



NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT: Drayton Coal Project



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

January 2008

Cover Photos: Looking northeast across Drayton's open cut operations toward Lake Liddell.

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EXECUTIVE SUMMARY

Anglo Coal Australia Pty Limited (Drayton) seeks project approval for the expansion and continued operation of the Drayton open cut mine, 13 kilometres south of Muswellbrook in the Hunter Valley.

The project involves increasing the maximum run-of-mine (ROM) coal production rate from 5.5 to 8 million tonnes per annum, as well as extending the mining footprint to access additional coal reserves. The current stockpile reclamation system and coal handling plant would also be upgraded to process the proposed increase in ROM coal production and would include a new domestic stockpile, relocation of the current ROM coal stockpile and the construction of a tailings drying area.

The mine operates under 8 consents granted by Muswellbrook Shire Council between 1987 and 2002 and one Ministerial consent granted in 2002 for the transport of product coal using the Drayton Rail Loop and Antiene Rail Spur. In seeking approval for the project, Drayton intends to surrender all existing Council consents for the mine and operate under one consolidated project approval. However, the Drayton Rail Loop and Antiene Rail Spur would not be surrendered, as the adjoining Mount Arthur Coal mining complex also relies upon this consent.

The Department publicly exhibited the Drayton's Environmental Assessment for the Project from 28 August 2007 until 26 September 2007, and received 13 submissions, including 5 from public authorities, 4 from special interest groups, and 4 from the general public. One special interest group – the Nature Conservation Council – and all of the members from the general public objected to the proposal, primarily because of the potential amenity (dust, noise, blasting, visual) impacts of the proposal but also because of its potential flora and fauna and greenhouse gas impacts. The other submissions raised some concerns about the proposal, but generally concluded that these concerns could be adequately addressed through the imposition of appropriate conditions of approval.

The Department has assessed the merits of the project in detail, and is satisfied that the environmental impacts of the project can be mitigated, managed, and offset to ensure an acceptable level of environmental performance. It is also satisfied that the project offers significant economic benefits for both the region and the State, as it would:

- allow 53 million tonnes of coal to be extracted for both domestic use and export;
- make optimal use of the existing infrastructure at the mine;
- attract a capital investment of \$35 million;
- generate export revenue of around \$ 2.4 billion;
- provide royalties and taxes to Government; and
- employ up to 390 people for at least 10 years.

Consequently, the Department believes the proposal is in the public interest, and should be approved subject to strict conditions.

1. PROPOSED PROJECT

1.1 Project Background

The Drayton open cut coal mine is located about 13 kilometres south of Muswellbrook in the Upper Hunter Valley (see Figure 1).

It is surrounded by a range of mining, power generation and farming land uses, with the Liddell and Bayswater power stations located to the east of the mine, the Mount Arthur Coal mining complex to the west of the mine, and the closest residences about 1.3 kilometres to the north of the mine in the Antienne rural-residential area.

The mine was approved by Muswellbrook Council in 1980, started operations in 1983, and currently operates under several separate development consents, although the primary consent for the mine was issued by Muswellbrook Council in 2002.

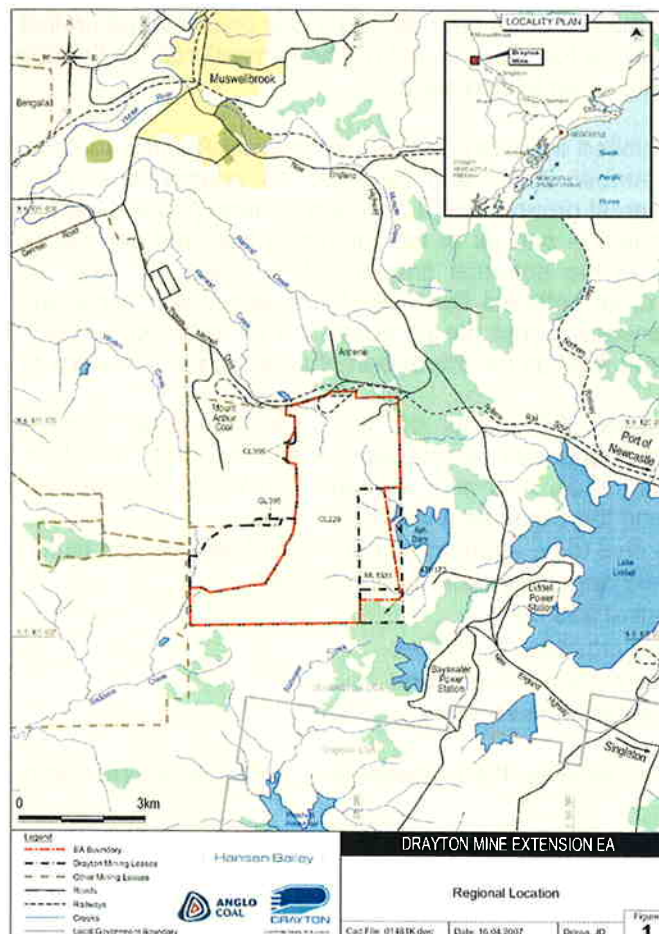


Figure 1: Drayton open cut coal mine locational context

Under its current development consents, Drayton is allowed to extract up to 5.5 million tonnes of run-of-mine (ROM) coal a year until 2012, and process it on site before exporting it via conveyor to the adjoining power stations or via rail to the Port of Newcastle.

Based on current mining rates, Drayton is scheduled to exhaust all approved coal mining reserves by 2010.

To extend the life of the mine to 2017, Drayton proposes to:

- extend the footprint of the mine to access additional reserves and extract up to 53 million tonnes of ROM coal over the next ten years (see Figure 2);
- increase maximum extraction rates from 5.5 to 8 million tonnes of ROM coal a year; and
- upgrade the mine's coal handling and preparation plant by establishing a new emergency domestic coal stockpile and tailings drying area, and relocating the current ROM coal stockpile (to enable the resources under the existing stockpile to be extracted).

1.2 Project Description

The major components of the project are summarised in Table 1, depicted in Figure 2, and described in detail in the Environmental Assessment for the project (see Appendix C).

Table 1: Major components of the project

Aspect	Description
Summary	▪ Extension of approval to mine Greta Seam coal reserves for 10 years. ▪ Extension of the mining footprint to access additional coal reserves. ▪ Increase in coal production from 5.5 Mtpa to a maximum of 8 Mtpa.
Surface Infrastructure and Services	▪ Relocation of the ROM stockpile and construction of an acoustic barrier at its northern limit. ▪ Changes in product stockpiling and reclaiming arrangements including provision of an emergency domestic stockpile. ▪ Modifications to workshop and warehouse including the conversion of six existing service bays. ▪ Access to the mine would continue to be provided from Thomas Mitchell Drive via the New England Highway or Denham Road.
Coal Processing	▪ Processing of up to 8 Mtpa of ROM coal. ▪ Upgrading and modifying the coal handling and processing infrastructure to facilitate the increase in production. ▪ Increase in the quantity of ROM coal received for washing from Cumnock No.1 Colliery from 0.3 Mtpa to a maximum of 1.5 Mtpa.
Water Management	▪ Continued operation of existing water management system and monitoring. ▪ Continued water sharing arrangement with Mt Arthur coal mine (up to 600 ML). ▪ Storage of excess (post-mining) water in mine water storage dams (1,700 ML) and West Pit Final Void (1,000 ML).
Product Coal	▪ Up to 8 Mtpa although the mine production rate would likely vary over the life of the mine with capacity peaking during the first five years of production. ▪ Up to 1 Mtpa of saleable domestic coal would continued to be transported via the existing overland conveyor for use in Bayswater Power Station. ▪ Up to 7 Mtpa of saleable export coal would continue to be transported via the Antiene Rail Spur and the Main Northern Railway to the Port of Newcastle. ▪ No change to coal transportation is required as a result of the project other than an increase in the quantity of export coal to be railed.
Waste Disposal	▪ Construction of a tailings drying area adjacent to the current product coal stockpiles. ▪ Continued provision of up to 25 million bcm of overburden to the Mt Arthur Coal Operations (MAC) sub-lease area (West Pit area). ▪ Continued provision of up to 250,000 bcm of overburden to Macquarie Generation.
Rehabilitation	▪ Progressive rehabilitation to provide integrated, free-draining final landform. ▪ North Pit void to be used for coarse reject emplacement. ▪ South Pit void to be used for water retention. ▪ East Pit void to be used for disposal of fly ash from Macquarie Generation. ▪ Emplacement of overburden in the MAC sub-lease area.
Hours of Operation	▪ Mining operations to continue 24 hours a day, 7 days a week.
Employment	▪ Operational workforce to increase by 59 employees from 329 to 388 employees. ▪ 38 temporary employees during year 1 of the project for the construction and upgrade of coal infrastructure and product stockpiles.
Mine Life	▪ An expected development life of 10 years (from 2007 to 2017)
Capital Investment	▪ Capital investment value of \$35 million.

The proposal has a capital investment value of \$35 million, and would generate export revenue of about \$2.37 billion, provide royalties and tax income to Government, create 60 new mining jobs, and provide continued employment for the 330 employees currently working at the mine.

