government organisations as the house and garage sink and the damage bill mounts.

Mr Cole-Clark said the Watsons' home was not undermined, so there was "no mine subsidence damage".

"Staff have liaised with Mr and Mrs Watson and explained that the site is not undermined and the water



WAITING: The Herald's report on Saturday.

castle Herald that this is a matter for the board are simply incorrect under the Act."

According to the Mine Subsidence Compensation Act, the board manages compensation for damage relating to coalmine subsidence.

The Herald revealed on Monday that in 1978 the board approved a compensation claim for water seepage from the old mine made by one of Mr Watson's neighbours.

NSW Opposition Leader John Robertson called yesterday for the situation to be

in the way, the Minister for Resources should look at providing one-off ex gratia financial assistance to the Watsons so they can put this whole saga behind them," he said.

The Watsons, both in their 90s, fear the legislation has been deliberately designed to ensure more claims are refused than accepted.

A chorus of Hunter residents unhappy with board decisions have called for a review of the Mine Subsidence Compensation Act.

"We need a fair system that deals with the complete problem of these old coalmines that are everywhere in the Hunter, not just some parts of it," Mr Watson said. "The community should be better protected."

Last financial year the board received almost \$18 million in colliery contributions.

In an online poll on the Herald's website yesterday, readers voted overwhelmingly in favour of a government review of the operations of the Mine Subsidence Board.

More than 500 people

22 April 2014

Mr GJ Cole-Clark  
Chief Executive Officer  
Mine Subsidence Board  
PO Box 188G  
NEWCASTLE NSW 2300

Dear Mr Cole-Clark

Wallarah 2 Coal Project

Thank you for your letter of 17 April 2014.

I refer to your comment about the relevance of the Warkworth decision. The relevance is that Preston CJ determined that noise impacts on so many properties (around 240) was unacceptable and refused the project. The situation is not dissimilar to the situation with subsidence impacts on houses for this project in that noise is also controlled under separately administered legislation, but the application for planning consent had to be considered within the EP&A Act parameters (i.e. section 79C).

There are some 240 houses and numerous other structures predicted to be impacted by subsidence if this project is approved. If the consent authority cannot be satisfied that the MSB processes will deal adequately with these impacts then the consent authority cannot approve the development application. At this juncture the Commission has received multiple submissions alleging that the separately administered MSB processes do not result in a satisfactory outcome for landowners and the Commission has nothing to balance this against.

Yours sincerely



Dr Neil Shepherd AM  
Chair, Wallarah 2 Coal Project Review

14 April 2014

Mr In-sik Kim  
Wyong Areas Coal Joint Venture  
PO Box 3039  
TUGGERAH NSW 2259

Dear Mr Kim,

### Wallarah 2 Coal Project

Following the meeting on 1 April between the Commission and WACJV, the Commission has had the benefit of input from the Public Hearing and has received additional information from other sources. As indicated at the meeting, the Commission has identified a number of concerns that it considers significant. The purpose of this letter is to outline those concerns and give WACJV, as Proponent, an opportunity to address them. The Commission expects that it will receive responses in writing, but is also prepared to meet with the Proponent and any relevant experts on either 28 April or 29 April 2014. Written responses will be received up until COB 2 May 2014.

#### **1. Water Supply**

The Commission considers that the most controversial aspect of this project is its potential impact on Central Coast water supplies.

Most of the information available to the Commission regarding water and subsidence is strongly contested. In broad terms the Commission needs to be confident that it has identified: the possible sources of impact; the quantum of impact from each possible source; when each impact might commence; and the likely duration of each impact. At this point the Commission is aware of three possible sources of impact: operational requirements of the mine; subsidence impacts on the alluvial aquifers leading to loss of baseflow to the streams; and (possibly) loss of baseflow to streams as a result of mine-induced groundwater depressurisation. These are discussed further below along with a series of questions in relation to Central Coast water supplies.

Wyong Council and multiple presenters at the Public Hearing raised major concerns about the risk of any loss of water from the Gosford-Wyong Water Supply System (GWWSS). The principal reasons given were the history of severe water restrictions in the Central Coast (in 2007 only 10% supply remaining with doubts about the accessibility of the last 4% of this), the fact that the long-term records show far worse droughts than 2007, and the substantial increases in population forecasts for the area to be supplied by GWWSS (up to 27%).

There are two 'subsidence-related' impacts. The first is the impact on the alluvial aquifers and the second is on the deeper aquifers that contribute to mine-water make and the filling of the goaf voids.

