



Office of
Environment
& Heritage

Your reference: SSD 5170
Our reference: DOC13/49784; FIL12/12724
Contact: Robert Gibson, 4908 6851

Mr Matthew Sprott
Planning Officer - Mining Projects
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Sprott

**RE: BENGALLA MINE CONTINUATION PROJECT (SSD 5170) – ASSESSMENT AND
RECOMMENDED CONDITIONS OF APPROVAL**

I refer to your email dated 30 August 2013 seeking comment and recommended conditions of approval for the proposed Bengalla Mine Continuation Project, which is a State Significant Development (SSD) under Part 4 of the *Environmental Planning and Assessment Act 1979*.

The Office of Environment and Heritage (OEH) has reviewed the Environmental Impact Statement (EIS) for the proposed development with regards to Aboriginal cultural heritage and threatened biodiversity. OEH has identified some issues of Aboriginal cultural heritage in the project area and has also identified errors and inconsistencies in details provided in the 'Aboriginal Archaeology and Cultural Heritage Impact assessment' (Appendix M) of the EIS.

OEH understands that the proponent is considering offsetting the impact of the proposed development on biodiversity primarily by paying into the Hunter Offset Fund in accordance with the Upper Hunter Strategic Assessment. OEH has reviewed the assessment in this context. These matters are discussed in **Attachment 1**.

If you require any further information regarding this matter please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4908 6851.

Yours sincerely

30 OCT 2013

RICHARD BATH
A/Regional Manager, Hunter Central Coast
Regional Operations

Enclosure: Attachment 1

ATTACHMENT 1

OEH REVIEW OF THE PROPOSED CONTINUATION OF BENGALLA MINE (SSD 5170)

The Office of Environment and Heritage (OEH) has been requested to provide comment on Aboriginal cultural heritage and threatened biodiversity matters in relation to the proposed project to extend the mine life and footprint of the Bengalla Mine at Muswellbrook. The modification involves expanding existing open cut mining operations to the west of the current open pit over a disturbance footprint of about 950 hectares (ha). OEH has reviewed the information provided in the Environmental Impact Statement (EIS) titled 'Continuation of Bengalla Mine: Environmental Impact Statement: September 2013' prepared by Hansen Bailey environmental consultants, with particular reference to Appendix M 'Aboriginal Archaeology and Cultural heritage Impact assessment' and Appendix O 'Ecological Impact Assessment'. OEH's comments are provided below:

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

OEH has reviewed the Aboriginal Archaeology and Cultural Heritage Impact Assessment (Appendix M of the EIS) for the Continuation of Bengalla Mine Project and has identified a number of issues with this assessment. OEH notes that archaeological assessments by multiple consultants over the Bengalla Mine Lease Area (MLA) have identified the entire Bengalla MLA as being of moderate to high scientific and cultural significance. For instance the results of investigations conducted by ERM (2008) under Aboriginal Heritage Impact Permit (AHIP) #2621 confirm the significance of the archaeological signature of the Bengalla MLA. As noted on Page 16 of that report most of the artefacts found at the site "*are not commonly recorded in camp scatters along the creek*" (ERM 2008). This study confirmed White's (nee Rich's) conclusions that quarry site complex B10 (AHIMS 37-2-0579) represents a major silcrete extraction location and possible raw material source for the surrounding region. (White 1998). OEH has significant concerns regarding the assessment of, and management proposals for, Aboriginal Heritage Information Management System (AHIMS) quarry site complex B10 (AHIMS 37-2-0579). OEH considers that the assessment has not accurately quantified the known nature and historical assessments of this site complex nor adequately identified its potential scientific significance. OEH considers that, based on historical correspondence and consultation with the local Aboriginal community that the cultural significance of AHIMS 37-2-0579 has not been adequately identified within the EIS. OEH notes that due to the significance of this site complex it has historically been identified as warranting full protection of all remaining areas and as such was specifically excluded from further impact under AHIP #2621. The exclusion zones identified in AHIP #2621 constituted both the extant northern and southern section of the site and were clearly identified to Bengalla in a letter by OEH, dated 11 October 2007, to Mr. Jeff Torkington (Project Development Manager Bengalla Mine). That letter clearly identified those areas OEH had excluded from impact. The variation to AHIP #2621 that accompanied the letter contained text and maps (provided in Attachment 1 to that letter) identifying the areas that should not be impacted. The decision to vary the AHIP to allow partial impact was largely based on the fact that the section of the site applied for had been subject to previous impacts and therefore overall damage to the site was minimised. OEH considers that those sections of AHIMS 37-2-0579 identified as 'Exclusion Zones' in Attachment #1 to the varied AHIP #2621 should remain undisturbed for the life of the Bengalla mine project.