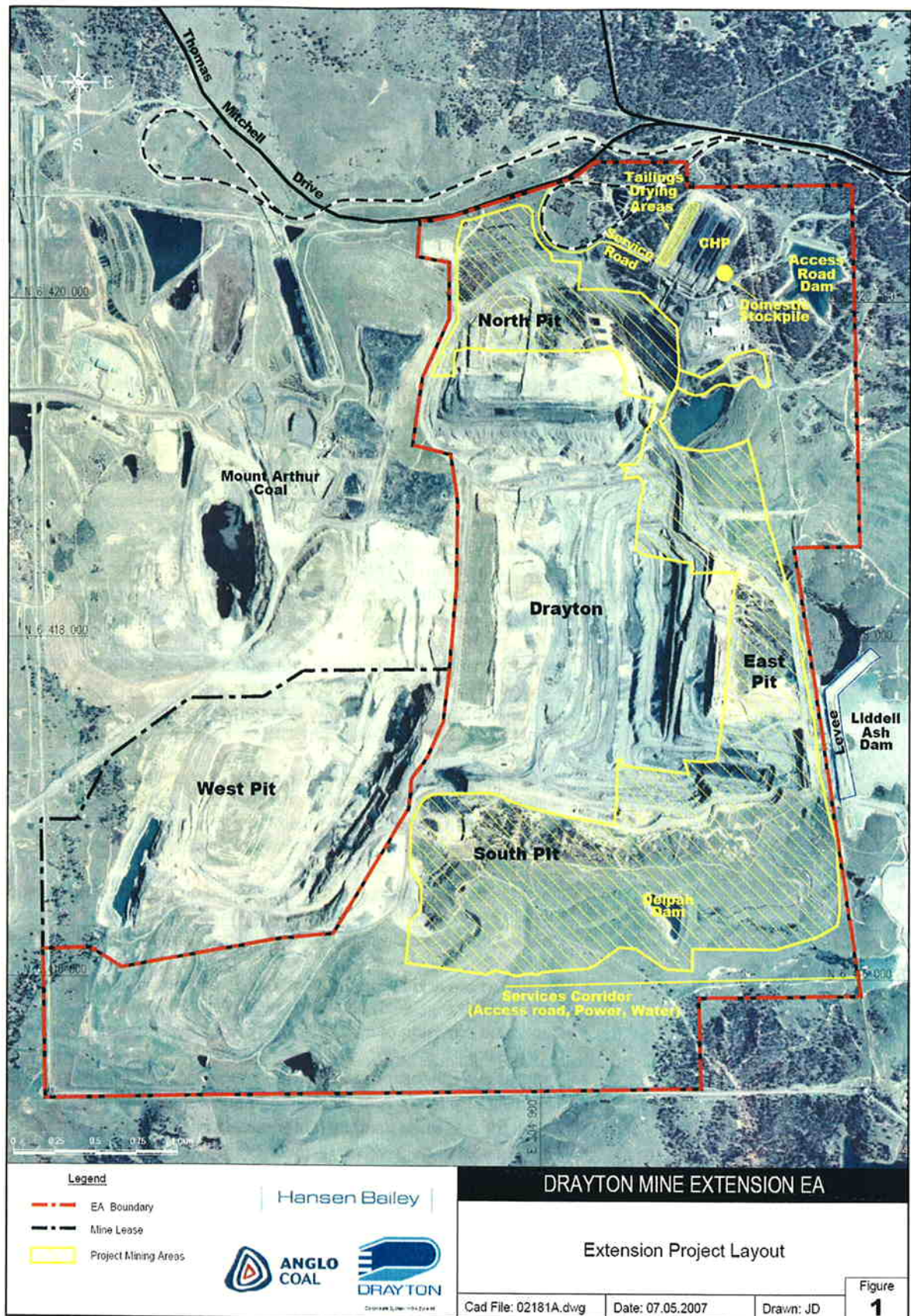


Figure 2: Proposed Layout of Project

1.3 Project Need

The Department recognises that society is heavily reliant on coal to meet its basic energy needs (both at a domestic and international level). Coal provides around 90% of NSW's electricity needs, 75% of Australia's electricity needs and 40% of the world's electricity needs.

Access to energy remains a critical development need, particularly for the one-third of the world's population without electricity. As living standards and development in Third World countries increase, it is expected that the demand for coal will rise to satisfy increasing global energy requirements. The extension to Drayton coal mine would contribute to supplying this rising annual coal demand. Therefore the ultimate need for the project is driven by both domestic and international markets to meet current and future energy needs.

Consequently, the Department is satisfied that there is a demonstrable need for the project in terms of meeting society's need for adequate, reliable and affordable energy.

At the local level, the Department recognises that the proposed area of coal extraction is surrounded by existing mining operations undertaken by Anglo Coal and Mt Arthur Coal. The project is able to be undertaken using existing mining equipment, facilities and infrastructure. In this regard, the Department acknowledges that the project represents a logical extension to existing coal mining activities at Drayton.

From the State's perspective, the project would deliver a number of key benefits, including continuing employment opportunities for the 328 people currently employed at Drayton, new employment for an additional 59 people, flow-on regional economic benefits, and significant royalty and tax income.

Notwithstanding the above, the Department recognises that a balance must be met in the promotion and co-ordination of the orderly and economic use of land; the proper management and development of the State's resources; and the protection of the environment and ecologically sustainable development. The Department has considered these matters in detail in its assessment of the proposal.

2. STATUTORY CONTEXT

2.1 Major Project

The proposal is classified as a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is development for the purpose of coal mining, and therefore triggers the criteria in Clause 5 of Schedule 1 of *State Environmental Planning Policy (Major Projects) 2005*. Consequently, the Minister for Planning is the approval authority for the project.

2.2 Permissibility

The land subject to the application is primarily zoned 1(a) (Rural "A" Zone) under the *Muswellbrook Local Environmental Plan 1985* (the LEP). Mining is permissible with consent in this zone. A small portion is zoned 5(a) (Special Uses "A" Zone), for which the use is designated as Power Station. The conveyance of coal over the surface of land within this zone is permissible with consent (cl. 48A of the LEP). While mining is generally prohibited in this zone, amendments to the LEP in 2002 made coal mining permissible with consent on the majority of this land (Sch. 3 of the LEP). However, small parts of two Lots (Part Lot 1 DP 790994 and Part Lot 16 DP 247944) are within the EA boundary but not covered by the 2002 LEP amendment. Mining is prohibited within these areas.

Recent amendments to section 75J(3) of the EP&A Act and associated changes to the *Environmental Planning & Assessment Regulation 2000* have the effect that the Minister cannot approve the carrying out of a project that would be wholly or partially prohibited under any environmental planning instrument. While mining itself is not proposed within these areas, the project application is for "development of the purposes of coal mining". Consequently, it is arguable that the project is "partially prohibited". However, a transitional provision associated with this change (clause 80A of the EP&A Regulation, gazetted on 16 November 2007) establishes that the Minister is able to approve a project which is partly prohibited, so long as the Director-General's requirements (DGRs) for that project's EA had been issued before the commencement of the other changes to the regulation in July 2007. This is the case for Drayton, since the DGRs were issued on 25 January 2007.

Consequently, the Minister may approve the carrying out of the project.

2.3 Existing Development Consents

Drayton currently operates under a total of 8 development consents granted by Muswellbrook Shire Council between 1987 and 2002. It also holds one Ministerial consent for the Drayton Rail Loop and Antiene Rail Spur (DA 106-04-00), granted in 2002.

As part of this approval process, Drayton intends to extinguish all existing Council consents on the site after having them consolidated into a single project approval. Consequently, it is intended that all extant development consents currently in force would be surrendered with the exception of the existing Ministerial consent. This would continue to be utilised under the terms of the project.

2.4 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) for a project publicly available for at least 30 days. After accepting the EA for the project, the Department:

- made it publicly available for a period of 6 weeks from 28 August 2007 until 26 September 2007:
 - at the Department's Information Centre and on its website, and at
 - Muswellbrook Shire Council and the Nature Conservation Council;
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities and Muswellbrook Council by letter; and
- advertised the exhibition in the Newcastle Herald and Muswellbrook Chronicle.

During the assessment process the Department also made a number of documents available for download on the Department's website. These documents included the:

- project application;
- Director-General's environmental assessment requirements;
- EA; and
- Drayton's responses to issues raised in submissions.

2.5 Objects of the Environmental Planning and Assessment Act 1979

All decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The objects of most relevance to the Minister's decision on whether or not to approve the project are found in Section 5(a) (i), (ii), (vi) & (vii) which are to encourage:

- (i) *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
- (iii) *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- (iv) *ecologically sustainable development ...*

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD "requires the effective integration of economic and environmental considerations in decision-making processes" and that ESD "can be achieved through" the implementation of the principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. This assessment seeks to integrate all significant economic, social and environmental considerations and avoid any serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

2.6 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

2.7 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report for a project is required to include a copy of or reference to the provisions of any *State Environmental Planning Policy* (SEPP) that substantially govern the carrying out of the modified development.

The Department has considered the proposal against the relevant provisions of several SEPPs (11, 33, 44 and 55), and is satisfied that none of these SEPPs substantially govern the carrying out of the modified development (see **Appendix F**).

3. ISSUES RAISED IN SUBMISSIONS

3.1 Submissions

During the consultation period, the Department received a total of 13 submissions on the project, including:

- 5 from public authorities;
- 4 from special interest groups; and
- 4 from the general public.

A summary of the issues raised in these submissions is provided below, and a full copy of the submissions is attached as **Appendix D**.

3.2 Public Authorities

The **Department of Environment and Climate Change** (DECC) identified the following environmental and conservation issues which should be taken into account during the Department's assessment - dust impacts, spontaneous combustion, noise impact assessment and impacts of clearing on biodiversity. These are set out below.