Dealing with the first of these, the Department of Planning & Infrastructure's Preliminary Assessment Report (PAR) states that, as a result of subsidence impacts, 270ML/y will be lost from the Jilliby Jilliby Creek source and 30ML/y from the Central Coast Unregulated Water Source (see p.33). The Department's PAR does not indicate the likely duration of this subsidence-related impact.

The Proponent contends that the impact of 270ML/y on the Jilliby Jilliby Creek source is the maximum impact and that it occurs in year 10 of mining. It states that in other years the impact will be less, that re-charge of the alluvial aquifer will occur rapidly and implies that there will be no further impact once this occurs. Presumably this can only be correct if there is no connection between the alluvium and the zone of depressurisation caused by extraction of the coal. This is a contested issue and will be discussed further below.

The proposed solution in the PAR to this water loss is the purchase by the Proponent of water licences ('probably for irrigation or some other farming purpose') and NOW is stated to have confirmed that sufficient transferable licences exist to cover the deficit. However, Wyong Council and many other submitters have asserted that the purchase of licences as a solution fails to address three issues:

- (i) the subsidence-induced loss is not controllable (i.e. it can't be turned off);
- (ii) some of the licences available for purchase will not have been in use (i.e. 'non-active') and therefore there will be a loss in real terms from the system; and
- (iii) that in dry times there is insufficient water in the system to meet the needs of the existing population (i.e. water restrictions come into force).

The Proponent's response on the water loss<sup>1</sup> can be summarised as:

- (i) the Water Sharing Plans (WSP) are designed to ensure that all licensed users can take their maximum allowance and still maintain ecosystem health (but far less definitive phrases are also used, i.e. 'satisfy basic landholder rights'. 'generally consistent with extraction limits', etc.<sup>2</sup>);
- (ii) that the distinction between active and non-active licences is immaterial and that it would in fact be detrimental to remove active licences from the system;
- (iii) a long-term extraction limit of 36,750ML/y applies to the GWWSS and the availability of water for town supply is therefore governed by the WSP, not the quantity of water in the dams; and
- (iv) the subsidence impact on water flow in Jilliby Jilliby Creek would be temporary with the exception of some small areas where flow would be redirected.

At this stage of the review the Commission is not convinced that the purchase of water licences will offset the impacts of the mine on water supply under drought conditions.

The second issue is the deeper groundwater impact associated with voids in the goaf, at least some of which manifests itself as mine-water make (i.e. water predicted to be pumped from the mine daily). This amounts to 2.5ML/d plus possibly another 0.5ML/d from the fractured zone.

The Department's PAR at p.25 suggests that there would be no direct connection (i.e. no connective cracking) between the surface and the mine and that any indirect connection would not be significant 'in terms of overall drawdown, groundwater inflow and (most importantly) surface water

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<sup>1</sup> Response from Hansen Bailey to DP&I Issues, dated 18 March 2014. This arose from the Commission seeking further information from the Department on a number of issues arising from the Commission's initial review of the Department's Preliminary Assessment Report.

<sup>2</sup> Emphasis added

resources'. This is a strongly contested issue. At the public hearing on 2 April 2014 Professor Pells<sup>3</sup> made the following points:

- (i) the predicted 2.5ML/d inflow to the mine includes 0.04ML/d from the hard rock aquifer, but the source for the rest of the 2.5ML/d is unstated. It must come from somewhere and that 'somewhere' must be in equilibrium with natural recharge and therefore must ultimately affect river flow;
- (ii) there will be substantial changes in the groundwater regimes caused by the post-mining zone of depressurisation with substantial drops in bore levels. These changes to groundwater will cause a decrease in base flow to Jilliby Jilliby Creek;
- (iii) flows in Jilliby Jilliby Creek vary substantially with seasonal conditions. In dry times the flows are consistently below 1ML/d for long periods and for the time since 1972 the flows for 20% of the time have been below 0.74ML/d.

In relation to potential impacts from the zone of depressurisation there are three issues for the Commission:

- whether there is, in fact, a connection between baseflow to Jilliby Jilliby Creek and the zone of depressurisation;
- what the quantum of that impact might be; and
- when the impact might occur and its duration.

The mine will have a variable operational water requirement (approximately 20ML/y average). The Commission understands that this will be drawn directly from the catchment rather than from the GWSS. Presumably the Proponent has a water licence for the amount under the WSP.