OEH is currently undertaking investigations into some recent works which are associated with quarry site complex B10 (AHIMS 37-2-0579). Until such time as these investigations are complete the entire northern extent of AHIMS 37-2-0579 must be considered as possible evidence and remain in its current state.

OEH provides examples of further inconsistencies and apparent errors in the Aboriginal cultural heritage assessment in Appendix M of the EIS which are summarised below:

Key Aboriginal cultural heritage issues

1. Executive Summary (p. 1) – *“High significance was attributed to the southern section of B10 quarry (37-2-0579)”*

OEH notes the arbitrary distinction between the northern and southern sections of this site are invalid. They are based on the fact that recent activity by Bengalla mine has destroyed a large and significant section of the site. AHIMS 37-2-0579 should continue to be treated as one unit regardless of the previous impacts by Bengalla mine. A variation to AHIP #2621 discussed in a letter issued by OEH to Bengalla Mine signed on 11 October 2007, and accompanying documentation, clearly identified a discrete area of this site which was authorised for impact. Conditions of the AHIP clearly identified that no other part of the site (north or south) was permitted for impact. The proposed impacts authorised by that AHIP were consistent with those originally identified by White (1993) as proposed for the mine. Various references within the EIS to the results of salvage and investigations in the northern section are questioned. No impact to any surface or subsurface object in the northern section of AHIMS 37-2-0579 has been authorised and OEH has no record of any salvage excavations in that area. Furthermore reports from all authorised salvage projects within the middle section of the site categorically state that they have not categorised the site nature. White (1998) clearly states that the two discrete locations tested are unlikely to be representative of the entire site and Neuweiger (ERM 2008) clearly notes that based on soil consistency the excavations conducted at the site under authority of AHIP #2621 were unlikely to have accurately identified the extent and nature of Aboriginal objects within the salvage areas. There is a high potential for subsurface and surface material of high scientific value to remain throughout the entire area of the site (all sections).

The result of consultation with the local Aboriginal community, for previous approvals, has identified the site as being of high cultural sensitivity. Based on the level of concern raised by the Aboriginal community, and the potential scientific value of the site, the original AHIP #2621 excluded the entire site from impact. It was only as a result of extensive consultation with the Aboriginal community and a commitment by Bengalla Mine to preserve all other areas within the site, as originally mapped by Beth White (nee Rich), that OEH determined in favour of a variation that authorised limited and specific impacts to the centre portion of the site which were consistent with those originally identified as likely to occur as a result of the project (Rich 1993).

Given the high scientific and cultural value of AHIMS 37-2-0579 and the results of previous discussions and agreements with Bengalla mine regarding the preservation of these areas, OEH recommends that the northern and southern sections of this site remain undisturbed.

2. Executive Summary (p. 1) – *“The northern part of quarry site (37-2-0579) where no Aboriginal heritage objects have been previously identified”*

- The entire site was mapped by Beth Rich as being sensitive. Only small portions of the central section have been subject to subsurface investigation. Surface surveys have been hampered by low visibility. This is confirmed in comments raised by Registered Aboriginal Parties (RAP's) in response to this EIS. Both the Northern and Southern sections of the site were identified as 'no impact areas' for the life of the mine under the process for AHIP #2621 variation.
- A number of Aboriginal objects have been identified as present on the surface of the northern section of AHIMS 37-2-0579. OEH notes that these were identified during surveys when ground surface visibility was quite low and the actual density of surface objects is most likely heavily underrepresented in the survey results. Currently no understanding of the nature of subsurface deposits in this area exists.

