



ADDENDUM:

***MAJOR PROJECT ASSESSMENT:
Warkworth Extension Project
(09_0202)***



Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

January 2012

Cover Photo: Coal Reclaimer – Mt Thorley-Warkworth Mine Complex

© Crown copyright 2012
Published January 2012
NSW Department of Planning & Infrastructure
www.planning.nsw.gov.au

Disclaimer:
While every reasonable effort has been made to ensure that this document is correct at the time of publication, the State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this document.

1. ADDITIONAL INFORMATION

1.1 Introduction

This report provides an addendum to the Director-General's Environmental Assessment Report (October 2011) for the Warkworth Extension Project (the project).

The report has been prepared in response to issues and comments raised by the Planning Assessment Commission (PAC) during its review of the project, including briefing meetings held on 17 October 2011, 28 October 2011, 15 November 2011 and 9 December 2011.

The report should be read in conjunction with the Director-General's Environmental Assessment Report (Assessment Report) for the project.

1.2 Chronology of Events

A brief chronology of the key events relevant to this addendum report in the time since the Department's referral of the assessment package to the PAC is presented in the following table.

Table 1: Chronology of Events

Date	Event
5 Oct 11	Director-General's Assessment Report referred to PAC
17 Oct 11 & 28 Oct 11	Department and EPA officers undertake briefings with the PAC. The PAC requests additional information on a number of matters, including: <ul style="list-style-type: none"> • strategic context and justification for the project; • biodiversity – including justification for mining through offset areas and mechanisms for ensuring long term security of offsets; • Wallaby Scrub Road – including impacts on emergency services, heritage impacts and the statutory process for road closure; • blast fumes; • noise attenuation; • dust management (pro-active and re-active); • groundwater (perched aquifer management); • catchment management initiatives; • Aboriginal heritage (blast impacts on axe grinding grooves); • community enhancement funding mechanisms; • independent peer review and adaptive management; and • agency consultation (PAC requested additional consultation with NOW and NSW Health).
25 Oct 11	Department requests additional response from NOW and NSW Health, in accordance with PAC request (see Attachment A).
3 Nov 11	NOW provides response to Department (see Attachment B), confirming that it does not object to the project provided conditions appropriately manage water resources and groundwater dependent ecosystems.
9 & 10 Nov 11	PAC meetings held in Singleton.
11 Nov 11	NSW Health provides response to PAC (see Attachment C)
15 Nov 11	Department officers undertake additional briefing with the PAC, with the PAC providing feedback on issues raised at the PAC meetings.
9 Dec 11	Department officers undertake additional briefing with the PAC, with the Department providing preliminary findings of the Department's investigations into the issues raised at the PAC meetings.
14 Dec 11	PAC provides letter to Department (see Attachment D) identifying concerns and requesting that recommended conditions appropriately address a number of matters, including: <ul style="list-style-type: none"> • best management practice – particularly in relation to noise, dust, light, blasting and rehabilitation; • production limits; • Wallaby Scrub Road – including alternative access for emergency vehicles and a timetable for road upgrades required as a result of the closure; • biodiversity offsets – particularly the uncertainty associated with the proposed offsets (particularly the additional 750 hectares yet to be identified); and • voluntary planning agreement (timing).

Date	Event
21 Dec 11	EPA advises the Department that it is satisfied with Warkworth's proposed additional biodiversity offset areas, based on desktop analysis. Letter formalising this advice received by Department on 13 Jan 12 (see Attachment E).
22 Dec 11	Warkworth provides additional information to Department addressing issues raised by the PAC (see Attachment F).

1.3 Strategic Context and Justification

The PAC requested that the Department provide some additional consideration and detail on the strategic context and justification for the project, including the proposed mining method (namely open cut mining as opposed to underground mining) and the recommended closure of Wallaby Scrub Road.

Hunter Coalfield Context

To provide this justification, it is worth providing some background context of the Warkworth mine within the Hunter Coalfield.

In this regard, the Hunter Coalfield¹ is Australia's most established coalfield. It is known that Aboriginal people in the Newcastle and Hunter regions used coal as a fuel prior to European settlement. The first European coal mines were operating in the Newcastle area in the late 1700s, with mining gradually moving up the Hunter Valley with settlement. Mining commenced in the Singleton area in the 1870s.

Today, the Hunter Coalfield is one of 6 main coal resource regions in NSW – the others being the Newcastle, Gunnedah, Gloucester, Western and Southern Coalfields (see Figure 1). The Hunter Coalfield is by far the largest coalfield in NSW in terms of production, with a total saleable coal production in 2008-09 of 82 million tonnes of thermal and coking coal. Extracted coal is used locally for electricity generation in the region's power stations, or exported from the Port of Newcastle. The Hunter Valley Coal Chain is the world's largest coal export operation.

