MAJOR PROJECT ASSESSMENT
Drayton South Coal Project
(PA 11_0062)

Secretary's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979
July 2014

Cover Photos:
Drayton South Coal Project
Environmental Assessment 2012

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EXECUTIVE SUMMARY

The Drayton Coal Mine is located 13 kilometres (km) to the southwest of Muswellbrook in the Upper Hunter Valley, and is owned and operated by Anglo American Metallurgical Coal Pty Ltd (Anglo).

It was first approved by Muswellbrook Shire Council in 1980, and has been operating for over 30 years.

Under the current approval, Anglo is allowed to extract up to 8 million tonnes of run-of-mine (ROM) coal a year until 2017, after which it is required to rehabilitate the mine. However, mining has developed more quickly than expected, and almost all the coal covered by the existing approval has been extracted.

To sustain the operations of the existing mine, Anglo proposes to expand the Drayton mine into an area to the south that is currently used for cattle grazing, and bring it closer to two major thoroughbred horse studs – the Coolmore and Woodlands studs.

Conceptually, the proposal – which is known as the Drayton South Coal Project – has 5 components:

- the establishment of a haul road from the existing mine to the new mining area, which would enable equipment and people to be moved between the two areas, and coal to be moved from the new mining area to the existing mine for processing and export to market;
- the creation of a new mining area and associated infrastructure to the south of the existing Drayton and Mt Arthur mines, and behind a natural ridgeline that would generally shield the new mining area from the south of the Golden Highway;
- the ongoing use of the existing infrastructure at the Drayton mine, including the coal handling and preparation plant, the Antiene rail spur, and surface facilities;
- the rehabilitation of both the Drayton and Drayton South areas following mining, focusing primarily on the establishment of woodland corridors that would complement the proposed rehabilitation at the adjoining Mt Arthur mine and the existing Drayton Wildlife Refuge to the north, and the protection and enhancement of three new offset areas to compensate for the residual flora and fauna impacts of the project; and
- consolidation of all existing planning approvals into a single, contemporary planning approval for the entire operation.

Anglo has mounted several arguments to justify the project.

These arguments include that the project would:

- extract a substantial coal resource of about 100 million tonnes of ROM coal from an area that has around 556 million tonnes of in-situ coal resources in an area that is already dominated by large-scale coal mining operations;
- use the existing infrastructure of the existing Drayton mine, and therefore significantly reduce the costs associated with mining the coal resource;
- provide around $333 million (present value) to the NSW Government in royalties and $152 million (present value) to the Commonwealth Government in company tax, generating revenue for spending on infrastructure and services for the general community;
- provide around $355,000 (present value) to Muswellbrook Shire Council each year for the provision of local infrastructure and services and community enhancement; and
- have significant consequential benefits for both the regional and State economy, through capital spending (around $485 million), annual operational spending (around $278 million), and the creation of jobs during the construction (up to 329) and operation (530) of the project.

Anglo has also argued that it has incorporated a range of mitigation measures into the design of the project to minimise its impacts people, surrounding land uses – such as the Coolmore and Woodlands horse studs – and the environment.

These measures include:

- keeping the new mining area behind the natural ridgeline in the area, and thereby sterilising about 75 million tonnes of coal worth around $4.5 billion;
- setting the mine back from the riparian zone around Saddlers Creek, and conserving and enhancing the existing vegetation within the riparian zone;

- minimising the size of the overburden dumps and backfilling the mining pits as much as possible to minimise the size of the final void;
- implementing best management practice to minimise the dust, noise, vibration, water, visual and heritage impacts of the project;
- creating a final landform with micro-relief that would blend in well with the undulating hills of the surrounding landscape;
- restoring most of the mining area to woodland, including at least 719 hectares (ha) of the Central Hunter Box-Ironbark Woodland endangered ecological community; and
- implementing a comprehensive biodiversity offset strategy, which involves the protection and enhancement of around 2,300 ha of land, to compensate for any residual flora and fauna impacts of the project.

The project was classified as a major project under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act) as it is development for the purpose of coal mining, and therefore met the criteria in Clause 5 of Schedule 1 of *State Environmental Planning Policy (Major Projects) 2005*.

Although Part 3A of the EP&A Act was repealed in October 2011, the project is still being assessed under the former Part 3A of the EP&A Act. This is due to the transitional arrangements under Part 6A of the EP&A Act, which say: if the assessment of a project was started under Part 3A, then it may be finished under Part 3A.

The NSW Planning Assessment Commission (PAC) will determine the application under delegation. This is because the project meets the terms of the Minister's delegation of 14 September 2011 due to the number of public objections to the project.

The Environmental Assessment of the project was exhibited from 7 November 2012 until 21 December 2012, and attracted 71 submissions: 13 from public authorities, 16 from special interest groups – including the owners of the Coolmore and Woodlands horse studs and the Hunter Thoroughbred Association – and 42 from the general public.

None of the public authorities, apart from Muswellbrook Shire Council, objected to the project. However, almost all of the submissions from special interest groups and the general public objected to the project.

These objections were principally concerned about the potential impacts (dust, noise, vibration, visual, water, heritage) of the project on the adjoining horse studs, claiming open cut mining operations on the site would be incompatible with the thoroughbred breeding operations at both of these studs. Concerns were also raised about the potential biodiversity, heritage, and traffic impacts of the project.

In March 2013, the former Minister requested that the Planning Assessment Commission (PAC) review the merits of the project, and hold public hearings during the review. This review was put on hold while the Department commissioned an independent review of the project's mine plan in May 2013. The review recommenced in August 2013 with slightly revised terms of reference.

These terms of reference asked the PAC to assess the potential impacts of the project on the operations of the Coolmore and Woodlands horse studs, and recommend any additional measures required to avoid and/or minimise the potential impacts of the project on the horse studs.

Ms Gabrielle Kibble AO (chair), Mr Garry West and Mr Joe Woodward carried out the PAC review. During the review, the PAC sought independent expert advice from Mr Terry Short (agricultural scientist), Dr Richard Lamb (visual), and Mr Richard Jennings and Mr John Janetzki (mine engineers). It also inspected the site and stud farms. On 10 October 2013, the PAC held public hearings in Denman, and heard 26 verbal submissions. It also received a further 16 written submissions. After completing the review, the PAC handed down its final report on 10 December 2013.

In summary, the PAC concluded that the project should not proceed as proposed for two key reasons:

- the project could cause the Coolmore and Woodlands horse studs to leave the Hunter Valley, and this would have a significant effect on the region's equine critical industry cluster as a whole, principally because these two studs play such a critical role in the cluster's operations; and
- the project could have a significant impact on the landscape in this part of the Hunter Valley, which has cultural significance due to its historic and continuing land use patterns with the built heritage

structures, unique topography, landforms and environment, and may warrant heritage listing at the State and National level.

It noted that if the project were to proceed, it would require "substantial changes" including further setbacks from the horse studs' operations. However, it also noted that a much smaller mine may well be achievable on the northern portion of the site.

Anglo provided an initial response to the PAC review in February 2014, which was critical of the PAC's recommendations, and indicated that "little or no weight" should be given to these recommendations. It argued, the project should be approved without further amendment.

After considering this response, the Department advised Anglo that it had not adequately addressed the recommendations of the PAC in its response, and in March 2014, Anglo submitted a retracted mine plan for the project.

The retracted mine plan makes a number of substantial concessions to address the PAC's recommendations, principally by removing the Houston Pit and part of the Whynot Pit from the mine plan to ensure the mine plan is setback behind the natural ridgeline. However, the retracted mine plan is not entirely consistent with the PAC's recommendations.

Although the southern corner of the Redbank Pit has been removed to increase the distance between the mine and the Woodlands horse stud, neither the Blakefield Pit nor the Redbank Pit have been setback behind the second ridge to the north of the Golden Highway as recommended by the PAC. Anglo argues these setbacks are unnecessary, and would render the project economically unviable.

Since receiving the retracted mine plan, the Department has received further submissions on the project, including submissions from the owners of the Coolmore and Woodlands horse studs.
The studs remain opposed to the project, even in its revised form.

The Department has carried out a detailed assessment of the merits of the project, in accordance with its statutory obligations, and considered the material submitted both in support and against the project.

In doing this, it has had particular regard to the aims and objectives of the *Upper Hunter Strategic Regional Land Use Plan*. This plan outlines the Government's overarching strategic policy objective of seeking to strike an appropriate balance between competing land uses in the region (i.e. mining and the thoroughbred industry); and to achieve co-existence wherever possible between these land uses. The intent of the plan is not to favour one industry over another, but to ensure land use planning decisions are directed towards allowing both industries to prosper, but not at the expense of the other.

In summary, the Department is satisfied that the project would extract a significant coal resource of around 100 million tonnes from an area within the Hunter Coalfield that has long been earmarked for coal mining development.

It is also satisfied that the extraction of this coal resource would generate substantial economic benefits for the regional and State economy. While there are arguments about the precise scale of these benefits, the Department is satisfied that even with conservative sensitivity testing of the key variables involved in calculating such benefits (such as the long term price of coal), the economic benefits of the project would be overwhelmingly positive in terms of securing royalties and taxes for Government to spend on infrastructure and services, creating jobs, and stimulating the regional and State economy through capital and operational spending.

The critical issue is: the extent to which the project would result in unacceptable impacts on the Coolmore and Woodlands thoroughbred operations.

The Department's detailed assessment has found that the project is unlikely to result in exceedances of the relevant air, noise and blasting criteria at the Coolmore and Woodlands studs:

- noise levels would remain well below the intrusive and amenity criteria in the *NSW Industrial Noise Policy*;
- blasting impacts could be controlled to ensure compliance with the relevant overburden pressure and ground vibration criteria in the relevant ANZEC guidelines;
- air quality levels would remain well below the relevant cumulative annual average ambient quality criteria in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW;* and

- while the modelling indicates there could be up to 4 additional days a year where the short term PM_{10} criteria may be exceeded at the studs, Anglo is likely to be able to avoid such exceedances occurring by implementing best practice dust control on site, and curtailing its operations during adverse weather conditions.

It has also found that the project is unlikely to have any significant impacts on the quantity or quality of water used by either of the two studs, and that any subsidence impacts associated with the proposed highwall mining would be negligible and have no impact on the operations of the studs.

Consequently, the Department has concluded that the project is unlikely to have any significant physical impacts on the studs, and would certainly not affect the physical capability or suitability of the site to be used for horse breeding.

This leaves the potential impacts of the project on the visual amenity, landscape and image of the Coolmore and Woodlands operations.

While Anglo's changes to the mine plan are not wholly consistent with the PAC's recommendations, they have addressed the primary concerns of the PAC by ensuring the mining operations would remain behind the major natural ridgeline on the site, and that there would be no direct views of the mining operations from the "core operations" of either of the studs.

This means the mining operation would only be visible from the higher ground on both studs where in some areas there are already views of the industrial landscape to the north, including the existing Mt Arthur mine and Macquarie Generation power stations. In the Department's view, these impacts would be acceptable as these areas are not the core areas where horse breeding activities occur.

Having said this, the Department notes that regardless of the setbacks imposed on the mining operations there would still be some indirect (light glow, dust plumes) and dynamic (mining-related vehicles on public roads, media about the two industries being in close proximity to each other) impacts as a result of the project.

While the Department accepts that reasonable people may disagree about the significance that should be given to these impacts, it has concluded that:

- they can be mitigated to some degree;
- are common in the Hunter Valley where mines are located in close proximity to several horse studs in the Equine Critical Industry Cluster; and
- are unavoidable consequences of co-existence of these two important industries in the valley.

The Department does not consider these impacts to be significant enough to warrant making further changes to the mine plan, such as excising the Redbank Pit, as this would sterilise another 19 million tonnes of ROM coal (worth between $1.3 and $1.5 billion) and jeopardise the viability of the project as a whole.

It also does not consider these impacts to be significant enough to cause the thoroughbred operations to leave the Hunter Valley, even though there is always a risk that this may occur.

In this regard, the Department notes that there are likely to be a number of economic and practical barriers to the relocation of these thoroughbred operations (such as the proximity to other thoroughbred operations in the Upper Hunter and Sydney, and the existing capital investment in the studs), and even if the owners of these operations did decide to leave the area, there is no reason why the properties could not continue to be used to breed thoroughbred horses in the future.

Notwithstanding this conclusion, Anglo will need to employ best management practice on site during any mining operations, and minimise the impacts of the project on the Coolmore and Woodlands studs.

Finally, the Department has considered all the other potential impacts of the project (biodiversity, heritage, land, water, economic, social), and is satisfied that these impacts are unlikely to be significant and can be suitably mitigated and/or offset.

In this regard, the Department has recommended conditions that would require Anglo to comply with strict standards to ensure an acceptable level of environmental performance, and prepare a number of management plans for the project in consultation with relevant agencies and the owners of both thoroughbred studs.

These conditions would require Anglo to monitor the impacts of its project closely, and to implement appropriate mitigation measures in the unlikely event that the impacts of the project are greater than predicted.

Overall, the Department is satisfied that the benefits of the project would outweigh its costs, and believes that the retracted mine plan strikes an appropriate balance between protecting the interests of the horse studs and realising the significant economic benefits that would flow to the region and the State if the project is allowed to proceed.

Consequently, the Department considers the project to be in the public interest, and recommends that it be approved subject to strict conditions.

1. PROJECT

1.1 Regional Context

The Drayton Coal Mine is located 13 kilometres (km) to the southwest of Muswellbrook in the Upper Hunter Valley (see Figure 1), and is owned and operated by Anglo American Metallurgical Coal Pty Ltd (Anglo).

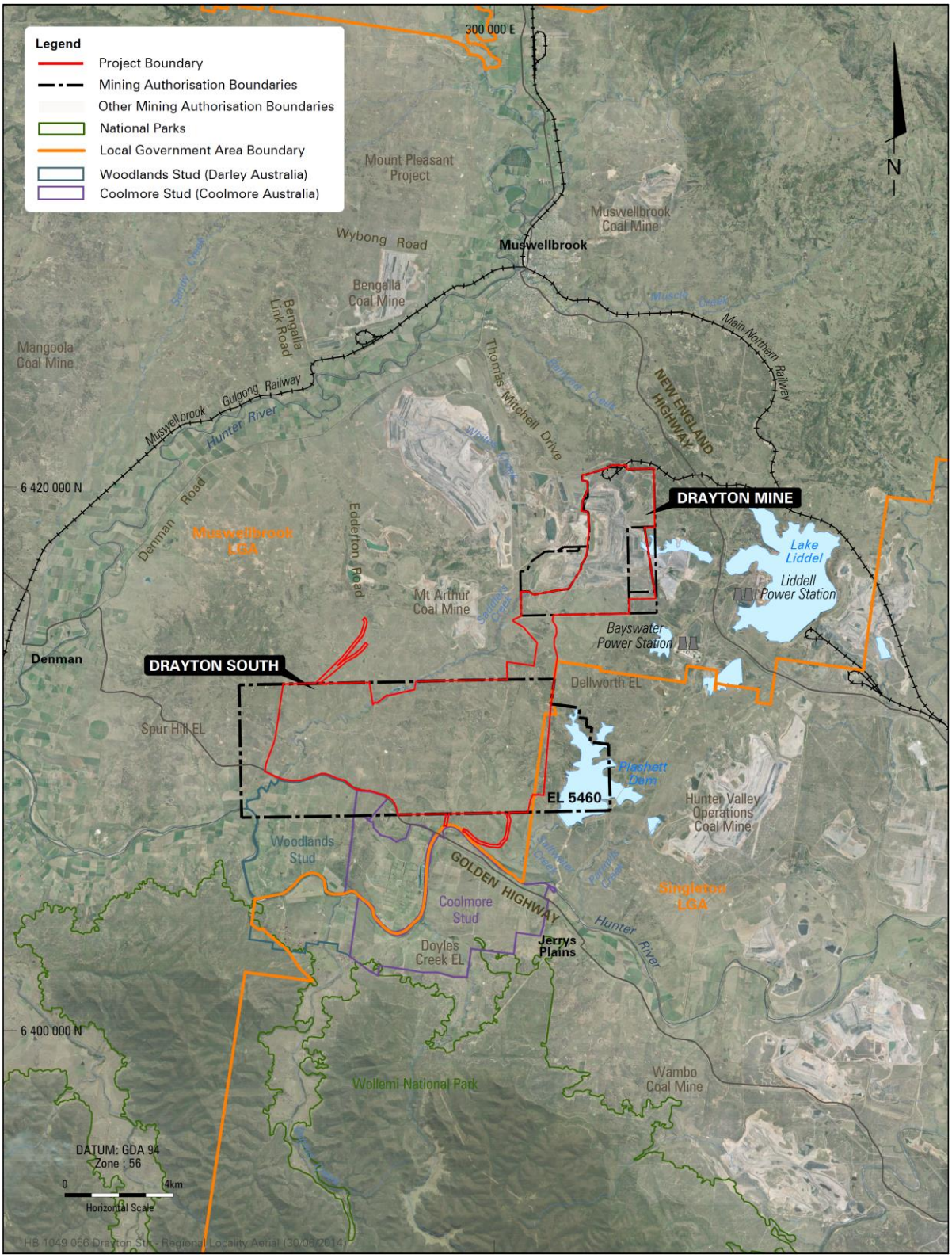

Figure 1: *Location of Drayton South Coal Project*

It is a large open cut mine with surface facilities, including a coal handling and preparation plant, off Thomas Mitchell Drive, and rail facilities that connect to the Main Northern Railway via the Antiene rail spur (see Figure 1).

Land uses around the mine are comprised of a combination of industry (mining and power generation), agriculture, tourism, residential and conservation.

These land uses are a microcosm of the complex land use patterns that have developed in this part of the Hunter Valley over the last two hundred years. They reflect the important and diverse role the region plays in the State's economy.

The Mount Arthur mine complex is located directly to the west of the Drayton mine, and is one of the largest mines in the Hunter Valley. These mines form part of the Hunter Coalfield, which currently forms a large corridor between Singleton and Muswellbrook, and produces around 60% of NSW's coal each year.

The land to the east of the mine is dominated by Macquarie Generation's Bayswater and Liddell power stations and their associated infrastructure, including the Liddell coal unloader, Liddell and Pikes Gully fly ash dams, Lake Liddell, Plashett Dam and various transmission lines and conveyors (see Figure 1). It also includes the proposed Bayswater B power station, which was approved in concept in 2010 but has not yet been built. This power station would be located just to the south of the existing Bayswater power station, and would form part of the larger power generation corridor to the east of the Drayton mine.

The land to the south of the mine is currently dominated by agriculture, but has several coal exploration licences, including the Drayton South, Dellworth, Spur Hill and the former Doyles Creek licences (see Figure 1).

The undulating hills closer to the mine are dominated by cattle grazing, with intensive agriculture – such as mixed cropping, small orchards and vineyards – along the alluvial floodplains of the Hunter River and its tributaries.

The Coolmore and Woodlands horse studs are located between the Golden Highway and the Wollemi National Park. They form part of a larger equine industry that stretches to Scone in the Upper Hunter Shire to the north and Bylong Valley to the west. The Arrowfield wine estate is locate adjacent to Coolmore Stud.

The area around the mine is sparsely populated, with the major population centres – Muswellbrook (10,000 population), Denman (1,500) and Jerry's Plains (700) – all located more than 10 km from the site (see Figure 1). The closest residential area is the Antiene rural-residential estate, which is located immediately to the north of the mine between the New England Highway and the Antiene rail spur.

1.2 Drayton Mining Operations

The Drayton mine (see Figure 2) was approved by Muswellbrook Shire Council in 1980.

This approval allowed the development of:

- two open cut pits (West Pit and East Pit) and associated overburden dumps to extract around 63 million tonnes of coal at a rate of up to 3.5 million tonnes a year;
- a range of surface facilities located off Thomas Mitchell Drive to the northeast of these pits, including a coal handling and processing facility;
- conveyors to connect the mine to the nearby Liddell and Bayswater power stations; and
- a 6.5 km rail spur and loop (the Antiene rail spur) to connect the mine to the Main Northern Railway to the east of the mine.

Coal would be extracted on site via a combination of dragline and truck and shovel operations. It would then be processed on site before being conveyed to the power stations for electricity generation or railed to the Port of Newcastle for export.

The mine started operating in 1983. Since then, two major expansions of the mine have been approved.

