**Stephen O'Donoghue - FW: Cobbora Coal - revised PPR**

**From:** Phil Towler <ptowler@emgamm.com>
**To:** Stephen O'Donoghue <Stephen.O'Donoghue@planning.nsw.gov.au>
**Date:** Monday, 9 September 2013 11:45
**Subject:** FW: Cobbora Coal - revised PPR

Steve

Responses to the NOW comments are provided below.

The NSW Office of Water advises the following key comments, and the detailed comments in Attachment A.

- Peak water demand has decreased from 4340ML/a in the initial Preferred Project Report (PPR) to 3930ML/a in the revised PPR. It is understood this is due to a decrease in predicted dust suppression requirements associated with a reduction in disturbed areas and more rapid mine development in the early years. This will reduce peak demand on water supply from the Cudgegong River and minimise the risk of inadequate entitlements in dry years.

Noted. See responses to Steve Perren's and Frans Kalf questions.

- Groundwater inflows into the mine workings and resultant drawdown over the mine life are described to be similar or less than predicted in the initial PPR. Differences are predicted to occur on an annual basis however these do not seem to be quantified.

The detailed groundwater model was not run for the revised mine plan. Rather, the analysis presented in Appendix E of the PAC Responses report considers whether impacts to groundwater are predicted to change significantly as a result of the mine plan revision (to address PAC recommendations). Alternatively, whether they are within the envelope predicted for the December 2012 mine plan (presented in the February 2013 PPR). It was found that the changes are expected to be within the previous envelope.

Annual groundwater inflows will be calculated based on the final detailed mine design. Section 3.11 of the PAC Responses Report commits CHC to the following. "The surface water management plan (operations) will provide updated detailed water management layouts that will supersede those in the PPR&RTS while the groundwater management plan (operations) will update detailed groundwater modelling results and provide a program for the periodic update of groundwater modelling through the life of the mine."

- A dewatering borefield is proposed to intercept groundwater before it flows into the mining areas to prevent its loss to evaporative processes. Details have not been provided in terms of the borefield's location, operation and impacts of this borefield in accordance with the requirements of the NSW Aquifer Interference Policy.

See discussion below.

- Development of the Aquatic Monitoring Strategy and appropriate triggers and contingency responses will be a key aspect to addressing the potential impacts to the surface water system.

Agreed.

- Licences may be required for the raw water dam.

See discussion below.

**Attachment A - Groundwater Assessment**

- To prevent evaporative losses of groundwater pit inflows a de-watering borefield is proposed. However the objective of the dewatering borefield, integration within the site water management system and water balance are not identified in the revised documents. A dewatering borefield if used to keep pit operations dry is likely to extend a greater drawdown influence and potentially result in longer flow paths for any contaminants that may leak from in-pit tailings emplacements. No details of the borefield's location, extraction rates, groundwater sources or impacts on neighbouring groundwater users or water sources in accordance with the NSW Aquifer Interference Policy or Water Management Act 2000 are provided. These details are requested to enable NSW Office of Water to assess the acceptability of the impacts and potential mitigation and management requirements.

A dewatering borefield may result in a slightly increased overall volume of groundwater being intercepted during the duration of the project. Any increase is likely to occur in the early stages of the project, and as the project progresses the volumes are likely to be similar to those that have already been modelled. Therefore, impacts will be similar to those already predicted.

The benefits of the dewatering borefield for on-site groundwater management are:

- more accurate metering of intercepted groundwater as bore headworks will be fitted with metres;
- minimising evaporation losses - losses will only occur once groundwater enters storage dams, not through evaporation as it seeps into the pit; and
- the water entering the storage dams will be cleaner and less saline than water pumped from sumps in the base of the pit.

The location and number of dewatering bores will be optimised by modelling prior to mining to ensure maximum efficiency. The optimisation of the borefield will allow details such as; bore design (depth, screen placement and diameter), location of bores, number of bores required, pumping rates, and the temporal succession of bore installation and decommissioning to be considered. For example, during initial stages dewatering bores will located within the mine pit area, and as mining approaches these bores will be decommissioned and newer bores will be installed. Key to designing the borefield is the mine plan and mining sequence, with a view to dewatering just marginally ahead of mining as it progresses. Identification of faults and zones of higher transmissivity within the mine area will be targeted for the location of dewatering bores.

It is likely that some groundwater will continue to seep into the pit even with a dewatering borefield, and pumping from the base of the pit will still be required. Therefore, in pit leakage of contaminants would not be really present a higher risk with the instillation of the dewatering borefield.