Coal mining is a significant contributor to the NSW economy, with total production worth some \$13.3 billion in 2009-10. It supplies 92% of the State's electricity and also provides essential support to major industry including the aluminium smelters in the Hunter Valley and the steelworks at Port Kembla.

The NSW coal mining industry currently employs approximately 19,000 people and indirectly creates up to another 70,000 jobs in mine and non-mine related industries. The industry generates around 80% of the State's mining income and around 25% of its export revenue. Coal is the single largest export in revenue terms from the State.

The future of the NSW coal industry is tied to global energy demand, which is predicted to increase by up to 60% over the next 25 years. Two thirds of this demand is expected to come from developing countries.

Most of the growth in the coal industry¹ over the next 25 years is likely to occur in the northern parts of the State, with the Hunter Valley likely to contribute about 40% to 60% of the additional coal output. Work undertaken by the Department indicates that further development of the Hunter Coalfield is likely to focus on:

- continued expansion of mining operations in the area between Singleton and Muswellbrook; and
- gradual expansion of open cut and underground mining into the area to the north and northwest of Muswellbrook, towards Denman and beyond.

The predicted intensification of mining in the area between Singleton and Muswellbrook will require the careful management of potential cumulative impacts in an area that already accommodates substantial coal mining activity. Key issues raised by stakeholders during consultation for the (former) NSW Coal and Gas Strategy² included:

- cumulative impacts (particularly noise, dust and blasting impacts);
- protecting amenity and health;
- land use conflicts;

¹ Including the Newcastle Coalfield.

² The former NSW Coal and Gas Strategy has now been integrated into the Upper Hunter Strategic Regional Land Use Plan.

- biodiversity;
- mine rehabilitation;
- water resources;
- rail and road capacity;
- economic costs and benefits;
- urban planning and community infrastructure; and
- Aboriginal heritage.

The NSW Government has introduced a range of new initiatives designed to address these and other concerns around land use conflicts in our regional areas. These include the preparation of a Regional Strategic Land Use Plan for the Upper Hunter. Once finalised, the plan is expected to provide a comprehensive strategic framework for balancing competing land uses in the Upper Hunter, particularly between the coal mining and coal seam gas industries and agricultural industries.