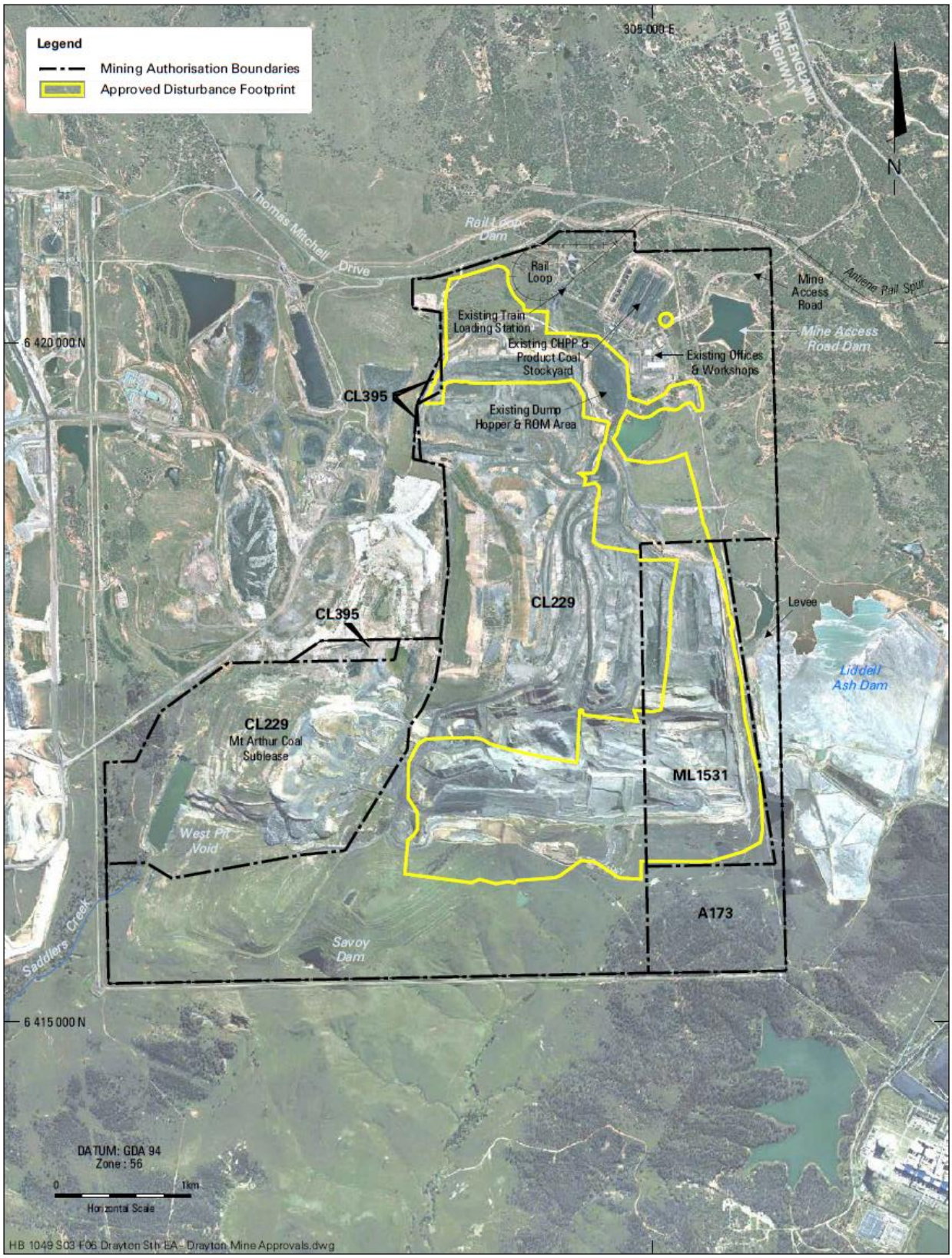

Figure 2: *Existing Layout – Drayton Mine*

The first expansion of the mine was approved by Muswellbrook Shire Council in 2002, and involved the eastward expansion of the East Pit onto land owned by Macquarie Generation. It also allowed an increase in the extraction rate from 3.5 to 5.5 million tonnes a year.

In return for providing its land to facilitate the expansion of the mine, Macquarie Generation gained an option to fill the East Pit void with fly ash from its power station operations (subject to obtaining the necessary planning approvals). Essentially, the East Pit void was earmarked as a long-term replacement for the current Liddell Fly Ash Dam, which is located adjacent to the East Pit.

The second expansion was approved by the then Minister for Planning, and involved a further expansion of the East Pit and creation of two new open cut pits (North Pit and South Pit) to extract a further 53 million tonnes of coal. It also involved an increase in the extraction rate to up to 8 million tonnes of run-of-mine (ROM) coal a year.

Due to the extension of mining operations to 2017, Macquarie Generation was forced to expand the capacity of the Liddell Fly Ash Dam to accommodate fly ash from the power stations while the additional mining was occurring. This has created some uncertainty about when the East Pit void is likely to be filled with fly ash.

The 2008 approval expires in 2017, and mining under this approved is now almost complete, and parts of the site are being progressively rehabilitated.

At full production, the mine employed around 530 workers. However, this number has fallen somewhat in recent months as mining operations gradually wind down.

The current layout of the mine is shown in Figure 2. The figure shows the 4 voids left by mining operations. The West Pit void has been integrated into adjoining Mt Arthur mine complex's operations, and is being filled with overburden and progressively rehabilitated by Mt Arthur. Current planning sees the other 3 voids being used to store tailings and coarse rejects from future mining operations in the region, fly ash from the powers stations or to store mine water. However, there is still some uncertainty about the precise form that this rehabilitation may take as it depends on a range of future decisions about continued mining at the Drayton mine and the development of Macquarie Generation's adjoining power stations.

1.3 Drayton South Coal Project

The proposal – which is known as the Drayton South Coal Project – is summarised in Table 1 below, and described in detail in the Environmental Assessment for the project (see Appendix C), and associated Preferred Project Report (see Appendix F), Justification Report (see Appendix J), and Consequential Environmental Impact Assessment of the Retracted Mine Plan (see Appendix K).

Conceptually, the project has 5 components as described below.

Transport Corridor

The proposal involves developing a transport corridor from the mine to a new mining area about 3 km to the south of the existing mine (see Figure 3).

The corridor would include both a haul road and access road that would enable equipment to and people to be moved from the existing mine to the new mining area, and coal to be moved from the new mining area to the existing mine for processing and export to market.

At some stage in the future, it may also include a conveyor. However, Anglo has made no firm commitments to build this conveyor as part of the project.

Finally, the corridor would also be used to provide utility connections for the new mining area (power, water, etc.).

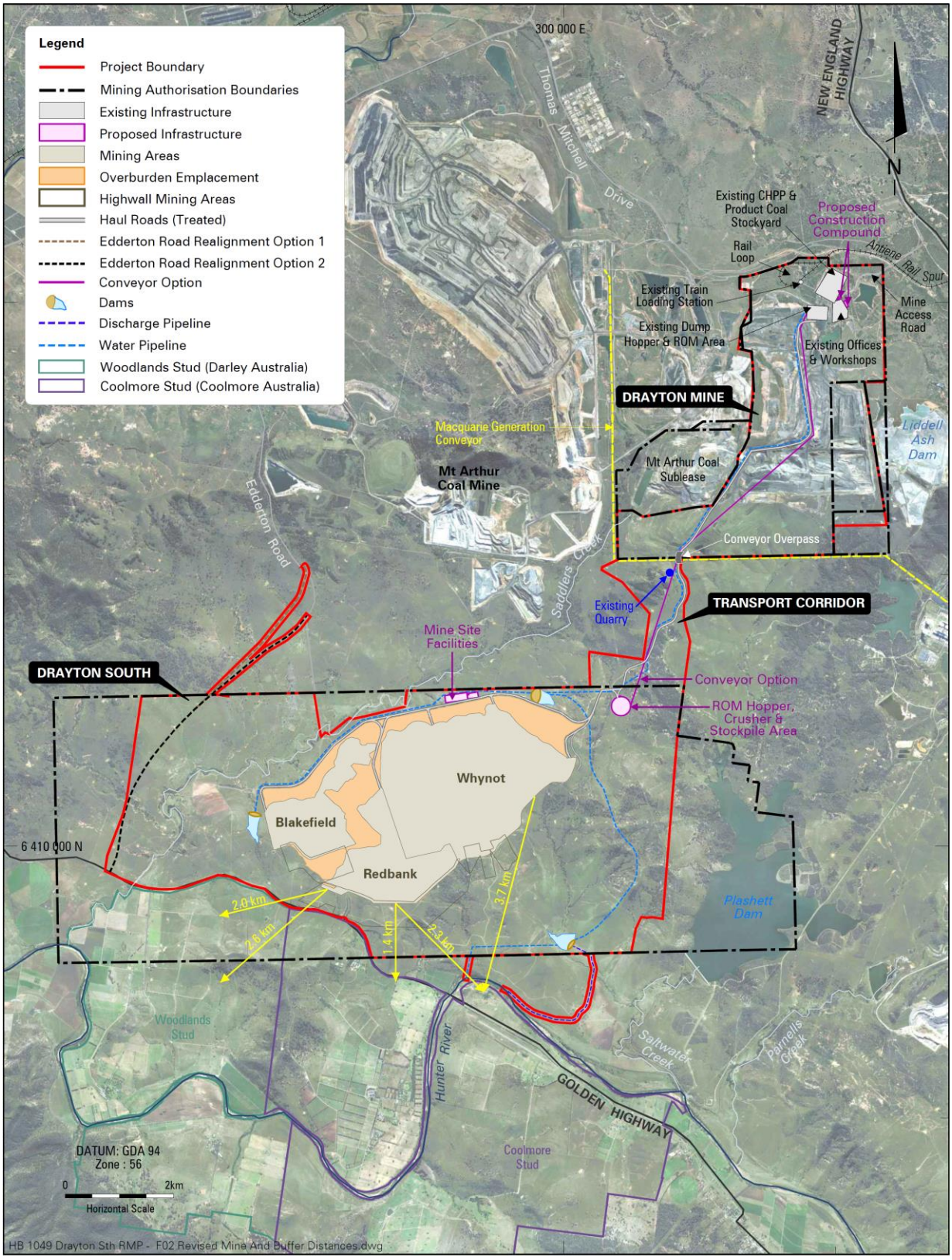

***Figure 3**: Drayton South Coal Project*

New Mining Area

The new mining area would be located in the rural area to the south of the existing Drayton and Mt Arthur mines, and would generally be bounded by the natural ridgeline that curves around Plashett Dam and along the Golden Highway (see the dotted blue line on Figure 4).

This is roughly the same location as the Mt Arthur South mine, which was approved following a Commission of Inquiry in 1986 but never proceeded.

Mining in this area would be a continuation of the dragline and truck and shovel operations currently being carried out at the Drayton mine.

Initially, Anglo was proposing to establish four open cut pits in the new mining area, and carry out augur mining from the highwall of each pit (known as "highwall mining") to recover some coal from the areas that were considered to be too sensitive to open cut mine (see Figure 4).

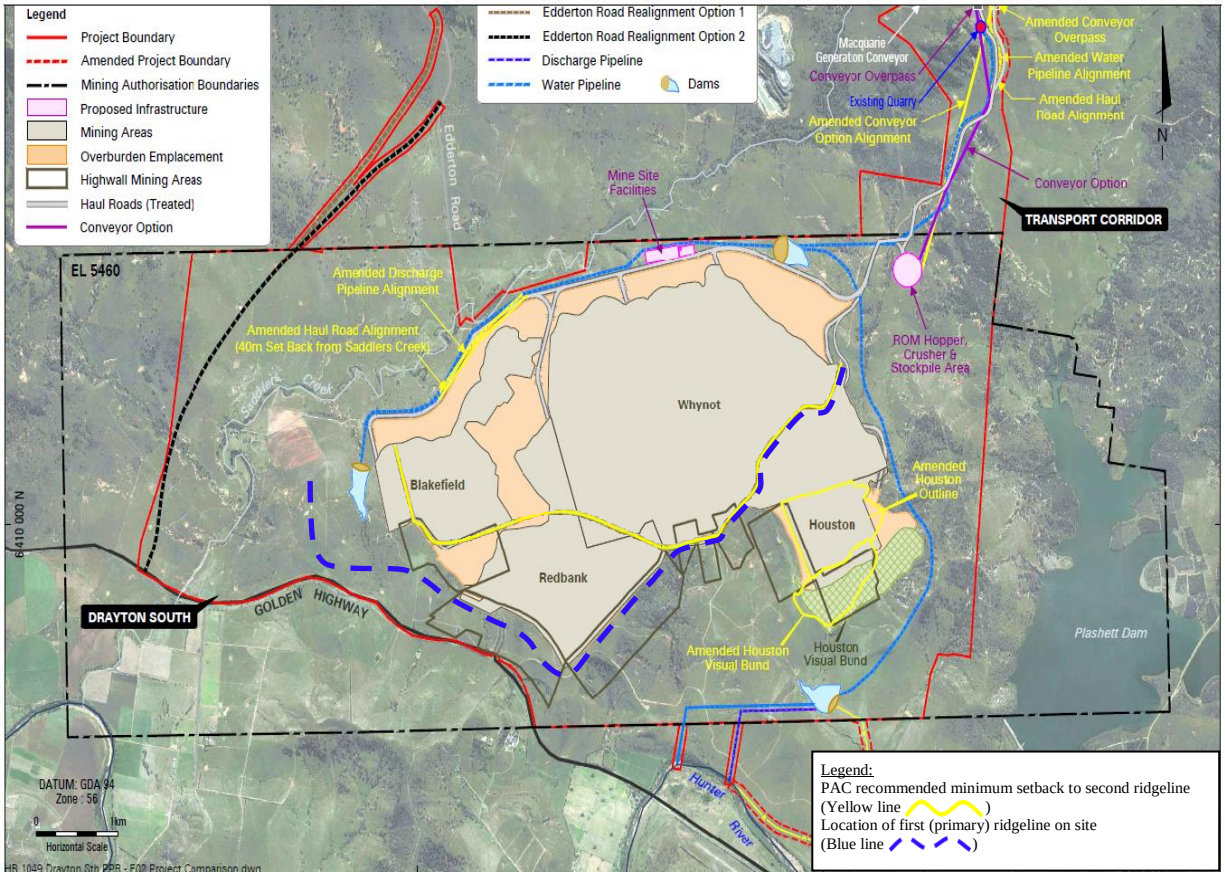

Figure 4*: Original Drayton South Project*
(including PAC's recommended setback and natural ridgelines on site)

However, Anglo has subsequently amended its original mine plan to try and address some of the criticisms raised by the PAC during its review of the merits of the project (see Section 5 below), and minimise the impacts of the mine plan on both the Coolmore and Woodlands horse studs.

The amended mine plan includes only 3 open cut pits (Whynot, Redbank and Blakefield), with highwall mining to be carried out from the highwall of each of these pits. In other words, the Houston Pit, the southern corner of the Redbank Pit, and the south western corner of the Whynot Pit have all been removed from the mine plan (see Figure 5).

This has reduced the coal that would be recovered from the new mining area from a total of 119 to 97 million tonnes (ie 22 million tonnes).

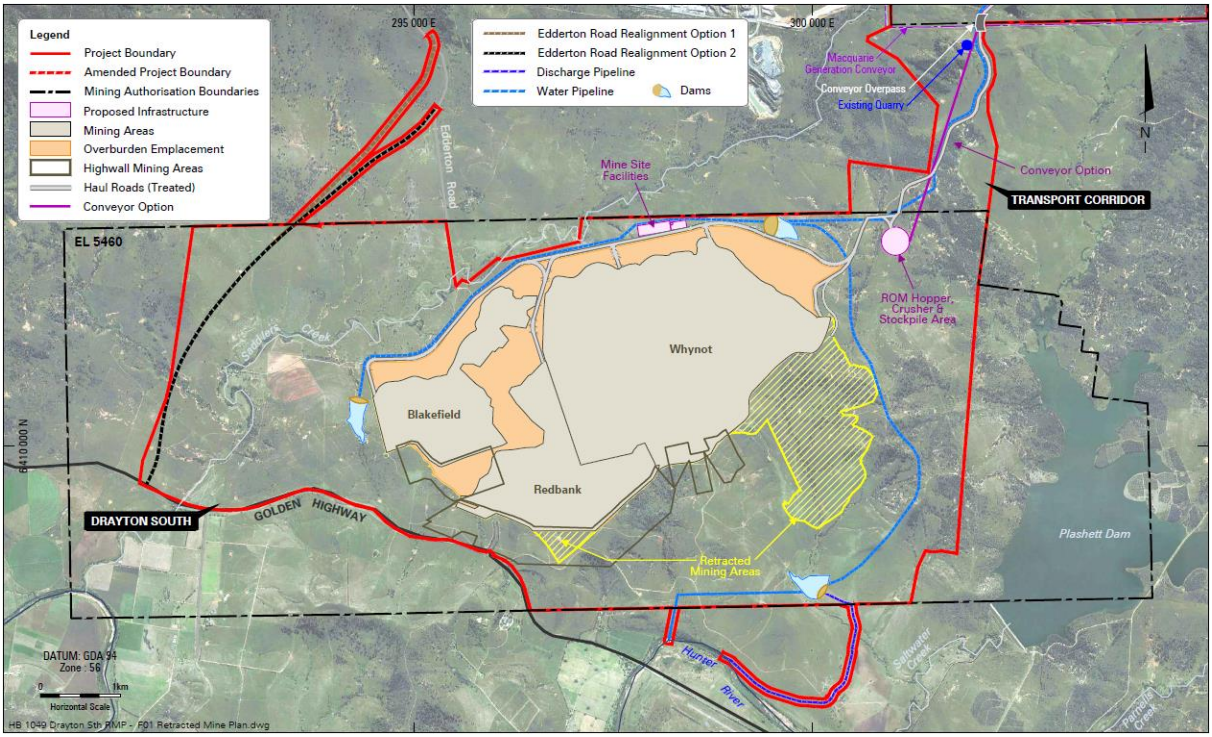

***Figure 5**: Retracted Mine Plan in response to the PAC review*

While the layout of the pits has changed, the footprint of the associated overburden dumps would remain the same. These dumps would be located to the north of the Blakefield and Whynot Pits adjacent to Saddlers Creek, and between the Blakefield and Redbank Pits.

A range of infrastructure would be developed to support the proposed mining operations, including:

- standard surface facilities (workshop, offices, etc.);
- a ROM hopper, crusher and stockpile; and
- a water management system to separate the mine's dirty water from the cleaner water in the catchment, and two pipelines to the Hunter River: one for extracting water from the river, and the other for discharging water to the river.

As the proposal involves mining through a section of Edderton Road, the road would need to be relocated around the proposed mining operations. The new alignment of the road would be located to the west of Saddlers Creek and join the Golden Highway near the entry to the Woodlands stud (see Figure 5).

Ongoing Use of the Drayton Mine

The proposal relies on the existing infrastructure at the Drayton mine.

All coal from the new mining area would be processed at the existing mine, and exported via the existing conveyors or Antiene rail spur. All rejects from this processing would be stored in existing mine voids.

Production rates would generally be consistent with existing production rates at up to 7 million tonnes of product coal a year.

Staff and supplies would continue to access the mine via Thomas Mitchell Drive.

As it would take some time to develop the new transport corridor and extract coal from the new mining area, Anglo is seeking approval for some minor extensions to the North, East and South pits at the existing mine (see Figure 6).

These extensions would disturb about 36.5 ha of land, and enable another 1.4 Mt of ROM coal to be extracted. The extraction of this coal would provide some continuity between the existing mining operations and the proposed mining operations at Drayton South.

