



## **Review of the Environmental Assessment for Tarrawonga Mine Extension Project**

### **1. Introduction**

Namoi CMA is primarily interested in major developments such as the Tarrawonga Mine Extension Project from the perspective of Catchment impacts and benefits especially in the areas of biodiversity protection, management of riparian areas, sustainability of agricultural soils, maintenance of long term productive land use and enhancement of the Catchment's social and economic values.

Namoi CMA advised the former Department of Planning (DoP) on the 4<sup>th</sup> April 2011 of its environmental assessment requirements for inclusion and consideration in the DGRs for the Environmental Assessment (EA). Additionally, we also provided comment to the Department of Planning and Infrastructure (DoPI) on the 30<sup>th</sup> November 2011 on the adequacy of the EA for public exhibition.

Namoi CMA has now examined the exhibition EA and provides the following specific comments.

### **1. Project Description**

Namoi CMA had previously expressed concern regarding the comprehensive nature of the development application. Namoi CMA is satisfied that a new development consent will be issued (if approved) that will override past development consents, cover the whole project site and will be comprehensive in nature.

Namoi CMA is aware that the general arrangement of the project results in open cut mining around Goonbri Creek which is part of the Liverpool Plains Floodplain and overlies the Gunnedah alluvial groundwater formations. The NSW Government has stated on a number of occasions that mining and exploration will not be permitted on the Liverpool Plains floodplain or so that it intersects alluvial aquifers, at least until the Namoi Water Study is released. Namoi CMA obviously supports the NSW Government's prohibition position on exploration and mining on the alluvial floodplains.

Namoi CMA is also aware that the project will result in a number of residual impacts including the following:

- The permanent removal and re-establishment of 3km of Goonbri Creek,
- The permanent installation of a low permeability groundwater barrier,

- The construction of a significant permanent flood bund to prevent floodwaters entering the final void, and
- A significant final void and a number of out of pit emplacements.

Namoi CMA is concerned about the long term impacts of these permanent features on the surrounding landscapes and on the Catchment and recommends that they be minimised as much as possible especially in relation to the final void and the out of pit emplacements.

## **2. Consultation**

Namoi CMA appreciates the level of consultation provided by the Tarrawonga Coal Pty Ltd (Proponent) and Resource Strategies (Consultants). A number of meetings were held by the proponents and their consultants to detail the landscape and Catchment implications of the project.

## **3. Environmental Assessment**

### **3.1 Land Resources and Agricultural Production**

Namoi CMA has examined the relevant sections in the EA, Appendix I Agricultural Resources and Productivity Assessment and Attachment B Agricultural Resource Assessment (MacKenzie 2011).

#### **3.1.1 Existing Environment**

Based on the examination of the above documents, Namoi CMA is mostly satisfied with the introductory information and descriptions of the existing pre mining landforms, land uses, soils, Rural Land Capability, Agricultural Suitability, Agricultural activities and bushfire regimes. The EA would have benefited by the inclusion of area amounts for both Rural Land Capability and Agricultural Suitability, along with Agricultural Suitability for MLA3 (Leard State Forest).

#### **3.1.2 Potential Impacts**

Namoi CMA understands that there will be significant landform changes post mining and it is understood that final elevations for the out of pit emplacements will be similar to current landforms. It is also understood that there will a loss of 125ha of Class 4 Agricultural Suitable land post mining, while 210ha of Class 3 land will be replaced and rehabilitated. Namoi CMA accepts the loss of this small amount of less productive land.

#### **3.1.3 Mitigation Measures, Management and Monitoring**

Namoi CMA is satisfied with the proposed mitigation measures, management and monitoring for the land resources and agricultural production. Namoi CMA requests that it be consulted during the production of the Water Management Plan – Sediment and Erosion control.

## **3.2 Groundwater**

Namoi CMA does understand that there will be long term residual impacts on the alluvial groundwater systems surrounding Goonbri Creek. Also that mitigation measures including a low permeable barrier will be installed and systems will be put in place to monitor groundwater movements and quality.

## **3.3 Surface Water**

Namoi CMA has examined the relevant sections in the EA and Appendix B Surface Water Assessment.

### **3.3.1 Existing Environment**

Namoi CMA is satisfied with the descriptions and discussion on surface water data, regional and local hydrology, baseline water quality and flooding assessment.

### **3.3.2 Potential Impacts**

Namoi CMA understands that there will be a loss of catchment to the Namoi River of 155ha (final void catchment). It is also understood that this area equates to 0.004% of the Namoi Catchment.

It is also understood that 3km of Goonbri Creek will be permanently removed and re-established to the east of the permanent flood bund and final void.