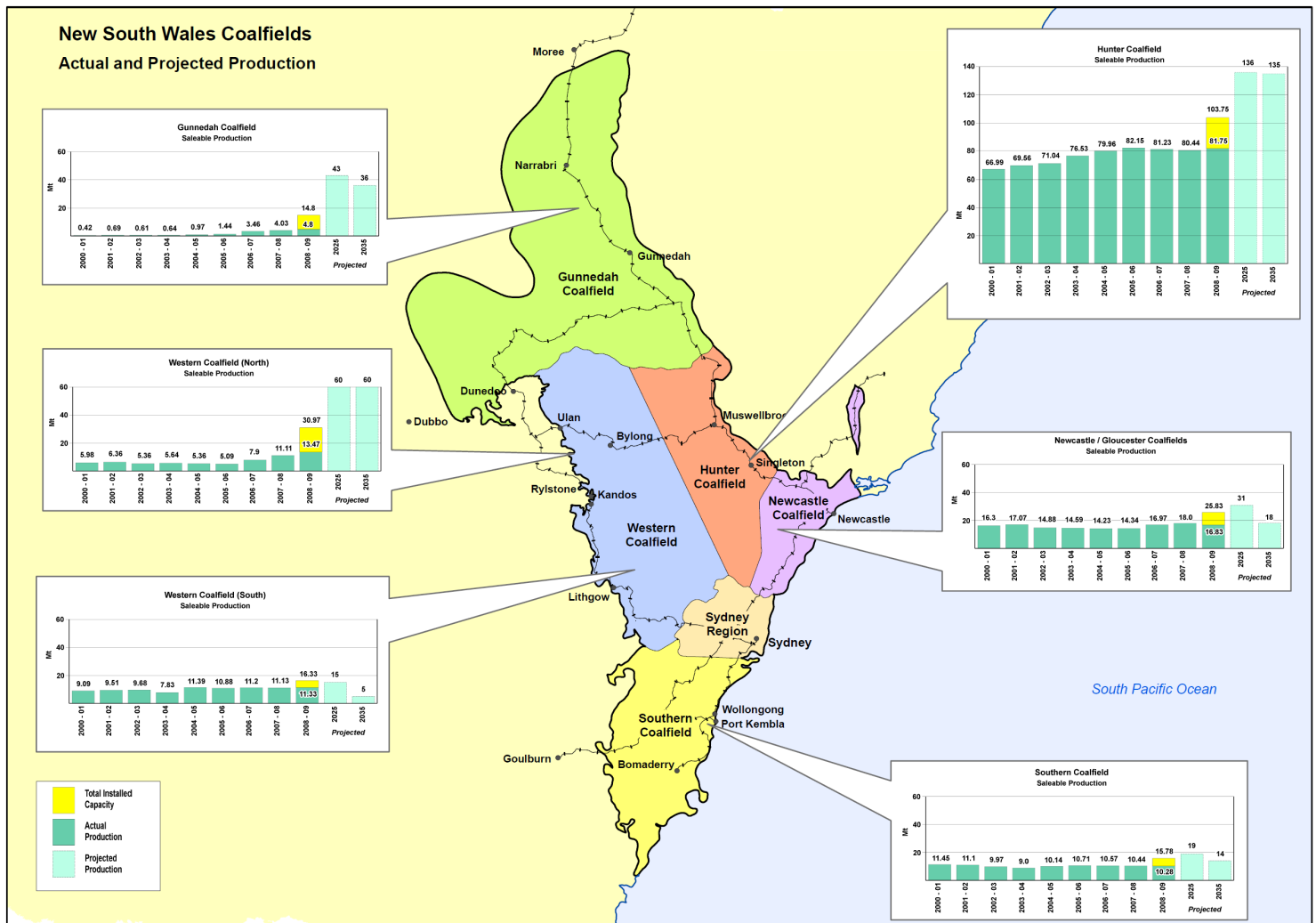


Figure 1: NSW Coalfields and Production

Warkworth Mine Extension Context and Justification

The Warkworth mine has been operating for more than 30 years, with operations commencing in April 1981. It is one of 24 mines currently operating in the Upper Hunter (see Figure 2).

The current consent for the mine allows Warkworth to extract up to 18 million tonnes of run-of-mine (ROM) coal a year, which is equivalent to 12.5 million tonnes of product coal.

Despite the long history of mining at Warkworth, its main mining lease area (CCL 753) – which includes the extension area – still contains very large amounts of in-ground thermal and semi-soft coking coal. It contains approximately 680 million tonnes of open cut resources and reserves and approximately 350 million tonnes of underground resources, making it one of the Hunter Coalfield’s largest coal resources.