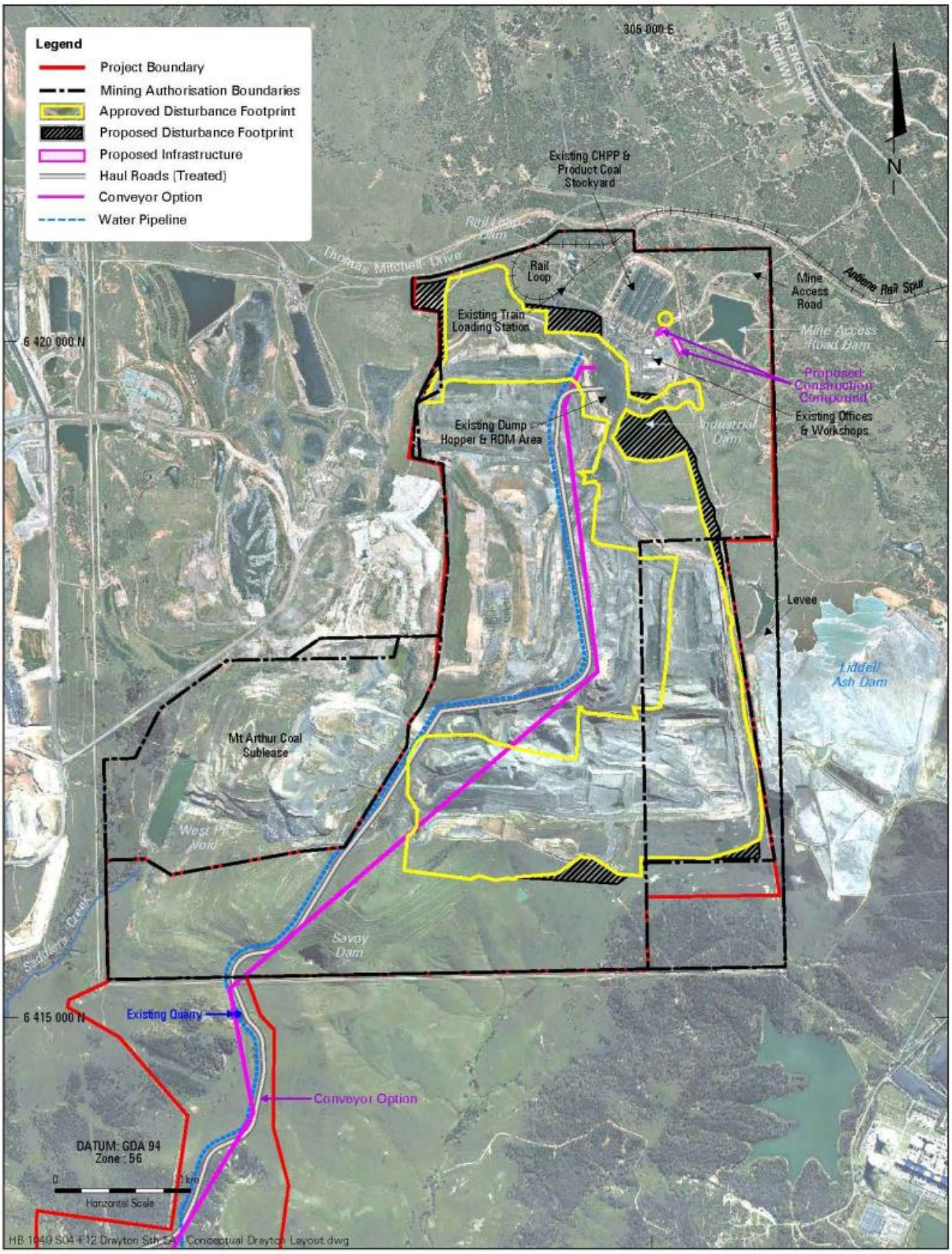

***Figure 6**: The proposed extensions to the approved mining operations at the Drayton mine*

Rehabilitation & Offsets

The proposal involves the rehabilitation of both the Drayton and Drayton South areas following mining, and the provision of biodiversity offsets to compensate for the residual flora and fauna impacts of the project.

As explained in section 1.2 above, there remains some uncertainty about the final landform of the Drayton mine. This is principally because it would depend to a large extent on Macquarie Generation's future demand for fly ash storage, and whether the Drayton South Coal Project is approved.

Anglo's preferred scenario for the rehabilitation of the mine is shown in Figure 7 below.

It shows the retention of 3 voids at the end of the Drayton South Coal Project, with the South Void being used to store water, the East Void to store tailings and the North Void to store coarse rejects. The rest of the mine would be rehabilitated to either grassland or woodland, with a woodland corridor connecting the proposed woodland corridor across the existing Mt Arthur mine with the existing Drayton Wildlife Refuge and associated offset areas to the north of the Drayton mine.

The proposed rehabilitation of the Drayton South site is shown conceptually in Figure 8 below. It has evolved substantially during the assessment process (see Section 6.4.1 below), and involves leaving a final void and rehabilitating the rest of the site to woodland.

The woodland would cover an area of 1,319 ha, and be comprised of 719 ha of the Central Hunter Box-Ironbark Woodland endangered ecological community (EEC) and 600 ha of the Narrabeen Footslopes Slaty Box Woodland community.

The creation of this woodland would complement the permanent protection and enhancement of two offset areas that are proposed to be established on the site (see Figure 8):

- the Saddlers Creek Offset, which covers an area of 86 ha and involves:
  - protecting and enhancing the existing riparian vegetation along the creek, including 62 ha of the Hunter Floodplain Red Gum Woodland EEC; and
  - building on similar conservation initiatives being implemented along the upper reaches of the creek at the Mt Arthur mine; and
- the Southern Offset, which covers an area of 85 ha to the south of the proposed mining area and involves protecting and enhancing around 54 ha of remnant vegetation from the Central Hunter Box-Ironbark Woodland EEC.

Together, the rehabilitation of the mining area coupled with the offset areas is expected to create over 1,490 hectares (ha) of woodland. This is expected to improve the conservation value of both Saddlers Creek and the rest of the site.

Anglo has made commitments to ensure the final landform of the mining area incorporates principles of micro-relief, creating rolling hills and natural features to improve its integration with the surrounding landscape. It has also agreed to minimise the size of the final void, and reduce the size of its catchment.

Finally, the project includes the establishment of an off-site offset in the Liverpool Ranges, about 75 km to the north of the project.

This offset involves the permanent protection and enhancement of 1,643 ha of land, which forms part of a larger property (see Figure 9). The offset area currently has 766 ha of grassland and 877 ha of woodland, including 496 ha of the White Box Woodland EEC (or critically endangered ecological community under Commonwealth legislation).

The primary aim of this offset was to compensate for the proposed clearing of the White Box Woodland on site. However, it should be noted that the retracted mine plan has substantially reduced the amount of clearing of the White Box Woodland from around 181 to 20 ha, and that the large remnant patch of White Box Woodland (around 253 ha) on the south eastern portion of the site would largely be untouched by mining following the removal of the Houston Pit and part of the Whynot Pit.

Consolidate Existing Consents

Anglo currently operates under two planning approvals: the 2008 approval for the mine's operations, and a 2000 consent to export up to 7 million tonnes of product coal a year along the Antiene rail spur.

The project involves incorporating these approvals into a single, modern planning approval for the entire operation.

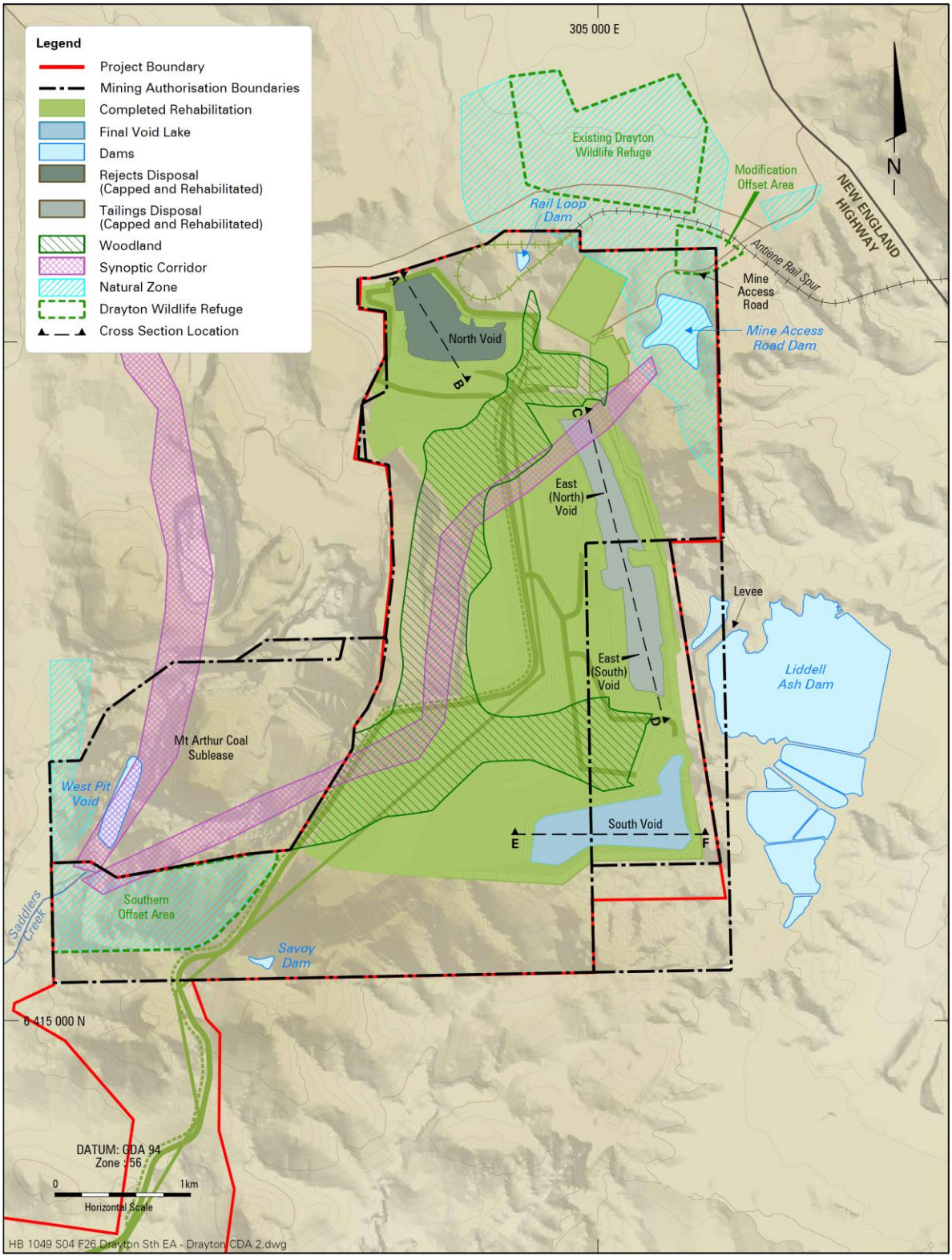

***Figure 7**: Proposed Final Landform, Rehabilitation and Biodiversity Offsets for Drayton Mine (preferred void scenario)*

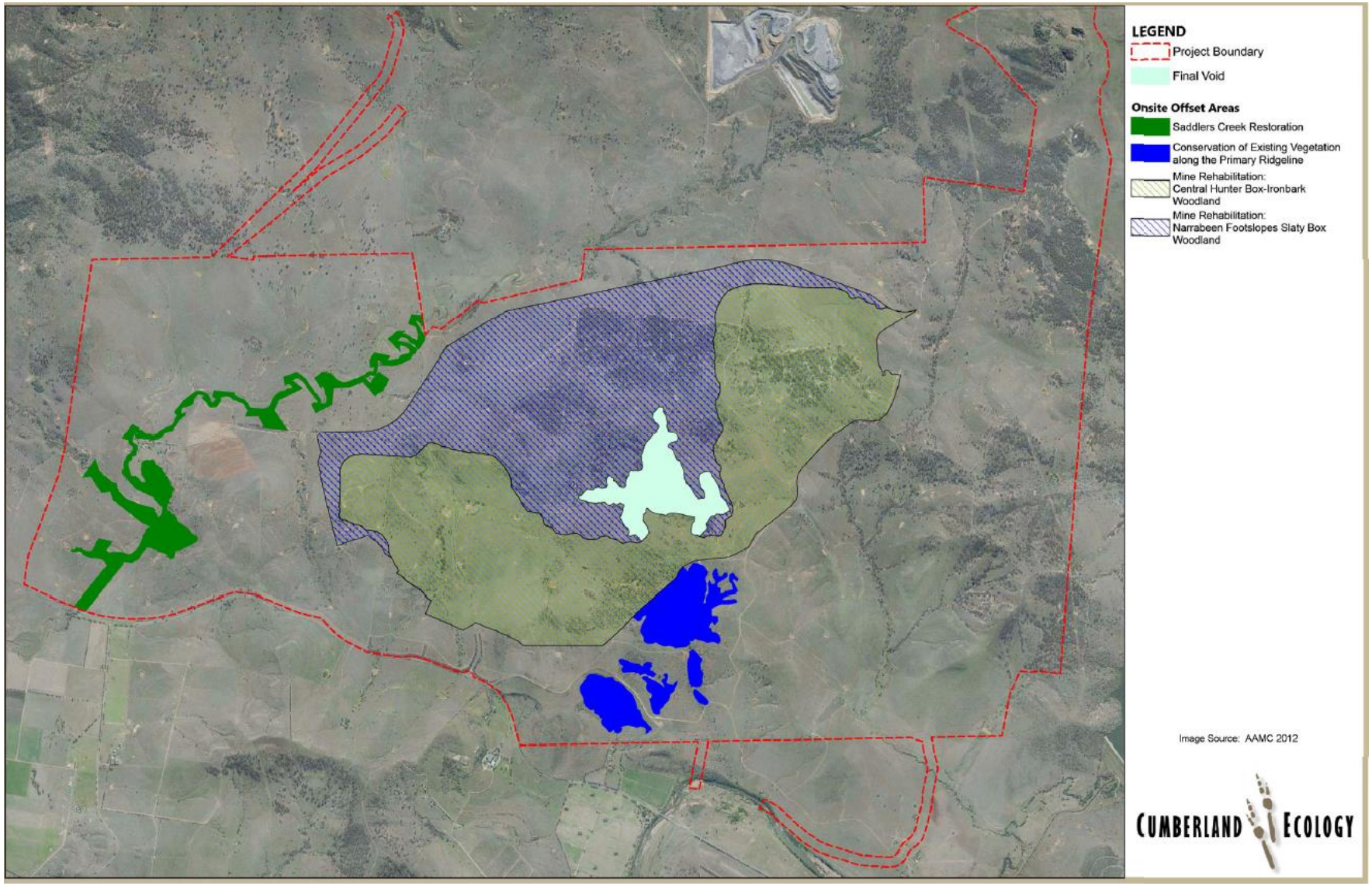

***Figure 8**: Proposed Drayton South Rehabilitation and Onsite Biodiversity Offsets*

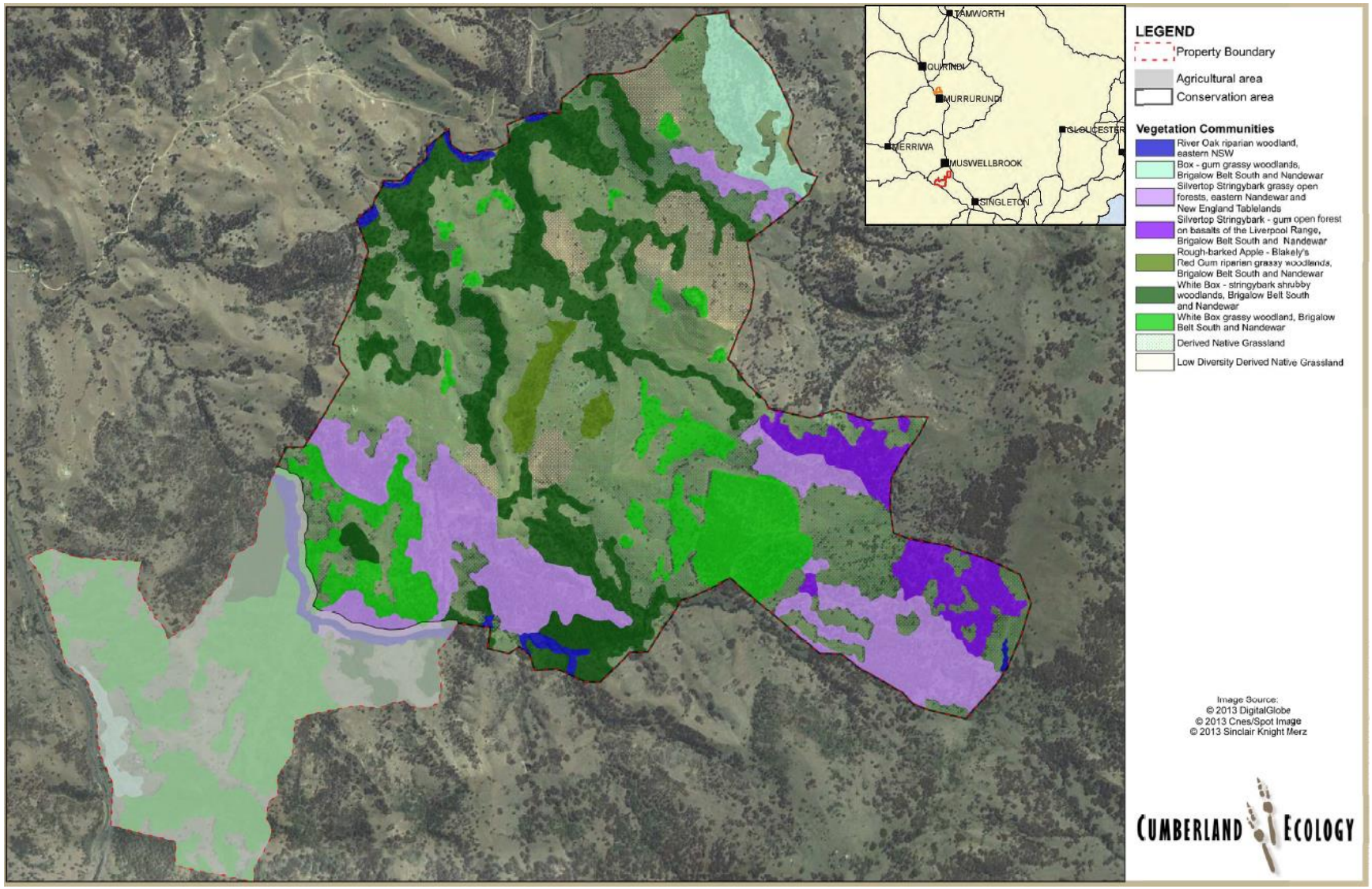

***Figure 9**: Offsite Biodiversity Offsets*

Table 1: *Comparison of Major Components of Original & Revised Drayton South Coal Project*

Aspect	***Original Project***	***Revised Project***
Project Life	▪ 27 years	▪ 20 years
Mining Areas	▪ Minor extensions (36.5 ha) to existing open cut pits (North, East and South) at the Drayton Mine ▪ Establish 4 new open cut pits (Whynot, Redbank, Blakefield and Houston) at Drayton South ▪ Auger mining from the highwall of each of the mining pits at Drayton South	▪ No change at Drayton mine ▪ Establish 3 new open cut pits (Whynot, Redbank, and Blakefield) at Drayton South ▪ Auger mining from the highwall of each of the mining pits at Drayton South
Coal Recovery	▪ 120.4Mt of ROM coal at a rate of up to 7 million tonnes of coal a year ▪ Mining to use a combination of dragline, truck and shovel, and auger mining methods	▪ 98.4Mt of ROM coal at a rate of up to 7 million tonnes of coal a year ▪ Mining methods to remain the same, although the dragline would also be used in the Redbank Pit
Overburden Emplacement	▪ Overburden from minor extensions at Drayton mine to be placed in existing voids ▪ Create overburden emplacements to the north of the Whynot and Blakefield Pits at Drayton South, and between the Blakefield and Redbank Pits ▪ Use overburden to build the Houston Pit Visual Bund ▪ Backfill mining voids at Drayton South once the mining pits are established	▪ Generally the same with the removal of the Houston Pit Visual Bund ▪ The footprint of the overburden emplacements at Drayton South would remain the same, but there would be changes to the final landform due to the changes to the mine plan
Coal Processing	▪ Use existing facilities to process and stockpile coal	▪ No change
Coarse rejects and tailings disposal	▪ Continue to use the existing voids at the Drayton mine	▪ No change
Coal Transport	▪ Export up to 7 million tonnes of coal a year using the Antiene Rail Spur and the Main Northern Railway	▪ No change
Blasting	▪ Up to 5 blasts a week	▪ No change
Infrastructure	▪ Use and augment the existing infrastructure at the Drayton mine ▪ Create a new transport corridor between the existing mine and Drayton South ▪ Extend utility services to Drayton South ▪ Construct surface facilities (offices, workshops, etc.); a ROM hopper, crusher and stockpile area; and water management system (including 2 pipelines to the Hunter River) at Drayton South ▪ Realign Edderton Road to the west of Saddlers Creek	▪ No change
Site Access	▪ Use existing access off Thomas Mitchell Drive ▪	▪ No change
Disturbance area	▪ 36.5 ha at Drayton mine ▪ 1,928 ha at Drayton South	▪ No change at Drayton mine ▪ 1,618 ha at Drayton South
Rehabilitation	▪ Progressively rehabilitate the disturbed areas with woodland and pasture species, with at least at least 1,403 ha to be rehabilitated to woodland ▪ Final landform to incorporate micro-relief and conform to the surrounding landscape ▪ 3 final voids at the Drayton mine, some of which could be filled in the future ▪ 1 final void at Drayton South	▪ Limited change, although the final void at Drayton South would be smaller than originally proposed, the final landforms would be configured differently, and 1,319 ha of the disturbed areas would be rehabilitated to woodland
Biodiversity Offsets	▪ Conserve and enhance of at least 2,250 ha land in perpetuity, comprising: o 85 ha of remnant vegetation on site; o 86 ha of restoration along Saddlers Creek; and o 2,079 ha of land in the Upper Hunter Shire	▪ Limited change, although only 1,643 ha of the land in the Upper Hunter Shire would be conserved and enhanced due to the reduced clearing associated with the retracted mine plan
Operating Hours	▪ 24 hours a day, 7 days a week.	▪ No change
Employment	▪ Up to 370 for construction ▪ Up to 530 for operations	▪ No change

1.4 Justification for the Project

Anglo has mounted several arguments to justify the project.