3. Executive Summary (p. 1) – *“The northern portion of the ridgeline originally mapped by Rich (1993) as B10 quarry (37-2-0579) will be impacted by the Project. This portion of B10 has been assessed as of low significance due to a lack of identified surface archaeology in the area...no mitigation is proposed for this area”*

- This area was assessed by Beth White (White 1993) as part of a significant site complex.

- Recent surface surveys have been hampered by low visibility.
- Aboriginal community concerns have identified this area as sensitive.
- No disturbance has been authorised in this location. OEH has no record of disturbance in this location.
- This area was set aside as conservation area under the process for AHIP #2621 variation.

4. Section 1.2.1 – OEH Submission (third dot point) “*The EIS should identify the nature and extent of impacts on Aboriginal cultural heritage values.....clear justification for such impacts should be provided*”

The nature and extent of impacts to Aboriginal objects in the northern section of AHIMS 37-2-0579 has not been identified nor has clear justification been provided. Discussion in the EIS regarding impacts to objects in AHIMS 37-2-0579 appears to be based on invalid information.

5. Section 3.4.2 – Responses to RAP Comments

- Response to Wonnarua Local Aboriginal Land Council (WLALC) Comments Point 2. Previous Processes regarding the preparation and ongoing maintenance of the ACHMP have been identified by OEH as inadequate. In particular on 20 Feb 2012 OEH provided a letter to Hanson Bailey (doc12/2901; addressed to Mr Jason Martin) which outlined a number of failures with the consultation process which resulted in OEH being unable to provide comment on the document. OEH requires that the revised management plan referred to in this point addresses all previous concerns raised by OEH and fulfils all the standard requirements expected in an Aboriginal Cultural heritage Management Plan (ACHMP).
- Response to DFTU Enterprises Comments Point 1. OEH notes the lack of visibility due to ground cover will have significantly affected the outcomes of the survey and in particular the attribution of significance ratings based on surface expression of Aboriginal objects.
- OEH would expect the proposed ‘chance finds procedure’ to be finalised prior to project approval. This would ensure that this aspect of the final ACHMP meets industry standards and that inappropriate impacts to Aboriginal objects do not occur as a result of the project.

6. Section 4.6 – Geomorphology

- “*Archaeologically, areas of erosion and exposure are of particular importance as they provide the greatest visibility and subsequently the greatest chance of identifying surface artefacts*”. This statement is misleading. Although the chances of locating surface finds is often increased in areas of visible erosion, as noted in this section, the subsurface integrity at these locations is invariably compromised and therefore the archaeological significance reduced. Areas of little to no erosion, that can be identified through contextual and landscape analysis as likely to contain *in-situ* deposits, are generally of much higher archaeological significance regardless of whether testing identifies deposits or not. A negative result from testing is of high value as it informs the predictive model dataset and a positive result (in the form of intact deposits) returns valuable information on traditional habitation and subsistence patterns.
- “*Dry Creek and its tributaries likely offer the only depositional environment within the study area*”. Although the study area is composed of duplex soils with high levels of erosion a number of areas of potential deposit have been identified (e.g. Site B10 and Site B33). In particular areas of AHIMS 37-2-0579 have been identified (White 1993, Rich 1998 and ERM 2008) as containing subsurface archaeological deposits which have been rated as of moderate to high scientific value.

7. Section 5.1 –Wonnarua

- “*While there is general acceptance of the boundaries of the Wonnarua*”. Although this statement may be true of the non-Aboriginal community there is significant disagreement amongst Hunter Valley Aboriginal groups as to the boundaries of the Wonnarua country.

- *“irregular ceremonial band aggregations”*. A large number of traditional Aboriginal ceremonies were conducted on a regular basis.

8. Section 6.3.1 – Rich, E.R. (1993)

“The most significant site recorded was a silcrete quarry B10 associated with tertiary ridge gravels”. AHIMS 37-2-0579 is the most significant site found within the project area. It has been identified as representing a number of technological phases and also various activity areas. Subsequent subsurface salvage has confirmed the significance. In 2008 Bengalla mine was granted a Partial AHIP (#2621) for a previously disturbed section of this site on the understanding that the rest of the site would remain undisturbed for the life of the mine. OEH has grave concerns with granting any approval that would result in further impact to this site.