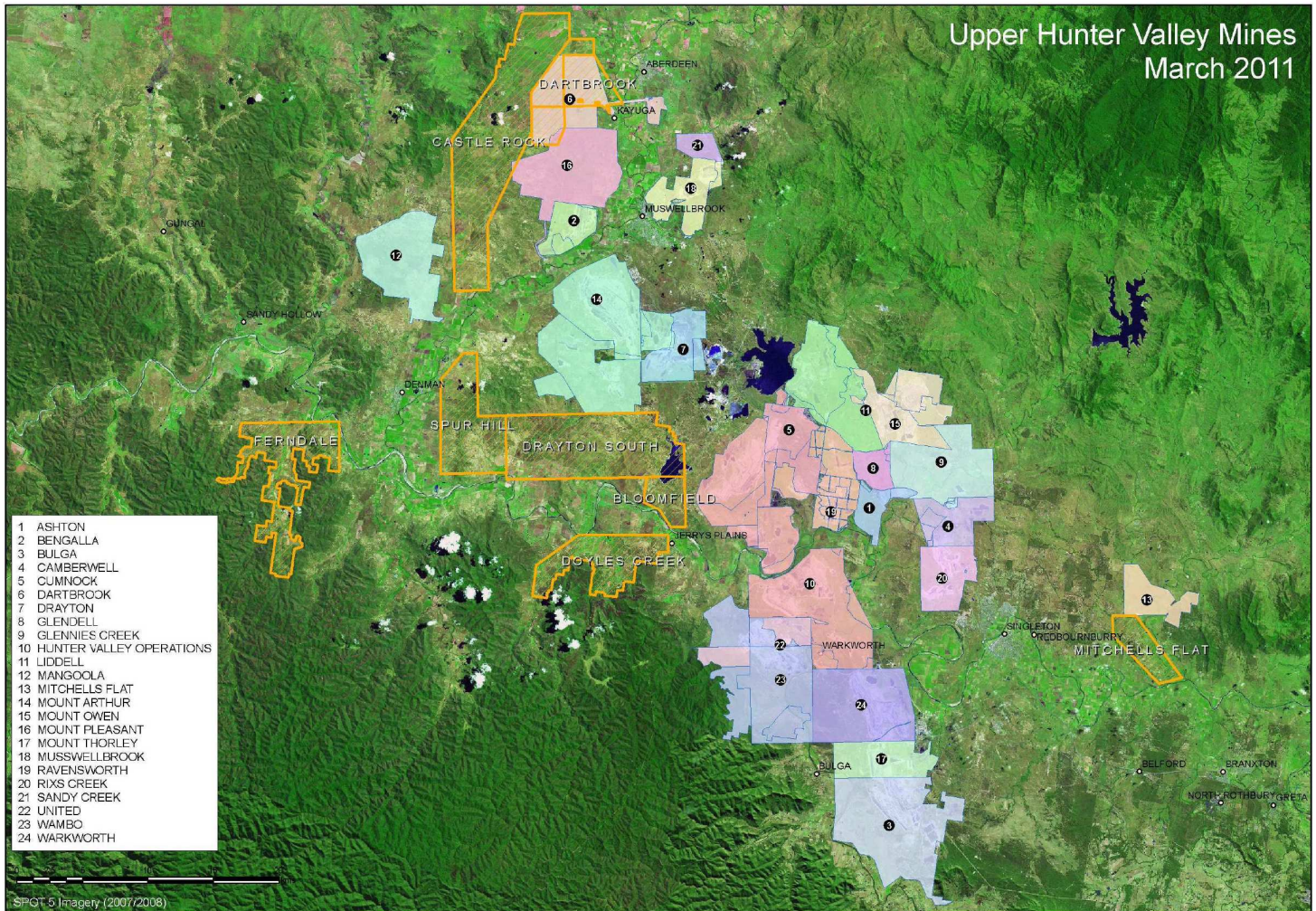


Figure 2: Upper Hunter Coal Mines

Warkworth's current mine planning indicates that these resources would support economic extraction of coal to 2056 (however the current proposal is based on extraction of 200 million tonnes of ROM coal over 21 years).

Mining at Warkworth targets coal within the Whittingham coal measures, which comprises some 20 coal seams of varied thickness interbedded with shales, siltstones, sandstones and conglomerates. Eight of these coal seams are too thin, narrow, split or close to other coal seams to be mined via underground mining methods. This, together with other constraints (such as safety and physical layout issues) means that underground mining would only be able to extract approximately 19% of the available resource in the areas that have open cut potential.

The Department believes that such an inefficient outcome would be inconsistent with the objects of the EP&A Act, which require the proper development of the State's resources, and the orderly and economic use and development of land. It would also be contrary to the requirements of Warkworth's mining lease which requires the company to extract as much coal from the lease area as practicable.

For these reasons, the Department is satisfied that the proposed open cut mining of the resource is justified and reasonable, and that mining via underground methods is not practicable. The Department acknowledges that open cut mining of the resource would have a range of environmental impacts, as detailed in the Director-General's assessment report. The Department has recommended a comprehensive suit of conditions to minimise, mitigate and/or compensate these impacts.

With regard to Wallaby Scrub Road, the Department notes that the road effectively bisects the proposed extension area. Granted that underground mining is not a practicable alternative, the only other alternatives to the Department's recommendation to close the road are the relocation of the road to the west, or leaving the road in-situ and foregoing the coal beneath it.

Leaving the road in-situ would effectively sterilise a large part of the proposed coal resource. Warkworth has estimated (see Attachment F) that not mining west of Wallaby Scrub Road would sterilise approximately 140 million tonnes of coal within the proposed 21 year consent limit, or 326 million tonnes of coal in total (ie. including coal resources beyond the 21 year limit). This total coal resource has a value of approximately \$14 billion (or \$32 billion for the total resource).

Sterilising the proposed coal resource west of Wallaby Scrub Road would forego a considerable portion of the socio-economic benefits of the project (total estimated benefits total some \$16.7 billion for the region over the 21 year life of the mine), and would forego around \$574 million in royalties to NSW over the life of the project.

The direct impacts of closing the road are outlined in the Director-General's assessment report, and include relatively modest increased travel times for the 780 vehicles that currently use the road each day (ie. an additional 3.5 minutes travel time for 80% of road users, and an additional 6 minutes for the remaining 20% of road users), and some heritage impacts.

The Department notes that road closures or realignments have been an aspect of a number of mining projects and approvals in the Hunter Valley in the past, with examples in the Singleton LGA including Lemington Road, Jerry's Plains Road, Putty Road, Pinegrove Road, Wambo Road, Dights Crossing Road, Old Maison Dieu Road and Brunkers Lane.

On balance, the Department does not believe that the impacts of road closure outweigh the costs associated with sterilising the coal resource. However, the Department has recommended conditions to mitigate these impacts, including requiring Warkworth to undertake local road upgrades, fund the relocation of the Rural Fire Service to mitigate the increased response times, and to conserve heritage values of the roadway. As detailed in Section 1.4 below, Warkworth has recently reached in-principle agreement with the Rural Fire Service regarding maintaining an emergency access road around the western boundary of the project site.