Coal Resource

Exploration work has been carried out on the site since the 1940s. According to Anglo, this exploration work has identified an estimated in-situ coal resource of 556 million tonnes of coal.

Following detailed studies over the last decade, Anglo identified a large open cut coal resource of around 172 million tonnes that could be extracted economically from the exploration area.

During detailed mine planning for the Drayton South Coal Project, the size of this resource was reduced to around 119 million tonnes. This followed the implementation of a range of measures to reduce the likely impacts of any mine on the adjoining Coolmore and Woodlands horse studs, such as increasing the proposed setbacks between the mine and the studs and using highwall mining methods to minimise the loss of coal in these setback areas.

Following the PAC review process, Anglo has made further revisions to the mine. These revisions have reduced the size of the resource to around 97 million tonnes.

This is still a substantial coal resource, even in the Hunter Coalfield, which is dominated by several large-scale mining operations.

Further, Anglo has indicated that it proposes to carry out further coal exploration work on site during the Drayton South Coal Project to investigate the feasibility of a number of other mining proposals, including the potential for extracting the deeper coal resources by underground mining.

Use of Existing Infrastructure

One of the benefits cited for the project is that it would use the existing infrastructure at the Drayton mine, and avoid the need to construct a range of surface infrastructure to support the new mining operation.

By doing this, it would reduce the cost of mining the resource, and provide an easy way to connect the new mining area to the Main Northern Railway and on to the Port of Newcastle. Securing access to this infrastructure has always been a significant constraint to developing mines to the south of the existing Drayton and Mt Arthur mines.

Mine Design

Anglo claims it has incorporated a range of mitigation measures into the design of the project to minimise its likely impacts on people, surrounding land uses and the environment. These measures include:

- keeping the mining area behind the natural ridgeline and sterilising about 75 million tonnes of an economic open cut coal resource, which has a current market value of around $4.5 billion;
- setting the mine back from the riparian zone around Saddlers Creek, and conserving and enhancing the existing vegetation within the riparian zone;
- minimising the size of the overburden dumps and backfilling the mining pits as much as possible to minimise the size of the final void;
- implementing best management practice to minimise the dust, noise, vibration, water, visual and heritage impacts of the project;
- creating a final landform with micro-relief that would blend in with the undulating hills of the surrounding landscape;
- restoring most of the mining area to woodland, including at least 719 ha of the Central Hunter Box-Ironbark Woodland EEC; and
- implementing a comprehensive biodiversity offset strategy, which involves the protection and enhancement of around 2,300 ha of land, to compensate for any residual flora and fauna impacts of the project.

Royalties & Taxes

According to Anglo, the net production benefit of the project would be at least $485 million (present value).

This would be comprised of:
- $333 million in royalties to the NSW Government for the extraction of the coal resource which is publicly owned;
- $152 million in company taxes to the Commonwealth Government.

These royalties and taxes would be spent on providing infrastructure and services to the broader community.

These estimates are most sensitive to the changes in the price of coal. To account for potential fluctuations in the coal price, these estimates have been subjected to sensitivity testing. This testing assumed coal prices could increase or decrease by up to 20% (from the $115 used in the original estimate) over the life of the project.

Based on this testing, Anglo estimates the royalties and taxes paid to Government over the life of the project could range between $267 and $826 million (present value).

Voluntary Planning Agreement

Anglo has made an offer to enter into a Voluntary Planning Agreement with Muswellbrook Shire Council for the project. The offer includes making following contributions to Council:
- $50,000 a year for road maintenance;
- $290,000 a year, which would be paid into a Community Fund and spent on projects "related to the promotion of economic and social health (health and education) or environmental benefit in the LGA; and
- $15,000 a year to help Council monitor the impacts of the project.

In addition, Anglo has agreed to use its best endeavours to engage at least 3 apprentices a year from the local area.

Anglo argues that this offer is generous given the project represents a continuation of existing mining operations, and would make little additional demand on Council for the provision of local infrastructure and services.

Spending

The project would result in both capital and operational spending, which would have beneficial economic impacts on both the regional and State economy.

Anglo estimates, the project would have:
- a capital investment value of around $485 million (present value); and
- annual operating costs of around $278 million (present value).

This spending is predicted to increase the annual output of the:
- region by $68 million (present value) during construction and $588 million (present value) during operations;
- the rest of NSW by $123 million (present value) during construction and $342 million (present value) during operations.

Employment

During construction, the project is predicted to employ up to 370 people over the 29-month construction period, with the annual average being around 126 workers. These employees would be in addition to the 530 workers that are expected to be required during operations. However, most of the operational jobs are likely to be filled by existing workers at the Drayton mine.

This employment is expected to support a range of other jobs in the region and the rest of NSW, depending on the multipliers used. Anglo estimates this could be up to 340 additional jobs during construction, and 1,600 jobs during operations.

Net Benefit

Anglo provided a detailed cost benefit analysis of the project.

This analysis estimated the net production benefits of the project by subtracting the production costs (land, capital, operating costs, rehabilitation) from the production benefits (deferred rehabilitation costs, coal revenue, residual land and capital value). The net production benefits were then assumed to be the threshold value against which any other externalities (agricultural, noise, air quality, greenhouse gas, biodiversity, water, visual, social impacts) should be offset. An attempt was made to quantify some of these externalities, whereas others were dealt with in a qualitative way.

The cost benefit analysis predicted that the project would have a net production benefit of around $700 million and externality costs of around $190 million, giving the project a net benefit of around $510 million (all present value).

These estimates were subjected to further sensitivity testing to account for the fact that 100% of the Anglo's profits could leave Australia, and fluctuations in the coal price.

Under all scenarios, the project was predicted to result in a net benefit to Australia.

2. STRATEGIC CONTEXT

2.1 NSW Coal Industry

Society is heavily reliant on coal to meet its basic energy needs, both at the domestic and international level, with coal currently providing around 90% of NSW's electricity needs, 75% of Australia's electricity needs and 40% of the world's electricity needs.

While the proportion of electricity generated from coal is expected to drop in the medium to long term, global coal use is still predicted to rise substantially during this period.

NSW has a large and mature coal industry based around substantial coal reserves.

These resources are spread over several geological basins, with the key basins forming a broad corridor between the Surat Basin in Queensland and the Sydney Basin, which extends to the coast between Newcastle and Wollongong. Within these basins, coal is currently being extracted from 6 coalfields: the Gunnedah, Hunter, Gloucester, Newcastle, Western and Southern Coalfields (see Figure 10).

Coal is by far NSW's biggest mineral commodity, with the industry generating around 80% of the State's mining income. Over the past decade, NSW coal production has grown steadily due to growing demand from Asian export markets. In 2010-11, NSW produced approximately 157 million tonnes of coal, and exported 122 million tonnes of coal, principally through the Port of Newcastle. This coal production was worth some $16.2 billion, and generated around 25% of the State's export revenue.

Port and rail capacity are currently being expanded to enable around 230 million tonnes of coal to be exported a year, and NSW coal exports are expected to continue to rise in line with the growth in this capacity in the short to medium term, subject to fluctuations in market demand.

Hunter Coalfield

At present, the Hunter Valley Coalfield is the largest and most significant coalfield in NSW, producing around 60% of the State's coal. It is comprised of 15 large mining complexes, including the Drayton mine, stretching in a broad corridor on either side of the Main Northern Railway between Singleton and Muswellbrook (see Figure 1).

Traditionally, mining in this region has been dominated by large open cut mining operations. However, in recent years there has been an increase in the scale of underground mining operations as mines move to access some of the deeper coal resources in the region.

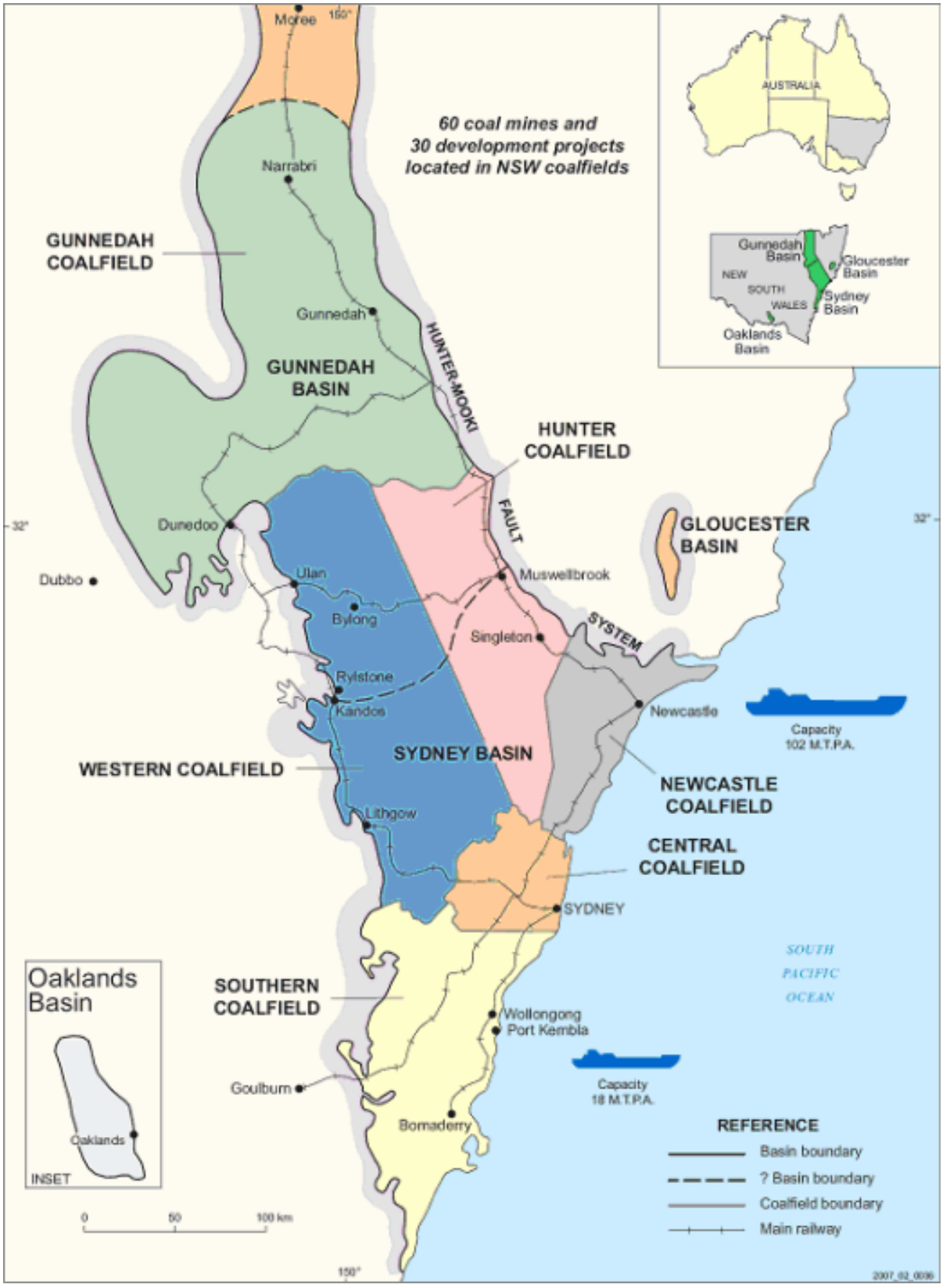

Figure 10: *NSW Coalfields*

Two key areas have long been earmarked for the potential expansion of the mining operations in the region: the area to the west of Muswellbrook surrounding the existing Bengalla and Muswellbrook mines, and the area to the south the existing Mt Arthur and Drayton mines between Jerrys Plains and Denman.

This is reflected in the number of coal exploration licences that have been granted in these areas, including the Drayton South, Ellerton, Spur Hill and former Doyles Creek exploration licences (see Figure 1).

Expansion of the mining industry into these areas has the potential to create land use conflicts with existing agricultural industries, including the thoroughbred horse breeding industry and the wine industry.

The Drayton South Coal Project represents the first foray of the mining industry into the Jerrys Plains to Denman area since the Mt Arthur South Project was approved on the same site in the 1986, and has clearly heightened concerns about the potential land use conflicts between mining and the Coolmore and Woodlands horse studs and the Arrowfield wine estate.

These concerns are being exacerbated by Spur Hill's proposal to establish a new underground coal mine and associated infrastructure within the existing Spur Hill exploration area to the southwest of the Drayton South Project (see Figure 1). This proposal has just been through the new gateway process (see below), and is likely to move into the formal State significant development assessment process under the *Environmental Planning & Assessment Act 1979* (EP&A Act) later this year.

Mt Arthur Mine

The Mt Arthur mine is located adjacent to the Drayton mine. It currently has approval to extract up to 36 million tonnes of coal a year from both open cut and underground mining operations.

Mt Arthur is currently seeking approval for a modification to the approval that governs its open cut mining operations and the use of its surface facilities.

The proposed modification involves:

- extending the approved open cut mining operations further to the southwest to extract a further 128 million tonnes of coal;
- making changes to the overburden emplacement arrangements at the mine, with additional overburden being place in the existing conveyor corridor adjoining the Drayton mine;
- duplicating the rail loop to the mine off the Antiene rail spur line;
- increasing the maximum number of train movements along the spur line (including the movements from the Drayton mine) from 24 to 30 a day;
- various upgrades to existing infrastructure; and
- making changes to the final landform of the mine.

The Department has completed its assessment of the merits of this proposal, and recommended that it be approved subject to conditions.

The PAC will hold a public meeting on the proposal in July 2014, and is expected to determine the application soon thereafter.

The Department has considered the potential implications of this proposal closely during its assessment of the merits of the Drayton South Coal Project.

2.2 Hunter Thoroughbred Industry

The Hunter thoroughbred industry is one of the largest and most important thoroughbred breeding clusters in the world, along with Newmarket in the United Kingdom and Kentucky in the USA.

It is comprised of a number of stud and broodmare farms, which are supported by a network of equine supply and support industries such as specialised veterinary services, bloodstock agents and farriers.

These farms and support industries are generally located in two broad corridors stretching from Jerrys Plains in the south to the area surrounding Scone in the north and the Bylong Valley in the west (see Figure 11 below). The land in these corridors is seen as being particularly conducive to horse breeding

with its combination of excellent soils on the alluvial flats and undulating hills, proximity to water, and scenic rural landscape.

The industry produces around half of all the thoroughbred horses in Australia, and around 67% of Australia's thoroughbred horse exports. In 2010-11, it generated around $300 million in income, including horse exports estimated at over $100 million.

It is also a significant employer in the region, directly providing jobs for around 1,000 people, and a significant contributor to the regional economy with over 85% of all operating costs being spent in the region.

Finally, it plays a major role in the cultural identity of the region, particularly in the area around Scone in the Upper Hunter Shire.

The Coolmore and Woodlands studs are located just to the south of the Drayton South Coal Project, and play an important role in the Hunter thoroughbred industry.

The Coolmore stud is a fully integrated operation with around 12 stallions standing. These stallions service mares from other farms within the Hunter thoroughbred industry, and are also shuttled to service mares overseas. The stud includes its own veterinary hospital and laboratory, and has facilities for mares, foals and yearlings. It also has a small airstrip, 3 guest units, a number of historic homesteads, and accommodation for many of its employees.

The Woodlands stud is primarily a broodmare operation with facilities for foals and yearlings. It is used in conjunction with Kelvinside stud near Aberdeen, which has around 13 stallions standing. It also has a historic homestead and accommodation for some of its staff.

The owners of these studs are strongly opposed to the development of the Drayton South Coal Project. They say open cut mining is incompatible with the thoroughbred breeding operations being carried out on their farms, and they have advised that they may leave the Hunter Valley if the project is approved.

2.3 Hunter Wine Industry

The Hunter region is Australia's oldest wine making region. The viticulture industry in the region tends to be concentrated around Pokolbin and the Broke-Fordwich sub-regions to the south of the Hunter Coalfield, and the Upper Hunter sub-region around Denman. It is comprised of vineyards, wineries and a range of tourist facilities, including restaurants and cellar doors.

The region currently produces about 2% of Australia's wine, and around 25 million litres a year.

Like the thoroughbred industry, it plays a strong role in the region's identity and economy.

Arrowfield Estate

The Arrowfield Estate was developed as a vineyard in 1894. Over the years, a winery, cellar door and restaurant was added to the estate; and grapes from other vineyards in the region were processed on site.

Although most of the vineyards at the estate were later removed to facilitate the development of the Coolmore horse stud, it has continued to play a role in the region's viticulture industry.

During the assessment process, the former owners of the estate obtained development approval for the redevelopment of the estate. The approval allows the construction of 23 tourist cabins, 2 function centres with chapels, and the refurbishment of the existing cellar door and restaurant facilities.

These owners objected to the Drayton South Coal Project, saying it was at odds with the history and proposed redevelopment of the estate, and that co-existence was impossible.

They have subsequently sold the estate to the owners of Coolmore. At this stage, it is unclear whether Coolmore will proceed with the approved redevelopment plans for the estate, or use the land to expand its existing thoroughbred operations.

2.4 Hunter Strategic Regional Land Use Plan

In September 2013, the NSW Government published the *Strategic Regional Land Use Plan* for the Upper Hunter region.

Balancing Agriculture and Resource Development

The plan identified key regional challenges as:

- improving the balance between competing land uses – particularly achieving co-existence where possible between mining, coal seam gas development and agriculture;
- maintaining or enhancing opportunities for environmentally responsible mining and coal seam gas development to deliver reliable energy supplies to the state that reduce energy costs and carbon emissions and that generate economic wealth for the state;
- maintaining or enhancing future opportunities for sustainable agriculture; and
- defining and protecting strategic agricultural land.

The key policy response to address these challenges was to identify and map the strategic agricultural land in the region, and require all resource development projects that could have a significant impact on this land to go through a new "gateway process" prior to starting the planning approvals process.

Gateway Process

The gateway process involves an independent, scientific and upfront assessment of how these resource development projects could affect strategic agricultural land against strict criteria by an expert panel; and if these projects cannot meet these criteria, then they will be subjected to much closer scrutiny during the development assessment process.

The plan identified three types of strategic agricultural land in the region:

- Biophysical Strategic Agricultural Land (BSAL), which is essentially the best farming land in the region due to its landforms, soils and access to productive water resources;
- Equine Critical Industry Clusters, which are comprised of a highly integrated concentration of horse breeding facilities and related infrastructure, such as specialised veterinary services; and
- Viticulture Critical Industry Clusters, which are comprised of a highly integrated concentration of vineyards and associated wineries and tourism infrastructure in a rural landscape.

While the plan included preliminary mapping of the strategic agricultural land in the region, it deferred the final mapping of this land as well as the development of the specific assessment criteria for the gateway process.

The *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) was subsequently amended to give effect to the new gateway process, and include both the final strategic agricultural land mapping and the specific assessment criteria to guide the gateway process.

While the mapping and criteria do not strictly apply to the Drayton South project – as the project was already being assessed when the new provisions of the Mining SEPP came into effect, the Department has considered both the mapping and criteria during its assessment of the merits of the project.

Accordingly, the Department has referred the project to the new Mining and Petroleum Gateway Panel for advice (see Appendix I), and taken this advice into consideration.

Mining SEPP Mapping - Strategic Agricultural Land

The Mining SEPP maps all three types of strategic agricultural land in NSW.

The BSAL mapping for the region surrounding the Drayton South project tends to hug the alluvial floodplain of the Hunter River and some of its tributaries. However, apart from the two water pipelines to the Hunter River, the Drayton South project is located well away from any mapped BSAL (see Figure 11).