Namoi CMA is satisfied with the discussion on operational water requirements, water modelling and water balance, and the Goonbri Creek realignment.

### **3.3.3 Mitigation Measures, Management and Monitoring**

Namoi CMA is satisfied with the proposed mitigation measures, management and monitoring for surface water management. Namoi CMA requests that it be consulted during the production of the Goonbri Creek Management Plan and the review of the existing Water Management Plan.

Namoi CMA is satisfied with the post mining surface water management and the proposed surface water monitoring systems.

## **3.4 Flora**

Namoi CMA has examined the flora section in the EA, Appendix F Flora Assessment and Attachment C Offset Strategy.

### **3.4.1 Native Vegetation Act 2003 (NVAct 2003)**

Namoi CMA realises that under 75U of the EP&A Act 1979 that a number of authorisations are not required for an approved project and Sub-section (e) refers to an authorisation referred to in Section 12 of the NVAct 2003. Furthermore, Namoi CMA realises that project clearing would be 'excluded clearing' under Section 25 (f) of the NVAct 2003.

However, under the NVAct 2003, broad-scale clearing is prohibited for all landholders in any and all areas of land classified as, or considered to be representing an Endangered Ecological Community (EEC), including Box Gum Woodlands.

Offsets for broad-scale clearing are not considered to pass the “improve or maintain test” under the NVAct 2003 and broad-scale clearing is not permitted, even under a Property Vegetation Plan. Unless the Minister's protocols are evoked for areas designated as being of 'Low Condition', (which requires an additional assessment, plus the requirement of an additional offset of land on top of their calculated offset (ie. 10:1 etc).

The fact that areas of EEC and CEEC vegetation is to be broad-scale cleared for this project seems to create equity issues for private landholders seeking to clear native vegetation and manage their land in competition with mining, and for the NSW Government with significant inconsistencies between both policies and legislation.

Concern	Recommendation
Namoi CMA is concerned with the extent of clearing resulting from this project	The proponent is urged to avoid clearing and to minimise and mitigate clearing where possible.

#### 3.4.2 Existing Environment

Namoi CMA is satisfied with the survey methods, descriptions and discussion on the existing vegetation communities, the assessment of condition, determination of threatened ecological communities and assessment of regionally significant vegetation and corridors. Namoi CMA recommends that condition assessments be made against biometric benchmarks for the various vegetation communities.

#### 3.4.3 Potential impacts

Namoi CMA understands that 397ha of existing native vegetation will be progressively cleared and of this 145ha is within Leard State Forest. Also included in this area are 13 ha of Box Gum Woodland EEC.

Furthermore, Namoi CMA understands that 15ha of potentially groundwater dependant Bracteate Honeymyrtle low riparian forest will be removed. Namoi CMA is also satisfied with the explanation provided on the cumulative impacts of the vegetation clearance.

#### 3.4.4 Offset Strategy

It is noted that the Biodiversity Offset Strategy for the Tarrawonga Coal Project has been developed in consideration of a number of State and Federal Government policies. Namoi CMA supports the biodiversity policies developed by both the NSW State and Federal Government.

However, Namoi CMA has recently published the ‘Namoi CMA Biodiversity Offset Policy (2011)’ for the Namoi Catchment. The policy highlights some of the deficiencies that are contained with the current NSW State and Federal

Government's approaches to biodiversity offsets. The current Government approaches have significant implications on Namoi CMA's ability to meet the biodiversity targets under its Catchment Action Plan (2010-2020) for the following reasons:

- **Insufficient Gain** – the amount of land apportioned for offset to compensate for loss of native vegetation is insufficient. Simply setting aside an area that already exists still results in net loss of vegetation and can result in critical vegetation extent thresholds being crossed. Similarly, gain cannot be achieved from protection of vegetation that is already well protected high value habitat. An improvement in the condition of pre-existing vegetation should not be considered an adequate offset for loss of vegetation extent.
- **Equivalence** - even when the same vegetation types are replanted or regenerated as part of an offset, planted or restored vegetation is never as biodiversity rich as natural vegetation communities. Thus avoiding loss of native vegetation communities needs to be the top priority, with assisted regeneration the next best option.
- **Time Lags** - timeframes for biodiversity increments to occur in assisted regeneration or new plantings are lengthy. Furthermore, many offsets are only short term in tenure. If multiple developments are occurring, cumulative impacts may result in offset areas subsequently being cleared, again resulting in net loss of native vegetation extent and biodiversity. Offsets need to be secured in perpetuity.

Namoi CMA understands that the property "Willeroi" which is located 20km north-east of Tarrawonga Coal Project is to be used to offset the proposed 397ha of clearing at the project site. "Willeroi" occupies an area of 1660ha of which 1616ha will be used for offsetting purposes. However, the 1616ha consists of existing native vegetation which is currently managed under various grazing and forestry regimes, and already has a high level of protection under various State and Federal legislation.