DECC acknowledged that the project is predicted to comply with the relevant air quality criteria. However, DECC is of the view that the additional mitigation measures set out within the submitted air assessment should be committed to either by Drayton or imposed as conditions.

DECC considered that appropriate mining techniques and proactive spontaneous combustion management practices should be implemented to minimise the effects of spontaneous combustion on local residents, and eliminate spontaneous combustion by the end of the mine life.

The project would not result in a significant change to existing noise levels and would not result in noise levels that cannot be regulated using an environmental protection licence (EPL), provided that all feasible and reasonable mitigation measures are undertaken.

DECC is of the view that the project would involve the removal of significant native vegetation and potential threatened species habitat and would require suitable compensatory measures to be implemented for the development.

The **Department of Primary Industries** (DPI) had no objections to the project, and indicated that Drayton would be required to update its current Mining Operations Plan to accommodate the proposed changes to the mining operations on site.

The **Department of Water and Energy** (DWE) noted that Drayton would need to obtain the relevant licences under the *Water Act 1912* or *Water Management Act 2000* for the project.

The **Roads and Traffic Authority** (RTA) had no objections or requirements for the project as Muswellbrook Shire Council is the roads authority for all public roads in the area.

Muswellbrook Shire Council (MSC) had no objection to the project subject to the following matters being included in any project approval:

- all properties which have been identified within the EA as being affected by the 40 dBA noise level should be included for compulsory acquisition in terms of the Industrial Noise Policy (INP);

- all properties identified in the EA as being located outside the identified "area of affection" in regards to air quality and noise but in close proximity to the mine operation should be included within the Property Value Protection Policy (PVPP);
- blasting activities should remain within the currently approved times of 8:30am to 5:00pm Monday to Saturday;
- Management Plans developed for the project by Drayton in consultation with Government agencies should address matters as identified within the EA;
- a road closure plan should be developed by Drayton in consultation with the Council to accommodate the closure of Thomas Mitchell Drive during blasting activities;
- the Company entering into a suitable agreement with Council regarding funding under the provisions of its Section 94 and Community Enhancement Program;
- completion of dense tree planting along Thomas Mitchell Drive by Year 2 of the project;
- the existing Drayton Community Consultative Committee should also monitor the extension; and
- the commitments within the EA should be included as conditions of approval.

3.3 Community and Interest Groups

The Nature Conservation Council and all four of the submissions from the general public objected to the project.

The main grounds for objection were as follows:

- *dust*, existing situation is already affecting amenity and expansion would worsen the situation;
- *noise*, especially from existing mining machinery, trains and vehicular road traffic;
- *blasting*, noise and damage to property with no repairs carried out;
- *water usage and quality*, including the following:
 - appearance of water in swimming pools and taste of drinking water;
 - decreased water quality and flow to the Hunter River and Lake Liddell resulting in changes to the region's riverine and aquatic environments and pressure on flora and fauna;
 - increased threatening processes related to existing water resources given its existing scarcity in the region; and
 - need for a Water Management Plan to be prepared and implemented to management water supply and quality on the Hunter River;
- *flora and fauna*, including loss of threatened and vulnerable flora and fauna given that the mining area would hinder habitat and conservation of native species within the area;
- *vibration*, including cracking to existing properties and damage to tiling on roofs which would be exacerbated if the mine is expanded;
- (lack of response to) *complaints* and no commitment to acquire property;
- *climate change impacts*, associated with the burning of coal sourced from the extension and expansion of output;
- *Aboriginal heritage*, particularly a number of medium to high significance Aboriginal objects that may be impacted; and
- *spontaneous combustion*.

Macquarie Generation (MacGen) is an affected landowner in that it owns part of Drayton's operational land and operates the nearby Liddell and Bayswater Power Stations. An existing 2003 lease arrangement between the two parties guarantees access by MacGen to the mine's East Pit Final Void for the disposal of fly ash from the Liddell Power Station from "on or about 2010". MacGen generally supports the project application but is concerned that Drayton is not meeting its obligations under this lease as the EA indicates that access to the East Pit Final Void would not be available until 2017. This may cause "significant operational difficulties" for Liddell Power Station which would need to "transport fly ash at an additional cost of some \$50-60 million to an alternative remote site".

3.4 Response to Submissions

Drayton has provided a detailed response to the issues raised in these submissions (see **Appendix E**). The Department has considered the issues raised in these submissions and Drayton's response to these issues in detail within section 4 of the report.

4. ASSESSMENT

4.1 Air Quality

The project has the potential to result in air quality impacts to the surrounding area, particularly residential receivers within the Antiene Estate to the north of the mine.

The EA includes a specialist air quality assessment, undertaken by Holmes Air Sciences Pty Limited in accordance with the DECC's *Approved Methods and Guidance for the Modelling of Air Pollutants*. The assessment includes consideration of total suspended particulates (TSP), fine particulate matter (PM₁₀) and dust deposition, with reference to relevant 24-hour, monthly and annual air quality goals.

The assessment indicates that dust emissions from the existing Drayton mine comply with the relevant annual air quality goals at sensitive receivers. During 2005, annual average TSP ranged from 50 to 75 µg/m³ at Drayton's air quality monitoring stations, which complies with the DECC's criterion of 90 µg/m³. PM₁₀ averaged 21 µg/m³, which is less than the DECC criterion of 30 µg/m³. Dust deposition levels at sensitive receivers are generally less than 2 g/m²/month, which complies with the DECC maximum criterion of 4g/m²/month.

With regard to predicted emissions associated with the project, the assessment includes consideration of the incremental increase caused by the project (ie the project in isolation), and the total cumulative emissions generated by the project, background dust emissions and predicted emissions from other existing approved mines in the area.

The assessment indicates that the project would comply with all applicable air quality criteria. The worst case predicted dust levels at the nearest sensitive receivers are shown in the following table. Figure 3 shows air quality contours during Year 5 of the project (when mining operations would be at their most active) in the context of land ownership surrounding Drayton mine.

Table 2: Predicted Air Quality Impacts

Pollutant	Averaging Period / Units	Criterion	Max. Predicted Incremental Dust Level	Max. Predicted Total Dust Level
Total suspended particulate (TSP) matter	Annual / µg/m ³	90	4.8	74
Particulate matter < 10 µm (PM ₁₀)	Annual / µg/m ³	30	4.1	26
	24 hour / µg/m ³	50	37.8	- ¹
Deposited Dust	Annual / g/m ² /month	2 (max. increase)	0.2	-
		4 (total)	-	2.0

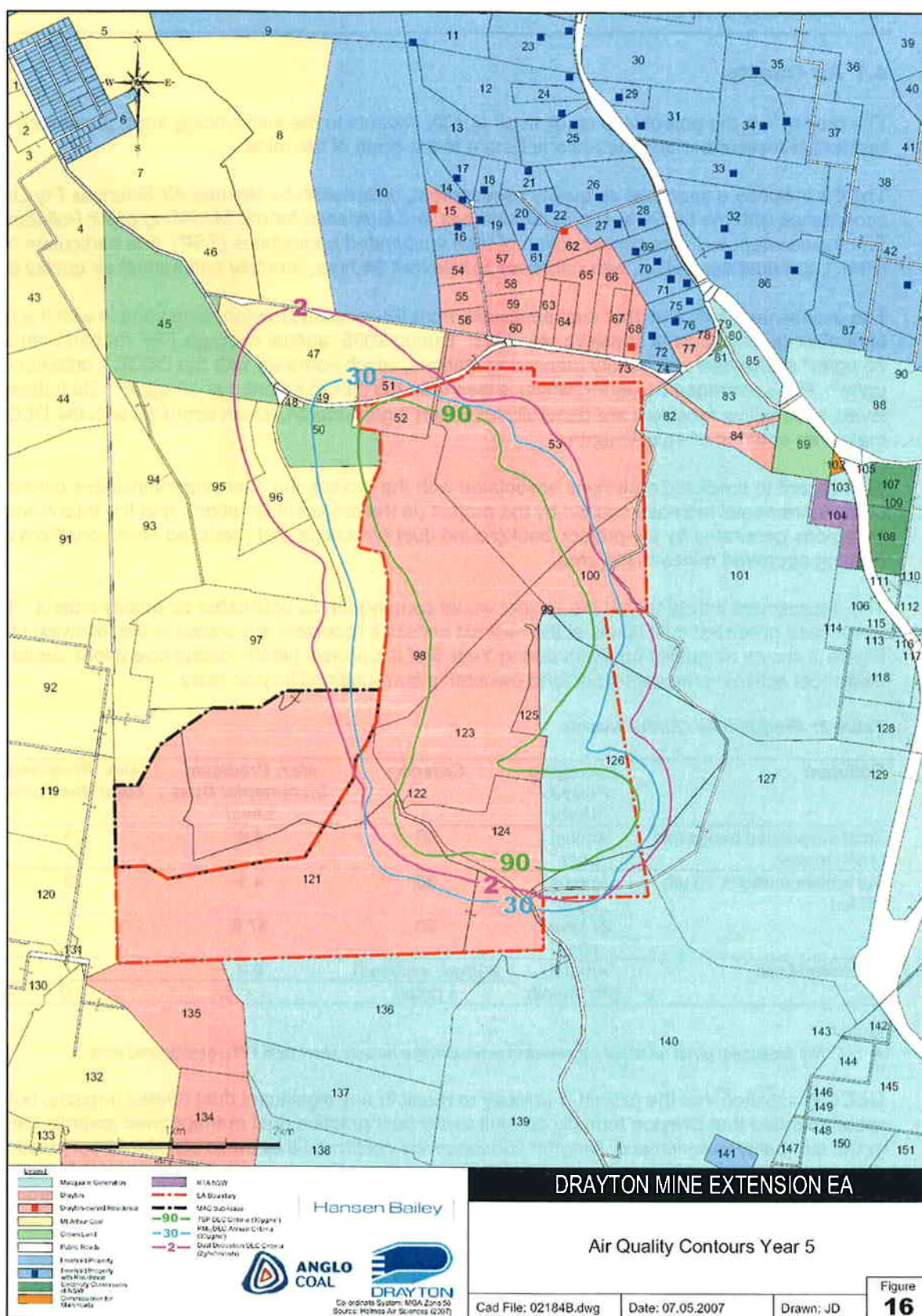
Notes:

¹ Not assessed, given technical difficulties in establishing a reliable short-term PM₁₀ background level.