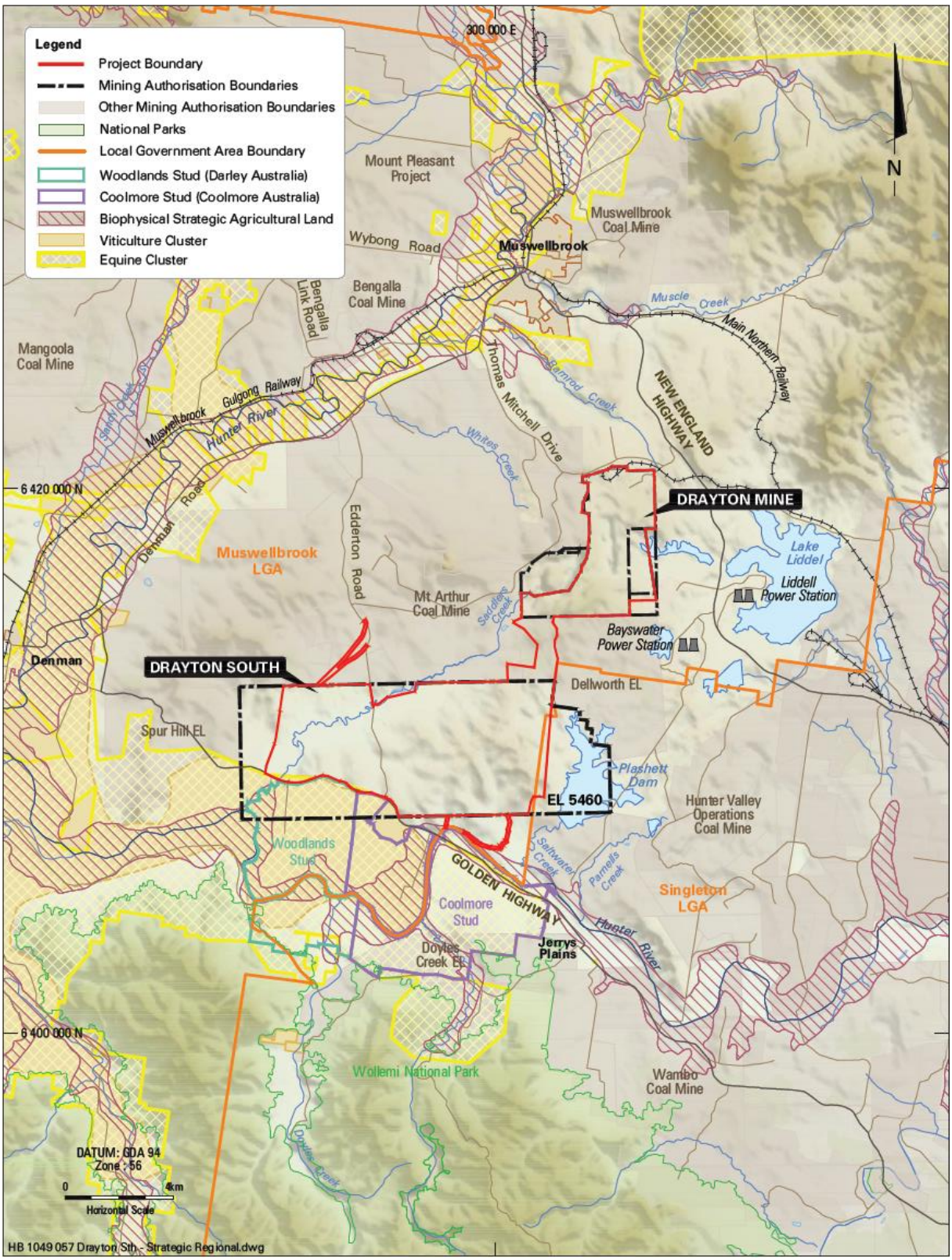

Figure 11: *Strategic Agricultural Land Map*

The Critical Industry Cluster (CIC) mapping is different.

The land directly to the south of the Drayton South project has been included in both the Equine and Viticulture CICs. These clusters form a broad corridor heading to the northwest towards Scone and west towards Bylong.

Both the Coolmore and Woodlands stud farms form part of the Equine CIC, and the Arrowfield Estate forms part of the Viticulture CIC (see Figure 11).

Critical Industry Cluster – Gateway Assessment Criteria

In relation to CIC land – both equine and viticulture – the relevant criteria for the gateway process under the Mining SEPP is:

> *…that the proposed development will not have a significant impact on the relevant critical industry based on a consideration of the following:*
> *(i) Any impacts on the land through surface area disturbance and subsidence,*
> *(ii) Reduced access to, or impacts on, water resources and agricultural resources,*
> *(iii) Reduced access to support services and infrastructure,*
> *(iv) Reduced access to transport routes,*
> *(v) The loss of scenic and landscape values.*

In considering these criteria, the gateway panel is required to have regard to:

> *(a) The duration of any impact; and*
> *(b) Any proposed avoidance, mitigation, offset or rehabilitation measures in respect of any such impact.*

While these criteria do not strictly apply to the consideration of such matters at the development application stage, the Department thinks they provide a useful framework for considering the potential impacts of the Drayton South project on the adjoining Equine and Viticulture CICs.

It has considered these matters further in Section 6 of this report.

2.5 Water Resources

The project is located entirely in the Hunter River catchment, with the areas to the north draining to the Hunter River via either Ramrod or Whites Creek, and areas to the south draining to the Hunter River via either Saddlers or Saltwater Creek. All of these creeks are generally ephemeral watercourses with brackish to saline water quality. The retracted mine plan is now located almost exclusively in the Saddlers Creek catchment.

The most significant groundwater resources in the region are associated with the Hunter River alluvium, and to a much lesser extent the Saddlers Creek alluvium. The extent and storage capacity of the alluvium varies over the length of the river, ranging from 11 to 18 m thick and between 500 m and 1.5 km wide in the vicinity of the site. Groundwater quality tends to be brackish in the Hunter River alluvium and moderately saline in the Saddlers Creek alluvium. The new mining area has been setback from both of these alluviums.

Other groundwater resources in the region include the:
- Permian hard rock aquifer (the coal seam), which is low yielding and generally contains poor quality water; and
- weather bedrock aquifer (regolith), which has limited storage capacity.

The NSW Office of Water regulates the take of water from these water sources under the *Water Management Act 2000*.

The Environment Protection Authority administers the Hunter River Salinity Trading Scheme in the region. This scheme regulates the discharge of saline water into the Hunter River from various industrial and agricultural sources to protect the water quality of the river. This is done by capping the allowable discharge, and auctioning tradeable credits to dischargers. Dischargers are then allowed to discharge saline water, generally during high river flows, in line with the credits they hold.

2.6 Conservation Areas

The vegetation on the valley floor on site is broadly related to the key topographic features and historic land uses of the region, with the flatter areas being largely cleared of woodland and characterised by derived native grasslands, and the hillier areas still containing some patches of remnant woodland (see Figure 1).

Due to historic clearing, the remaining vegetation on the valley floor tends to have some conservation significance for EECs or threatened species.

In recent years, clearing for development in the region has generally gone hand in hand with the provision of offsets to compensate for this clearing and ensure the conservation of the region is improved in the medium to long term.

To this end, the Drayton Wildlife Refuge was established immediately to the north of the mine in 1987 following the original approval of the mine. It has 117 ha of native woodland, and has been augmented in recent years with offsets from both the Drayton and Mt Arthur mines. Further, the Mt Arthur mine has committed to rehabilitate at least 40% of the mine land to woodland, and to ensure this woodland further augments the woodland in both the Drayton Wildlife Refuge and offset areas. It has also committed to protect and enhance the riparian zone along the upper reaches of Saddlers Creek to the north of the new mining area.

Further afield, the Wollemi National Park is located to south of the mine and forms part of the Greater Blue Mountains World Heritage Area that stretches all the way to the Lithgow region.

2.7 Residential Areas & Land Ownership

The area around the mine is not densely populated, with the major population centres – Muswellbrook (10,000 population), Denman (1,500) and Jerry's Plains (700) – all located more than 10 km from the site.

The closest residential area is the Antiene rural-residential estate, which is located immediately north of the mine between the New England Highway and the Antiene rail spur. There are currently 21 residences in the estate.

These residences are affected to some extent by the dust, noise and visual impacts of the existing operations of the Drayton and Mt Arthur mines, and in particular the noise from the rail operations along the Antiene rail spur.

There are also a number of residences on the surrounding rural properties to the south and west of the mine, including worker accommodation on the Coolmore and Woodlands studs and recently approved tourist accommodation on the Arrowfield Estate. These residences are currently relatively unaffected by the impacts of mining operations in the region.

The land ownership of the area surrounding the site is shown in Figure 12.

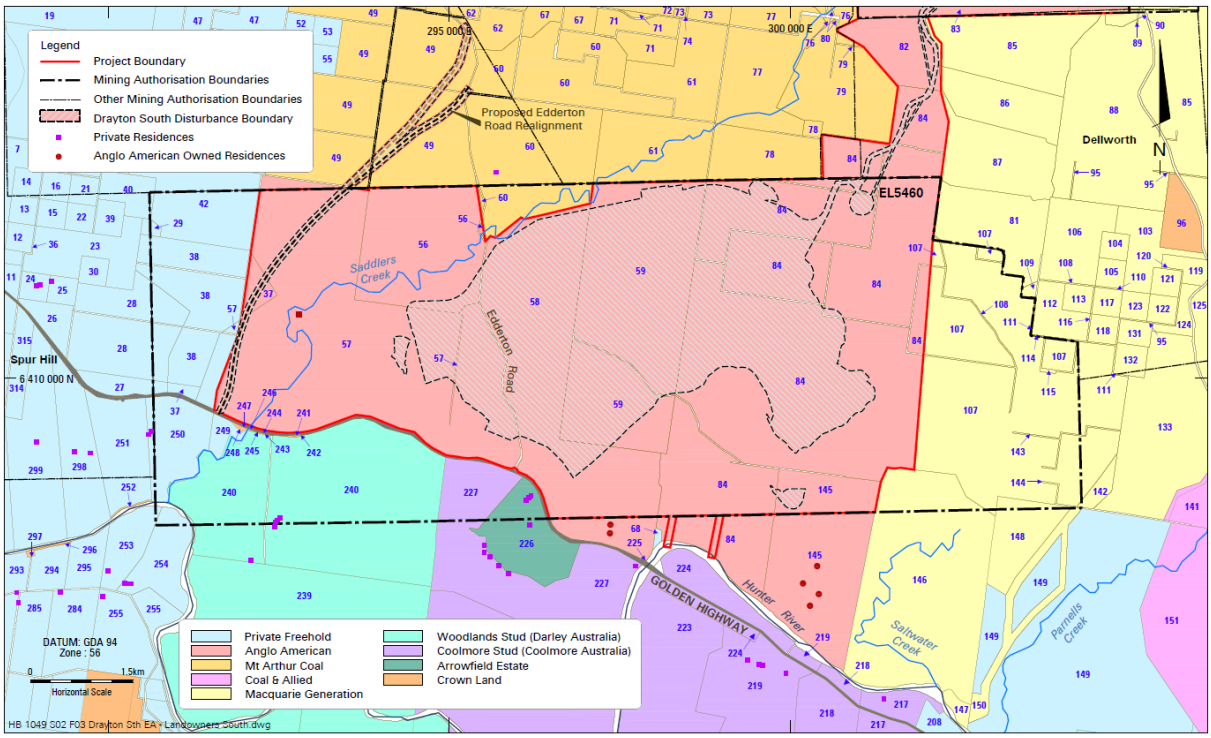

Figure 12: *Land Ownership*

2.8 Key Infrastructure

Key infrastructure in the region includes (see Figure 1):

- the regional road network, which includes three State Roads (the New England Highway, the Golden Highway, and Denman Road) and two important local roads:
  - Thomas Mitchell Drive, which links the New England Highway to Denman Road and allows traffic heading west to bypass Muswellbrook; it provides access to both the Drayton and Mt Arthur mines as well as the Mt Arthur industrial estate; and
  - Edderton Road, which links the Golden Highway to Denman Road and allows traffic heading to Muswellbrook to bypass Denman; it provides a useful link between the Coolmore and Woodlands stud farms and many of the other stud farms in the Upper Hunter Shire;
- various private rail spurs – such as the Antiene rail spur – that link the mines in the region to the Main Northern Railway and the Port of Newcastle, as well as the mines to the north and west of the region with the power stations; and
- a number of regional electricity transmissions lines, including:
  - a 550kV transmission owned by Transgrid running from the Bayswater power station to the west just to the south of the existing Drayton and Mt Arthur mines; and
  - a 132 kV transmission line owned by Ausgrid running on a north-south alignment between the Drayton and Mt Arthur mines to the Golden Highway and on to Jerrys Plains.

The project involves the realignment of a section of Edderton Road (see Figure 2), as well as the continued use of much of the key infrastructure in the region. The new transport corridor between Drayton and Drayton South has been designed to ensure there are no disruptions to the regional electricity transmission lines.

3. STATUTORY CONTEXT

3.1 Major Project

The project was classified as a major project under Part 3A of the EP&A Act as it is development for the purpose of coal mining, and therefore met the criteria in Clause 5 of Schedule 1 of *State Environmental Planning Policy (Major Projects) 2005*.

Although Part 3A of the EP&A Act was repealed in October 2011, the project is still being assessed under the former Part 3A of the EP&A Act. This is due to the transitional arrangements under Part 6A of the EP&A Act, which say: if the assessment of a project was started under Part 3A, then it may be finished under Part 3A.

3.2 Approval Authority

The Minister is the approval authority for the project application.

However, the PAC will determine the application under delegation. This is because the project meets the terms of the Minister's delegation of 14 September 2011 due to the number of public objections to the project.

3.3 Permissibility

The majority of the project area is zoned RU1 (Primary Production) under the *Muswellbrook Local Environmental Plan 2009* and the *Singleton Local Environmental Plan 2013*. Mining is permissible with development consent in this zone under both LEPs.

The land for the proposed realignment of Edderton Road is primarily zoned RU1 and traverses a small area of land zoned E3 (Environmental Management) under the Muswellbrook LEP. Roads are permissible with development consent in these zones.

With respect to the Drayton mine, the areas of the existing East and South Pits that occur within the Macquarie Generation sublease area are situated on land zoned SP2 (Infrastructure). The Department notes that mining is not listed a permissible use within this zone. However, under clause 7(b)(ii) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP), mining is permissible within a mining lease that applied before the Mining SEPP was introduced in February 2007. In this case, the applicable mining lease (ML 1531) existed prior to this date, and hence the proposed extension and continuation of mining at the Drayton mine is permissible with development consent.

Consequently, all components of the project are permissible with development consent, and the PAC may determine the application.

3.4 Integrated Approvals

Under Section 75U of the EP&A Act, a number of approvals have been integrated into the Part 3A approval process, and are not required to be separately obtained for the project. These include:

- heritage-related approvals under the *Heritage Act 1977* and *National Parks and Wildlife Act 1974;*
- authorisations to clear native vegetation under the *Native Vegetation Act 2003*; and
- some water-related approvals under the *Water Management Act 2000*.

Under Section 75V of the Act, a number of other approvals are required to be obtained, but must be approved in a manner that is consistent with any Part 3A approval for the project. These include:

- granting variations to the existing mining lease (1531) for the Drayton mine and a new mining lease for the Drayton South area under the *Mining Act 1992*;
- approvals for development in the Patricks Plains Mine Subsidence District and Muswellbrook Mine Subsidence District under the *Mine Subsidence Compensation Act 1961*;
- variations to the existing environment protection licence for the Drayton mine under the *Protection of the Environment Operations Act 1997;*
- consent under Section 138 of the *Roads Act 1993* for realignment of Edderton Road; and
- a licence under the *Pipelines Act 1967*.

The Department has consulted with the public authorities responsible for granting these integrated approvals during the assessment process.

None of these authorities (apart from Muswellbrook Shire Council) object to the approval of the project, subject to the imposition of suitable conditions (see Section 5 below).

3.5 Other Approvals

Anglo requires some other approvals for the project, which are not integrated into the Part 3A approval process, including:

- an approval from Muswellbrook Shire Council to close the section of Edderton Road that would be mined and gazette the new section of Edderton Road under the *Roads Act 1993*; and
- water licences from the NSW Office of Water (NOW) under both the *Water Act 1912* and the *Water Management Act 2000.*

While NOW has no objection to the approval of the project, subject to Anglo securing the necessary water licences for the project, Muswellbrook Shire Council objects to the project including the realignment of Edderton Road (see Section 5 below).

3.6 Commonwealth Approvals

The Commonwealth Minister for the Environment has declared the project to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) because it is likely to have a significant impact on nationally listed threatened species and communities, nationally listed migratory species and is a large coal mining development that may impact on water resources.

Consequently, the project requires Commonwealth approval under the EPBC Act in addition to the various State approvals.

The Commonwealth has accredited the NSW approval process for the project. Consequently, the Commonwealth assessment has been integrated into the State assessment process under Part 3A of the EP&A Act. However, it is important to recognise that the Commonwealth Minister will still make a separate decision on the project, and that this decision will occur after the PAC's determination.

3.7 Exhibition and Notification

Under section 75H(3) of the EP&A Act, the Secretary 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 from 7 November 2012 until 21 December 2012:
  - on the Department's website,
  - at the Department's Information Centre,
  - at the Muswellbrook Shire Council Administration Centre, and
  - at the offices of the Nature Conservation Council;
- notified relevant State government authorities and Muswellbrook Shire Council; and
- advertised the exhibition in the Newcastle Herald, Hunter Valley News and Singleton Argus.

This satisfies the requirements of Section 75H(3) of the EP&A Act.

During the assessment process, the Department also made several other documents available on its website, including the:

- project application;
- Secretary's environmental assessment requirements;
- EA;
- public submissions on the project;
- response to submissions (RTS);
- preferred project report (PPR);
- independent mine plan review;
- Mining and Petroleum Gateway Panel's advice on the project;
- PAC merit review;
- justification report;
- consequential EIA for the retracted mine plan; and

- various other representations on the project.

This satisfies the requirements in Section 75X of the EP&A Act and Clause 8G of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

3.8 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Secretary's report for a project is required to include a copy of, or reference to, the provisions of environmental planning instruments that substantially govern the carrying out of the project.

Several environmental planning instruments apply to the project, including:

- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007;*
- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy No 33 – Hazardous and Offensive Development;*
- *State Environmental Planning Policy No 44 – Koala Habitat Protection;*
- *State Environmental Planning Policy No 55 – Remediation of Land;*
- *Hunter Regional Environmental Plan 1989 (Heritage);*
- *Muswellbrook Local Environmental Plan 2009;* and
- *Singleton Local Environmental Plan 2013.*

The Department has considered the relevant provisions of these environmental planning instruments during the assessment of the project (see Appendix B), as well as Anglo's consideration of these matters (see Section 5 of the EA, which is included in Appendix C of this report), and is satisfied that none of these instruments substantially govern the carrying out of this project.

3.9 Objects of the EP&A Act

The PAC should consider the objects of the EP&A Act when it determines the project application.

The objects of most relevance to the PAC's decision are found in Section 5(a)(i), (ii), (vi) & (vii) of the EP&A Act. They are:

> *(a) 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,*
> *(vi) 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*
> *(vii) ecologically sustainable development.'*

The Department is satisfied that the project encourages the proper use of resources (Object 5(a)(i)) and the promotion of orderly and economic use of the land (Object 5(a)(ii)), particularly as the project is permissible with development consent under the relevant environmental planning instruments, and the subject coal resource is located within an existing exploration licence for coal in a region that is dominated by coal mining operations, would utilise the existing infrastructure at the Drayton mine and would provide considerable socio-economic and other public benefits.

The Department has fully considered the likely environmental impacts of the project (see Section 6 below), and concluded that these impacts can be suitably controlled to ensure an acceptable level of environmental performance, including the protection and conservation of native animals and plants (Object 5(a)(iv)).

Finally, the Department has considered the project against the principles of ecologically sustainable development (Object 5(a)(vii)), and sought to integrate all significant economic and environmental considerations and avoid any serious or irreversible damage to the environment based on an assessment of risk-weighted consequences. It has also considered Anglo's assessment of these matters and its assessment of project alternatives, including not proceeding with the project. Based on

these considerations, the Department is satisfied that the project can be carried out in a manner that is consistent with the principles of ecologically sustainable development.

3.10 Statement of Compliance

Under Section 75I of the EP&A Act, the Secretary's report is required to include a statement relating to compliance with the environmental assessment requirements of the project. The Department is satisfied that the environmental assessment requirements have been complied with.

