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4 September 2012

Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Mr David Kitto

Dear Mr Kitto

RE: WAMBO – MONTROSE WATER STORAGE MODIFICATION – RESPONSE TO SUBMISSIONS

Please find enclosed Wambo Coal Pty Limited's response to submissions on the Environmental Assessment for the Montrose Water Storage Modification for your review.

Please do not hesitate to contact the undersigned on (02) 6570 2361 if you have any queries regarding the modification.

Yours faithfully

A handwritten signature in black ink, appearing to read "Michael Alexander". The signature is written in a cursive style with a large, sweeping initial "M".

Michael Alexander
Manager Projects
WAMBO COAL PTY LTD

Enclosure A. Response to Submissions on the Montrose Water Storage Modification
Environmental Assessment

ENCLOSURE A.

RESPONSE TO SUBMISSIONS ON THE MONTROSE WATER STORAGE
MODIFICATION ENVIRONMENTAL ASSESSMENT

**Table 1
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
1	New South Wales (NSW) Department of Planning and Infrastructure (DP&I).	The DP&I requested additional information regarding the justification for the location of the proposed Montrose Water Storage.	<p>As described in Section 3.2 of the Environmental Assessment (EA), the Montrose Water Storage site was selected after a review of available water storage locations at the Wambo Coal Mine (Wambo).</p> <p>The review was undertaken by ATC Willimans (mine water management specialists) and included the identification of five possible water storage locations. The possible water storage locations were reviewed against physical constraints such as topography and geological/soil conditions (e.g. permeability of the soil matrix), existing and planned site infrastructure and the location of historical and future underground and open cut mine workings.</p> <p>Conceptual designs were developed for each of the identified potential water storage locations and each potential water storage was then ranked based on criteria including:</p> <ul style="list-style-type: none"> • Ease of integration with the existing site water management system. • The relative efficiency of key design parameters (e.g. the ratio of area to volume). • Cost of construction. <p>A number of other relevant factors were also considered including:</p> <ul style="list-style-type: none"> • Location of known Aboriginal and European cultural heritage sites. • Location of remnant vegetation. <p>Based on the review, the siting of the proposed Montrose Water Storage was considered to be the most suitable water storage location available at Wambo.</p>
2	NSW Environmental Protection Authority (EPA).	<i>The EPA has reviewed the EA and has determined that if the project is approved, no additional Environmental Protection Licence conditions will be required for the construction and operation of the dam and as such, no recommended conditions of approval are required. The EPA has no objection to the project proceeding as described in the EA.</i>	Acknowledged.
3	NSW Office of Environment and Heritage (OEH).	<p>The OEH recommended the following amended condition of approval:</p> <p><i>The proponent must continue to consult with and involve all the registered local Aboriginal representatives for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.</i></p>	Wambo Coal Pty Ltd (WCPL) currently undertakes all activities on site in accordance with the existing Consent No. 2222 Consent to Destroy with Salvage, issued under the NSW <i>National Parks and Wildlife Act, 1974</i> (NPW Act) on 20 June 2005. This includes consultation with all 32 registered Aboriginal groups, which involves a roster system for field work and salvage, when required to be undertaken. WCPL considers this approach to be appropriate and adequate.

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
4	NSW OEH.	<p>The OEH recommended the following amended condition of approval:</p> <p><i>In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and the registered Aboriginal parties must be contacted to determine the significance of the object(s) and to develop an appropriate management strategy. A management strategy must be developed for the site in accordance with the provisions of the National Parks and Wildlife Act 1974. This may include avoiding impact, additional investigations and/or the submission of an Aboriginal Heritage Impact Permit application. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by the OEH) and the management outcome for the site included in the information provided to the AHIMS.</i></p>	WCPL acknowledges and accepts this condition for new Aboriginal objects identified outside of the area covered by Consent No. 2222 Consent to Destroy with Salvage issued under the NPW Act on 20 June 2005.
5	NSW OEH.	<p>The OEH recommended the following amended condition of approval:</p> <p><i>If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are contacted immediately. No action is to be undertaken until police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact the OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works are to continue until the OEH provides written notification to the proponent.</i></p>	WCPL acknowledges and accepts this condition.
6	NSW OEH.	<p>The OEH recommended the following amended condition of approval:</p> <p><i>An Aboriginal Cultural Education Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the local Aboriginal community.</i></p>	<p>The existing WCPL induction programme includes explanations of the importance and sensitivity of Aboriginal cultural heritage and describes the management process in place at Wambo. The programme also explains employee and contractor responsibilities in regard to cultural heritage management. Records of all inductions are maintained on site.</p> <p>WCPL considers that the above approach meets OEH's requirements.</p>
7	NSW OEH.	<p>The OEH recommended the following amended condition of approval:</p> <p><i>That the clearance of threatened species, populations or communities, or their habitats, for this development must be offset in accordance with OEH offsetting policy; either the 'Principles for the use of biodiversity offsets in NSW (DECC, 2011) or the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects (OEH, 2011).</i></p>	<p>Based on the vegetation mapping conducted by FloraSearch (2012), the proposed Montrose Water Storage area includes approximately 1.8 hectares (ha) of Central Hunter Box – Ironbark Woodland Endangered Ecological Community and 0.8 ha of Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community.</p> <p>A summary of the areas of woodland vegetation communities in the location of the proposed Montrose Water Storage for which an offset is proposed is provided in the table below.</p>