The aquifer interference policy requires that sufficient volumetric entitlements are held to account for water taken. Therefore aquifer access licence shares for any increased volume as a result of the borefield will be held prior to commencement of mining. CHC continue to purchasing available licences from the Gunnedah Oxley Basin water source. CHC have also registered their interest in obtaining aquifer access licence shares under the Controlled Allocation Order made in May 2013 under Section 65 of the Water Management Act 2000.

- Appendix B of the revised PPR indicates groundwater extraction via the proposed borefield is expected to compare favourably with the inflow volumes presented in the initial PPR. This statement requires further justification and relates to the requests in the previous point.

See responses above and below.

- A table detailing the revised annual groundwater inflows is requested with preference for revision of Table 6.3 presented in the Groundwater Assessment (January 2013). It is expected this may need to be explained in conjunction with operation of the proposed borefield. Confirmation of groundwater inflows into the final void post mining and at equilibrium is also requested.

A complete update of the groundwater modelling would be required to revise annual groundwater inflows. Work required to prepare inputs the model, modelling, checks, interpretation, report preparation (detailing all of the changes to support the information presented in the table) and reviews would take approximately two to three months. We believe that the groundwater assessment presented in the PPR and the confirmation results presented in the PAC Responses Report Appendix E provides sufficient information to determine if adequate management measures are proposed to minimise impacts and to determine if the groundwater impacts are acceptable in the wider project context. As noted above, the groundwater modelling will be updated based on the final detailed design as part of the groundwater management plan (operations). It is anticipated that approval conditions will require that this plan is completed prior to operations commencing.

- Other changes in the revised PPR include reconfiguration of the final saline void lake dimensions and surrounding landform. The worst case scenario final water level is similar to the previous design. The reduced freeboard (to 6 metres) from this revised design still holds considerable storage before overtopping. The final void in the southern extent of mining area B remains a regional groundwater sink.

Agree.

- A revised cross-sectional diagram of the final landform across mining area B is requested to illustrate the regional surface and groundwater features and revised final void geometry.

The regional surface and groundwater features will not be changed significantly. A cross-section of mining area B is presented in Figure 3.15 of the PAC Responses Report.

- The Office of Water is aware of a proposal to source groundwater via bores for construction purposes. If this proposal is to be implemented it is recommended detail be provided as part of the revised preferred project report on the number of bores, predicted demands, and an impact assessment completed in accordance with the NSW Aquifer Interference Policy.

*The PPR&RTS (February 2013) Section 7.2.6 (Construction water) provides the following information:*

***Issue***

*The DPI requests additional information regarding the proposal to source construction water from one or more dams on CHC land. Further information is requested on the volume required, water sources and relevant licences under water legislation. The DP&I requests clarification on the water supply during construction for dust suppression and road construction.*

***Response***

*The construction water demand will be determined during detailed design. However, a survey of licensed water storages in December 2012 determined current stored water reserve is 630 ML. As described in Section 7.6 of Appendix E, access licences for more than 2,500 ML/a are held by CHC (1,780 ML/a from the Lower Talbragar River Water Source and 1,024 ML/from the Gunnedah -Oxley Basin Murray Basin Groundwater Source). Together, these will provide sufficient water for construction.*

*And the following in Section 7.2.27 (Water Industry Competition Act):*

***Issue***

*Dubbo City Council comments that the construction village may require nomination of a 'water supplier of last resort' under the Water Industry Competition Act 2006. The need for a licence under the Act and, if required, the organisation that is nominated as the last resort water supplier should be nominated.*

***Response***

*The proposed construction village will be a temporary facility. The EA assumes that it will be supplied with water delivered by truck purchased from an appropriate water retailer (particularly for the road transport assessment). Alternative sources available to CHC would be either its already licensed allocations from the Cudgegong River or, possibly, a new bore near the village. None of these require approval under the Water Industry Competition Act, nor nomination of 'a retailer of last resort'.*

*However, if a new bore is required, a licence would be sought under the Part 5 of the Water Act 1912.*

*And the EA (September 2012) Section 3.13.6 (potable water) states:*

*Potable water will be sourced initially from a local town supply and trucked to site and the construction camp. The preferred long -term option, contingent on electricity supply, is to use a Class A potable water treatment plant to produce potable water from the clean water dam.*

In summary:

- the project as described in the EA and PPR&RTS does not include the construction of bores for sourcing construction water or seek their approval;
- water from groundwater bores is not required for construction;
- if detailed design indicates that use of water from groundwater bores is a desirable alternative to the current sources, then approval will be sought for the construction and use of these bores. If these bores are not approved, the sources described in the EA and PPR&RTS will be used.

Surface Water Assessment

- Section 3.11.3 refers to proposed clean water diversions around the Mine Infrastructure Area and Coal Handling and Preparation Plant. A map is requested detailing the location of these drains and proposed management measures to convey water into the creek system.