4. PAC REVIEW

On 16 March 2013, the Minister asked the Planning Assessment Commission to carry out an independent review of the merits of the project, and to hold public hearings during the carrying out of the review.

On 27 August 2013, the Minister revised the terms of reference for the review after the Department had commissioned an independent review of the mine plan, and advised the Minister that the critical merit issue was the potential impacts of the project on the Coolmore and Woodlands horse studs (i.e. the nearby equine CIC).

The revised terms of reference asked the PAC to:

1. *Consider the EA for the project, the issues raised in submissions, the formal response to submissions, the Preferred Project Report, the review of the mine plan by Runge Pincock Minarco, and any other information provided on the project during the course of the review;*
2. *assess the potential impacts of the project on the operations for the Coolmore and Woodlands horse studs; and*
3. *recommend any additional measures required to avoid and/or minimise the potential impacts of the project on the horse studs.*

Ms Gabrielle Kibble AO (chair), Mr Garry West and Mr Joe Woodward carried out the PAC review.

During the review, the PAC sought independent expert advice from Mr Terry Short (agricultural scientist), Dr Richard Lamb (visual), and Mr Richard Jennings and Mr John Janetzki (mine engineers). It also inspected the site and stud farms.

On 10 October 2013, the PAC held public hearings in Denman, and heard 26 verbal submissions. It also received a further 16 written submissions.

After completing the review, the PAC completed its final report on 10 December 2013.

In summary, the PAC concluded that the project should not proceed as planned for two key reasons:

- the project could cause the Coolmore and Woodlands horse studs to leave the Hunter Valley, and this would have a significant effect on the region's equine CIC as a whole, principally because these two studs play such a critical role in the cluster's operations; and
- the project could have a significant impact on the landscape in this part of the Hunter Valley, which has cultural significance due to its historic and continuing land use patterns with the built heritage structures, unique topography, landforms and environment, and may warrant heritage listing at the State and National level.

It noted that if the project were to proceed, it would require "substantial changes" including further setbacks from the horse studs' operations. Nevertheless, it did concede that a much smaller mine may well be achievable on the northern portion of the site.

The PAC final recommendations were:

1. *The Coolmore and Woodlands horse studs should be recognised as essential to the broader Equine Critical Industry Cluster and given the highest level of protection from the impacts of mining;*
2. *The mine plan proposed for the site should not be approved;*
3. *Any open cut mining contemplated on the site should be required to demonstrate that its impacts will not affect the operation of the Coolmore and Woodlands horse studs;*

4. *If mining on any portion of the site is to proceed, a new mine plan would need to be developed to plan for extraction from a considerably reduced mining area. As a minimum, the mine plan would need to be constrained to adopt the following physical restrictions:*
   a) Open cut mining must be setback behind the existing natural ridgelines;
   b) Considerable buffering to shield the studs from the mine is necessary and, having regard to the topography of the area, open cut mining must not be allowed to extend through the second ridge to the north of the Golden Highway (see the yellow line on Figure 4).

   These constraints are put forward as minimum setbacks and any proposed mining area on the site would need to be subject to rigorous assessment to ensure compliance with recommendation 3 above; and
5. *Any new mine plan for the site would need to be further assessed to ensure the visual, blasting, noise and dust impacts could be managed to an acceptable level at the neighbouring stud properties and should take into account worst case scenarios. Other impacts would also need to be carefully considered both in relation to any impacts to the horse studs and more broadly, particularly in relation to the long term water impacts and final landform.*

Anglo provided an initial response to the PAC review in February 2014 (see the Justification Report in Appendix J). This response was extremely critical of the PAC's recommendations, and indicated that "little or no weight" should be given to these recommendations. In the response, Anglo claimed:

- it had been denied natural justice during the review by not being given a chance to review and comment on the export reports that were commissioned by the PAC, particularly since these reports had been influential in shaping the PAC's recommendations;
- the expert reports (in some instances) were prepared by experts whose expertise and independence was questionable;
- the PAC had relied on expert reports that had a "number of shortcomings", and consequently its findings were tainted by legal and procedural errors, including relying on:
  - "perceived environmental impacts" which were not based on probative evidence or objective fact;
  - biased sources of evidence;
  - incorrect facts;
  - threats from the horse studs that they would leave the region if the project were to be approved; and
  - inappropriate use of the findings of the PAC's review of the Bickham Coal Project;
- the PAC had not given due consideration to the findings of the technical studies in the EA, RTS and PPR (see Appendices C, E, F);
- the PAC had exceeded its terms of reference by recommending the project should not be approved; and
- the review was therefore invalid.

After considering this response, the Department advised Anglo that its response did not adequately address the PAC's recommendations, and in March 2014, Anglo submitted a retracted mine plan for the project.

The retracted mine plan makes a number of substantial changes to the mine plan to address the PAC's recommendations, principally by removing the Houston Pit and part of the Whynot Pit to ensure the mine plan is setback behind the primary natural ridgeline on the site. However, the retracted mine plan is not entirely consistent with the PAC's recommendations. Although the southern corner of the Redbank Pit has been removed to increase the distance between the mine and the Woodlands horse stud, neither the Blakefield Pit nor the Redbank Pit have been setback behind the second ridge to the north of the Golden Highway. Anglo argues these setbacks are unnecessary, and would render the project economically unviable.

The retracted mine plan was accompanied by a qualitative assessment of the consequential environmental impacts of the changes to the mine plan.

The Department has considered the PAC's recommendations and both of Anglo's responses to these recommendations further in its assessment of the merits of the project (see Section 6 below).

5. CONSULTATION

During the exhibition period, the Department received 71 submissions on the project, including:

- 13 from public authorities, including Muswellbrook Shire Council;
- 16 from special interest groups; and
- 42 from the general public.

The Department also received correspondence from the Commonwealth Department of the Environment (DoE), as part of the accredited assessment process under the EPBC Act. This included correspondence from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC), established under the EPBC Act to provide independent scientific advice on the potential impacts of large mining and CSG projects on water resources.

To gain a better understanding and appreciation of the key matters for consideration in its merit assessment of the project, the Department has consulted further with Coolmore, Darley, Hunter Thoroughbred Breeders Association, and relevant public authorities, including Muswellbrook Shire Council. Departmental officers have also visited the site and surrounding areas on a number of occasions, including the Coolmore and Woodlands horse studs.

A summary of the issues raised in submissions is provided below, and a full copy of the submissions is provided in Appendix D. Anglo's formal response to the issues raised in submissions is provided in Appendix E.

5.1 Additional Assessment

To address some residual matters raised during consultation and the cumulative impacts of mining in the region more generally, the Department has commissioned three independent expert reviews that are relevant to the assessment of the project, namely:

- **Mine Plan Review** – in late May 2013, Runge Pincock Minarco was commissioned to undertake an independent mine plan review to examine the economic and operational justification for the mine plan as originally proposed. However, given that the review was based on the original proposal, the findings of this report are of limited relevance in the assessment of the retracted mine plan (see Appendix G).
- **Air Quality Review** – the Department commissioned Jacobs SKM to undertake an independent peer review of the air quality impact assessments contained in the EA, RTS and responses to the PAC Review, to verify the adequacy and accuracy of the predicted air quality impacts of the project (see Appendix O).
- **Traffic Review** – the Department commissioned GHD to undertake a traffic study of Thomas Mitchell Drive to provide a basis for levying appropriate contributions from mining companies for Muswellbrook Shire Council to upgrade and maintain Thomas Mitchell Drive.

5.2 Public Authorities

With the exception of Muswellbrook Shire Council, none of the public authorities objected to the project. Nevertheless, while the majority of public authorities did not object to the modification, most raised concerns about the project and/or made recommendations relating to a range of issues relevant to their administrative and regulatory responsibilities.

Following the provision of additional information in the RTS and changes to the project detailed in the retracted mine plan, all the agencies (apart from Council) have confirmed that they are satisfied that their concerns have now been addressed and/or can be managed through appropriate conditions of approval. Accordingly, the following summary focuses primarily on the key residual issues that require further consideration in Section 6 (below).

Muswellbrook Shire Council (Council) objected to the project as described in the EA. However, while Council's submission raised concerns about a range of potential impacts of the project, it also raised a number of long standing issues that are not directly relevant or solely related to the project (such as the cumulative impacts of mining on the broader road network, the provision of social services, and existing constraints on the Muswellbrook sewage treatment plant).

With respect to the project, the Department believes that Council's main concerns relate to the potential impacts on the local road network (namely Thomas Mitchell Drive and Edderton Road), regional air quality, the local economy, community health and services, local biodiversity and the proposed final landform and rehabilitation plans.

The Department has met with Council on a number of occasions throughout the assessment process to ensure that Council's concerns are appropriately considered and addressed. As part of this consultation process, the Department commissioned a number of expert reports and sought a range of additional information from Anglo, including additional modelling of predicted air quality impacts and significant revisions to the final landform and rehabilitation plans.

The Department has considered these independent expert reports and the additional information provided further in Section 6, and recommended conditions to address Council's concerns.

Environment Protection Authority (EPA) raised a number of initial concerns about the predicted air quality and noise impacts, including the inputs for the modelling and predicted exceedances of particulate emissions criteria at several properties to the south of the project. However, these concerns have been addressed through the RTS and Anglo's responses to the PAC Review.

In this respect, it is important to note that Anglo's RTS and responses to the PAC Review included several revisions to the originally predicted air quality impacts, which reflect a range of site specific data, additional mitigation measures and the reductions in the mining and disturbance areas. However, given the scale of reductions predicted in Anglo's revised modelling, the Department commissioned SKM to undertake a peer review of the air quality assessments and verify the reasonableness, reliability and suitability of these predictions.

This independent peer review found that following the incorporation of more conservative silt and moisture contents, the modelling provided reasonable and reliable predictions of the likely impacts of a mine. Having regard to this review, the EPA confirmed that it was satisfied that the predicted air quality impacts were realistic, and recommended a number of conditions regarding the management of potential air quality impacts, which have been incorporated in the conditions recommended by the Department.

The EPA also confirmed it is satisfied with the assessment of surface and groundwater impacts, including potential discharges to the Hunter River, and identified that these impacts could be managed through an Environmental Protection Licence (EPL) and under the Hunter River Salinity Trading Scheme.

Office of Environment and Heritage (OEH) has confirmed that it is satisfied that the revised biodiversity offset package for the retracted mine plan would meet the minimum offset requirements required under relevant OEH biodiversity offsetting policies. In addition, OEH has recommended a number of conditions to address its residual concerns, including the determination of an appropriate mechanism for the long term security of the biodiversity offsets.

With respect to Aboriginal Cultural Heritage, OEH is satisfied that the impact assessment had been undertaken in accordance with relevant requirements and noted that the predicted impacts on Aboriginal heritage items could be appropriately managed through recommended conditions of approval.

The Heritage Branch within OEH also provided comments on the non-Aboriginal heritage aspects of the project. This submission confirmed that the Heritage Branch is satisfied with the assessment of non-Aboriginal heritage sites within and surrounding the project area and made a number of recommendations regarding the management of potential impacts on these sites that have been incorporated in the recommended conditions.

Department of Primary Industries (DPI) provided a consolidated submission on behalf of the NSW Office of Water (NOW), Office of Agricultural Sustainability and Food Security (OASFS), Crown Lands, and Fisheries NSW

NOW confirmed that it is satisfied that Anglo would be able to obtain sufficient water licences to account for the maximum predicted surface water and groundwater take for the project (including consideration of harvestable rights). Notwithstanding, to ensure that Anglo fully accounts for its take and holds adequate licences for all aspects of its proposed operations, NOW has recommended a

number of conditions to manage the water take from the project. These conditions have been incorporated in the recommended conditions of approval.

OASFS confirmed that it is satisfied with the soil and land capability mapping and that the impacts of the project on nearby agricultural resources could be managed through appropriate approval conditions, including specific conditions (reflective of the recommendations in the Equine Health Impact Assessment accompanying the EA) to protect the nearby thoroughbred horse studs.

Crown Lands indicated that Anglo would need to seek approval to acquire any affected Crown land under the *Crown Lands Act 1989* and would need to purchase any Crown roads that would be impacted by the project and either close these roads or, should they remain open, have them reclassified and transferred to Council as the local roads authority.

Fisheries NSW noted that the modification would not impact any key fish habitat.

Division of Resources and Energy (DRE) noted that the project occurred entirely within an existing exploration lease and supported the proposed progressive rehabilitation objectives. Notwithstanding, DRE noted that should the project be approved, Anglo would be required to prepare a detailed rehabilitation plan for the complex and a subsidence management plan for the proposed highwall auger mining.

Roads and Maritime Services (RMS) noted that the traffic assessment did not adequately assess potential impacts on State Roads, particularly with respect to the intersection of the realigned Edderton Road and the Golden Highway. To address this issue, the RMS identified that any proposed road works involving classified State Roads would need to adhere to relevant design standards and that any impacts on these roads should be appropriately funded. This requirement has been reflected in the Department's recommended conditions.

Transport for NSW recommended that further details be sought regarding the opportunity to coordinate the proposed realignment of Edderton Road with the approved Mt Arthur realignment and/or arrange for the upgrade of the intervening section of road.

Rural Fire Service (RFS) noted that the project would need to comply with relevant bushfire safety standards and recommended that a Bushfire Emergency Evacuation Plan be developed, should the project be approved.

The Commonwealth ***Department of the Environment (DOE)*** provided comments on the relevant Matters of National Environmental Significance pertaining to the project, as part of the accredited assessment process under the EPBC Act. These comments focused on the likely biodiversity impacts for a range of EPBC Act listed threatened species, communities and migratory species, and potential impacts on water resources.

Following the provision of a revised biodiversity offset package associated with the retracted mine plan, DOE confirmed that it is satisfied that the revised biodiversity offset package is sufficient to compensate for the biodiversity impacts of the project.

With respect to water resources, DOE provided a separate submission from the IESC, which was established under the EPBC Act to provide independent scientific advice on the potential impacts of large mining and coal seam gas projects on water resources.

This IESC advice noted that while the project was likely to have minimal site specific impacts, it would significantly alter the geomorphology of the Saddlers Creek catchment and may impact the associated riparian/floodplain ecosystems. The IESC noted that any increase in ecosystem fragmentation would place additional stress on remaining vegetation during drought conditions and recommended that Anglo develop a biodiversity action plan including monitoring to identify impacts on ephemeral streams and water dependent ecosystems. In addition, to manage potential impacts on the Hunter River, the IESC recommended that the proposed saline discharges be appropriately licensed under the Hunter River Salinity Trading Scheme.

5.3 Community and Special Interest Groups

Of the 58 submissions received from special interest groups and the general public during the exhibition period, all but 3 objected to the project. Several of these submissions included specialist technical reports.

The Department has reviewed the submissions from the community and special interest groups, and notes that while the submissions raise a broad range of issues with the impacts of mining in general, the key issues that are specifically relevant to the consideration of the project are:

- *Air quality* – concerns regarding the predicted dust levels and impacts on the health of the community and both residential employees and horses at the nearby studs;
- *Noise and blasting* – concerns regarding the predicted noise and blasting impacts, primarily for those private properties to the south of the mine;
- *Visual* – concerns regarding impacts on landscape amenity, tourism and the perceived reputation of the nearby studs;
- *Agriculture* – potential impacts on the nearby equine and viticulture CIC (namely the Coolmore/Woodlands Studs and Arrowfield Estate) and the associated indirect impacts on the broader horse breeding, wine and tourism industry in the Hunter Valley;
- *Water* – concerns about impacts on surface and groundwater resources, particularly the Hunter River;
- *Biodiversity* – concerns regarding vegetation clearing, biodiversity impacts and the adequacy of the proposed biodiversity offset package;
- *Aboriginal heritage* – objections to impacts on areas of Aboriginal cultural heritage;
- *Traffic* – concerns regarding the predicted traffic impacts on local roads and the potential impacts of the proposed realignment of Edderton Road;
- *Social* – concerns regarding additional demand on community services; and
- *Economics* – concerns with the impacts on the local economy due to additional demand for limited resources and claims that the project's economic benefits have been exaggerated.

5.4 Coolmore and Darley Submissions

Following the submission of Anglo's responses to the PAC (i.e. the Justification Report and the Retracted Mine Plan), the Hunter Thoroughbred Breeders Association, Coolmore Australia and Darley Australia all provided substantial supplementary submissions to the Department.

The studs maintain their strong objection to the retracted mine plan on 5 principal grounds:

1. ***Significance*** – the Coolmore and Woodlands studs are essential to the broader equine CIC, and must be given the highest level of protection.

2. ***Incompatibility*** - open cut mining and a viable international-scale thoroughbred breeding enterprise are fundamentally incompatible land uses, and cannot co-exist unless an adequate buffer is imposed to remove any mining impacts on the studs.

3. ***Unacceptable Impacts*** – the retracted mine plan would result in unacceptable impacts on the amenity and reputation of the studs, and if it is approved, it would immediately and permanently put at risk the economic viability of the studs and may force them to relocate to Victoria or overseas.

4. ***Not consistent with PAC Recommendations*** - the retention of the Redbank Pit within the retracted mine plan does not conform to the PAC's recommendation that mining must not be allowed to extend through the second ridge to the north of Golden Highway.

5. ***Lack of Information*** – Anglo has not provided any meaningful assessment of the potential environmental impacts associated with the retracted mine plan, and therefore the project cannot be approved.

The specific concerns of the studs are described and considered in detail in Section 6 below.

6. ASSESSMENT

In accordance with Section 75I of the EP&A Act and Clause 8B of the EP&A Regulation, the Department has considered the following in its assessment of the project:

- the environmental impacts of the project, including Anglo's EA, RTS, and PPR;
- the findings and recommendations of the PAC's review of the project;
- Anglo's response to the PAC Review, including the Justification Report and the Retracted Mine Plan;
- all submissions received throughout the assessment process, including advice from public authorities;
- applicable plans, policies and guidelines, including the *Upper Hunter Strategic Regional Land Use Plan* (SRLUP);
- the suitability of the site for the project;
- the objects of the EP&A Act; and
- the public interest.

In summary, the Department believes that the changes made to the project largely comply with the recommendations made by the PAC, and would significantly reduce the potential impacts of the project on the operations of the Coolmore and Woodlands horse studs.

The Department acknowledges that the retracted mine plan includes mining beyond the PAC's recommended setback from the horse studs (i.e. in the Redbank Pit). However, based on its assessment, the Department is satisfied that mining can occur in this area without posing any material additional risk to the operations of the horse studs. The Department also notes that Anglo has advised that mining the coal in the Redbank Pit is fundamental to the economic viability of the mine as a whole, and if this pit is removed it is likely that the project would not proceed.

Overall, the Department believes that the retracted mine plan strikes an appropriate balance between protecting the interests of the horse studs and realising the significant economic benefits that would flow to the region and the State if the mine is allowed to proceed, including $333 million in royalties for the NSW Government and continued employment for the 530 people that currently work at the mine.

It is also important to note that the *Upper Hunter SRLUP* seeks, wherever possible, to achieve a sustainable co-existence between mining and agriculture in the Upper Hunter Valley. The policy intent is therefore not to favour one industry over another, but to ensure land use planning decisions allow both industries to prosper, but not at the expense of the other. The Department is satisfied that the retracted mine plan would allow this to occur, and is therefore not inconsistent with the NSW Government's policy position set out in the SRLUP.

The Department has also assessed the potential impacts of the project on natural resources and the amenity of the local community, and is satisfied that these impacts can be adequately managed, mitigated and/or offset to achieve an acceptable level of environmental performance.

Based on its assessment, and having considered the PAC's review, the Department is satisfied that when the project is taken as a whole, the benefits of the project outweigh its impacts. Consequently, the Department considers that on balance the Drayton South Coal Project is in the public interest, and **should be approved** subject to stringent conditions.

The specific grounds for this recommendation, including detailed consideration of the potential impacts on Coolmore and Woodlands horse studs, are provided below.

6.1 Adequacy of Information

The Department acknowledges that limited additional information has been provided by Anglo to assess the environmental impacts of the retracted mine plan, and this is one of the criticisms raised in recent submissions from the studs. However, the Department notes that the retracted mine plan has been proposed by Anglo in response to the recommendations of the PAC to reduce the environmental impacts of the project, particularly on the studs.

The retracted mine plan is contained wholly within the disturbance footprint of the project as originally proposed, and reduces the overall disturbance footprint by 320 ha. The retracted mine plan is also supported by advice from a number of key specialist consultants that were engaged in the assessment

of the original project. This advice supports the conclusion that the retracted mine plan would not increase the impacts of the original project, and in most cases would reduce the overall impacts of the mine.