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response			
7 (Cont.)			Summary of Woodland Vegetation Community Areas			
			Woodland Vegetation Community	Proposed Montrose Water Storage	Proposed Offset Area	Ratio
			Central Hunter Box – Ironbark Woodland Endangered Ecological Community	1.8 ha	7.2 ha	4:1
			Narrabeen Footslopes Slaty Box Woodland Vulnerable Ecological Community	0.8 ha	2 ha	2.5:1
			Total	2.6 ha	9.2 ha	3.5:1
			<p>Two offset areas are proposed and are shown in Figure 1. The proposed RWEPL Area D Extension comprises 2 ha of Narrabeen Footslopes Slaty Box Woodland Vulnerable Ecological Community and the proposed RWEPL Area E comprises 7.2 ha of Central Hunter Box – Ironbark Woodland Endangered Ecological Community.</p>			
			<p>Should approval be granted, it is anticipated that the offset areas would be subject to similar consent conditions to those which currently relate to the RWEPL Areas B and C (i.e. Conditions 41 and 41A of Schedule 4 of the existing Development Consent DA 305-7-2003).</p>			
			<p>With the application of this condition to the proposed offset areas, WCPL considers that the proposed offset areas would be permanent and secured by a conservation agreement. The offset areas would also have clear management requirements as per the Flora and Fauna Management Plan (including long-term management requirements).</p>			
			<p>A description of how the proposed offset would be consistent with <i>Principles for the Use of Biodiversity Offsets in NSW</i> (Department of Environment and Climate Change [DECC], 2011) is provided in Table 2.</p>			

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
8	The United Mineworkers' Federation of Australia	<i>The Union supports the Modification.</i>	Acknowledged and appreciated.
9	NSW Department of Trade and Investment, Regional Infrastructure and Services (Resources and Energy) (DRE)	<i>The proposed final use of the Montrose Water Storage site is unclear and therefore should be clarified.</i>	As described in Section 3.4 of the EA, the Montrose Water Storage would become part of the Wambo water management system. Following cessation of mining activities, as described in Section 3.7 of the EA, the Montrose Water Storage would ultimately be either retained for beneficial use by the relevant landholder (i.e. used to support agricultural activities) or decommissioned and the area rehabilitated in accordance with the Flora and Fauna Management Plan and the Wambo rehabilitation principles and objectives. This decision would be made at the cessation of mining activities in consultation with the ultimate relevant landholder.
10	NSW DRE	<i>There is an area outside ML1594 which appears to have parts of the water storage walls, and includes the "Maximum Inundation Area" and the "Upcatchment Diversion" to which the proponent has no surface coal title. CL397 underlies this area from 15 metres below the surface. A mining title is required from the surface to 15 metres below the surface if the proposed dam is for mining purposes.</i>	WCPL acknowledges the requirement for a surface mining lease for the area outside of Mining Lease 1594 which includes components of the Montrose Water Storage and will apply for a surface mining lease for this area prior to construction of the Montrose Water Storage outside of ML 1594.
11	NSW DRE	The DRE recommended the following conditions be incorporated into the planning approval, if granted: <i>Rehabilitation Plan</i> <ul style="list-style-type: none"> • <i>The Proponent should prepare and implement a Rehabilitation Plan to the satisfaction of the Director General of NSW Trade & Investment, Regional Infrastructure & Services. The Rehabilitation Plan should:</i> • <i>be prepared in accordance with DRE NSW guidelines and in consultation with relevant agencies and stakeholders;</i> • <i>be submitted and approved by the Director General of NSW Trade & Investment, Regional Infrastructure & Services prior to the commencement of construction;</i> • <i>address all aspects of rehabilitation and mine closure, including final landuse assessment, rehabilitation objectives, domain objectives, completion criteria and rehabilitation monitoring.</i> 	As described in Section 3.7 of the EA the Montrose Water Storage would ultimately be either retained for beneficial use by the relevant landholder (i.e. used to support agricultural activities) or decommissioned and the area rehabilitated in accordance with the Flora and Fauna Management Plan and the Wambo rehabilitation principles and objectives. This decision would be made at the cessation of mining activities in consultation with the ultimate relevant landholder. In addition, the current Wambo Rehabilitation Management Plan would be reviewed, and if necessary, revised to include the Modification (if approved). The current Wambo Rehabilitation Management Plan was prepared in accordance with Condition 94A of Schedule 4 of Development Consent DA 305-7-2003. Given the above, WCPL does not consider additional conditions in this regard to be required.