9. Section 10.5 – Subsurface Archaeological Sensitivity of the Study Area

Table 31 - AHIMS 37-2-0579 has historically been identified as having high potential for *in-situ* subsurface deposits. No reference to this is provided in Section 10.5 of the EIS.

10. Section 10.6 – Evaluation of Predictive Model

Table 32 identifies that the predictive model indicated that *“Quarry sites may occur where exposed silcrete and mudstone outcrops occur”*, the result provided is that *“No new quarry sites were identified during the archaeological survey”*. It is unclear whether unquarried silcrete and/or mudstone outcrops were located or whether no such outcrops were located. This has direct bearing on the contextual local significance and representativeness of AHIMS 37-2-0579.

11. Section 11.1.2 – Research Potential

This section notes that *“...in the Hunter Valley such questions will revolve around stone tool manufacture; settlement patterning; how regional resources were used; how uses changed throughout the Holocene; and how these changes manifested in the archaeological record”*. AHIMS 37-2-0579 has been identified as likely to contain subsurface deposits. A likelihood exists that these deposits may provide information regarding the evolution of the use, and procurement, of boulder silcrete in the upper Hunter Valley. The limited subsurface excavation done to date at this site has indicated the potential for significant sub-surface deposits that may further inform our understanding of these aspects of traditional Wonaruah life.

12. Section 11.1.5 – Application of the Scientific Significance for the Project

Table 34 - This table indicates that Site B10 has been split into north and south section and assessed independently. This is an inappropriate and invalid distinction. Site B10 constitutes a single site based on landform. The attribution of low significance to the northern section of the site is based on the results of a surface survey where ground surface visibility was rated as low. Subsurface investigation would be necessary in order to qualify this rating. If low artefact numbers were encountered this would contribute to the overall understanding of the site particularly with regard to the distance decay study required by OEH (then NPWS) as part of consent conditions for the 1998 salvage project. Prior to disturbance resulting from mining activities there were no north and south sections of this site. Any impacts to the northern Section of B10 were specifically prohibited by AHIP #2621.

13. Section 13.1.1 – Intergenerational Equity - Cumulative Impact of the Project on Aboriginal heritage

- In order to address Cumulative Impact Assessment and Ecological Sustainable Development issues and the identified significance of the site, both the northern and southern Sections of AHIMS 37-2-0579 were excluded from any impacts for the life of Bengalla Mine as part of the process for AHIP #2621.

- Page 84 notes previous mine related impacts and subsurface investigations to the northern section of 37-2-0579. No such impacts have been authorised and since 2007 any such impacts have been specifically prohibited under AHIP #2621.
- A letter from OEH to Mr. Jeff Torkington at Bengalla (DOC07/40231), which accompanied a variation to AHIP#2621, identifies the specific protections provided to these sections both visually and in writing. Page 84 of the EIS notes that none of the sites impacted have been attributed a high scientific significance. This is false as B10 (37-2-0579) was originally ascribed a high significance in 1993. All studies of the site since have confirmed the high scientific value of this location.

14. Section 13.1.2 - The precautionary principle

Contrary to the statement on p. 85 of the EIS, OEH considers that AECOM has not adopted a precautionary approach for the purposes of this evaluation.

15. Section 14.2.2 – Archaeological Salvage Program

OEH notes that no subsurface salvage program is proposed in this section for any site within the project area. As noted by AECOM in Appendix A, Section 4.7 (p. 109) *"As demonstrated by numerous Aboriginal archaeological investigations in the Upper Hunter Valley, surface artefacts at most open artefact scatter sites represent only a portion of the total number of artefacts present."* A subsurface salvage methodology should be developed in consultation with the RAP's, OEH and DP&I prior to any determination being made regarding this project. Part of the justification for the position of 'no salvage' is a reference to *"Turvey"* (in White 1998:28). Page 28 of White (1998) contains only tables do not contain any comments by any *"Turvey"*. The justifications for 'no salvage' at Site B10 (37-2-0579) refer to excavations at this location. No excavations have ever occurred at this location and it forms part of a site complex/landform that has been clearly identified and confirmed as being of high scientific significance. This location was also specifically protected from any impact by Bengalla mine as part of the process for the issue of AHIP #2621.