Tarrawonga Coal Pty Ltd only proposes to change the conservation status and management regime of the 1616ha. These changes will eventually lead to improved condition of the offset area. However, as there still will be 397ha of the project site cleared, there still will be a net loss of mature native vegetation from the Catchment.

It is believed that the clearing at the project site maybe offset through woodland rehabilitation once mining is complete however the details of the woodland rehabilitation is not well detailed in section 5 in the EA on Rehabilitation and Landscape Management.

<b>Concern</b>	<b>Recommendation</b>
That there will be a net loss of mature native vegetation from the Namoi Catchment.	The proponent is required to provide greater detail and specifications of the offset strategy for the project site for the loss of 397ha of native vegetation.

Also, Namoi CMA understands that 8 vegetation communities are found on “Willeroi” including 4 out of the 5 found on the Tarrawonga project site. Of the 4 to be cleared on “Tarrawonga”, the clearing will be adequately offset on “Willeroi” with offset ratios ranging from 1.8 to 16 times. However, the 5<sup>th</sup> community to be cleared, 45ha of Pilliga Box – Poplar Box – White Cypress Pine Grassy Open Woodland will not be adequately compensated with an equivalent mature vegetation community.

<b>Concern</b>	<b>Recommendation</b>
That the 45ha of Pilliga Box – Poplar Box – White Cypress Pine Grassy Open Woodland will not be adequately compensated	The proponent is required to offset and compensate for the loss of 45ha of Pilliga Box – Poplar Box – White Cypress Pine Grassy Open Woodland through a revegetation program with an appropriate offset ratio.

Also Namoi CMA is concerned that, within the Catchment, the White Box – White Cypress Pine Grassy Woodland (Box Gum EEC/CEEC) has been 83% cleared in the past and is now over a critical resilience threshold. Therefore, any proposed clearing of this vegetation community should be avoided. The project proposes to clear 13ha of this community and to offset it by conserving 216ha on “Willeroi”, most of which is Derived Native Grassland (192ha).

<b>Concern</b>	<b>Recommendation</b>
That the White Box – White Cypress Pine Grassy Woodland is in adequately compensated	The proponent is required to offset and compensate for the loss of 13ha of White Box – White Cypress Pine Grassy Woodland through an assisted regeneration program within the area of Derived Native Grassland on “Willeroi”.

Namoi CMA also understands that there are ecological differences in the vegetation compositions between the 4 vegetation communities found on the offset area and the same 4 found in the project area. Namoi CMA has assessed the comparative analysis undertaken in Appendix F and we accept the conclusion ‘that the vegetation communities of the proposed “Willeroi” offset are acceptable matches for the Tarrawonga Coal Project area’.

Other than the above concerns, Namoi CMA is satisfied with “Willeroi” as a proposed offset area, the mapped vegetation communities, the condition assessments, the proposed ecological gains, the planned security, management proposals and the planned monitoring systems. Namoi CMA requests that it be consulted during the production of the Biodiversity Offset Strategy.

#### 3.4.5 Mitigation Measures, Management and Monitoring

Namoi CMA is satisfied with the proposed mitigation measures, management and monitoring for flora management. Namoi CMA requests that it be consulted during the production of the Biodiversity Management Plan.

### 3.5 Fauna

Whilst detailed comment on fauna impacts and mitigation measures will be made by the NSW Office of Environment and Heritage, Namoi CMA knows that there is a strong link between sustainable fauna populations and extent of vegetation communities. This link is reflected in Namoi CMA's Catchment Action Plan targets for terrestrial biodiversity.

Namoi CMA is satisfied with the proposed mitigation measures, management and monitoring for fauna management including the preparation and implementation of a Biodiversity Management Plan. It is understood that the plan will include strategies for land clearing, salvaging of habitat features, rehabilitation of Goonbri Creek, a nest box program, enhancement of farm dams and feral animal control.

### 3.6 Aboriginal Heritage

Namoi CMA considers that the aboriginal heritage survey and field assessment methodologies to be comprehensive, appropriate and compliant with relevant legislation and codes of practice.

The proponent proposes to review the existing Aboriginal Heritage Management Plan (AHMP). Namoi CMA recommends that it be consulted during the review of the AHMP, especially with regard to recording and protection of aboriginal heritage.

## 4.0 Rehabilitation and Landscape Management

Namoi CMA has examined the above section in the EA, Appendix I and attachment B especially with regard to landforms, rehabilitation, soil management, soil balance, revegetation and soil conservation. Namoi CMA places a great deal of importance on the proposals for mine rehabilitation.