Consequently, in its assessment, the Department has primarily relied on the EA, RTS and PPR, with reference to more recent information about the retracted mine plan where necessary. The Department is satisfied that there is sufficient information available to adequately assess the merits of the retracted mine plan, and to make a recommendation about whether or not the project should be approved.

6.2 Policy Framework

In this instance, the studs form part of the Upper Hunter CIC, and hence there is some policy guidance about the relevant criteria for considering impacts. In particular, one of the key objectives of the SLRUP is to *define and protect* strategic agricultural land (such as CICs) through a number of policy mechanisms, including the Gateway process. While this process does not strictly apply to this project, the Department sought the advice of the Gateway Panel on the project (see Appendix I).

The Gateway Panel considered the project against the relevant criteria for CICs in the Mining SEPP, and largely mirrors the findings and recommendations of the PAC. Of these, the criterion most likely to be affected by the project is the *loss of scenic and landscape values*. The Gateway Panel advised that, in its opinion, the project would *cause a significant deterioration of landscape values which underpin the Coolmore and Woodlands stud businesses*.

While this advice was prepared prior to the submission of the retracted mine plan, it highlights the inter-dependence of the landscape values and the economic viability of the CIC, and reflects the NSW Government's recognition of this relationship in the SRLUP and the Mining SEPP.

Notwithstanding the above, the Department does not believe that the Government's policy position equates to *no* or *nil* impacts from mining on CICs. In this regard, it would be unreasonable to expect that in areas where mining is a permissible land use, has historically been a major industry, and where there are current Exploration Licences, that indirect visual impacts associated with noise, blasting and dust emissions from mining can be avoided entirely.

The Department also believes it is important to note that the EPA has established acceptable criteria for noise, blasting and dust emissions for mining projects. In this instance both the Department and the EPA are satisfied that Anglo would be able to comply with all these criteria at the studs (see below).

In summary, the Department accepts that the current situation is not 'typical' and that a higher standard ought to apply to the protection of the studs, but that this ought not to afford total protection from all impacts of mining.

6.3 Coolmore and Woodlands Horse Studs

The Coolmore and Woodlands horse studs are significant thoroughbred breeding operations situated within an equine CIC identified in the *Upper Hunter SRLUP*. A detailed description of the Coolmore and Woodlands horse studs is provided in the PAC's report, including the operations at the studs themselves, their interactions with other horse breeding operations, and their significance to the broader equine CIC in the Hunter Valley and the horse breeding industry as a whole.

For the purposes of this assessment, the Department accepts that both the Coolmore and Woodlands studs are central to the equine industry in the Upper Hunter CIC, and it is therefore not necessary to repeat the information from the PAC's report that demonstrates this is the case.

Rather, the Department's assessment focuses on whether the concessions made in the retracted mine plan are sufficient to enable co-existence and afford adequate protection to the operations of the studs. Specifically the assessment considers those attributes of the stud properties that contribute to their suitability in supporting successful horse breeding enterprises, including visual amenity, air quality, noise, and access to water. Other less tangible aspects associated with having a mine in the vicinity on the reputation of these businesses are also considered.

6.3.1 Visual Amenity

PAC Review

The PAC concluded that the mine would result in significant impacts on the visual amenity, landscape and image of the Coolmore and Woodlands studs. In its review, the PAC considered direct and indirect visual impacts - direct impacts comprising those aspects of the project that would be directly visible from the stud properties, and indirect impacts being where there is no direct visibility of the mining operations, but there is evidence of them (e.g. light glow at night).

The PAC noted the unique sensitivity or vulnerability of the studs to any direct or indirect visual impacts that may compromise or conflict with their image of being situated in a quiet rural area with clean air, clean water, and isolated from other industrial activities. The PAC also considered that this sensitivity is inherent to the branding and identities of the studs, and warrants special consideration with regard to the acceptability of the potential visual impacts of the proposed mine.

In regard to direct visual impacts, the PAC found that:

- the Houston Pit and associated "visual bund" would result in a significant negative effect on views from the Golden Highway and parts of Coolmore; and
- apart from of the highest land to the northeast, the Woodlands stud would have no direct views of the mine.

In regard to indirect visual impacts, the PAC noted a number of aspects of the mining operations that would result in indirect impacts and may be evident to visitors to the studs, including the glow associated with night time lighting, noise and dust from blasting, and visible dust plumes associated with haul roads and overburden emplacement.

The PAC also considered 'dynamic views' which comprise a range of matters, including mining-related vehicles on roads and images presented in the media that taken together, which could affect the public perception of a particular location. The concern being that the presence of a large coal mine in the immediate vicinity would clash with the stereotypical view of the studs as having clean air, clean water, clean pastures, and picturesque scenery.

The PAC acknowledged the various mitigation measures proposed by Anglo including tree screening along roads and ridgelines, and the visual screening provided by the bund associated with the Houston Pit. However, the PAC questioned the efficacy of these measures, particularly in addressing the indirect visual impacts of the mine. The PAC also acknowledged that due to the topography of the area there was no practical way to shield the direct views of the Blakefield and Redbank Pits from the highest parts of the Woodlands property.

It is also important to note the PAC's distinction between the studs' primary areas of operations and other parts of the properties which may be closer to the mine, but where little in the way of horse breeding activity occurs. This is not to negate the fact that the non-primary areas of operation are important to the stud owners, and clients may visit these areas from time to time. However, the Department believes it is reasonable to make the distinction between these two components of the stud properties, and has broadly adopted this distinction in its assessment of the project.

Overall, the PAC concluded that the only effective mitigation measure available to address both direct and indirect visual impacts would be to increase the distance between the mine and the studs. The general principle being that the further the operations are from the boundaries of the studs, the less likely that there would be noticeable indirect visual impacts.

In light of these considerations, the PAC recommended that:

- mining operations must not be visible from the studs' primary areas of operations; and
- open cut mining must not be allowed to extend through the second ridge to the north of the Golden Highway (see Figure 13).

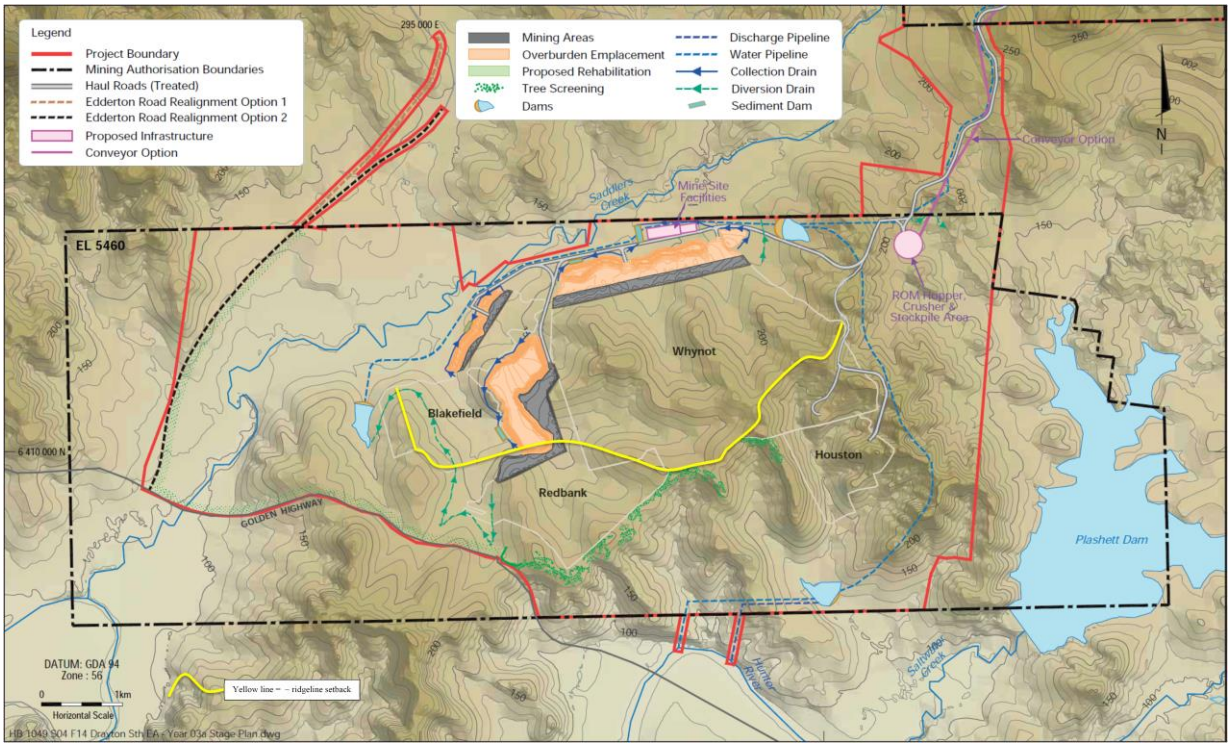

Figure 13: *PAC Minimum Setback Requirement*

Retracted Mine Plan

To address the recommendations of the PAC, the retracted mine plan removes the Houston Pit, the associated visual bund, and the south eastern corner of the Whynot Pit. These changes result in the mining operations being confined to the north of the natural ridgeline between the Saddlers Creek and Saltwater Creek catchments.

By making these changes, Anglo has effectively complied with almost half of the PAC's recommended setback requirement, and the PAC's recommendation to ensure that mining operations are not directly visible from the stud's primary areas of operations (see Figures 14 and 15).

The changes would also mean that the mine would not be visible from Jerrys Plains and the Golden Highway. It would also reduce the potential indirect visual impacts by increasing the separation between the mine and the boundary of the Coolmore property by almost 2 km (i.e. from 2 to 3.7 km) (see Figure 16).

The key departure of the retracted mine plan from the PAC's recommendation is the retention of the majority of the Redbank Pit. However, to further reduce the potential visual (and other) impacts associated with mining in the Redbank Pit, Anglo has increased the setback of the Redbank Pit from the Coolmore property boundary by 400 metres (i.e. from around 500 to 900 m – and around 1.4 km from Coolmore's area of primary operations).

The changes do not materially change the setback from the Woodlands property boundary which remains as close as 500 m, although the mining would be more than 2 km from the primary operational areas of the Woodlands stud.

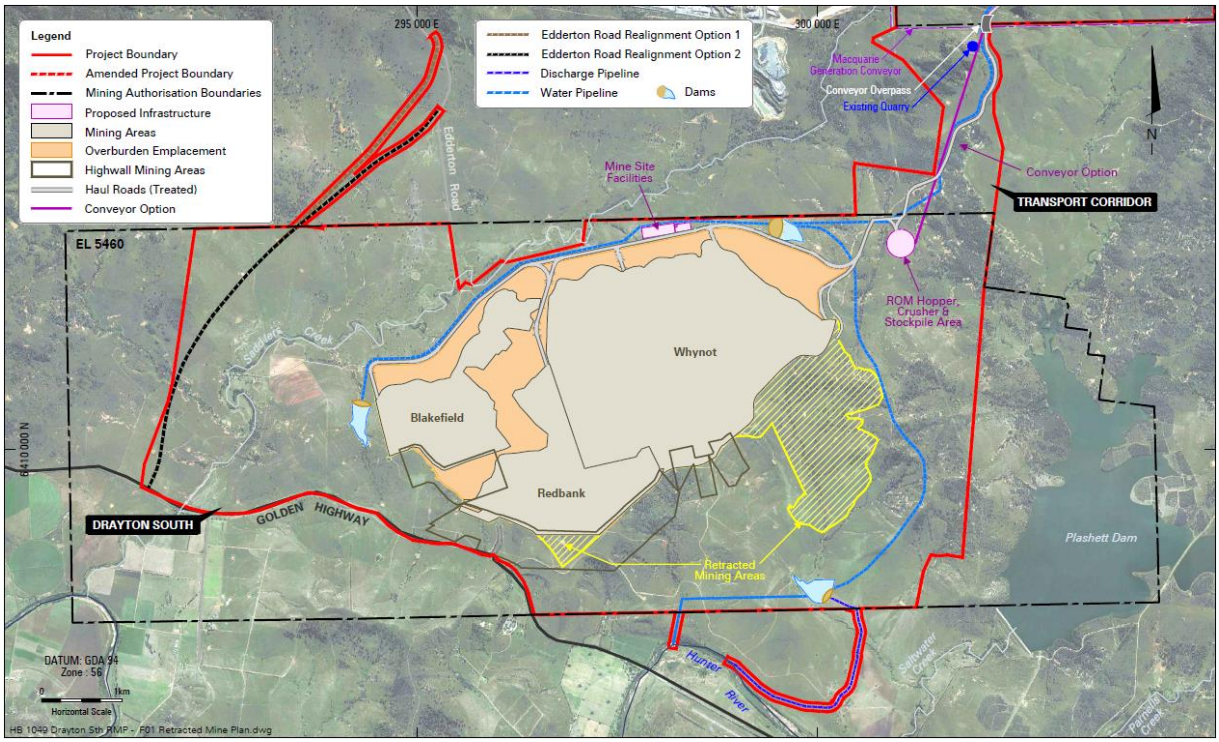

Figure 14: *Drayton South Coal Project - Retracted Mine Plan*

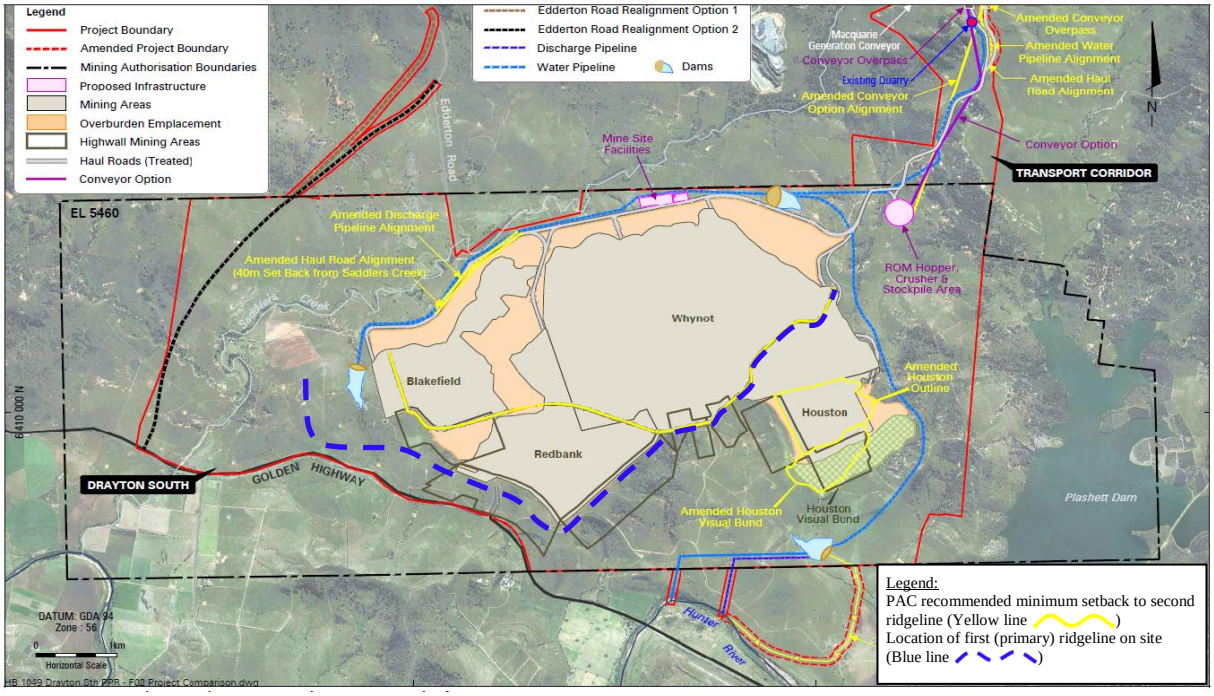

Figure 15: *Comparison of PAC Recommended Setback and Primary Ridgeline*

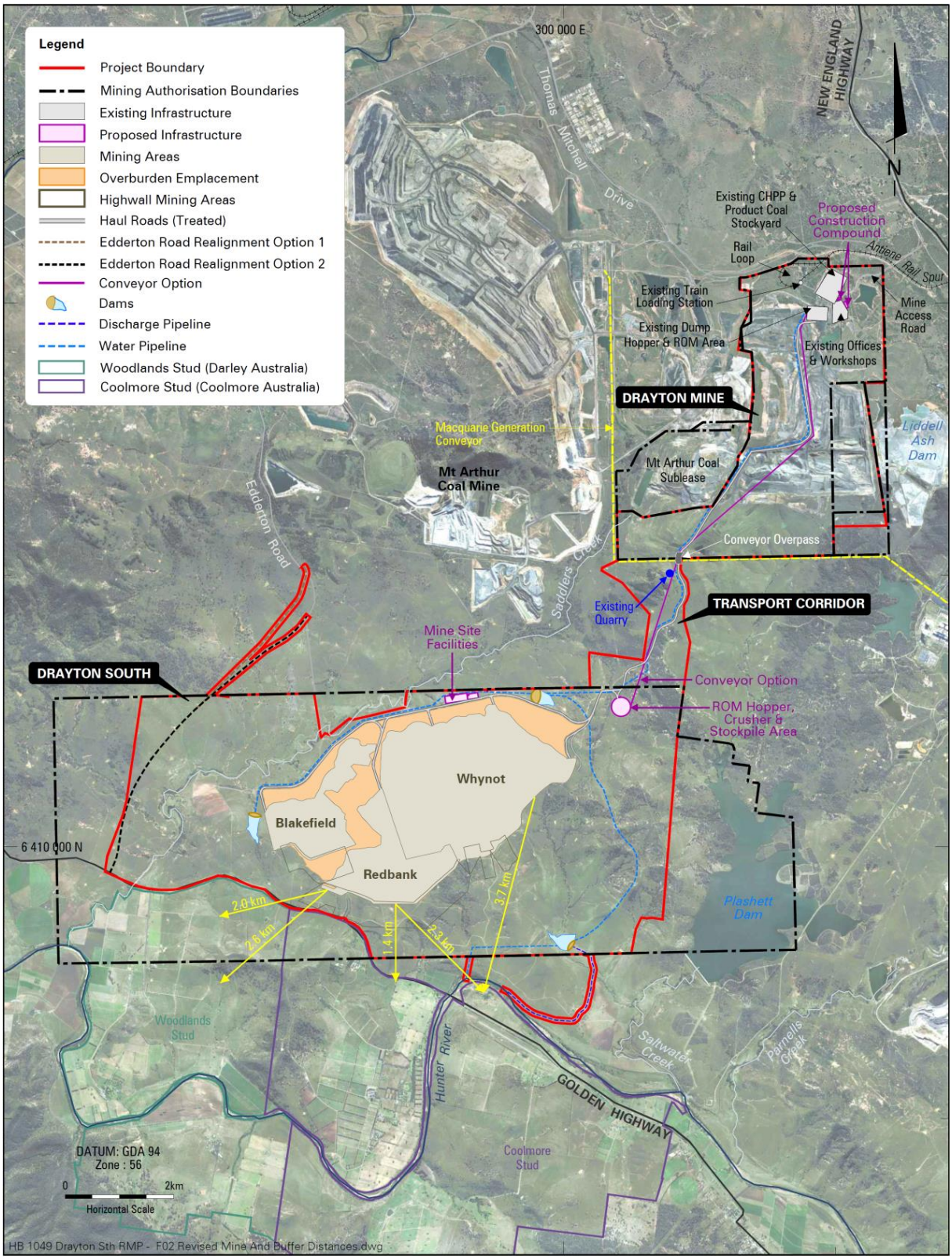

Figure 16: *Drayton South Coal Project – Setback Distances from Studs*

Stud Submissions

In regard to visual impacts, the studs raised a number of objections and concerns in their submissions on the retracted mine plan, including that:

- the documentation submitted by Anglo does not provide a meaningful visual impact assessment of the retracted mine plan;
- the setback distances from the studs claimed by Anglo are not accurate;
- aspects of the mining operations would remain visible from the highest parts of the stud properties, including the proposed dragline in the Redbank Pit which would have a boom length of up to 95 m; and
- the retracted mine plan would result in unacceptable indirect visual impacts on the studs as it does not fully comply with the PAC's recommendation to remain behind the second ridge line.

Consideration

In the Department's view, the key question to be considered is whether the retention of the Redbank Pit (and a small section of the Blakefield Pit) would result in unacceptable visual impacts on the horse studs.