16. Section 14.2.6 – Management of Previously Unrecorded Aboriginal Objects

This section provides no discussion or proposal for the management of a number of site types that may be found in the area such as Quarry Sites and Grinding Grooves. A more comprehensive chance finds protocol is necessary to ensure that unforeseen Aboriginal objects are afforded the appropriate mechanisms for protection and management.

17. Appendix A – RAP Correspondence Section 3.1 AHIMS Search

Table 3.1 is not an accurate representation of the AHIMS results for the area as it does not include any reference to the Quarry Sites. This constitutes false information provided to the Aboriginal stakeholder groups for the project.

18. Appendix F – Arborist Scar Tree Assessment

OEH has reviewed the document. OEH notes the constant reference to an arbitrary date of 150 years for the latest possible traditional tree scarring. This is not scientifically or ethnographically valid.

19. Existing Approval for the Bengalla Mine (DA211/93)

OEH notes that Condition 29 of the existing approval (DA211/93) requires the development of an ACHMP by the end of February 2012. OEH further notes that the current ACHMP appears incomplete and has not been endorsed by OEH. The last record of correspondence regarding this matter is a letter dated 20 February 2012 from OEH to Mr Jason Martin of Hanson Bailey which advises that OEH considers the ACHMP incomplete. OEH advises DP&I that this may constitute a breach of condition of approval number 29 of the existing approval.

Summary and Conclusions

OEH has identified several significant issues that need to be addressed before this project may be approved, and as such is not in a position to be able to provide any recommended conditions of approval for Aboriginal cultural heritage matters at this stage.

THREATENED BIODIVERSITY ASSESSMENT

According to the EIS the proposed development would have a footprint of about 950 ha, of which 881 ha currently comprises native vegetation (see Table 1, below). The project, if approved would clear about 551 ha of endangered ecological community (EEC) vegetation, and 2.9 ha of Vulnerable Ecological Community (VEC) vegetation as listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and about 535 ha of Critically Endangered Ecological Community (CEEC) as listed under the Australian Government *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Table 1 Summary of vegetation communities in the project area and their conservation status (from Table 67 in the Main Report).

Vegetation Community	Status	Area (ha)
Hunter Floodplain Red Gum Woodland	EEC, GDE	9.4
Grey Box – White Box Intergrade Grassy Woodland (HU905)	CEEC (EPBC Act), EEC (TSC Act)	27.9
Upper Hunter White Box – Ironbark Grassy Woodland (HU905)	CEEC (EPBC Act), EEC (TSC Act)	45.3
Central Hunter Ironbark – Spotted Gum Forest	EEC	6.7
Narrabeen Foothills Slaty Box Woodland	VEC	2.9
Upper Hunter Hills Exposed Ironbark Woodland	Not listed	167.9
TOTAL Native Woodland & Open Forest		260
DNG (Box – Gum Woodland) (HU905)	CEEC (EPBC Act); EEC (TSC Act)	462.1
DNG (Slaty Box)	Not listed	0
DNG (Upper Hunter Hills Exposed Ironbark)	Not listed	159.2
TOTAL Derived Native Grassland		621
Tree & shrub plantation	Not listed	11.4
Low diversity DNG/ exotic pasture	Not listed	57.5
Exotic/ Riparian Vegetation	Not listed	0
TOTAL Non-native vegetation		69
TOTAL AREA OF VEGETATION		950

The vegetation to be cleared includes plants of Tiger Orchid (*Cymbidium canaliculatum*) which forms an endangered population in the Hunter Valley, and would also clear about 881 ha of actual or potential habitat of Lobed Bluegrass (*Bothriochloa biloba*) – an Australian Government listed Vulnerable species. Nine threatened animals have been recorded from the project area: Brown Tree creeper, Speckled Warbler, Black-chinned Honeyeater, Grey-crowned Babbler, Yellow-bellied Shearwater, Eastern Bent-wing Bat, Large-footed Myotis, Eastern Cave Bat, and Squirrel Glider.