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
12	NSW Agriculture	<i>Agriculture NSW advise that the proposal is low risk in terms of impact on agricultural resources and as such an Agricultural Impact Statement is not required.</i>	Acknowledged.
13	NSW Office of Water	<i>Measures to address salinisation of the underlying porous unconsolidated materials and prevention of migration of high salinity stored water through or beneath the dam wall toward North Wambo Creek and post-use rehabilitation of the site should be required through conditions of approval for the modified consent.</i>	<p>As described in Section 3.2 of the EA, the design of the Montrose Water Storage would include aspects to minimise seepage including constructing the embankments with a low permeability core and cut-off key that would be extended into competent basement material.</p> <p>As described in Section 3.7 of the EA, the Montrose Water Storage would ultimately be either retained for beneficial use by the relevant landholder (i.e. used to support agricultural activities) or decommissioned and the area rehabilitated in accordance with the Flora and Fauna Management Plan and the Wambo rehabilitation principles and objectives.</p> <p>In addition, the current Wambo Rehabilitation Management Plan would be reviewed, and if necessary, revised to include the Modification. The current Wambo Rehabilitation Management Plan was prepared in accordance with Condition 94A of Schedule 4 of Development Consent DA 305-7-2003.</p> <p>Given the above, WCPL does not consider additional conditions in this regard to be required.</p>
14	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern regarding the timeframe available to prepare a submission on the Modification.	<p>The EA was publically exhibited from Wednesday 11 July 2012 until Friday 27 July 2012.</p> <p>The document was available on the DP&I website and for review at the Singleton Shire Council and Nature Conservation Council during this time. The Singleton Shire Council and Nature Conservation Council confirmed they had received copies of these documents on the 10 July 2012.</p>
15	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern that the Community Consultative Committee (CCC) for Wambo was not given an overview of the Montrose Water Storage Modification as stated in the EA.	As described in Section 1.3 of the EA, in May 2012 the CCC was provided an overview of the Modification and notified of WCPL's intention to lodge a modification for additional onsite water storage.
16	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern regarding the availability of section 75W of Part 3A of the EP&A Act as an approval pathway for the Modification.	<p>As described in Section 5 of the EA, clause 12 of Schedule 6A of the EP&A Act provides that section 75W of Part 3A of the EP&A Act continues to apply to modifications of development consents referred to in clause 8J(8) of the NSW <i>Environmental Planning and Assessment Regulation, 2000</i> (EP&A Regulation) following the repeal of Part 3A.</p> <p>Wambo was approved under Part 4 of the EP&A Act in February 2004 and was a development consent under Division 4 of Part 4 of the Act (relating to State significant development). Therefore Development Consent DA 305-7-2003 is a development consent that falls within clause 8J(8)(c) of the EP&A Regulation. That is, section 75W of the EP&A Act continues to apply to modifications to the Wambo Development Consent DA 305-7-2003, notwithstanding its repeal.</p>

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
17	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern that the overtopping of the South Wambo Dam in March 2012 and was not reported appropriately or in a timely manner.	<p>A mine water discharge event occurred on land owned by WCPL between 3 and 5 March 2012. The event involved discharge from the South Wambo Dam. The discharge was contained within the South Wambo Dam spillway and the low heavily grassed ground immediately to the east of the dam. The cause of the discharge was a combination of a faulty water level sensor, heavy rainfall over the period 2 to 4 March 2012 and subsequent elevated dam water level.</p> <p>The EPA was notified of the incident on 28 March 2012 and a report detailing the incident was issued to the EPA on the 10 April 2012. The delay in reporting the incident was primarily due to the event occurring wholly within WCPL owned lands and there being negligible downstream consequences (i.e. no environmental harm).</p> <p>The following measures (detailed in the 28 March 2012 report to the EPA) have been undertaken to prevent a recurrence of such an event:</p> <ul style="list-style-type: none"> • The faulty water level sensor was replaced. • Revision of the South Wambo Dam inspection schedule to ensure weekly verification of the water level sensor. • Revision of the environmental training package in order to reinforce the duty to report environmental incidents immediately. The revised package is to be rolled out to all employees and contractors undertaking work at Wambo. <p>The DP&I and EPA considered the report and did not take action for the incident.</p>
18	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern regarding the noise impact to his residence resulting from construction of the Montrose Water Storage.	<p>Potential noise related impacts of the Montrose Water Storage Modification (the Modification) would be associated with the construction of the Montrose Water Storage and associated supporting infrastructure (i.e. pumps, pipelines and powerline). Construction works would generally be undertaken during daytime hours (7.00 am to 6.00 pm Monday to Friday and 7.00 am to 4.00 pm Saturday) for approximately 6 months.</p> <p>As described in Section 4.7 of the EA, given the minor short-term nature of the construction works associated with the Modification in comparison to the scale of open cut mining operations at Wambo (approved for operations 24 hours a day, 7 days a week) and the distance of at least 3 km to the nearest privately owned residence and approximately 5.5 km to the Fenwick residence, the Modification has negligible potential to increase intrusive noise levels.</p>
19	Mr. Fenwick (Submission Dated 26 July 2012).	Mr. Fenwick raised concern regarding the information presented in the EA in relation to the bora ground Aboriginal cultural heritage site.	The bora ground is located more than 7.5 kilometres (km) from the Montrose Water Storage area and therefore would not be impacted by the Modification.