DECC is satisfied that the project is unlikely to result in any significant dust related impacts, but recommended that Drayton formally commit to the best practice dust management controls identified in the air quality assessment. Drayton subsequently confirmed that these standard best practice mitigation measures are included in its existing formalised Environmental Management System. The Department is satisfied that the mine has adopted current best practice dust mitigation controls in its management systems.

The Department and DECC are satisfied that the project is unlikely to result in any significant air quality related impacts. To ensure that air quality is managed in accordance with contemporary best practice, the Department has recommended conditions that would require Drayton to:

- comply with contemporary air quality impact assessment criteria;
- undertake reasonable and feasible measures to minimise dust and odour emissions from the project;
- establish a comprehensive air quality monitoring program, in consultation with DECC;
- publicly report all monitoring data; and
- acquire (at the request of the landowner) any private property where monitoring indicates that applicable acquisition air quality criteria are being exceeded.



4.2 Noise

The EA includes a specialist noise assessment undertaken by Bridges Acoustics in accordance with applicable DECC guidelines including the *NSW Industrial Noise Policy* (INP). The assessment was undertaken with reference to sensitive receivers in the vicinity of the Drayton mine, the closest of which are approximately 1.5 km from the project disturbance area.

Construction Noise

The project essentially involves an extension of existing operations associated with the Drayton mine and would involve minimal construction activities. As such, the project would not result in any construction noise related impact.

Operational Noise

The operational noise assessment is based on the application of a number of “reasonable and feasible” noise mitigation measures, including:

- limiting operations in the North Pit to one loading unit (excavator or front end loader) during evening and night time periods;
- restricting trucks to working in shielded locations in the North and East Pits during evening and night time periods;
- locating pre-strip haul roads and loading units in shielded locations in the North Pit;
- locating the South Pit haul road as low as possible, with shielding;
- installing a 5 m bund on the northern side of the new ROM coal stockpile;
- installing a 4 m bund on the eastern side of the haul road between the ROM coal stockpile and ROM Hopper;
- a sound power limit no greater than 103 dBA being applied to each of the three new reclaimers and one raw coal stacker;
- shielding of the secondary crusher; and
- upgraded exhaust mufflers (to achieve a sound power level of 118 dBL) being fitted to some overburden and all coal haulage trucks.

The assessment determined that background noise levels at sensitive receivers around the project site (ie at Antiene) and adopted background noise levels of 30 or 32 decibels (dBA) at the various receiver locations for day, evening and night time periods. As such, the applicable noise criterion for the project based on the INP is either 35 or 37 dBA, depending on the receiver location (ie 5 dBA above the background level).

The modelling undertaken in the noise assessment indicates that the project would result in exceedances of the applicable noise criteria at a total of 23 private properties at some stage of the project, during worst case operational and weather conditions. It should be noted that these exceedances are anticipated after the “reasonable and feasible” noise mitigation measures have been implemented. All affected receivers are located in the Antiene area, north of the project area. The affected area is shown in Figure 4 and the predicted maximum exceedances are summarised in Table 3.

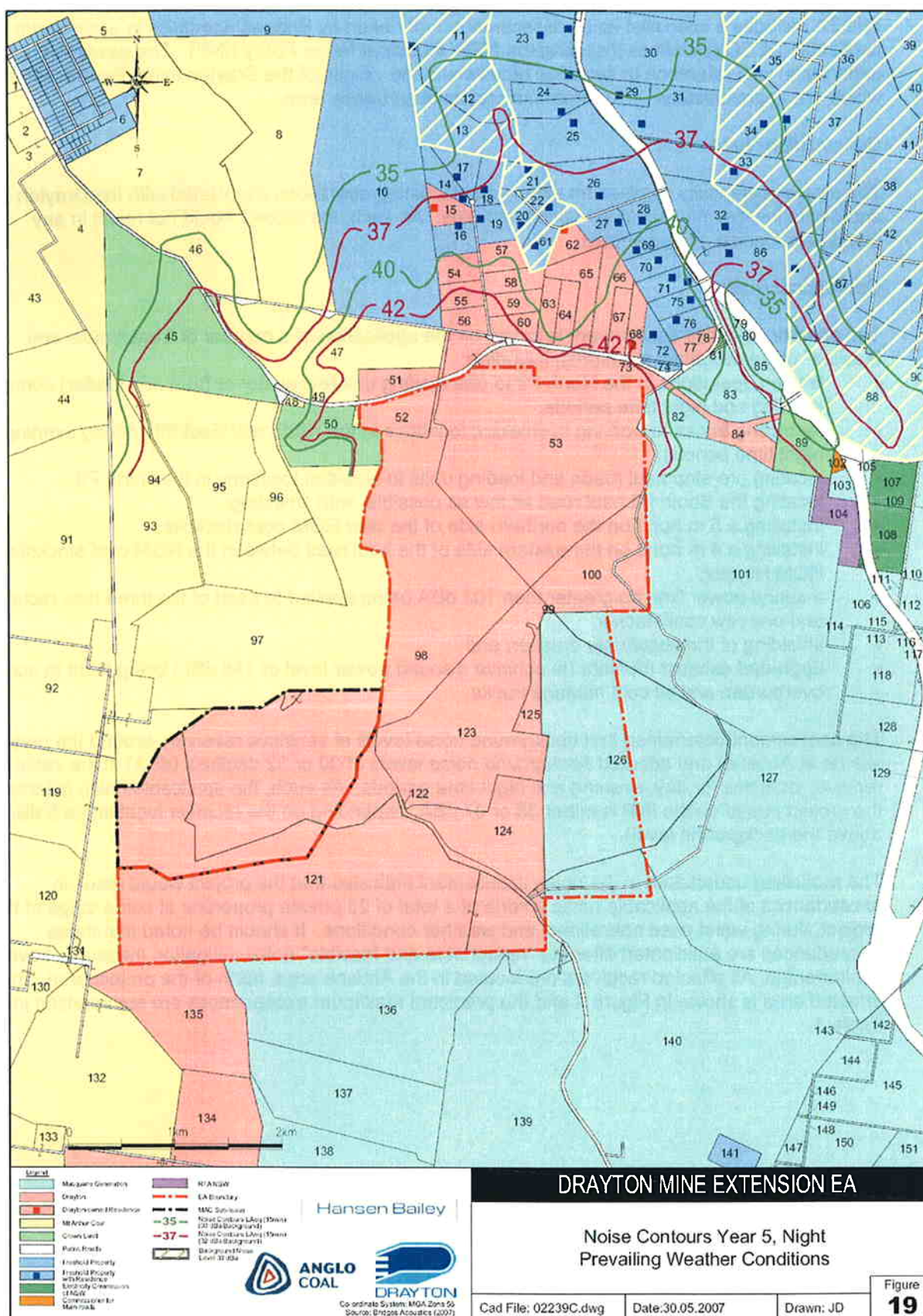


Table 3: Predicted exceedances of adopted intrusive noise criteria (LAeq,15min, all periods)

Receivers	Predicted Exceedance (LAeq,15min)			Maximum Exceedance
	Day	Evening	Night	
72 Robertson	--	--	5 dBA	5 dBA
76 Horder	--	--	5 dBA	
20 Osborn	Up to 4 dBA	Up to 5 dBA	Up to 4 dBA	
61 Skinner	Up to 4 dBA	Up to 5 dBA	Up to 4 dBA	
69 Clifton	--	--	Up to 4 dBA	4 dBA
70 Jones	--	--	Up to 4 dBA	
71 Hunter	--	--	Up to 4 dBA	
75 Sharman	--	--	Up to 4 dBA	
16 Doherty	Up to 4 dBA	Up to 4 dBA	Up to 2 dBA	3 dBA
22 Halloran	Up to 3 dBA	Up to 3 dBA	Up to 3 dBA	
21 Reynolds	Up to 3 dBA	Up to 3 dBA	Up to 3 dBA	
28 Bird	--	--	Up to 3 dBA	
32 Cross	--	--	Up to 3 dBA	2 dBA
33 Fisher	--	--	Up to 3 dBA	
86 Wild Group	--	--	Up to 3 dBA	
19 Duck	Up to 3 dBA	Up to 3 dBA	Up to 2 dBA	
14 Budd	Up to 3 dBA	Up to 2 dBA	Up to 1 dBA	1 dBA
27 De Boer	--	--	Up to 2 dBA	
18 SR Page	Up to 1 dBA	Up to 2 dBA	Up to 1 dBA	
26 Baxter	Up to 1 dBA	Up to 1 dBA	Up to 1 dBA	
34 Davies	Up to 1 dBA	Up to 1 dBA	Up to 1 dBA	1 dBA
13 Jacobson	Up to 1 dBA	Up to 1 dBA	--	
17 BC & SR Page	--	Up to 1 dBA	--	

The Department's typical policy with regard to noise exceedances is set out in Table 4.