BCAM Assessment for Offset by way of payment into the Upper Hunter Offset Fund

The proponent is participating in the Upper Hunter Strategic Assessment and which will provide the opportunity to offset the impact of the development on threatened biodiversity primarily by paying into the

Upper Hunter Offset Fund which will be established as part of the Upper Hunter Biodiversity Plan. The amount to be paid into the Fund will be determined by the Biodiversity Certification Assessment Methodology (BCAM)(OEH, 2011) and two calculators to convert credits to hectares then hectares to dollars. The details of the Upper Hunter Offset Fund are to be finalised in 2014 when the final offset package for the Continuation of Bengalla Mine project will be able to be calculated.

OEH has reviewed most of the BCAM data behind the assessment presented in the EIS, and has discussed the issues raised from that assessment during a teleconference with the proponent on 25 October 2013. A few issues remain, which may be addressed during the review of submissions for this project. Those remaining issues are summarised below:

1. The White Box vegetation communities, including the Derived Native Grasslands after White Box woodland were matched to a Narrow-leaved Ironbark vegetation BVT (HU905) in which White Box is very rare. The EIS seems to indicate that a more appropriate White Box – dominated woodland BVT (which OEH has identified as HU820) could not be flagged as an EEC in BCAM, and thus a Narrow-leaved Ironbark vegetation community (HU905) was used instead (EIS, App. L of App. O, p. L.5.2). The BCAM calculator does not give any additional weighting to EEC vegetation communities for the main driver of credits generated per vegetation zone is instead based on the percentage that any given vegetation community is cleared within a given CMA subregion. A consequence of choosing HU905 rather than HU820 has been a slight reduction in the number of ecosystem credits generated by the three White Box vegetation zones. OEH found that it would increase the number of credits for White Box communities by about 106 per cent which would increase the total number of credits generated by the project (as per Table 5.3 in App. L of App. O of the EIS) by 1025 ecosystem credits for a new total of 28,545 ecosystem credits;
2. 109.7 ha of 'Low Diversity Derived Native Grassland/Exotic Pasture is described from the project area but not included in the BCAM assessment (e.g. Table 3.1 in App. L of App. O of the EIS). OEH understands that this grassland, which occurs on the Hunter River floodplain will not be cleared by the project. Thus for the BCAM assessment the native element of this grassland must either be assigned to a BVT, adequately sampled and included in the BCAM calculator, or have justification provided as to why that area is excluded from the project area assessed by BCAM
3. The vegetation community 'Derived Native Grassland after Upper Hunter Hills Exposed Ironbark' (HU819) was not sampled sufficient as per BCAM guidelines. OEH understands that this was done due to the highly variable species composition of this grassland in the project area. Not sampling in full accordance with BCAM weakens the robustness of BCAM results, and for transparency OEH recommends additional field quadrat data is provided so that this issue is resolved.

OEH awaits further details from the proponent about these matters whilst the proponent is reviewing all submissions received for the exhibited EIS.

Similarly, OEH found that the EIS did not fully document the thought process involved in matching vegetation communities within the project area to the BVTs used in BCAM assessment, which made it difficult to check that the process was done correctly. Whilst some vegetation communities readily match only one available BVT in current database (e.g. Narrabeen Footslopes Slaty Box Woodland), many other vegetation communities (particularly those with Narrow-leaved Ironbark in the canopy) have many BVT options that they may match. Since selecting the most appropriate BVT generally involves finding the one with the most number of shared species in a particular vegetation community, once factors such as geographic location, soil type and position in landscape have been taken into account. However, the vegetation community descriptions in exhibited EIS are light on details of the dominant plant species that they contain. This lack of detail makes OEH's role difficult in checking that the most appropriate BVTs were selected for the vegetation communities in the project assessment area, and the calculations that followed in the calculator. This data must be provided for the Bengalla continuation of mining project to show that the process was done correctly and in a transparent manner, and can be provided whilst the review of submissions process is being conducted. In this case it appears that this is an issue for the White Box

communities, and, as discussed above, this has been raised with the proponent and will be addressed shortly.