The Department has also considered the alternative of relocating Wallaby Scrub Road in detail in the Director-General's assessment report (see Section 5.8 of the report). On balance, the Department believes that the potential impacts associated with the relocation of the road cannot be justified given:

- the additional impact on endangered ecological communities;
- the relatively low traffic volumes;
- the relatively low additional travel times associated with road closure;
- the costs associated with road relocation (and ongoing maintenance), which are unlikely to outweigh the benefits accrued to a small proportion of road users; and
- potential additional impacts on Aboriginal heritage.

For these reasons, the Department is satisfied that closure of Wallaby Scrub Road is reasonable and justified.

Further consideration of the need for the Warkworth Extension Project is presented in Section 5.11 of the Director-General's assessment report.

1.4 Response to Other Issues

The PAC raised several issues regarding the project. The key issues raised, and the Department's consideration of each, are presented in Table 1 below. Warkworth has prepared a detailed response to the PAC's issues (see Attachment F), which should be read in conjunction with the table below.

The recommended conditions of approval for the project have been amended to address the issues raised by the PAC (see Attachment G). The key amendments to the recommended conditions are outlined in the following table.

Table 1: Response to Issues

Issue	Issue Detail	Department's Response and Amendments to Instrument of Approval
Best Management Practice	<p>The PAC noted that the existing mine complex falls well short of best environmental management practice. The PAC stated that best practice would need to be imposed and supported by strong audit requirements and appropriate sanctions for non-compliance, ideally framed so as to limit progress of the mine toward sensitive receivers unless standards and/or timeframes are met.</p>	<p>Warkworth's response includes an assessment of compliance with relevant noise, dust and blast criteria, and lighting complaints, since 2004 (see Attachment F). The assessment indicates that the mine complex has recorded a relatively small number of non-compliances since 2004, however the Department acknowledges and agrees that best management practice at the mine complex could be substantially improved.</p> <p>In this regard, the Department has amended the recommended conditions to:</p> <ul style="list-style-type: none"> • strengthen the requirements for implementing best management practice in noise, blasting and air quality management; • specify requirements for compliance and adaptive management; and • implement other specific measures as outlined below.
	<p>Specific matters for consideration/conditioning include:</p> <ul style="list-style-type: none"> • at-source controls (esp. noise and dust); 	<p>Warkworth has considered additional reasonable and feasible at-source controls (see Attachment F), and has recently committed to:</p> <ul style="list-style-type: none"> • the progressive attenuation of 100% of the existing fleet of trucks, dozers, drills and excavators by the end of 2015 (the original recommended conditions required Warkworth to attenuate 80% of the existing truck fleet by the end of 2017); • construct a bund at the Mt Thorley Lodgers Pit (a key locational source of noise emissions) by September 2012, with dumping to occur behind the bund during sensitive (ie. winter) night time periods; and • progress the roll-out of real-time noise and dust management systems (see below). <p>The Department is satisfied that these additional at-source controls represent reasonable and feasible source mitigation measures for the mine complex, and has amended the recommended conditions to reinforce these commitments.</p>
	<ul style="list-style-type: none"> • night time noise limits; 	<p>As outlined in the Director-General's Assessment Report, the proposed noise limits for the mine complex represent a tightening of noise limits at Bulga Village, as the Department and EPA have required Warkworth to apply noise limits to the complex as a whole, rather than the existing consents which provide separate noise limits for Warkworth and Mt Thorley. Therefore, whilst the noise limits appear at first glance to have increased, the complex criteria are actually lower than that which apply if each mine is allowed to operate at its existing noise limit. The result is a reduction in noise limits by up to 3 decibels for receivers to the west. Warkworth's additional information (see Attachment F) contains additional consideration in this regard.</p>
	<ul style="list-style-type: none"> • performance during temperature inversions; 	<p>The Department notes that the noise criteria apply during prevailing weather as required by the NSW Industrial Noise Policy (INP), including temperature inversion conditions up to and including the F-class stability category. It is only during extreme inversion conditions (ie. G-class and above) where the INP provides that noise criteria do not apply. These conditions only occur less than 5% of the time.</p>
		<p>However, the Department agrees that Warkworth should be required to implement all reasonable and feasible</p>