### 4.1 Rehabilitation of the Project

Namoi CMA understands that 7 areas within the project site will be subject to rehabilitation and revegetation during and post mining operations. Also that 752ha will be rehabilitated to native woodland/forest and 210ha rehabilitated to Class 3 agricultural suitability land. The following comments are provided in relation to the 7 areas to be rehabilitated.

Area	Comment
Northern Emplacement and Open Cut Infill areas	<p>Namoi CMA is satisfied with the proposed rehabilitation and long term woodland/forest land use for the northern emplacement and for some of the open cut infill areas.</p> <p>Namoi CMA recommends that the emplacement and infill areas have lower and varied slope batters and lengths. Subsoil must be replaced prior to applying 20cm of topsoil.</p> <p>Namoi CMA believes that the open cut in fill areas would achieve better re-use and would be easier to rehabilitate and manage through one long slope versus a number of terraces.</p>

	Namoi CMA is satisfied with the long term land use of grazing for some of the open cut infill areas.
Southern emplacement	Namoi CMA is satisfied with the proposed rehabilitation and long term woodland/forest land use for the southern emplacement area. Namoi CMA recommends that the emplacement areas have lower and varied slope batters and lengths. Subsoil must be replaced prior to applying 20cm of topsoil.
Final void areas	Namoi CMA understands that the final void area will have a catchment area of 155ha and with partial fill to approximately 240 to 260m AHD which will be approximately 50m below natural surface. The void will also have batters on the eastern side of 60°. Namoi CMA recommends that the void to be backfilled to approximately 250m AHD and the eastern batter lowered to a maximum of 33°.
Permanent Goonbri Creek Alignment	Namoi CMA is satisfied with the proposed alignment and rehabilitation of Goonbri Creek. Namoi CMA requests that it be consulted during the development of the Goonbri Creek Management Plan.
Goonbri Creek enhancement area	Namoi CMA is satisfied with the proposed Goonbri Creek enhancement plan. Namoi CMA requests that it be consulted during the development of the Goonbri Creek Management Plan.
Water Management Infrastructure	Namoi CMA is satisfied with the proposals for rehabilitation of the water management infrastructure.
Mine Facilities area	Namoi CMA is satisfied with the proposals for rehabilitation of the mine facilities area.

#### 4.2 General Rehabilitation Practices and Measures

It is noted that in the EA, Appendix I and attachment B, information is provided on land resources, water resources, land capability, agricultural suitability and agricultural productivity. The information is provided for the project site, buffer areas and the project biodiversity offset area.

The EA along with Appendix I and attachment B provides good background information along with a number of maps, however there are no area figures provided for the pre mining soil mapping, land capability and agricultural suitability. Furthermore, there are no post mining land capability and agricultural suitability maps and associated areas.

Provided in the EA and Appendix I is a conceptual map on the proposed agricultural enterprises for the project site post mining, again with little and confusing



information on what areas will be returned to agricultural and forestry land uses. The proponent prefers to leave the post mining detail to the yet to be developed post approval Rehabilitation Management Plan, Water Management Plan and the Biodiversity Management Plan.

It is also noted that some information is provided on soil reserves, soil balance and soil replacement. Without comprehensive information included in the EA and associated documents it not possible to reconcile whether there will be enough suitable topsoil available to achieve the final land uses.

Concern	Recommendation
That comprehensive and complete information for reconciling and reviewing the proposed rehabilitation is lacking	The proponent to provide additional maps and area figures to enable reconciling and reviewing the proposed rehabilitation for Tarrawonga Coal mine.

## 5.0 Planning Framework and Project Justification

Namoi CMA has read this section in the EA and examined sections that are pertinent to Namoi CMA.

Namoi CMA has three documents which serve to guide developments and activities, including mining, in the Catchment:

- Namoi Catchment Action Plan 2010-20 (Namoi CAP).
- Extractive Industries Policy (NCMA EIP 2009) for the Namoi Catchment.
- Biodiversity Offsets Policy (BOP 2011).

It is noted in the EA that reference is made to the Namoi CAP 2007; however this CAP has been reviewed and the 2010-20 CAP is currently awaiting Ministerial approval.

Namoi CMA has read section 6.6 in the EA and is satisfied with the proponent's recognition of the CAP and the catchment targets and their proposals to address and contribute towards achieving the relevant targets in the CAP.

Furthermore, Namoi CMA is satisfied with the proponent's addressing of the Namoi CMA Extractive Industries Policy.

For comments regarding the Namoi CMA's Biodiversity Policy see section 3.4 above.

Report Date: 27th February 2012  
Namoi Catchment Management Authority