The Commission has directed a number of questions to other parties concerning the above material. The Commission is also prepared to receive input from the Proponent on any aspect of this material. However, responses to the following specific questions would be appreciated:

1. If the duration of impact on baseflow to the streams depends in part on the effective sealing of fractures beneath the alluvium, what robust evidence does the Proponent have that would convince the Commission that there would not be a continuing impact?
2. In the context of the possible impacts of the zone of depressurisation on groundwater, can the Proponent indicate whether it accepts the drawdown figures indicated on Professor Pell's diagrams showing hypothetical bores at year 0 and year 20 of mining? If not, why not?
3. Does the Proponent accept that there will be an impact of the zone of depressurisation of the mine on the baseflow to the streams supplying the GWSS (a) during mining or (b) at any time in the future? If the answer to either (a) or (b) is positive, can the Proponent please provide details of the likely impact and when it might occur?
4. In relation to the operational requirement of 20ML/y, does the Proponent consider that it will be able to draw this water under licence from the catchment under severe drought conditions? If not, how does the Proponent propose to access water for the project under these conditions?

The Commission is inclined at this stage to recommend a nil impact on the water available to GWSS as a condition of consent. This will involve consideration of all the issues discussed above. It will also involve consideration of possible mechanisms to augment the supply at the Proponent's cost consistent with any impacts it cannot avoid.

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<sup>3</sup> Professor Pells was the Wyong Shire Council expert on water issues. The presentation at the public hearing was as a representative of the Australian Coal Alliance. The relevant slides from his presentation are included as Annexure 1.

The only possible solution to the risk of impacts on supply that the Commission can identify at this stage is to have the Proponent treat the mine water to an acceptable standard for return to the catchment rather than the currently proposed discharge of treated water to Wallarah Creek. The water for discharge to Wallarah Creek will be processed through a Reverse Osmosis plant and will already be required to meet the water quality guidelines applicable to that creek. Conceptually it should be possible to increase the level of treatment to meet any further requirements of raw water supply. Theoretically there should be 2.5ML/d available if required (i.e. more than enough to offset the predicted losses to GWWSS). The options would be to discharge the treated water to the impacted stream(s) or to discharge the water in close proximity to the weir. Does the Proponent have any views as to whether the return of treated water to the catchment would be feasible and whether either of the discharge options suggested could work? If not, what other options could be pursued?

## **2. Impacts on Jilliby Jilliby Creek and Little Jilliby Jilliby Creek**

The Department's Preliminary Assessment Report suggests that the subsidence impacts on these streams will be limited to 'negligible' impacts over 80% of the stream length and 'minor' over 20%. This is unenforceable and, although it has been used in some previous approvals, cannot be supported by the Commission in this case.

The Commission considers that applying a single classification of 'negligible impact' to the whole stream length would not be consistent with the predictions and compliance could not be achieved. However, the Commission is not prepared to relax the performance measure to 'minor impact' over the whole stream either, since this would allow an unacceptable level of impact without the need for action by the Proponent to prevent or repair avoidable damage.

What is required is a performance measure (or measures) that require the predictions not to be exceeded at all points along the streams and then require the Proponent to prevent adverse consequences (i.e. headcuts, bank erosion, etc.) in the areas of risk. In this context the Commission notes that changes in gradient as individual longwalls impact the stream will be much greater than the average change in gradient along the stream once subsidence stabilises.

For water quality impacts, the Commission considers that, given the highly variable nature of flows in the streams and the other non-mine related influences on water quality, a system of assessing mine-related impacts will need to be developed including contemporaneous sampling above and below areas of current mining impact.

The Commission is prepared to consider further submissions from the Proponent on these issues. The Commission recognises that with the mine progressing up-catchment, project-specific solutions may be achievable.

## **3 Flooding**

The Commission has four concerns:

- (i) that uncertainties associated with use of a yielding pillar mine design in the Project Area geology may mean that surface deformation is not as predicted (either in extent or timeframe). What flood studies have been done that incorporate potential variations in surface topography resulting from possible variations in pillar behaviour? What are the potential consequences compared to those predicted?
- (ii) While compensation, modifications, etc., are proposed for potential impacts on existing residences, etc., what is proposed for situations where there is increased risk of flooding on land that would have been suitable for development (e.g. subdivision)? How many properties are in this category (details please)?