Issue	Issue Detail	Department's Response and Amendments to Instrument of Approval
		measures to reduce noise emissions during inversion conditions. In this regard, the Department has amended the recommended conditions to require Warkworth to minimise noise impacts from the mine complex during adverse weather conditions, and to describe such measures in the Noise Management Plan for the project. The Department has extended similar requirements to dust during adverse weather conditions.
		The Department also acknowledges Warkworth's commitment to establishing the bund at the Lodgers Pit (see above), which would be used to mitigate dumping-related noise emissions during sensitive weather periods.
	<ul style="list-style-type: none"> noise attenuation of all plant and equipment (including shortening of timeframes to complete); 	<p>As outlined above, Warkworth has recently committed to the progressive attenuation of 100% of the existing fleet of trucks, dozers, drills and excavators by the end of 2015 (the original recommended conditions required Warkworth to attenuate 80% of the existing truck fleet by the end of 2017). The recommended conditions also require Warkworth to ensure that all new trucks, dozers, drills and excavators purchased following approval are noise attenuated.</p> <p>Warkworth notes that these mobile sources typically contribute 90% to 100% of the received noise levels off-site, and that attenuating other plant items would not have any material influence on received noise levels.</p>
	<ul style="list-style-type: none"> maintenance and auditing of noise and dust attenuation measures; 	The Department has amended the recommended conditions to strengthen requirements for maintenance and testing of attenuation measures, and also to require Warkworth to undertake annual Independent Noise, Blasting & Air Quality Audits (see below).
	<ul style="list-style-type: none"> noise mitigation of Mt Thorley operations; 	Warkworth has recently committed to construction of a bund to mitigate noise emissions at Mt Thorley (see above).
	<ul style="list-style-type: none"> real-time dust management systems; and 	The Department has amended the recommended conditions to strengthen the requirements for real-time monitoring, together with implementation of active management systems that employ both proactive and reactive mitigation measures.
	<ul style="list-style-type: none"> independent auditing of noise, air quality and blasting measures/systems. 	As outlined above, the Department has amended the recommended conditions to require Warkworth to undertake annual Independent Noise, Blasting & Air Quality Audits until the Director-General is satisfied that Warkworth is implementing best noise, blasting and air quality management practice on site.
<i>Production Limits</i>	<p>The PAC questioned the practice of managing operations to regulatory environmental performance limits (eg. noise and dust) based on maximum mine production volumes, rather than focusing on best practice (at all production stages).</p> <p>Specific matters for consideration include:</p> <ul style="list-style-type: none"> ensuring best practice at-source controls (at all times); tying limits to production levels; and imposition of realistic production limits in the approval. 	<p>Given that noise emissions are likely to decrease following cessation of active mining operations at Mt Thorley in approximately 2017, the Department has amended the recommended conditions to apply reduced noise criteria once Mt Thorley mining ceases. The noise criteria are based on predicted noise levels post-Mt Thorley operations, and following additional noise assessment by Warkworth (see Attachment F).</p> <p>See above.</p> <p>See above.</p> <p>Warkworth has provided additional information (see Attachment F) explaining that the lower achieved production rates in recent years is primarily the result of physical constraints in the Hunter Valley Coal Chain (from the mine to the Port of Newcastle). With recent</p>

Issue	Issue Detail	Department's Response and Amendments to Instrument of Approval
Wallaby Scrub Road	<p>In its request to the Department of 14 Dec 11 (see Attachment D), the PAC noted that 2 issues needed to be resolved:</p> <ul style="list-style-type: none"> • alternative access for emergency vehicles (primarily the Rural Fire Service); and <hr/> <ul style="list-style-type: none"> • requirements and timetable for upgrades to regional intersections affected by the road closure. 	<p>and planned upgrades to the infrastructure network, Warkworth is predicting that its production levels will progressively increase to the approved maximum (ie. 18 million tonnes of ROM coal a year).</p> <p>Given the improved focus in the amended recommended conditions on best practice and minimisation of noise and dust impacts (including revised noise limits once mining at Mt Thorley ceases), the Department does not believe that further tying of environmental limits to production levels is warranted.</p> <p>Since referral of the Director-General's assessment Report to the PAC, Warkworth has undertaken additional consultation with the RFS, and has proposed to construct an emergency access track/fire trail around the western perimeter of the proposed extension area (though within the proposed project disturbance area), to minimise any increase in emergency response times. The RFS has provided feedback to Warkworth providing in-principle support for the proposed emergency access road (see Appendix H in Attachment F).</p> <p>The Department has recommended a condition requiring Warkworth to construct the emergency access track/fire trail prior to the closure of Wallaby Scrub Road (nominally 2018), and to maintain the road throughout the project, provide improved access to the site during emergencies and to assist the RFS with provision of resources for emergency response.</p> <p>As detailed in the Director-General's Assessment Report, the closure of Wallaby Scrub Road has been modelled and is not expected to result in any adverse impacts on other roads in the region.</p> <p>Notwithstanding, given existing sub-standard performance, the recommended conditions include requirements on Warkworth to upgrade (and/or provide funding to upgrade) two local intersections to the satisfaction of the Roads and Maritime Services (RMS), by the end of 2012. This timing is approximately 5 years before the proposed closure of Wallaby Scrub Road.</p> <p>The Department notes that the recommended conditions also require Warkworth to construct and maintain the third Putty Road bridge between the Warkworth and Mt Thorley mines to the satisfaction of the RMS, without any specific timetable for the bridge construction. The Department clarifies that this is a mine-owned bridge over Putty Road, which forms part of a haul road connecting the Warkworth and Mt Thorley mines. This bridge is not related to the closure of Wallaby Scrub Road, and the Department is satisfied that timing for the bridge construction is not necessary in the conditions of approval, given its private use.</p> <hr/> <p>In earlier briefings, the PAC also requested additional information on:</p> <ul style="list-style-type: none"> • potential heritage impacts of road closure and mining; and <p>Section 5.7 of the Director-General's Assessment Report and the recommended conditions address the heritage impacts of road closure. The Department considers that the recommended conditions – requiring further archaeological investigations and management – are appropriate for the potential level of impact. The Department is also satisfied that the timeframe for investigations (ie. by the end of 2012) is adequate for evaluating and mitigating impacts well prior to road closure (nominally 2018).</p>