Table 4: Recommended management measures for noise exceedances

Criteria Exceedance	Impact	Management Generally Required
1-2 dBA	Minor	Noise mitigation, if possible
3-5 dBA	Moderate	Noise mitigation, inc. noise mitigation at residence
>5 dBA	Significant	Acquisition

In accordance with this policy, the project is predicted to moderately affect 17 residences, and have a minor effect on a further 6 residences (it is noted that exceedances of 1 to 2 dBA are not generally perceptible to the human ear). No private properties are predicted to be "significantly" affected.

The Department and DECC are satisfied that Drayton has reviewed available reasonable and feasible measures to reduce the noise impacts of the project, and adopted such measures where appropriate. The Department is satisfied that further significant reductions in noise emissions are unlikely to be achievable without significant restrictions and impacts on the mining operation.

Notwithstanding, the Department acknowledges that the project is predicted to have at least some operational noise impact on a relatively large number of private properties. To mitigate or at least compensate for these impacts, the Department believes that Drayton should be required to:

- implement all recommended "reasonable and feasible" noise mitigation measures proposed in the project's noise assessment;
- undertake (at the landowner's request) architectural noise treatments (such as double glazing, insulation and/or air-conditioning) at all residences where operational noise levels are predicted to exceed the project noise criterion by more than or equal to 3 dBA;
- establish and implement a comprehensive noise monitoring program, which includes real-time monitoring of noise impacts;
- where this monitoring indicates that noise criteria are being exceeded:
 - by more than or equal to 3 dBA at any residence on private property, undertake (at the landowner's request) architectural noise treatments on the property;
 - by more than 5 dBA at any private property, purchase the property (at the landowner's request); and

- comply with stringent noise and amenity criteria, and strive to continually improve the noise performance of the project.

With the implementation of these measures, the Department is satisfied that the noise impacts of the project can be effectively minimised, managed or compensated for. The DECC is also satisfied that the project would not result in any significant noise impacts and has forwarded recommended noise criteria for the project.

Sleep Disturbance

Noise monitoring for the current Drayton operations indicates that minor exceedances (1 to 2 dBA) of the sleep disturbance criterion are being experienced at a small number of private properties in the Antiene area. The noise assessment for the project includes consideration of the potential for sleep disturbance, which indicates that the potential for sleep disturbance would not increase as a result of the project.

The Department is satisfied that the recommended operational noise conditions, including requirements on Drayton to undertake architectural noise treatments on noise-affected properties, would assist in mitigating any sleep disturbance impacts associated with the project. In addition, the Department has included applicable sleep disturbance criteria in the recommended conditions of approval.

Rail Noise

Antiene Rail Spur is permitted to load and transport up to 7 Mtpa of saleable coal from Drayton to the Main Northern Railway. This arrangement would continue to be relied upon and exercised by Drayton for the haulage of its product coal to the Port of Newcastle. No changes to the existing coal transportation arrangements or approvals are required for the project.

The EIS for the approved Antiene Rail Spur found that the operation of extra trains would not result in noise levels exceeding the recommended criteria at any residence and the additional operations proposed would result in a negligible increase in noise levels. A number of mitigation measures were put forward as part of that EIS to minimise rail noise impacts including the preparation of a Noise Management Plan.

These mitigation measures have been successfully implemented and have been found to be operating satisfactorily, as demonstrated in the independent compliance audit of the Antiene Rail Spur development consent in November 2006. The project would not result in an increase to the approved coal transport tonnage set out under the terms of that development consent, which lapses in 2025.

Traffic Noise

Traffic accessing Drayton coal mine travels via Thomas Mitchell Drive and either the New England Highway or Denham Road, all of which are arterial roads carrying significant industrial traffic. The project would result in approximately 59 additional employees being required to achieve the proposed increase in annual production, which would result in about 88 additional car movements per day along roads serving the site.

Given that most of these vehicles would be cars as opposed to trucks, additional traffic arising from the project is predicted to result in a noise increase of 0.1 dBA, which is not significant. Road traffic noise would remain within acceptable noise criteria. Traffic noise levels would not noticeably increase over current levels, primarily due to existing traffic flows not associated with Drayton and a high proportion of truck movements on various roads in the area.

Conclusion

The Department and DECC are satisfied that Drayton has assessed the potential noise impacts of the project in accordance with the relevant DECC guidelines, and appropriately considered reasonable and feasible noise mitigation measures. With the implementation of these measures, the assessment indicates that the project would result in some residual operational noise impacts to rural residents of Antiene. Although the project is not predicted to significantly impact any properties, the project is predicted to have a minor or moderate impact on 23 private properties.

To manage these operational noise impacts, the Department has recommended a number of stringent noise conditions, which would require Drayton to:

- comply with strict operational noise criteria, and strive to continually improve the noise performance of the project;

- establish a comprehensive noise monitoring program, including real-time monitoring;
- implement the noise mitigation measures included in the EA's noise assessment;
- undertake architectural noise treatments (at the landowner's request) on any private residence predicted to receive exceedances (or where monitoring otherwise demonstrates exceedances) of noise criteria by more than or equal to 3 dBA; and
- acquire any private properties (at the landowner's request) where monitoring indicates exceedances of noise criteria by more than 5 dBA.

The Department is satisfied that these measures would adequately minimise, manage or at least provide appropriate compensation for the noise impacts of the project.

4.3 Surface Water and Groundwater

Surface Water

The project is located in the headwaters of a number of first and second order ephemeral creeks, including Ramrod, Saddlers, Saltwater and Bayswater Creeks. These either drain into the Hunter River (Ramrod and Saddlers Creeks), which is approximately 8 km from the project site, or into Lake Liddell and Plashett Reservoir (Bayswater and Saltwater Creeks respectively). Both Lake Liddell and Plashett Reservoir are owned and managed by MacGen and are an integral part of the power generation infrastructure.

None of these creeks support either permanent surface flows or groundwater base flows in the vicinity of the project area, responding only to rainfall events, and therefore do not contribute significantly to overall downstream surface flows in the Hunter River. Further, the project would only marginally increase the area of disturbance compared to the total areas of these surface water catchments and therefore would not impact significantly on the amount of surface runoff water available to these drainages during rainfall events.

Groundwater

The proposed project would increase the extent of an existing mining operation located within an area characterised by extensive coal mine development (Mt Arthur, Bayswater and Drayton). Consequently the local and regional groundwater regime is already highly altered state compared with pre-mining conditions.

The coal seam aquifer is the main aquifer that would be impacted by the proposal. Groundwater from this aquifer is reported in the EA to discharge along Muscle Creek and its tributaries about 5 km north of the project area, and to the Plashett Reservoir about 5 km to the south. However, due to the poor quality of groundwater in the coal measures this aquifer has limited commercial or domestic use. Consequently there are no registered bores that access this groundwater source within the area that might be impacted by the project.

Two other aquifers are reported in the EA to occur in the vicinity of the project: colluvium along certain reaches of the surface drainages; and weathered bedrock aquifers, both of which are believed to be locally limited in extent. Local occurrences of the latter aquifer type support three registered bores within 3 km of the project boundary, but are believed to be of limited yield.

Extraction of groundwater from the coal measures during mine dewatering would result in a cone of depression around the project area which would lower the groundwater level in this aquifer to varying extents beyond the limits of the project site. The EA predicts that this cone of depression would extend the impact on groundwater levels from existing mining operations by more than 2 km to the north and 4.5 km to the south of the project. However, the Liddell Ash Dam and Lake Liddell would constrain the extent of this impact to the east of the project, while the Muswellbrook Anticline and the overprint from the Mount Arthur Mine would constrain the western extent of groundwater level impacts. The EA further predicts that following cessation of mining groundwater levels would take in excess of 100 years to reach a re-equilibrated state.

Despite this predicted increase in the extent of reduced groundwater levels, the EA predicts only marginal impacts to the regional groundwater regime. Importantly there would be no impact on flow in the Hunter River or creeks and the associated alluvial and colluvial aquifers or on groundwater discharge to Muscle Creek as a result of the project. Further, Plashett Reservoir would receive 0.1 ML/day less than during pre-mining conditions at the end of mining while Lake Liddell would receive 0.1 ML/day more water than for pre-mining conditions, which may be caused by the infiltration

from Liddell Ash Dam. However, neither this loss nor gain to the two power station water storages represents a significant contribution to the available storage capacity of these two water sources.

Drayton's groundwater assessment reports that the colluvium and weathered bedrock aquifers are not hydraulically connected to the underlying coal seam aquifers. Hence, it predicts that any additional depressurisation of the coal seam aquifer, and consequent lowering of groundwater levels within it, is not predicted to impact on the availability or quality of groundwater within these shallow groundwater sources. Nevertheless, Drayton has committed to monitor water levels in the vicinity of the three registered bores, and to make good any loss of water in them as a result of the project.

DWE did not raise any major concerns in relation to the groundwater impact assessment or the groundwater impacts of the project. However, DWE recommends that Drayton be required to undertake a census of bores in the area and to compensate any loss of water to groundwater users in the unlikely event that this occurs. The DWE also recommended a number of measures for inclusion in the mine's groundwater management plan and monitoring programs.