**Table 1 (Continued)
Response to Submissions**

Number	Individual/ Organisation	Submission	WCPL Response
20	Mr. Fenwick (Submission Dated 26 July 2012).	<p>Mr. Fenwick raised concern regarding the validity of the information referenced in the Agricultural Resources Assessment, his concerns included:</p> <ul style="list-style-type: none"> • the reference to Rural Land Classification; and • the reference to the stocking rate of 3 dry stock equivalent per hectare with a Gross Margin of \$53.06 per hectare per year. <p>Mr. Fenwick also raised concern regarding the lack of agricultural usage of the land during WCPL ownership.</p>	<p>The Rural Land Capability mapping referenced in the Agricultural Resources Assessment (Appendix D of the EA) is based on the Rural Land Capability mapping published by the Soil Conservation Services of NSW (1985). The Agricultural Resources Assessment also references the Agricultural Suitability mapping published by NSW Agriculture (1983).</p> <p>The values assumed for the stocking rate and gross margin referenced in the Agricultural Resources Assessment are based on the NSW Department of Primary Industries Gross Margin Budget for 'North Coast Weaners – Unimproved Land'.</p> <p>The land in the vicinity of the proposed Montrose Water Storage has historically been used for the agistment of stock. However, given the progression of mining activity and health and safety requirements the area can no longer be safely leased or agisted.</p>
21	Mr. Fenwick (Submission Dated 6 August 2012).	Mr. Fenwick raised concern regarding the amount of freeboard proposed for the Montrose Water Storage.	<p>As discussed in Section 3.2 of the EA, the Montrose Water Storage would be operated to maintain freeboard to store a 1 in 100 year 72 hour rainfall event.</p> <p>WCPL considers the proposed freeboard to be adequate and does not consider additional freeboard is required.</p>
22	Mr. Fenwick (Submission Dated 6 August 2012).	Mr. Fenwick raised concern regarding the noise impact to his residence resulting from construction of the Montrose Water Storage.	See response to issue number 18.
23	Mr. Fenwick (Submission Dated 6 August 2012).	Mr. Fenwick raised concern that the CCC for Wambo was not given an overview of the Montrose Water Storage Modification as stated in the EA.	See response to issue number 15.
24	Fisheries NSW	<i>Fisheries NSW raises no issues with the proposal on the basis that it is "off-line" to existing watercourses with no habitat involved.</i>	Acknowledged.

Table 2
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>1. Impacts must be avoided first by using prevention and mitigation measures.</p> <p><i>Offsets are then used to address remaining impacts. This may include modifying the proposal to avoid an area of biodiversity value or putting in place measures to prevent offsite impacts.</i></p>	<p>As described in Section 3.2 of the EA, the Montrose Water Storage site was selected after a review of available water storage locations at Wambo.</p> <p>The review was undertaken by ATC Willimans (mine water management specialists) and included the identification of five possible water storage locations. The possible water storage locations were reviewed against physical constraints such as topography and geological/soil conditions (e.g. permeability of the soil matrix), existing and planned site infrastructure and the location of historical and future underground and open cut mine workings.</p> <p>Conceptual designs were developed for each of the identified potential water storage locations and each potential water storage was then ranked based on criteria including:</p> <ul style="list-style-type: none"> • Ease of integration with the existing site water management system. • The relative efficiency of key design parameters (e.g. the ratio of area to volume). • Cost of construction. <p>A number of other relevant factors were also considered including:</p> <ul style="list-style-type: none"> • Location of known Aboriginal and European cultural heritage sites. • Location of remnant vegetation. <p>Based on the review, the siting of the proposed Montrose Water Storage was considered to be the most suitable water storage location available at Wambo.</p>
<p>2. All regulatory requirements must be met.</p> <p><i>Offsets cannot be used to satisfy approvals or assessments under other legislation, e.g. assessment requirements for Aboriginal heritage sites, pollution or other environmental impacts (unless specifically provided for by legislation or additional approvals).</i></p>	<p>The proposed offset areas would not be used to satisfy approvals or assessments under other legislation.</p>
<p>3. Offsets must never reward ongoing poor performance.</p> <p><i>Offset schemes should not encourage landholders to deliberately degrade or mismanage offset areas in order to increase the value from the offset.</i></p>	<p>The proposed offset areas would not encourage WCPL to deliberately degrade or mismanage offset areas in order to increase the value from the offset.</p>
<p>4. Offsets will complement other government programs.</p> <p><i>A range of tools is required to achieve the NSW Government's conservation objectives, including the establishment and management of new national parks, nature reserves, state conservation areas and regional parks and incentives for private landholders.</i></p>	<p>The proposed offset areas would complement the existing Wollemi National Park. The proposed offset areas would connect (via WCPL's existing RWEPL Areas B, C and D) to the Wollemi National Park. The conservation and enhancement of these areas would strengthen the linkages between the Wollemi National Park, existing remnant woodland and woodland rehabilitation areas.</p>

Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>5. Offsets must be underpinned by sound ecological principles.</p> <p><i>They must:</i></p> <ul style="list-style-type: none"> ▪ include the consideration of structure, function and compositional elements of biodiversity, including threatened species ▪ enhance biodiversity at a range of scales ▪ consider the conservation status of ecological communities ▪ ensure the long-term viability and functionality of biodiversity. <p><i>Biodiversity management actions, such as enhancement of existing habitat and securing and managing land of conservation value for biodiversity, can be suitable offsets. Reconstruction of ecological communities involves high risks and uncertainties for biodiversity outcomes and is generally less preferable than other management strategies, such as enhancing existing habitat.</i></p>	<p>It is considered that the proposed offset areas are underpinned by sound ecological principles. The structure, function and compositional elements of the proposed offset areas are considered to be superior to those in the proposed location of the Montrose Water Storage.</p> <p>The vegetation in the offset areas has a continuous and overlapping tree canopy at natural densities, and the floristics and density of the shrub and ground cover layers are consistent with what would be expected in undisturbed examples of the communities. In contrast, the vegetation in the Montrose Water Storage area has been semi-cleared and heavily grazed in the recent past, such that tree densities are lower than in the offset areas with less canopy connectivity. In addition, many of the trees in the Montrose Water Storage area are relatively young regeneration, which has established since grazing was withdrawn from the area.</p> <p>As the proposed offset areas (combined) have larger woodland vegetation community areas and consists of vegetation in better condition with better structure than the proposed Montrose Water Storage area, it is considered that the proposed offset would maintain superior biodiversity function than the proposed Montrose Water Storage area. In addition, with the implementation of biodiversity enhancement measures (see below) the biodiversity function of the proposed offset would improve.</p> <p>The proposed offset areas would be connected (via WCPL's existing RWEF Areas B, C and D) to the Wollemi National Park. The conservation and enhancement of the proposed offset would increase buffer zones around the Wollemi National Park and strengthen the linkages between the Wollemi National Park, existing remnant woodland and woodland rehabilitation areas and therefore enhance biodiversity at a range of scales.</p> <p>Based on the vegetation mapping conducted by FloraSearch (2012), the Montrose Water Storage area and the proposed offset areas include the following woodland vegetation communities:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland Endangered Ecological Community. • Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community. <p>As stated above, the offset areas are a much higher quality of vegetation and habitat than the Montrose Water Storage area. The proposed offset areas also provide habitat for numerous fauna species listed as threatened under the NSW <i>Threatened Species Conservation Act, 1995</i> (refer to Table 3).</p>

Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>5. Offsets must be underpinned by sound ecological principles (Cont.).</p>	<p>Should approval be granted, it is anticipated that the offset areas would be subject to similar consent conditions to those which currently relate to the RWEPP Areas B and C (i.e. Conditions 41 and 41A of Schedule 4 of the existing Development Consent DA 305-7-2003), viz.:</p> <p><i>41. Within 18 months of the commencement of this consent, the Applicant shall enter into a Deed of Agreement with the Minister. In this agreement, the Applicant shall agree to:</i></p> <p><i>(a) conserve and manage the land in the offset strategy in accordance with the Remnant Woodland Enhancement Program (see Condition 47) in the Flora & Fauna Management Plan (see Condition 44),</i></p> <p><i>(b) apply to rezone the land in Remnant Woodland Enhancement Area A for the purpose of:</i></p> <ul style="list-style-type: none"> ▪ <i>protecting the land for conservation; and</i> ▪ <i>excluding open cut mining;</i> <p><i>(c) conserve and manage the land in Remnant Woodland Enhancement Area A in accordance with any Aboriginal cultural heritage conservation agreement (see Condition 51);</i></p> <p><i>(d) exclude open cut mining in Remnant Woodland Enhancement Areas B and C, unless, in the opinion of the Minister, the Applicant has demonstrated that there is a clear justification for this on social, economic, and/or environmental grounds. To assist the Minister in his decision making, the Applicant shall:</i></p> <ul style="list-style-type: none"> ▪ <i>establish the coal reserve in Remnant Woodland Enhancement Area Areas B and C;</i> ▪ <i>investigate the options for mining this reserve;</i> ▪ <i>assess the implications of any open cut coal mining proposal on the offset strategy and broad conservation outcomes; and</i> ▪ <i>assess the environmental, economic and social aspects of any open cut mining proposal in the area; and</i> <p><i>(e) apply to rezone Remnant Woodland Enhancement Areas B and C, in whole or in part, excluding any lands approved for open-cut mining by the Minister.</i></p> <p><i>41A. By the end of December 2009, the Applicant shall:</i></p> <p><i>(a) incorporate an offset of at least 46 hectares, generally consistent with the offset described in the 2009 SEE, into the Remnant Woodland Enhancement Program (see condition 47); and</i></p> <p><i>(b) establish mechanisms within the Flora and Fauna Management Plan for long-term conservation and management of this offset in accordance with condition 41 (d) & (e).</i></p> <p>With the application of this type of condition to the proposed offset areas it is considered that they would be long term and secured by a conservation agreement.</p>

Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>5. Offsets must be underpinned by sound ecological principles (Cont.).</p>	<p>The proposed offset would include enhancement of existing habitat and securing and managing land of conservation value for biodiversity. Biodiversity management measures that would be implemented to improve the flora and fauna values of the land (as described in the Flora and Fauna Management Plan) within the offset areas include:</p> <ul style="list-style-type: none"> • rezoning; • fencing; • weed and feral animal control; • bushfire management; • restriction to vehicular traffic access; • selective planting; and • provision of roosting/nesting resources. <p>As the proposed offset areas consist of existing remnant vegetation, the ecological communities would not have to be reconstructed.</p> <p>The Flora and Fauna Management Plan would be updated to include management and monitoring of the proposed offset areas.</p>
<p>6. Offsets should aim to result in a net improvement in biodiversity over time.</p> <p><i>Enhancement of biodiversity in offset areas should be equal to or greater than the loss in biodiversity from the impact site.</i></p> <p><i>Setting aside areas for biodiversity conservation without additional management or increased security is generally not sufficient to offset against the loss of biodiversity. Factors to consider include protection of existing biodiversity (removal of threats), time-lag effects, and the uncertainties and risks associated with actions such as revegetation.</i></p> <p><i>Offsets may include enhancing habitat, reconstructing habitat in strategic areas to link areas of conservation value, or increasing buffer zones around areas of conservation value and removal of threats by conservation agreements or reservation.</i></p>	<p>The proposed offset is considered suitable for offsetting the potential residual impacts associated with the Modification (after the mitigation measures and rehabilitation described in Section 4.5 of the EA), given the anticipated enhancement of biodiversity in the proposed offset areas in the medium to long-term. The enhancement of biodiversity in the proposed offset areas is considered to be greater than the loss of biodiversity from the Montrose Water Storage area as it is larger (see Response to Principle 9) and of better condition.</p> <p>Additional management and increased security would be implemented for the proposed offset areas. Measures that would be implemented to improve the flora and fauna values of the land (as described in the Flora and Fauna Management Plan) within the offset areas are presented in the Response to Principle 5. The anticipated method for the long term security of the proposed offset areas is outlined in the Response to Principle 5.</p> <p>The proposed offset areas would be connected (via WCPL's existing RWEP Areas B, C and D) to the Wollemi National Park. The conservation and enhancement of the proposed offset areas (see Response to Principle 5) would increase buffer zones around the Wollemi National Park and strengthen the linkages between the Wollemi National Park, existing remnant woodland and woodland rehabilitation areas.</p>

Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset																
<p>7. Offsets must be enduring - they must offset the impact of the development for the period that the impact occurs.</p> <p><i>As impacts on biodiversity are likely to be permanent, the offset should also be permanent and secured by a conservation agreement or reservation and management for biodiversity. Where land is donated to a public authority or a private conservation organisation and managed as a biodiversity offset, it should be accompanied by resources for its management. Offsetting should only proceed if an appropriate legal mechanism or instrument is used to secure the required actions.</i></p>	<p>Should approval be granted, it is anticipated that the offset would be subject to similar consent conditions to those which currently relate to the RWEPA Areas B, C and D (i.e. Condition 41 and 41A of Schedule 4 of the existing Development Consent DA 305-7-2003) (see the Response to Principle 5).</p> <p>With the application of these conditions to the proposed offset areas it is considered that they would be permanent and secured by a conservation agreement.</p>																
<p>8. Offsets should be agreed prior to the impact occurring.</p> <p><i>Offsets should minimise ecological risks from time-lags. The feasibility and in-principle agreements to the necessary offset actions should be demonstrated prior to the approval of the impact. Legal commitments to the offset actions should be entered into prior to the commencement of works under approval.</i></p>	<p>Should approval be granted, it is anticipated that the offset areas would be subject to similar consent conditions to those which currently relate to the RWEPA Areas B and C (i.e. Condition 41 of Schedule 4 of the existing Development Consent DA 305-7-2003) (see the Response to Principle 5).</p> <p>With the application of this type of condition to the proposed offset areas it is considered that it would be permanent and secured by a conservation agreement.</p>																
<p>9. Offsets must be quantifiable - the impacts and benefits must be reliably estimated.</p> <p><i>Offsets should be based on quantitative assessment of the loss in biodiversity from the clearing or other development and the gain in biodiversity from the offset. The methodology must be based on the best available science, be reliable and used for calculating both the loss from the development and the gain from the offset. The methodology should include:</i></p> <ul style="list-style-type: none"> ▪ the area of impact ▪ the types of ecological communities and habitat/species affected ▪ connectivity with other areas of habitat/corridors ▪ the condition of habitat ▪ the conservation status and/or scarcity/rarity of ecological communities ▪ management actions ▪ level of security afforded to the offset site. 	<p>Based on the vegetation mapping conducted by FloraSearch (2012), the Montrose Water Storage area and the proposed offset areas include the following woodland vegetation communities:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland Endangered Ecological Community. • Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community. <p>A summary of the areas of woodland vegetation communities in the location of the proposed Montrose Water Storage and the proposed offset areas is provided in the table below.</p> <p style="text-align: center;">Summary of Woodland Vegetation Community Areas</p> <table border="1" data-bbox="1173 970 2011 1278"> <thead> <tr> <th>Woodland Vegetation Community</th> <th>Proposed Montrose Water Storage</th> <th>Proposed Offset Area</th> <th>Ratio</th> </tr> </thead> <tbody> <tr> <td>Central Hunter Box – Ironbark Woodland Endangered Ecological Community</td> <td>1.8 ha</td> <td>7.2 ha</td> <td>4:1</td> </tr> <tr> <td>Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community</td> <td>0.8 ha</td> <td>2 ha</td> <td>2.5:1</td> </tr> <tr> <td>Total</td> <td>2.6 ha</td> <td>9.2 ha</td> <td>3.5:1</td> </tr> </tbody> </table> <p>The proposed offset areas are presented in Figure 1. The proposed RWEPA Area D Extension comprises 2 ha of Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community and the proposed RWEPA Area E comprises 7.2 ha of Central Hunter Box – Ironbark Woodland Endangered Ecological Community.</p>	Woodland Vegetation Community	Proposed Montrose Water Storage	Proposed Offset Area	Ratio	Central Hunter Box – Ironbark Woodland Endangered Ecological Community	1.8 ha	7.2 ha	4:1	Narrabeen Foothills Slaty Box Woodland Vulnerable Ecological Community	0.8 ha	2 ha	2.5:1	Total	2.6 ha	9.2 ha	3.5:1
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Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>9. Offsets must be quantifiable - the impacts and benefits must be reliably estimated (Cont.).</p> <p><i>The best available information/data should be used when assessing impacts of biodiversity loss and gains from offsets. Offsets will be of greater value where:</i></p> <ul style="list-style-type: none"> ▪ <i>they protect land with high conservation significance</i> ▪ <i>management actions have greater benefits for biodiversity</i> ▪ <i>the offset areas are not isolated or fragmented</i> ▪ <i>the management for biodiversity is in perpetuity (e.g. secured through a conservation agreement).</i> <p><i>Management actions must be deliverable and enforceable.</i></p>	<p>The structure, function and compositional elements of the proposed offset areas are considered to be superior than those in the proposed location of the Montrose Water Storage (see Response to Principle 5). The conservation and enhancement of these areas would strengthen the linkages between the Wollemi National Park, existing remnant woodland and woodland rehabilitation areas.</p> <p>The proposed offset areas are considered suitable for offsetting the potential residual impacts associated with the Modification (after the mitigation measures and rehabilitation described in Section 4.5 of the EA), given the anticipated improvement in the flora and fauna values of the land within the offset areas in the medium to long-term. Measures that would be implemented to improve the flora and fauna values of the land (as described in the Flora and Fauna Management Plan) within the offset areas are presented in the Response to Principle 5.</p> <p>The Flora and Fauna Management Plan would be updated to include the proposed offset areas.</p>
<p>10. Offsets must be targeted.</p> <p><i>They must offset impacts on the basis of like-for-like or better conservation outcome. Offsets should be targeted according to biodiversity priorities in the area, based on the conservation status of the ecological community, the presence of threatened species or their habitat, connectivity and the potential to enhance condition by management actions and the removal of threats. Only ecological communities that are equal or greater in conservation status to the type of ecological community lost can be used for offsets. One type of environmental benefit cannot be traded for another: for example, biodiversity offsets may also result in improvements in water quality or salinity but these benefits do not reduce the biodiversity offset requirements.</i></p>	<p>As described in Section 4.5 of the EA, the Montrose Water Storage area includes the following woodland vegetation communities:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland Endangered Ecological Community; and • Hunter Valley Foothills Slaty Box Woodland Vulnerable Ecological Community. <p>The offset areas are a much higher quality of vegetation and habitat than the Montrose Water Storage area. The proposed offset areas also provide habitat for numerous fauna species listed as threatened under the NSW <i>Threatened Species Conservation Act, 1995</i> (refer to Table 3).</p>
<p>11. Offsets must be located appropriately.</p> <p><i>Wherever possible, offsets should be located in areas that have the same or similar ecological characteristics as the area affected by the development.</i></p>	<p>The proposed offset areas are located approximately 0.8 km and 2.5 km from the proposed location of the Montrose Water Storage. Both proposed offset areas adjoin existing offsets and are contiguous with Wollemi National Park. As described in Section 4.5 of the EA, the Montrose Water Storage area includes the following vegetation communities:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland Endangered Ecological Community; and • Hunter Valley Foothills Slaty Box Woodland Vulnerable Ecological Community.