The exact locations and detailed design of the clean water diversions will be determined as part of final detailed design. Designs will be in accordance with relevant guidelines and standards. CHC will consult with government agencies to ensure the passage of clean water to the downstream waterways does not unduly impact waterways.

As previously noted, Section 3.11 of the PAC Responses Report commits CHC to updated detailed water management layouts as part of the surface water management plan (operations).

- It is recognised an additional refuge pool is predicted to be impacted by drawdown and another pool would be affected earlier than the previous proposal. The NSW Office of Water supports the proposal to develop an Aquatic Monitoring Strategy and the implementation of suitable contingency measures. A comprehensive groundwater monitoring plan will provide valuable data to inform potential impacts in the surface water system and support triggers for implementation of contingency and compensatory protocols.

Noted.

Water Licensing

- Point 4 in Section 3 of Appendix D indicates Clean Water Dam 10 is to have a capacity of 357ML and this is to be authorised under the harvestable rights provisions. This is acceptable on the basis the combined volume of the harvestable rights dams are within the Maximum Harvestable Rights Dam Capacity (MHRDC) for the property and it is on a first or second order stream.

Noted.

- The NSW Office of Water has advised previously of the need for the raw water dam to be considered for licensing based on consistency with the MHRDC for the property or additional licensed entitlement. Based on the current proposal it appears the capacity of the raw water dam will significantly exceed the MHRDC. The proponent will therefore be required to ensure adequate entitlement is held within the Lower Talbragar water source of the Macquarie-Bogan Unregulated and Alluvial Water Sharing Plan to account for the total capacity of the raw water dam.

CHC holds 1,737 unit shares of entitlement (WAL 34440) in the Lower Talbragar water source of the Macquarie-Bogan Unregulated and Alluvial Water Sharing Plan. The two bywash dams nominated on the works approval for capture of licensed surface runoff entitlement are Woolandra West dam (1,470 ML) at the headwaters of Blackheath Creek, and Woolandra East dam (548 ML) at the headwaters of a tributary of Tucklan Creek. CHC estimates 1,265 unit shares of entitlement is associated with Woolandra West dam, which is planned for decommissioning to offset impacts on surface water resulting from mining area development.

NOW has advised that a portion of the Lower Talbragar entitlement must be held to offset river losses due to groundwater drawdown, and enhanced recharge to spoil. The detailed groundwater model was not run for the revised mine plan, so a worst case can be derived from the PPR&RTS groundwater modelling which determined the combined loss to peak at 799 ML/year. NOW has advised a dam reliability factor for the 'Woolandra' area of 1.17, meaning 935 ML of relinquished Woolandra West dam storage is sufficient to offset the combined impacts.

CHC intends to use the remaining 535 ML of relinquished Woolandra West dam storage to offset establishment of the raw water dam. CHC will consult with NOW to determine the adequacy of this offset, with respect to the proposed 1,000 ML capacity, the 'turkeys nest' nature of the dam, and the primary water source location at the Cudgegong River and not at the Talbragar River. The limited impact in the Talbragar River water source is supported by the mine water balance (Water Balance and Surface Water Management System – addendums (18 March 2013), which determined runoff capture by the raw water dam to range between 1 ML/year in a 10% dry year and 44 ML/year in a 10% wet year.

- Point 7 in Section 3 of Appendix D refers to the temporal constraint of accounting for the impact to baseflows in the Talbragar River. The proponent is advised the maximum of the predicted water take is to be licensed from the commencement of the activity in accordance with the NSW Aquifer Interference Policy.

As noted above, the water balance will be updated prior to commencement of the activity based on updated groundwater modelling. The adequacy or the need for any additional licences (unlikely based on the predicted decrease in average water demand) will be determined prior to the start of operations.

Best regards

Phil

Philip Towler
Associate Director

*Sydney, Newcastle and Brisbane.*

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**From:** Stephen O'Donoghue [mailto:Stephen.O'Donoghue@planning.nsw.gov.au]
**Sent:** Monday, 2 September 2013 2:22 PM
**To:** Phil Towler; frkalf@aol.com; sperrens@evanspeck.com
**Cc:** Matthew Riley
**Subject:** Fwd: Cobbora Coal - revised PPR

Phil

See email below with comments from DPI - in particular note comments from NOW and request for some additional information. Can you get back to me on this request and ability to provide a timely response. Steve/ Frans some of this may overlap with your concerns regarding extraction of water ahead of mining from dewatering borefield activity. As indicated from Greg, a formal signed response to follow.

Thanks

Steve

*Stephen O'Donoghue*
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*Mining and Industry Projects*
*NSW Department of Planning & Infrastructure*
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NSW GOVERNMENT Planning & Infrastructure

>>> <greg.paine@industry.nsw.gov.au> 2/09/2013 13:19 >>>

Steve.