Issue	Issue Detail	Department's Response and Amendments to Instrument of Approval
	<ul style="list-style-type: none"> the statutory process for road closure. 	<p>The statutory process and necessary approvals for road closure are detailed in Section 3.1 of the Director-General's Assessment Report. Importantly, the requirement to obtain separate approvals does not preclude the PAC from determining the project.</p>
<i>Biodiversity Offsets</i>	<p>The PAC requested additional information/certainty regarding the:</p> <ul style="list-style-type: none"> identity of the offset areas, in particular the 750 hectare additional offset area that is yet to be identified; and 	<p>Since referral of the Director-General's Assessment Report to the PAC, Warkworth has provided additional commercial-in-confidence information to the Department and the EPA identifying additional potential offset areas in the same region as its proposed Goulburn River offset area. These potential areas comprise approximately 1,965 hectares of land, including over 750 hectares of native woodland.</p> <p>The EPA has confirmed to the Department that the areas meet the requirements of the recommended conditions (for the additional offset area), based on desktop review (see Attachment E).</p> <p>Based on EPA's feedback, Warkworth is now moving to progress commercial negotiations with the landowners of these properties.</p> <p>The Department is satisfied that Warkworth is adequately progressing the identification of the additional offset areas, and that if Warkworth's acquisition negotiations should fall over, that other potential offset lands are available in the region.</p>
	<ul style="list-style-type: none"> future security of the offset areas and the enforceability of offset-related conditions. 	<p>The Department notes that there are a number of options for the long term (in perpetuity) conservation of offset areas, including:</p> <ol style="list-style-type: none"> transferring the land to National Parks with a funding arrangement for long-term management; establishing the areas as reserves under the EPA's Biobanking scheme; establishing a Voluntary Conservation Agreement (VCA) between the Minister for the Environment and the Proponent; establishing a Voluntary Planning Agreement (VPA) between the Minister for Planning and Infrastructure and the Proponent; and/or rezoning the land and/or placing covenants on the land title. <p>The Department notes that the NSW Land and Environment Court has recently expressed a view that a VCA under the <i>National Parks and Wildlife Act 1974</i> is an appropriate legal mechanism to protect offset areas (<i>Ironstone Community Action Group Inc v NSW Minister for Planning and Duralie Coal Pty Ltd [2011] NSWLEC 195</i>).</p> <p>In this regard, Warkworth has recently committed to entering into a VCA for the protection of the offset areas by December 2012, and the Department has amended the recommended conditions to reinforce this commitment.</p>
<i>Planning Agreement / Contributions</i>	<p>The PAC considered that the recommended planning agreement would need to be negotiated between Warkworth and Council, with the Department to act as arbiter if agreement cannot be reached within 6 months.</p>	<p>The Department agrees and has amended the recommended conditions to clarify the Department's role regarding dispute resolution.</p>