Water Supply and Management

Drayton has an existing water management strategy that includes the facility to capture and store up to 2140 ML annually from disturbed, industrial, rehabilitated and undisturbed areas within the project site. The open cut pits are predicted to capture a maximum inflow of about 985 ML a year (2.7 ML/day) from the surrounding aquifer during mining.

All captured water is either used on site for dust suppression and washing of product coal, or transferred to the adjoining Mt Arthur Coal Mine through an existing water sharing arrangement. Under this arrangement, Drayton can transfer up to 600 ML of excess mine water to Mt Arthur per annum, with all transfers made through an existing pipeline. Currently, Drayton is not permitted to discharge surplus water to any external surface drainage, and it is not looking to alter this arrangement.

Clean surface water runoff is diverted around disturbed areas into the existing surface drainage network, and as the project is located in the upper catchment reaches, the loss of surface water flows to downstream users is considered to be minor.

Potable water for domestic use in the administration buildings and irrigation of Drayton's vineyard is supplied by pipeline from Muswellbrook Shire Council (MSC). Other potable water demand (for crib huts and large machinery) is supplied by a private water carrier company.

Site Water Balance

A water balance for the project has been modelled for the life of the project under variable climatic conditions. The highest annual water demand is predicted to be 2020 ML and would occur in year 5 when mining would be at full production. This would be sourced from inflows from rainfall and groundwater inflows to pit areas. The main water usage would be associated with the washing of ROM coal in the CHP and dust suppression on haul roads and stockpiles.

As a worst case scenario, a deficit of up to 380 ML is predicted in year 5, assuming extremely low rainfall. In such an event, Drayton would draw on existing water storages on site which are likely to continue to have around 1700 ML of stored water available for use.

In the event of extremely high rainfall, the project could have a surplus of up to 1455 ML in year 10, which after the potential transfer of 600 ML to MAC would require on-site storage of up to 855 ML. Drayton predicts that the West Pit void would have sufficient volume to safely accommodate this surplus. However, it is unclear what the water demands at the Mt Arthur Mine would be in such a high rainfall year, and how much water would require to be transferred from Drayton. In this respect, the Department notes that, in 2005, 615 ML of water was transferred from Drayton to Mt Arthur, but only 50 ML in 2006. Therefore the Department believes that Drayton should be required to investigate contingencies in the event that it does not have sufficient on-site storage to safely handle the predicted worst case surplus. One such possibility could be the transfer of water to either Lake Liddell or the Plashett Reservoir for use by MacGen, however this would presumably depend on water quality requirements and available storage capacity in the two storages. Drayton has indicated its intention to investigate additional transfer arrangements with other existing mining and or power generation facilities to manage predicted surplus water where required.

The project would not require external water supply and apart from inter-mine transfers would not require external discharge.

Final Voids

High evaporative losses are predicted to maintain surface water levels within pit voids below surrounding groundwater levels. Pit voids are therefore predicted to act as groundwater sinks, with salinity levels expected to increase over time. However, as local groundwater flow would be toward the voids there would be no decrease in the water quality of regional surface water sources as a result of increasing salinity in the voids.

Conclusion

The Department is generally satisfied with Drayton's assessment of the project on local and regional water sources, and agrees that the project would not significantly impact on the quality or quantity of available ground and surface water sources in the area or on existing water users. Further, the Department believes that Drayton has demonstrated that it would have a sufficient and secure supply of water for the course of the project, which is not reliant on an external supply or on offsite discharge. It also supports the continued sharing of water between mines to reduce the demand on competing water resources, such as the Hunter River.

The Department has recommended conditions that require Drayton to review and update its existing surface and groundwater monitoring and management plans and protocols in consultation with DWE, and to validate the predictions it has made in the EA and to monitor any potential impacts of the project on local and regional water sources.

4.4 Flora and Fauna

The EA includes a detailed flora and fauna assessment which was carried out by Hansen Bailey Environmental Consultants, and included ecological surveys of the site and adjacent wildlife refuge area. The assessment indicates that the majority of the site has previously been cleared for mining and agricultural purposes and is therefore already in a highly disturbed state. However, the assessment also indicates that the project area supports small pockets of remnant native vegetation as a result of prior protection or more recent mine rehabilitation efforts, some of which would now require clearing to effect the proposed mine expansion.

The project would disturb about 259 ha of land not previously disturbed by mining, including 38 ha of native treed vegetation. The balance comprises grassland and rehabilitated mine areas.

The assessment indicates that the project would require the clearing of:

- 36 hectares of Narrow-leaved Ironbark woodland;
- 1 hectare of Spotted – Grey Box open forest woodland;
- 1.3 hectare of Forest Red Gum open forest and woodland;
- 6 hectares of revegetated Yellow Box and Grey Gum woodland;
- 8 hectares of revegetated areas containing acacias; and
- 207 hectares of various derived and exotic grassland (pasture) and rehabilitated grazing land.

The Forest Red Gum community has been identified as being consistent with the definition of the Hunter Lowland Redgum Forest (HLRF) which is listed as a regionally significant Endangered Ecological Community (EEC) under the NSW *Threatened Species Conservation Act 1995 (TSC Act)*. Further, Lobed Blue Grass, which was not recorded during targeted surveying and is listed as a vulnerable species under the Commonwealth *Environment Protection and Biodiversity Act 1999 (EPBC Act)*, has been identified in database searches as occurring in the area.

A total of 96 fauna species were identified in the survey area, including 67 bird, 27 mammal and two reptile species. Of these, 10 are identified as threatened fauna species under either the *TSC Act* or the *EPBC Act*, including 3 bird species (Diamond Fire Tail, White-throated Needletail, Rainbow Bee-eater), Squirrel Glider and 6 bats (Grey-headed Flying Fox, Yellow-bellied Sheath-tailed Bat, East-coast Free-tailed Bat, Greater Broad-nosed Bat, Eastern Cave Bat). In addition, one threatened bird (Brown Treecreeper) and bat species (Eastern Long-eared Bat) were identified from relevant database searches as occurring in the area, but were not identified in field surveys.

Drayton has undertaken tests of ecological significance for the two stands of HLRF and each of the identified threatened fauna species, as well as the additional threatened species that, although not identified in the surveys, have the potential to occur within the project area. The tests of significance conclude that the project would not have a significant impact on any of the listed threatened species.

The original Drayton mine development sought to protect a 114 ha area of existing native woodland in the vicinity. The resulting Drayton Wildlife Refuge was proclaimed on 4 March 1987 under Section 68 of the *National Parks and Wildlife Act 1974 (NPW Act)* and divided the development area into three separate zones: a mining zone; a grazing zone; and a natural zone.

The current mining extension proposal lies wholly within the mining and grazing zones of this proclaimed area. Consequently, despite its proposal to clear 259 ha of land, Drayton believes that, through the protection and ongoing management of the Wildlife Refuge, it has already provided sufficient offsets to justify the additional clearing. Further, Drayton argues that the habitat value of the wooded areas proposed to be cleared for the project is poor, predominantly due to their already disturbed state, and hence the overall impact of clearing would be minor.

However, both the DECC and the Department disagree with this view and believe that the proposal would involve the significant removal of native vegetation (38.3 ha) and potential threatened species habitat, and hence should require appropriate compensatory measures to be implemented. Further, prior commitments to offset the impact of the original mine development on the biodiversity values of the area are not in themselves sufficient offsets for continued expansion of the mining footprint at the site. Consequently, the DECC and the Department believe that Drayton should be required to further investigate and implement additional offset measures to protect biodiversity values in the medium to long term.

Consequently, the Department has recommended conditions that would require Drayton to:

- investigate and implement additional measures to offset the flora and fauna impacts of the project, which should include at least a 2:1 (or better) replacement;
- develop a strategy for the management and long term protection of this offset;
- include specific provisions in the offset strategy to enhance and conserve significant plant communities, particularly Hunter Lowland Redgum Forest;
- provide for the long term conservation of the offset area; and
- lodge a substantial conservation bond for the offset area.

4.5 Relationship with Macquarie Generation

Council's development consent in 2002 allowed Drayton to extend its mining operations onto Macquarie Generation's land to the east of the mine, and leave a final void of between 30 and 35 million m³ on part of this land.

Following this approval, Drayton and Macquarie Generation entered into an access agreement for the use of Macquarie Generation's land. This agreement allowed Macquarie Generation to use the final void for fly ash disposal, subject to it obtaining the necessary planning approvals.

By extending the life of the mine, however, this proposal would delay the availability of the final void for fly ash disposal for at least another 5 years until 2017.

Macquarie Generation claims this delay is contrary to the terms of its access agreement with Drayton, and could comprise its ability to dispose of the fly ash from the Liddell power station in the short to medium term. It has advised the Department that it is currently considering a range of alternative options for fly ash disposal with Drayton, and asked for the approval of this application to be delayed until these negotiations are completed.

As fly ash disposal is a critical component of Macquarie Generation's operations, and the ongoing operation of the Liddell power station critical for the provision of the State's energy needs, the Department has investigated this matter in some detail in consultation with both Drayton and Macquarie Generation.

Based on these investigations, it is satisfied that:

- Macquarie Generation needs additional fly ash disposal capacity for the Liddell power station in or around 2010; and that
- there are a range of suitable alternatives available – apart from the Drayton final void – that could be implemented prior to 2010 to provide additional fly ash disposal capacity for the Liddell power station in the short to medium term, with the most suitable alternative likely to be raising the walls of the existing fly ash dam to create an additional 35 million m³ of capacity (which equates to about 14 years of additional fly ash capacity) at a cost of between \$8 to \$10 million.