Advice of Department of Primary Industries below.

Will follow under formal DPI letterhead shortly.

Greg Paine
Business Services

Tel: 9338 6778

Comment by NSW Office of Water
The NSW Office of Water advises the following key comments, and the detailed comments in Attachment A.

- Peak water demand has decreased from 4340ML/a in the initial Preferred Project Report (PPR) to 3930ML/a in the revised PPR. It is understood this is due to a decrease in predicted dust suppression requirements associated with a reduction in disturbed areas and more rapid mine development in the early years. This will reduce peak demand on water supply from the Cudgegong River and minimise the risk of inadequate entitlements in dry years.

- Groundwater inflows into the mine workings and resultant drawdown over the mine life are described to be similar or less than predicted in the initial PPR. Differences are predicted to occur on an annual basis however these do not seem to be quantified.

- A dewatering borefield is proposed to intercept groundwater before it flows into the mining areas to prevent its loss to evaporative processes. Details have not been provided in terms of the borefield's location, operation and impacts of this borefield in accordance with the requirements of the NSW Aquifer Interference Policy.

- Development of the Aquatic Monitoring Strategy and appropriate triggers and contingency responses will be a key aspect to addressing the potential impacts to the surface water system.

- Licences may be required for the raw water dam.

For further information please contact Tim Baker, Senior Water Regulation Officer (Dubbo office) on 6841 7403, or at: tim.baker@water.nsw.gov.au.

Comment by Fisheries NSW
Fisheries NSW advise no further comment.

For further information please contact David Ward, Fisheries Conservation Manager (Tamworth office) on 6763 1255, or at: david.ward@industry.nsw.gov.au.

Comment by Crown Lands
Crown Lands advise no further comment, with the proponent being aware of Crown Lands requirements and conditions.

For further information please contact Rebecca Johnson, Coordinator Client Services (Newcastle office) on 4920 5040, or: rebecca.johnson@lands.nsw.gov.au.

Comment by Office of Agricultural Sustainability & Food Security
In accordance with procedures for mining applications that affect agricultural land, the Office of Agricultural Sustainability & Food Security has responded direct to your Department by letter dated 30 August 2013.

**Attachment A**

**Cobbora Coal Project (MP 10_0001)**
**Revised Preferred Project Report (PPR)**

**Additional comment by NSW Office of Water**

**Groundwater Assessment**

- To prevent evaporative losses of groundwater pit inflows a de-watering borefield is proposed. However the objective of the dewatering borefield, integration within the site water management system and water balance are not identified in the revised documents. A dewatering borefield if used to keep pit operations dry is likely to extend a greater drawdown influence and potentially result in longer flow paths for any contaminants that may leak from in-pit tailings emplacements. No details of the borefield's location, extraction rates, groundwater sources or impacts on neighbouring groundwater users or water sources in accordance with the NSW Aquifer Interference Policy or *Water Management Act 2000* are provided. These details are requested to enable NSW Office of Water to assess the acceptability of the impacts and potential mitigation and management requirements.
- Appendix B of the revised PPR indicates groundwater extraction via the proposed borefield is expected to compare favourably with the inflow volumes presented in the initial PPR. This statement requires further justification and relates to the requests in the previous point.
- A table detailing the revised annual groundwater inflows is requested with preference for revision of Table 6.3 presented in the Groundwater Assessment (January 2013). It is expected this may need to be explained in conjunction with operation of the proposed borefield. Confirmation of groundwater inflows into the final void post mining and at equilibrium is also requested.
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- It is recognised an additional refuge pool is predicted to be impacted by drawdown and another pool would be affected earlier than the previous proposal. The NSW Office of Water supports the proposal to develop an Aquatic Monitoring Strategy and the implementation of suitable contingency measures. A comprehensive groundwater monitoring plan will provide valuable data to inform potential impacts in the surface water system and support triggers for implementation of contingency and compensatory protocols.

**Water Licensing**

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- The NSW Office of Water has advised previously of the need for the raw water dam to be considered for licensing based on consistency with the MHRDC for the property or additional licensed entitlement. Based on the current proposal it appears the capacity of the raw water dam will significantly exceed the MHRDC. The proponent will therefore be required to ensure adequate entitlement is held within the Lower Talbragar water source of the *Macquarie-Bogan Unregulated and Alluvial Water Sharing Plan* to account for the total capacity of the raw water dam.
- Point 7 in Section 3 of Appendix D refers to the temporal constraint of accounting for the impact to baseflows in the Talbragar River. The proponent is advised the maximum of the predicted water take is to be licensed from the commencement of the activity in accordance with the NSW Aquifer Interference Policy.

**End Attachment A**