OEH is asking for the provision of more detailed floristic details in vegetation communities identified on a site and assessed by BCAM. The required details include a description of the position in the landscape and the soil type(s) on which each vegetation community occurs, and the habitat features they contain, in addition to floristic details that include the listing of at least the top three dominant shrubs, groundcover forbs, groundcover vines, groundcover sedges and rushes and grasses, and the identity of plants in the following grass genera: *Aristida*, *Austrostipa* and *Rytidosperma* (*Austrodanthonia*) to species level. Such details are needed to support the matching of a vegetation community to the most appropriate available BVT, and its condition which were then run in the BCAM calculator. Where a vegetation community may not have a single best fit BVT then a decision of which one of a shortlist of options was used must be justified, including any assumptions made. Where the information provided does not allow OEH to fully assess the decisions made in data used in the BCAM calculator then this will prevent OEH from being able to fully carry out its assessment role for the UHSA. As raised above, OEH raised this issue with the proponent during the recent teleconference and since in this case the data can be provided during the assessment of submissions.

In future OEH recommends that BCAM files and associated GIS files are made available on the DP&I website so that not only OEH, but other interested parties can access this data so as to provide transparency for the full environmental assessment process.

The Biodiversity Plan for the Upper Hunter Strategic Assessment is still being prepared, and is not scheduled to be finished until 2014. Policy decisions are being developed to help inform this process, and once they are completed OEH will need to revisit the ecosystem credit calculations for the Bengalla Project when reviewing all projects covered by the Upper Hunter Strategic Assessment.

Proposed planting of River Red Gums on part of the Project Area

The proponent has a Statement of Commitment to rehabilitate part of its Hunter River frontage, and to include River Red Gums (*Eucalyptus camaldulensis*) in the planting mix (Table 101, EIS Main Report and s. 5.2.2 of App. O of the EIS). River Red Gums in the Hunter Catchment form a state-listed Endangered Population. OEH has identified 11 priority actions to help recover this endangered population (OEH, 2013) and supports those efforts in assisting the survival of this species in the Hunter Catchment.

Recommended conditions of approval for threatened biodiversity

1. That proposed offsets for this proposal, if approved would be provided in accordance with the Upper Hunter Biodiversity Plan, including contributing money to the Upper Hunter Offset Fund using appropriate OEH calculators.
2. That if for any reason the offsets were unable to be provided in accordance with the Upper Hunter Biodiversity Plan then they would be provided in accordance with other OEH offsetting policy.
3. That proposed planting of River Red Gum (*Eucalyptus camaldulensis*) trees as part of the maintenance of the Hunter River frontage of the project area must only use propagules collected from within the Hunter Catchment, so as to retain the genetics of the local and endangered population. Further, seed collection from source trees must be done in accordance with FloraBank guidelines (www.florabank.org.au/).

References:

ERM obo Hansen Bailey (Baker Neville) (2007) *Bengalla Mine Section 90 #2621, Aboriginal Heritage Salvage Collection Report*, August 2007. ERM unpublished report for Hansen Bailey.

ERM obo Hansen Bailey (2008) *Bengalla Mine Section 90 #2621, Aboriginal Heritage Salvage of Area B10 Collection Report*, July 2008. ERM unpublished report for Hansen Bailey.

OEH (2011) Biodiversity Certification Assessment Methodology. February 2011. NSW Office of Environment and Heritage, Sydney. www.environment.nsw.gov.au/resources/biocertification/110170biocertassessmeth.pdf

OEH (2013) *Eucalyptus camaludulensis* population in the Hunter catchment – Threatened Species Profile. NSW OEH, Sydney. www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10968

Rich, E. (1993) *Proposed Bengalla Coal Mine, Muswellbrook NSW: Summary of Aboriginal Heritage*, January 1993. Unpublished report for Wayne Perry & Associates.

White, E. (1998) *Archaeological Salvage of Sites B10 & B33, Bengalla Mine, Hunter Valley, NSW*, February 1998. Unpublished report for Bengalla Mining Company.