It is also satisfied that, from a planning perspective, there are good reasons for delaying the availability of the Drayton final void for fly ash disposal for at least another 5 years, as this would allow at least another 8 million tonnes of coal to be extracted from the mine that would otherwise be sterilised, provide continued employment for at least 390 workers, and deliver a larger final void of 43 million m³ for fly ash disposal (which equates to about 5 years of extra fly ash disposal capacity).

In the Department's view, these benefits are likely to outweigh any additional costs that may be caused by the delay.

The key issue then is who should be liable for any additional costs associated with the delay: Drayton or Macquarie Generation? In the Department's view, this is essentially a commercial matter that should be resolved by the parties outside the planning approval process.

Consequently, the Department believes it would be unreasonable to delay the approval of the application, as requested by Macquarie Generation.

Nevertheless, the Department believes Drayton should be required to complete its mining operations on site by 2017 at the latest, in strict accordance with what is proposed, to prevent any further delays in the making the Drayton final void available to Macquarie Generation for fly ash disposal.

4.6 Rehabilitation, Final Landform and Voids

Drayton's proposed final landform would be designed to be consistent with the surrounding landscape, and aim to promote the objectives for land use and integration in the Muswellbrook LEP, the Hunter REP and DPI's *Synoptic Plan: Integrated Landscapes for Coal Mine Rehabilitation in the Hunter Valley of New South Wales*. This landform is expected to have a maximum height of 330m AHD, and would be designed to achieve maximum integration of the drainage system with the surrounding catchment, and of rehabilitated areas with existing woodland.

Drayton believes that its rehabilitation strategy would create land capability which is at least equal to the pre mining land capability, and proposes to employ the following rehabilitation techniques to achieve this aim:

- soil resources would be stockpiled following pre-mining stripping activities. Where appropriate, this soil would be redistributed over the final landform, and revegetated as soon as possible;
- erosion and sediment control measures would be undertaken including the construction of contour furrows and banks to contain flow speeds of run-off over disturbed areas;
- revegetation would be conducted to link rehabilitation and remnant vegetation by establishing woodland corridors, and would utilise endemic plant species representative of the regional fauna as far as possible; and
- a Void Management Plan would be developed to comprehensively manage the long-term protection and sustainable use of the site following cessation of mining activities.

Drayton has entered into an agreement with Mt Arthur Coal over part of the West Pit area (MAC Sub-lease area) which allows Mt Arthur Coal to emplace inert overburden from the Whittingham coal measures in the MAC Sub-lease area. This assists in rehabilitating the West Pit and also in remediating areas currently subject to spontaneous combustion. Drayton also emplaces overburden in West Pit, which will be filled by these mechanisms. Mt Arthur Coal will then assume responsibility for its final rehabilitation via the transfer to it of parts of Drayton's mining leases.

Drayton is therefore proposing a final landform which includes only 3 final voids, and has identified preferred short to medium-term land use options for each as follows:

- South Pit void to be used as a water retention basin;
- East Pit void to be utilised by MacGen for disposal of fly ash, subject to arrangements (as detailed above) which would transfer to MacGen final rehabilitation responsibility for this void; and
- North Pit void may potentially be used for coarse reject emplacement by neighbouring mining operations.

Drayton has provided conceptual final landform plans which assume these preferred uses would eventuate in practice. It anticipates that both the North Pit and East Pit voids would be capped with at least 2 m of overburden, rehabilitated and left in a free-draining state after completion of fly ash and reject emplacement. The conceptual final landform provides an integrated landscape consistent with the Synoptic Plan which aims to link existing woodland with rehabilitation to provide corridors for the

movement of flora and fauna. These would join with those proposed in the Synoptic Plan and the rehabilitation plans for the MAC Sub-lease area. The integrated rehabilitation planning approach proposed will result in significant economic and environmental benefits, namely:

- the maximum extraction of the available coal resource;
- an optimal use of the East Pit void for the disposal of fly ash;
- economies for Mt Arthur Coal with the availability of the MAC Sub-lease area;
- the management and ultimate cessation of spontaneous combustion within the project site and the MAC Sub-lease area;
- a reduction in the number of mining voids in the Upper Hunter; and
- integration and implementation of the principles of the Synoptic Plan.

The Department is satisfied with Drayton's short to medium-term rehabilitation plans. The Department considers that Drayton's long-term rehabilitation and final landform plans are achievable and provide for a good integration with the surrounding environment.

4.7 Other Issues

The project is likely to generate a range of other environmental impacts. However, these impacts are not predicted to be significant, and the Department is satisfied that they can be controlled, mitigated or managed by through the commitments made by Drayton within the EA and its response to submissions and through appropriate conditions of approval.

Table 5: Summary of other issues, features/impacts and conclusions/mitigating factors

Issue	Features/Impacts	Conclusion/Mitigating Factors
Aboriginal Heritage	Potential impact on Aboriginal Cultural Heritage due to disturbance of archaeological sites	▪ Field assessment conducted over seven days in August 2005 with representatives of the local Aboriginal Community identified 29 sites likely to be impacted by the project. These sites are characterised by stone artefact scatters, and: • one is considered to be of high archaeological significance; and • four are considered to be of medium archaeological significance ▪ The Proponent is intending to disturb or destroy each of these sites, after salvage and recording. No Aboriginal stakeholders objected to the proposal. ▪ Results from the field assessment and all stakeholder input have been incorporated into an Aboriginal Archaeology & Cultural Heritage report, which was finalised in full consultation with all stakeholders. ▪ A significant amount of material from this report would go towards revising the Aboriginal Archaeology & Cultural Heritage Management Plan, which Drayton has committed to completing in consultation with DECC and the local Aboriginal community prior to disturbance, including measures to facilitate salvage of artefacts disturbance. The Department has included a condition in the approval formalising this commitment.
Greenhouse Gas Emissions (GHGs)	The burning of product coal, as well as the use of mining machinery and clearing of vegetation, would contribute to climate change through release of greenhouse gases from stored carbon in vegetation and use of fossil fuels.	▪ Drayton has undertaken an assessment of the impacts on climate change from Scope 1, 2 and 3 emissions and spontaneous combustion. ▪ Scope 1 & 2 emissions are estimated at average around 356 ktpa. The worst case scenario for emissions associated with spontaneous combustion is around 30 ktpa. ▪ The burning of coal from the Project (ie the expanded Drayton mine) would release an annual average of around 11.95 Mt CO₂-equivalent over its 10 year life, with a maximum of 18.1 Mtpa in Year 5 and as low as 3.53 Mtpa in Year 10. The average represents only 0.03% of current annual global CO₂-equivalent emissions. Further, it is slightly less than the current 12.65 Mtpa average of Scope 3 emissions associated

Issue	Features/Impacts	Conclusion/Mitigating Factors
		with the mine's current production (during 2006 and 2007, under the current consent). ▪ If Drayton were not permitted to expand, it is almost certain that coal from another source would still be burnt in its place. To fail to approve the Drayton project on the grounds of increased Scope 3 emissions would almost inevitably fail to reduce overall global GHGs, only change the source of the coal that is burnt. That alternate source may be an existing approved NSW mine, a Queensland mine, or a mine from any other country. ▪ Drayton would continue to review and monitor GHGs whilst aiming to limit emissions to the minimum practicable level and minimise the ratio of GHGs per tonne of coal. ▪ The Department proposes a condition requiring the preparation of an Energy Savings Action Plan in accordance with the requirements of DECC.
Spontaneous Combustion	The potential impact of spontaneous combustion and its effect on the existing environment	▪ The main incidences of spontaneous combustion were recorded in 1998 (5.6 ha) but have gradually declined until 2006 (0.4 ha). ▪ This decrease is due to targeted management including of a Spontaneous Combustion Management Plan (SCMP), stockpile management and placement of overburden and partings. ▪ Spontaneous combustion would continue to be managed in accordance with the SCMP which would be revised in consultation with relevant agencies. ▪ The agreement with Mt Arthur Coal regarding overburden emplacement would lead to the area worst affected by spontaneous combustion being covered with inert material.
Blasting	Overpressure and ground vibration from additional blasting events	▪ The 2005 AEMR indicates that blast overpressure and ground vibration levels comply with relevant criteria. ▪ The proposed production increase would result in additional, rather than larger blasts (about two extra per week) and is unlikely to result in any damage to residences. ▪ Calculated overpressure and ground vibration levels in Year 10 when the North Pit is closest to residents indicates that existing criteria would continue to be met. ▪ Blasting activities would continue to take place in accordance with Drayton's EMP (which would be updated) and in close consultation with existing residents. Regular monitoring would continue.
Visual	Expansion of open-cut mining footprint has the potential to exacerbate visual impacts in some viewing locations	▪ Dominant land uses in the surrounding region are open-cut coal mining and power generation which limit the potential to generate further significant visual contrast. ▪ Local topography is highly undulating and characterised by ridges, spurs and vegetation restricting direct views of mining operations from most locations. Nearest residents located to the north and northeast of the mine receive screening from forested lands including the Drayton wildlife refuge and wooded ridges. The North Pit expansion would be more distant from these residences than existing operations including the CHP and rail facility. ▪ In addition, Drayton has committed to providing dense tree planting across the northern boundary of the site adjacent to Thomas Mitchell Drive. The Department has included a condition requiring this to occur within two years of any approval.