- (iii) What proposals exist for assessment and compensation for impacts on enterprises such as the turf farm? In this context the Commission notes that impacts may be direct (i.e. loss of production) or indirect (e.g. loss of markets due to failure to supply).
- (iv) The Commission notes that there are some 15 roads and bridges that are predicted to have an increased risk of flooding from the project. Has the potential impact on emergency vehicle access been considered and, if so, can the Proponent supply details?

#### 4. Subsidence

The Commission has a number of residual concerns:

- (i) The yielding pillar approach in this mine design has not been attempted in this area previously. The Commission accepts that it is conceptually attractive as a means of achieving a relatively uniform topographical outcome while maximising resource recovery. However, the Commission wishes to understand the potential consequences if pillars do not behave as expected in either the short or long term. Relevant issues include:
  - Potential impacts on stream morphology and flow characteristics arising from changes in gradient greater or less than those predicted;
  - Potential impacts on built infrastructure; and
  - Timeframes for reaching surface stability.
- (ii) The expected period from initial impact on a feature or built infrastructure to final stability may be affected by the yielding pillar design. Can the Proponent provide estimates of this period of impact for the proposed mining method including the upper bounds.
- (iii) Buttonderry WMF. Council has advised this is valued at \$1.3bn and will be very difficult to repair/remediate if it is impacted by subsidence. The Commission considers that a nil/negligible impact performance measure may be appropriate combined with a pre-mining dilapidation report and appropriate monitoring thereafter. Does the Proponent wish to comment on this?

The Commission's report is due mid-May so written responses would be needed by 2 May 2014. Please call Mrs Paula Poon on (02) 9383 2101, if you have any questions in relation to this request.

Yours sincerely



Dr Neil Shepherd AM  
Chair, Wallarah 2 Coal Project Review

**From:** [Paula Poon](#)  
**To:** [garry.casement@wyong.nsw.gov.au](mailto:garry.casement@wyong.nsw.gov.au)  
**Subject:** Wallarah 2 Coal Project - Water supply issue  
**Date:** Wednesday, 16 April 2014 3:15:26 PM

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Hi Garry,

Following our discussion the other day, the PAC would like to meet with Council again (as the water supply authority) to discuss issue in relation to water supply.

One of the key issues raised by Council and the community is the risk of any loss of water from the GWWSS. The Commission considers that availability of water for the GWWSS is its highest priority issue to resolve in the review of the Wallarah 2 Coal Project application. One of the options is to consider a nil impact on the GWWSS as a condition of consent if the project were to be approved.

One possible solution to the risk of impacts on water supply is to have the Proponent treat the mine water to an acceptable standard for return to the catchment rather than the currently proposed discharge of treated water to Wallarah Creek. The current proposal is to treat the mine water through a Reverse Osmosis plant to meet the water quality guidelines applicable to Wallarah Creek before discharge to the creek. The option is to increase the treatment level to meet the raw water supply requirements and discharge the treated water to the impacted stream(s) or near the weir.

The Commission would like to discuss these issues with Council. The Commission is available on either Monday, 28 April (any time) or Tuesday, 29 April (between 12pm and 5pm) to meet in the PAC office in Sydney. Please let me know the best date and time that suit the Council.

Paula

22 April 2014

Mr David Stewart  
Director General  
Transport for NSW  
PO BOX K659  
HAYMARKET NSW 1240

Dear Mr Stewart,

**Wallahah 2 Coal Project**

The Commission is conducting a review of the proposed Wallarah 2 Coal Project. A copy of the terms of reference issued by the Minister for Planning and Infrastructure is attached for your information and reference.

The submission by Transport for NSW, dated 1 October 2013 to the then Department of Planning and Infrastructure, expressed concern about the proposed rail loop at the Toohey's site and stated the proposed 200m radius curves are below what is considered optimum for mitigating wheel squeal and that other measures may be needed. The Proponent's Residual Matters Report responded that all curves will have a minimum radius of 200m as this was found to be the minimum necessary to prevent wheel-squeal based on observations from a number of other mining projects and that the relevant RailCorp standard prescribes a minimum curve radius of 160m.

The Commission would like to receive any additional advice you may provide in response to the Proponent's claim that the proposed 200m radius will be acceptable.

The Commission's report is due in mid May so written response would be appreciated by COB, Friday, 2 May 2014. For any further enquiries please contact Mrs Paula Poon on (02) 9393 2101.

Yours sincerely



Dr Neil Shepherd AM  
Chair, Wallarah 2 Coal Project Review