Table 2 (Continued)
Montrose Water Storage Modification Offset – Principles for the Use of Biodiversity Offsets in NSW (DECC 2011)

Principle	Montrose Water Storage Offset
<p>12. Offsets must be supplementary.</p> <p><i>They must be beyond existing requirements and not already funded under another scheme. Areas that have received incentive funds cannot be used for offsets. Existing protected areas on private land cannot be used for offsets unless additional security or management actions are implemented. Areas already managed by the government, such as national parks, flora reserves and public open space cannot be used as offsets.</i></p>	<p>The proposed offset areas are owned by WCPL and are not currently a part of an existing offset or conservation scheme.</p> <p>In addition, the proposed offset areas would be subject to the additional management measures currently applied to RWEF Areas B, C and D. These management measures are detailed in the Flora and Fauna Management Plan in accordance with Condition 41(a) of Development Consent DA 305-7-2003.</p> <p>The Flora and Fauna Management Plan would be updated to include management and monitoring of the proposed offset areas.</p>
<p>13. Offsets and their actions must be enforceable through development consent conditions, licence conditions, conservation agreements or a contract.</p> <p><i>Offsets must be audited to ensure that the actions have been carried out, and monitored to determine that the actions are leading to positive biodiversity outcomes.</i></p>	<p>Should approval be granted, it is anticipated that the offset areas would be subject to similar consent conditions to those which currently relate to the RWEF Areas B, C and D (i.e. Condition 41 and 41A of the existing Development Consent DA 305-7-2003) (see the Response to Principle 5).</p> <p>Should the offset areas be subject to similar consent conditions to those which currently relate to the RWEF Areas B, C and D (i.e. Condition 41 and 41A of the existing Development Consent DA 305-7-2003), the proposed offset areas would be subject to the additional management measures and monitoring programme that are currently applied to RWEF Areas B, C and D. These management measures and monitoring programme are detailed in the Flora and Fauna Management Plan in accordance with Condition 41(a) of Development Consent DA 305-7-2003. The monitoring programme for the RWEF Areas includes monitoring of flora, habitat complexity, terrestrial fauna and specific enhancement initiatives (e.g. weed control programmes).</p> <p>The Flora and Fauna Management Plan would be updated to include the proposed offset areas.</p>

Table 3
Threatened Fauna Species Considered Possible Occurrences
in the Study Area and Surrounds

Scientific Name	Common Name	Conservation Status ¹	
		TSC Act	EPBC Act
Amphibians			
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V
Birds			
<i>Lophoictinia isura</i>	Square-tailed Kite	V	-
<i>Circus assimilis</i>	Spotted Harrier	V	-
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-
<i>Rostratula australis</i>	Australian Painted Snipe	E	V
<i>Calyptorhynchus lathami</i>	Glossy Black-cockatoo	V	-
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	-
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-
<i>Neophema pulchella</i>	Turquoise Parrot	V	-
<i>Lathamus discolor</i>	Swift Parrot	E	E
<i>Tyto tenebricosa</i>	Sooty Owl	V	-
<i>Tyto novaehollandiae</i>	Masked Owl	V	-
<i>Ninox strenua</i>	Powerful Owl	V	-
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V	-
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	V	-
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V	-
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	E
<i>Grantiella picta</i>	Painted Honeyeater	V	-
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V	-
<i>Petroica phoenicea</i>	Flame Robin	V	-
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V	-
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-
<i>Pachycephala olivacea</i>	Olive Whistler	V	-
<i>Stagonopleura guttata</i>	Diamond Firetail	V	-
Mammals			
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll (SE mainland population)	V	E
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-
<i>Miniopterus australis</i>	Little Bentwing-bat	V	-
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-
<i>Nyctophilus corbeni</i>	Greater Long-eared Bat (south-eastern form)	V	V
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-
<i>Scoteanax rueppelli</i>	Greater Broad-nosed Bat	V	-
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V	-

¹ Threatened species status listed under the NSW *Threatened Species Conservation Act, 1995* and Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (current as at June 2012).

V = Vulnerable E = Endangered CE = Critically Endangered