Issue	Issue Detail	Department's Response and Amendments to Instrument of Approval
	In earlier briefings, the PAC also queried the best mechanism for delivering the proposed community enhancement funding.	The Department believes that a trust fund as proposed is the most appropriate mechanism for delivering the proposed community enhancement funding. An alternative delivery mechanism is to establish a Voluntary Planning Agreement with Singleton Council, however preliminary discussions between the proponent and Singleton Council failed to reach such an agreement.
<i>Blast fumes</i>	The PAC questioned if potential blast fume impacts had been adequately addressed in the Assessment Report and instrument of approval.	As outlined in the Director-General's Assessment Report (Section 5.2), there are currently no health based guidelines or criteria which control the emission of blast fumes. Based on assessments undertaken for similar projects (and by ACARP) the Department is satisfied that SO ₂ and NO _x emissions are capable of being managed to acceptable levels with the implementation of appropriate best practice management measures. In this regard, the Department has recommended conditions requiring Warkworth to implement best management practice to minimise fume emissions.
<i>Ground-water (management of perched aquifer)</i>	The PAC requested a strengthening of conditions for managing impacts on the perched aquifers supporting Warkworth Sands Woodland off site.	The Department notes that the area with the greatest potential for impact is in the area already approved for mining. However, it is acknowledged that the recommended conditions could be strengthened. The Department has amended the recommended conditions to require Warkworth to: <ul style="list-style-type: none"> • achieve performance criteria of negligible drainage of water from the perched aquifer, and negligible impacts on the Warkworth Sand Woodland EEC adjacent to the mining pit; and • prepare and implement a specific Warkworth Sands Woodland Perched Aquifer Management Plan as part of the Groundwater Management Plan for the project.
<i>Catchment Action Plans (CAPs)</i>	The PAC noted that the priorities and targets of the CAPs appear not to have been considered in the assessment or through the instrument of approval.	The Department acknowledges the challenge of aligning the priorities and targets of CAPs within the context of mining projects. However, the Department is satisfied that the project would improve biodiversity in the long-term. The Department has amended the recommended conditions to require Warkworth to consult with the CMA during the preparation of the Biodiversity Management Plan, and in finalising the additional biodiversity offset areas for the project.
<i>Aboriginal heritage – blasting impacts</i>	The PAC recommended that impacts from blasting on grinding grooves be limited to nil impact.	The Department has amended the recommended conditions to require Warkworth to ensure that blasting on site does not damage the grinding grooves, as well as other heritage items including the Wambo Homestead, Bulga Bridge and St Phillips Church.
<i>Adaptive Management</i>	The PAC recommended additional clarification in the conditions regarding when adaptive management would be implemented.	The Department has amended the recommended conditions to include a specific condition regarding implementation of adaptive management.
<i>Other Issues</i>	The Department has made a small number of other amendments to the recommended conditions, in response to Warkworth's additional response and the PAC's review.	The key amendments include: <ul style="list-style-type: none"> • an amendment to the land subject to additional air quality mitigation upon request (after 2016). This follows a review of the air quality modelling work for the project by Todoroski Air Sciences which identified an amount of anomalous data on which the original modelling was based (see Appendix E in Attachment F). The Department has reviewed and accepts the updated modelling results; • the removal of a small number of properties from the environmental performance conditions, which are now mine-owned properties; • an update to the blast-related property inspections and investigation conditions, to provide for dispute resolution;

<i>Issue</i>	<i>Issue Detail</i>	<i>Department's Response and Amendments to Instrument of Approval</i>
		<ul style="list-style-type: none"> • an update to the meteorological monitoring condition, to allow flexibility in the technology/methods used for measuring temperature lapse rate; and • some additions to the Water Management Plan condition, including clarification of requirements for detailed baseline data, and a tightening of the timeframes for undertaking independent groundwater model validations (from every 5 years to every 3 years).

2. CONCLUSION

The Department has prepared amended recommended conditions of approval for the Warkworth Extension Project (see Attachment G), and has also made minor amendments to the associated HVO South Project modification application to reflect recent authority restructuring³ (see Attachment H).

The Department believes that the revised recommended conditions of approval for the Warkworth Extension Project represent current best practice for the regulation of coal mines in NSW.

As detailed in the Director-General's Assessment Report, the Department acknowledges that the project represents a logical extension of the existing mining complex, and that it would make use of existing infrastructure and facilities. The Department also recognises that the project would provide major economic and social benefits for the Hunter region and to NSW.

On balance, the Department believes that the project's benefits would outweigh its residual impacts that it is in the public interest and should be approved, subject to stringent conditions.

3. RECOMMENDATION

It is RECOMMENDED that the Planning Assessment Commission:

- **consider** the findings and recommendations of this addendum report together with the Director-General's Environmental Assessment Report;
- **approve** the project application, subject to conditions;
- **approve** the modification application, subject to conditions;
- **sign** the attached amended instrument of project approval (see Attachment G); and
- **sign** the attached amended instrument of modification (see Attachment H).

Chris Wilson
Executive Director

Sam Haddad
Director General

³ The Office of Environment and Heritage is now (largely) the Environment Protection Authority.

ATTACHMENTS

- A Department Letters to NOW and NSW Health – 25 Oct 11
- B NOW Letter to Department – 3 Nov 11
- C NSW Health Letter to PAC – 11 Nov 11
- D PAC Letter to Department – 14 Nov 11
- E EPA Letter to Department re Offsets – 10 Jan 12
- F Warkworth Additional Information to Department – 22 Dec 11
- G Amended Instrument of Project Approval
- H Amended Instrument of Modification

ATTACHMENT A

ATTACHMENT B

ATTACHMENT C

ATTACHMENT D

ATTACHMENT E

ATTACHMENT F

ATTACHMENT G

ATTACHMENT H