Issue	Features/Impacts	Conclusion/Mitigating Factors
		Visual impacts would predominantly affect motorists passing by the region on the New England Highway to the south and east, and would not affect the liveability for residents in the region.
European / Non-Aboriginal Heritage	Potential impact on Non-Aboriginal heritage items/sites	- Five heritage sites have been identified within the EA boundary, with one (a stockyard) considered to be of moderate local significance under the <i>Heritage Act 1977</i>. This would be destroyed by the Project. The site has been photographed and recorded. No mitigation measures are proposed, however the Department proposes that Drayton update its existing Heritage Management Plan before destruction. - None of the other sites are predicted to be disturbed. One is of high local significance and would be fenced off to avoid accidental damage.
Traffic and Transport	Potential impacts on road traffic volumes, road safety, intersections and infrastructure, including cumulative impacts due to other existing and proposed developments	- A Traffic Impact Assessment modelled the predicted additional vehicle movements relative to baseline data taken from the Mount Arthur North EIS in April 2000, which had incorporated predictions through to 2021, including an annual growth rate of 1.5%. - Results suggested predicted overall peak volumes (in Year 5) would be only slightly higher than those predicted in the EIS for 2013, with the largest increase, of 3.9%, expected on Thomas Mitchell Drive, corresponding to a maximum of 36 additional vehicle movements per day, with no more than five of these being heavy vehicles. - Much smaller increases, of around 0.4% per day, are predicted for the New England Highway and Denman Road. - The two major public road intersections utilised by mine-related traffic (Thomas Mitchell Drive with the New England Highway and Thomas Mitchell Drive Denman Road) have both been recently upgraded to rural Type C intersections, and are expected to be able to accommodate projected peak traffic volumes. - The intersection of Drayton's mine access road with Thomas Mitchell Drive is also predicted to be able to accommodate maximum traffic volumes (in Year 5). - The Department has proposed a condition of approval requiring Drayton to develop a Road Closure Plan to the satisfaction of Council, prior to undertaking any blasting activities within 500 m of Thomas Mitchell Drive.

5. RECOMMENDED CONDITIONS

The recommended conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting in accordance with current best practice;
- provide for the ongoing environmental management of the modified development; and
- ensure that long term rehabilitation and final land use objectives for the mine are satisfactorily achieved.

The recommended conditions address management of noise, blasting and air quality impacts, surface water and groundwater impacts, landscape and rehabilitation management, heritage impacts, greenhouse gas emissions, and environmental management systems, on-going environmental monitoring, community consultation and complaints management and performance audits.

A summary of the recommended conditions of approval is provided in **Appendix A** and a full set appears in **Appendix B**. Drayton has reviewed these conditions and accepted them. The Department believes these conditions reflect current best practice for the regulation of coal mines in NSW.

6. CONCLUSION

The Department has assessed the merits of the project in detail, in accordance with the statutory requirements of the EP&A Act, and is satisfied that:

- there is sufficient information available to determine the application;
- the residual impacts of the proposal can be adequately mitigated, managed, and/or offset to ensure an acceptable level of environmental performance; and
- the proposal offers significant social and economic benefits for NSW as it would:
 - allow 53 million tonnes of coal to be extracted for both domestic use and export;
 - make optimal use of the existing infrastructure at the mine;
 - generate export revenue of around \$ 2.4 billion;
 - provide royalties and taxes to Government; and
 - employ up to 390 people.

Consequently, the Department believes the proposal is in the public interest, and should be approved subject to strict conditions.

7. RECOMMENDATION

It is RECOMMENDED that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under Section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (Tag “A”).

David Kitto
Director
Major Development Assessment

Chris Wilson
Executive Director
Major Project Assessment

Sam Haddad
Director-General

APPENDIX A. SUMMARY OF CONDITIONS OF APPROVAL

Aspect	Condition	Requirement
Schedule 2: Administrative Conditions		
Limits of Approval	5	Approval for mining restricted until 2017
	6	Restriction on production to 8 million tonnes of ROM coal a year
	7	All coal to be transported by rail
Surrender of Consents	8	All previous consents shall be surrendered
Planning Agreement	13	Planning agreement to be entered into with Council,
Schedule 3: Specific Environmental Conditions		
Noise	1	Noise impact assessment criteria
	2-4	Acquisition criteria
	5-6	Noise mitigation measures
	7	Requirement to seek continual improvement of noise performance
	8	Noise Monitoring Program
Blasting	9-10	Blast impact assessment criteria
	11-13	Restriction on blasting hours and frequency of blasting
	14-17	Blast related operating conditions, including restriction on blasting within 500m of privately owned land, requirement for Road Closure Management Plan, and requirement for public notification of blasting operations
	18-20	Rights for structural property inspections for properties potentially affected by blasting
	21	Blast Monitoring Program
Air Quality	22-23	Air quality impact assessment criteria and acquisition criteria
	24	Requirement to minimise air quality impacts
	25	Air Quality Monitoring Program
	25	Spontaneous Combustion
	27	Meteorological monitoring
Surface and Ground Water	28	Restriction on discharging dirty water and saline water from the site
	29-34	Site Water Management Plan
Rehabilitation and Landscape Management	35	Requirement to progressively rehabilitate the site
	36	Requirement to prepare and implement an Offset Strategy, and to arrange for long term security of the offset areas
	37-40	Landscape, Rehabilitation, Offset, Final Void and Mine Closure Management Plans
Heritage	41	Aboriginal Heritage Plan
Transport	42	Requirements to keep records of coal transport
Visual Impact	43-45	Requirement to undertake visual screening on affected properties, and to minimise project's visual and lighting impacts
Greenhouse Gas	46-47	Energy Saving Action Plan
Waste Minimisation	48	Requirement to monitor and minimise waste
Schedule 4: Additional Procedures		
Notification of Landowners	1-2	Requirement to notify landowners of exceedances of relevant criteria during monitoring
Independent Review	3-8	Procedures for independent review if landowners believe the project to be exceeding relevant impact assessment criteria
Land Acquisition	9-11	Procedures for land acquisition
Schedule 5: Environmental Management, Monitoring Auditing and Reporting		
Environmental Management Strategy/ Program	1-2	Environmental Management Strategy/ Environmental Management Program
Incident Reporting	3-4	Requirement to report incidents
Annual Reporting	5	Annual Environmental Management Report
Auditing	6-8	Requirement to undertake regular independent environmental audits
CCC	9	Requirement for Community Consultative Committee
Access to Information	10-11	Requirement to publicly report environmental management plans/programs/strategies, and monitoring results

APPENDIX B. RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX C. ENVIRONMENTAL ASSESSMENT

See attached CD-ROM entitled *Environmental Assessment Drayton Mine Extension – Main Report and Appendices – August 2007*.

APPENDIX D. SUBMISSIONS

See the attached CD-ROM, which contains a folder entitled *Submissions*.

APPENDIX E. RESPONSE TO SUBMISSIONS

See attached CD-ROM, which contains a file entitled *071120 Drayton EA Detailed Response to Submissions*.

APPENDIX F. CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy (Major Projects)

The proposal is classified as a major project under Part 3A of the EP&A Act because it is development for the purpose of coal mining and consequently meets the criteria in clause 5 of schedule 1 of *State Environmental Planning Policy (Major Projects) 2005*.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 – (Mining SEPP)

As the application for project approval under Part 3A of the EP&A Act was submitted prior to the commencement of the Mining SEPP, the provisions of that SEPP do not apply to the project.

State Environmental Planning Policy (SEPP) No.11 – Traffic Generating Development

The proposal is affected by the provisions of SEPP 11, as an 'extractive industry or mining' (Schedule 1(m)). The application was referred to the RTA, which confirmed that it did not object to the proposal.

SEPP No. 33 – Hazardous and Offensive Development

SEPP 33 requires consideration of whether an industrial proposal is a potentially hazardous or offensive industry. This is defined as a development that '*would pose a significant risk in relation the locality: to human health, life or property; or to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment*'.

The proponent conducted a Preliminary Hazard Analysis for various aspects of the project such as waste management, fuel storage and emergency response. All hazardous materials would be managed in accordance with relevant guidelines. An Environment Protection Licence (EPL) would be obtained for the proposed development. As such, the Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 33.

SEPP No. 44 – Koala Habitat Protection

The EA identified that the modified development site does not contain 'core' or 'potential' Koala habitat and does not have a resident population of Koalas. As such, the Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 44.

SEPP 55 – Remediation of Land

The Department is satisfied that the land subject to the development application does not have a significant risk of contamination given its historical land use, and that the proposal is generally consistent with the aims, objectives and requirements of SEPP 55.

Hunter Regional Environmental Plan 1989

Part 6, Division 1 of the *Hunter Regional Environmental Plan (HREP) 1989* states the objectives of the plan in relation to planning strategies for mineral resources and extractive industries. The Department is satisfied that the proposed project would manage coal mining in a manner that minimises adverse impacts on the environment and population, ensure that the most efficient extraction of the coal resource would be undertaken and that rail transport of coal from the mine would have minimal adverse impacts on the community.

Muswellbrook Local Environmental Plan 1985

The land subject to the project application is primarily zoned 1(a) (Rural 'A' Zone) and development for the purpose of coal mining is permissible with consent in this zone. A smaller portion of the land is zoned 5(a) (Special Uses 'A' Zone), for which the use is designated as Power Station. Development for the purpose of coal mining is permissible with consent on the majority of this land by virtue of *Muswellbrook Local Environmental Plan 1985 (Amendment No. 88)*.