The Department notes the claims that the documentation submitted by Anglo does not provide a meaningful visual impact assessment of the retracted mine plan. While the Department agrees that the information on visual impacts in the retracted mine plan report is limited, Anglo has relied primarily on the detailed visual assessment undertaken in its EA. Given that the Redbank Pit is proposed to be retained, and mining in the Whynot Pit would now be located behind a ridgeline, the Department is satisfied that there is sufficient information in the EA to allow an adequate assessment of the visual impacts of the retracted mine plan.

Direct Impacts

The Department agrees with the submissions from the studs that the Redbank and Blakefield Pits would be visible from the higher parts of Coolmore and Woodlands under the retracted mine plan, including from Trig Hill and some of the higher paddocks on Coolmore land.

However, it is important to note that even if the mine remains behind the second ridge as recommended by the PAC, some mining in the Blakefield Pit would remain visible from Trig Hill. Furthermore, the views from these areas are not "pristine" as existing industrial activities are clearly visible, including open cut mining associated with the Mt Arthur mine and the Bayswater Power Station (see Figure 17). Furthermore, the Bayswater B Power Station, which was approved in 2010, is located approximately 6.5 km north of Coolmore and is likely to be highly visible from the higher ground at the studs if it proceeds.

The Department also notes the studs' concerns about Anglo's proposal to introduce dragline operations in the Redbank Pit. The Department has been advised that the boom length is around 100 m in length, but that the maximum height above the ground would be 62 m. Anglo has indicated that the dragline would not always be operating at the surface, and that at all times the maximum height of the boom would remain below the maximum overburden emplacement height which the visual assessment in the EA indicates would not be visible from the operational areas of the studs. Nonetheless, the Department has recommended a condition that requires Anglo to make sure this is the case.

In the advice to the PAC, Dr Richard Lamb flagged that there was potential for a more satisfactory suite of measures to mitigate direct visual impacts on the studs. This included better designed and managed vegetation buffers between the Golden Highway and the Redbank Pit. Dr Lamb recommended that this should be subject to specific conditions that required a sufficient width, density and height to screen views of overburden emplacements, equipment, lights and other infrastructure.

The Department notes that the mine would progress from north to south, and mining at the southern boundary of the Redbank Pit would only occur after Year 5 of the mine plan. This, combined with the additional 400 m setback, provides ample opportunity for Anglo to ensure that a very substantial tree screen is established between the active mining areas and the studs.

Figure 17: *View looking north from Trig Hill*

Dr Lamb recognised that the vegetation buffer would not avoid direct views from the highest parts of the studs (or indirect views of the mining-related activities from other areas within the studs). However, Dr Lamb considered the elevated land at the studs are not the areas of highest intrinsic sensitivity, are not particularly accessible, and would in all likelihood be avoided as a place for staff to take clients if the mine was to proceed.

To ensure that the efficacy of the vegetation buffer is maximised, the Department has recommended that Anglo be required to:

- establish and maintain a suitable vegetation buffer from the southern boundary of the site to the edge of the Redbank Pit; and
- commission suitable experts to prepare a Visual Impact Management Plan that includes staged and final completion criteria for the vegetation buffer that address the recommendations of Dr Lamb regarding the width, height and density of the buffer.

Indirect Impacts

The PAC found that constraining mining to the north of the second ridge line was the *absolute minimum* required to buffer against noise, dust, blasting and lighting. However, the Department believes there is limited evidence to support this recommendation.

The retracted mine plan proposes a setback of around 1.4 km from Coolmore's area of primary operations and 2 km from Woodlands' area of primary operations (see Figure 16). The PAC's recommendation would increase this by around 1.2 km (i.e. ~ 2.6 km from Coolmore and 3.2 km from Woodlands).

The Department acknowledges that both the increased distance and the topographical shielding afforded by the second ridgeline would reduce the potential for indirect visual impacts. However, the Department does not believe that adhering strictly to the PAC's recommended setback would eliminate these impacts altogether.

Under both scenarios, the Department's view is that dust generated by the mine would be visible from time to time, and that there would be a noticeable light glow during the night. Although not a visual impact, noise may also be audible under both scenarios, particularly during adverse weather conditions.

The Department also notes that while mining in the Redbank Pit would occur at various intensities throughout the mine life, the majority of amenity impacts associated with this pit would occur for approximately 10 years (between Year 5 and Year 15) when the pit is operating at its maximum strike length and progressing towards receivers to the south. After this time, the mining direction would reverse and operations would progress north behind rehabilitated and revegetated in-pit overburden emplacements.

Given this, the Department is not convinced that the incrementally greater indirect visual impacts for a period of 10 years is sufficient justification for sterilising between $1.3 and $1.5 billion of low strip ratio coal, and risking the substantial economic benefits of the project as a whole. Consequently, the Department does not believe that retracted mine plan should be refused or substantially amended on the grounds of unacceptable indirect visual impacts.

Dynamic Views

The Department does not discount the reality of 'dynamic views', but questions to what extent visitors to the studs would be aware of the debate in regard to the Drayton South project.

The issues regarding this project would obviously be well known to the local community, but it is difficult for the Department to quantify the extent to which this issue is of concern to the broader community in NSW and beyond. The Department believes it is more likely that visitors to the site would be far more influenced by site-based visual cues that indicate the presence of mining in the vicinity of the studs rather than media coverage.

The Department notes that the Hunter Valley is well known for coal mining (as well as for horse breeding) and one of the largest mines (Hunter Valley Operations) is located 3 km from the eastern boundary of Coolmore (a similar distance to the proposed Whynot Pit). Consequently, the proximity of large open cut mining projects to horse breeding operations is not something new to the region, and it does not appear to have prevented the Coolmore and Woodlands studs from operating successfully for many years.

Furthermore, the Department understands that most horse owners would be unlikely to visit the studs, and even if they did, it is difficult to visit this area without seeing other coal mines. For example, the most direct route to the studs is via the Golden Highway, and there are many existing mines that are close to the road and highly visible. This would tend to have the effect of diminishing the perception that mines and horse studs cannot successfully co-exist.

In regard to the road network, the Department notes that mining-related vehicles are frequently visible on the Golden Highway, which is used by employees of various mines to the west of Muswellbrook. The project is not proposing to alter the access arrangements for the Drayton mine via Thomas Mitchell Drive. Consequently, while there may be a marginal increase in mining-related vehicles on the Golden Highway associated with activities such as planting tree screens etc., the vast majority of project-related vehicles would not need to use the Golden Highway and would therefore not materially increase the dynamic views of mining for the studs.

Finally, the Department questions the extent to which dynamic views are a relevant matter for consideration in the planning process, as matters like media coverage are clearly not within the control of the proponent and do not comprise an "environmental impact" per se that can be mitigated or managed.

Conclusion

The Department is satisfied that the concessions made by Anglo in its retracted mine plan would substantially reduce the visibility of the mine from the studs by relying on the primary natural ridge across the site. While the Department acknowledges that the retracted mine plan does not remove the Redbank Pit as recommended by the PAC, it believes there is no clear evidence that the retention of this mining area would result in unacceptable visual impacts on the studs.

The Department has recommended that Anglo be required to establish and maintain a substantial vegetation buffer to the north of the Golden Highway. The Department believes that this would provide effective screening of direct views of the Redbank Pit from the majority of land within the studs, including the most sensitive primary operational areas identified by the PAC.

The Department acknowledges that this would not eliminate the indirect and dynamic visual impacts of the project. However, the Department does not believe that adherence to the PAC's recommended setback would achieve this outcome either, particularly as there would also be similar indirect impacts associated with mining in the Whynot Pit.

The Department also believes that a mining company should enjoy a reasonable expectation that if it develops a mine plan that can demonstrate that it would comply with established air quality, noise and blasting criteria at sensitive receivers, it should not also need to adhere to indirect or dynamic visual impact criteria that are not defined in government policy.

Overall, the Department is not convinced that the incrementally greater indirect visual impacts for a period of 10 years is sufficient justification for sterilising up to $1.5 billion of coal, and risking the substantial economic benefits of the project as a whole. Consequently, the Department does not believe that retracted mine plan should be refused or substantially amended on the grounds of unacceptable visual impacts.

6.3.2 Noise & Blasting

PAC Review

The PAC considered the studs to be particularly sensitive to noise and blasting impacts, and that these sensitivities relate to both people (including staff residing at the studs and visitors to the studs) and horses (said to have a highly evolved flight response).

The PAC acknowledged concerns raised in submissions about noise and blasting impacts on the residential receivers at the studs, but generally accepted that the mine would be able to comply with all applicable noise and blasting criteria at these receivers with the implementation of the proposed mitigation measures. These measures included reducing the size of blasts and avoiding blasting during unfavourable weather conditions.

However, the PAC raised concerns that these measures would increase the frequency of blasting to as many as 10 blasts a week, and would not comply with the *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure* (ANZEC 1990), which specify that blasting should generally take place no more than once a day.

The PAC noted that the opinions presented during its review about the impacts of mine noise and blasting on horses were contradictory. It also noted that evidence regarding this issue is limited, but acknowledged that reactions of horses to mine noise and blasting are dependent on past exposure, at least to some extent.

Given the uncertainty regarding the actual impacts on horses, the PAC found that noise and blasting has the potential to be detrimental to the reputation and brand of the studs. The PAC did not nominate an acceptable criteria for noise and blasting, but accepted that the proximity of the mining operations was the key factor that increased the risks of these impacts to the studs.

Stud Submissions

In regard to noise and blasting impacts, the studs raised a number of objections and concerns about the retracted mine plan, including that:

- there is no appreciable change in the minimum distance between the mining area and the closest residences;
- there is no appreciable improvement in the noise impacts as a result of the retracted mine plan;
- there is limited information about the frequency of blasts and how potential blast impacts would be managed;
- there is no recognition of the significant noise and blasting impacts that the project would have on the stud operations; and
- the existing Drayton mine has a history of non-compliance with environmental standards.

Consideration

Intrusive Noise Impacts

The background noise levels in the vicinity of the studs are relatively low, particularly at the Woodlands stud which is less influenced by traffic noise from the Golden Highway. The noise assessment found that the background noise at Coolmore is approximately 33 dB(A), and as low as 25 dB(A) in the vicinity of the Woodlands stud during the evening and night.

In accordance with the *NSW Industrial Noise Policy* the noise assessment adopted 33 dB(A) as the relevant evening and night-time Rated Background Level (RBL) for Coolmore and 30 dB(A) for Woodlands, which is the lowest available under the INP. This gives a Project Specific Noise Level (PSNL) of 38 dB(A) for Coolmore and 35 dB(A) for Woodlands.

Table 2: *Predicted Noise Levels – South*

Residence			Area ≤ 25% of Property			Criteria (dBA)
Receiver	Day	Evening and Night	Receiver	Day	Evening and Night	Day / Evening and Night
217N[1]	19.5	32.8	Coolmore Australia	19.8	31.6	40/38
217S[1]	19.5	32.8				40/38
219C[1]	21.8	34.6				40/38
219E[1]	21.6	34.2				40/38
219W[1]	21.9	35.0				40/38
227C[1]	22.7	28.2				40/38
227E[1]	20.2	34.3				40/38
227W[1]	23.4	29.6				40/38
228[1]	19.3	29.4				40/38
-	-	-	Darley Australia	15.8	25.3	35/35
250	18.1	30.0	249-251,254	17.5	30.0	35/35
226N[2]	27.6	32.3	Arrowfield Estate	26.8	30.9	40/38
226S[2]	25.8	30.7				40/38
209	17.3	31.1	209	17.4	31.3	35/35
211	15.8	30.0	174-177,208, 210,211	16.0	30.1	35/35

1 Residences are under common ownership (Coolmore Australia)
2 Residences are under common ownership (Arrowfield Estate)

The Department understands that there are around 150 people residing on the Coolmore stud, and the noise modelling in the EA indicates that the highest noise levels at these receivers as a result of mining operations would be between 28 and 35 dB(A) (see Table 2 and Figure 18). There are also around 70 people residing on the Woodlands stud, but these receivers are located further away from the project, and shielded by topography. Consequently, the predicted noise levels at these receivers are less than 30 dB(A).

In summary then, even with the original mine plan, the noise modelling in the EA indicates that the project would comfortably comply with the applicable intrusive noise criteria at all the receivers at the studs at all times of the day and night.

Advice from Bridges Acoustics indicates there would be a slight reduction in the noise levels at the closest receivers within the Coolmore and Woodlands studs as a result of the retracted mine plan. This advice also indicates that the use of a dragline in the Redbank mining area, instead of using trucks and excavators for part of the time, would assist in lowering noise levels.

Notwithstanding, the Department has used the worst case predictions in the EA as the basis of its assessment, and both the Department and the EPA are satisfied that these predictions provide a sound basis against which to assess the impacts of the project.

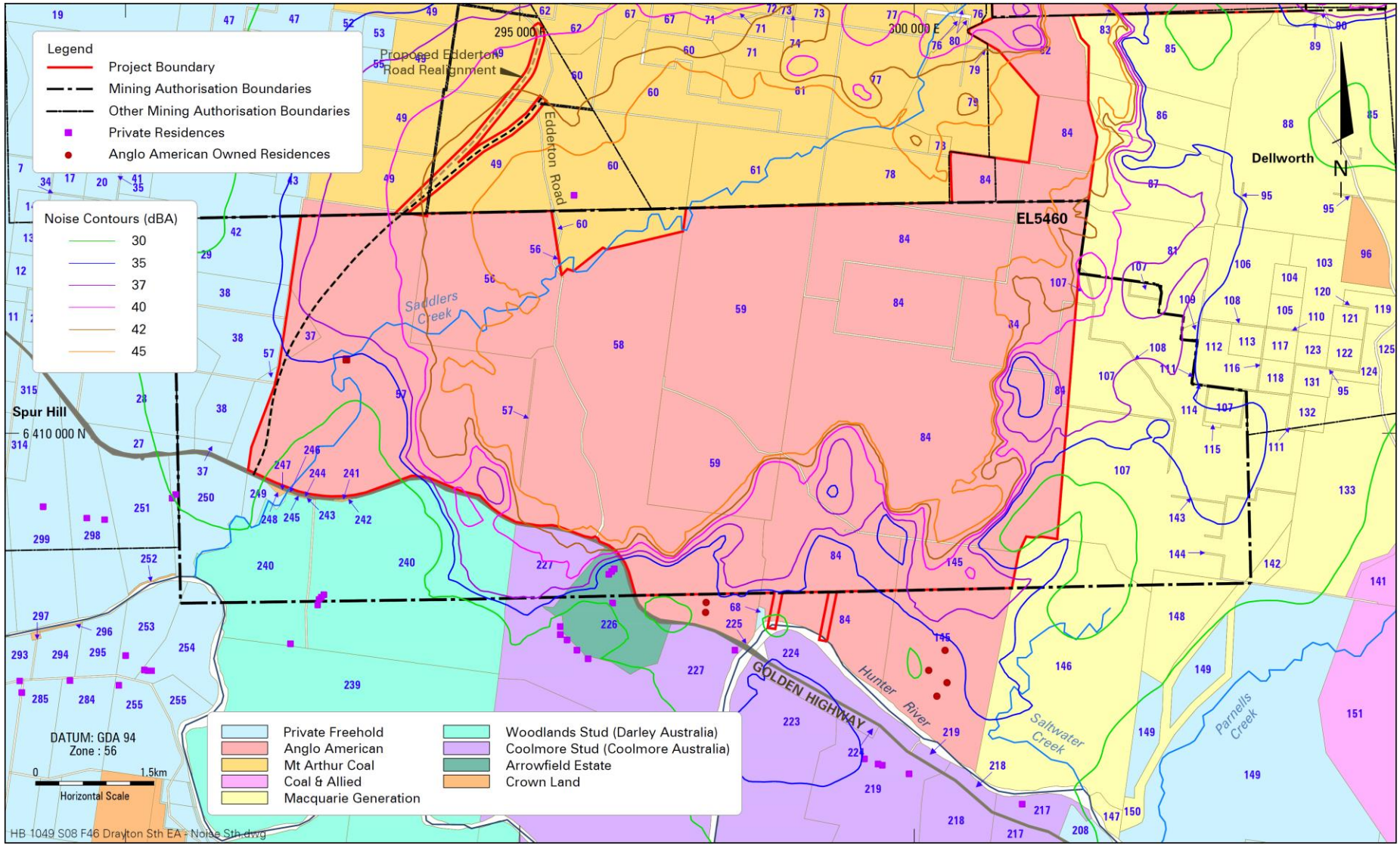

Figure 18: *Noise Contours – All Years*

In considering the acceptability of these noise levels, it is important to note that the INP also sets recommended and maximum amenity criteria for different land use categories for day, evening and night. The relevant land use category in this case would be 'rural', as there are no special provisions for horse studs. These criteria range from 40 dB(A) during the night up to a maximum of 55 dB(A) during the day.

Consequently, in this case, the impacts are predicted to be at least 5 dB(A) below the minimum recommended amenity criteria established by the NSW Government for rural areas at all times. Furthermore, the relative change in noise levels as a result of the project is not predicted to be significant. In the case of Coolmore, the maximum increase is predicted to be about 2 dB(A), and even less in respect of Woodlands.

This does not mean that the mine would not be audible at the studs from time to time. However, audibility is not the test against which new developments are assessed. There is an existing assessment regime established by the NSW Government to consider the acceptability of noise generated by new developments. This regime is sufficiently flexible to take into account the sensitivities of different land uses, but it is not appropriate to discard the established regime and adopt alternatives on a case by case basis. To do so would create unacceptable uncertainty and confusion in land use planning and economic investment in NSW. This position is supported by both the Department and the EPA (see Appendix D).

To minimise the potential noise impacts on the studs, the Department has recommended that Anglo be required to comply with the *lowest allowable noise criteria* under the INP of 35 dB(A). In doing so, the Department realises that the PSNLs for Coolmore and Arrowfield are 38 dB(A), but given that the EA indicates that the noise generated by the project would be 35 dB(A) or less at the receivers on the Coolmore property, the Department believes that Anglo should be required to do so.

Finally, the Department questions the extent of noise reduction that would be achieved by removing the Redbank Pit from the mine plan. It is acknowledged that the additional setback would reduce noise as a consequence of distance and intervening topography. However, noise from the mine would be generated from multiple sources across the Whynot and Blakefield mining areas, and the Department is not convinced that a receiver at Coolmore would be able to notice any significant difference in audible noise.

Furthermore, if a 800 or 900 m vegetation buffer was established between the Golden Highway and the Redbank Pit , it would further assist in reducing noise compared with the original mine plan and further reduce any discernible difference between the retracted mine plan, and that recommended by the PAC.

Notwithstanding the above, it is important to note that Anglo has not submitted any additional noise modelling to quantify the noise differential with and without the Redbank mining area.

Blasting

The EA includes an assessment of blasting impacts, and indicates that the project would comply with overpressure and ground vibration amenity and structural criteria for all receivers. This would be achieved by implementing best practice blast minimisation procedures, including progressively reducing the maximum instantaneous charge of the blast event as the mine approaches the studs and the adjacent Arrowfield Estate.

As a result of the reduced MIC, the frequency of the blasts in this area would need to be increased from 5 blasts up to 10 blasts a week to maintain the same production rate. However, as a result of the additional 400 m setback proposed by Anglo in the Redbank Pit, the need for the increased frequency of smaller blasts would be reduced at least to some extent.

The PAC raised concerns about the fact that blasting up to 10 times a week is not consistent with the recommendations in the ANZEC blasting guidelines. The Department notes that the approval for the existing operations at the Drayton mine permits up to 2 blasts a day, and up to 8 blasts a week. There are also a number of other mines in the Hunter Valley with similar allowances.

The Department notes that the ANZEC blasting guidelines are almost 25 years old, and were prepared at a time when mines in NSW generally comprised one or two open cut pits. As a result of amalgamation and improvements in mining equipment, contemporary open cut mines are far larger

and often involve active mining across multiple pits. To maintain production, this generally necessitates a greater frequency of blasting than is recommended under the ANZEC guidelines.

In this context, the Department's view is that provided mining companies comply with the overpressure and ground vibration annoyance criteria established under the ANZEC guidelines, some flexibility on blast frequency is reasonable where there is justification to do so. In this case, the project involves continued mining at the Drayton mine in addition to 3 new pits at Drayton South, and it may be preferable to have more frequent smaller blasts in the parts of the mine closest to the studs, rather than fewer larger blasts.

The Department notes that Anglo has committed to confine blasting to Monday to Saturday between 9am and 5pm in accordance with the ANZEC guidelines. However, the Department has also recommended that the number of blasts on the site not exceed 2 per day and 5 per week. This would not be in strict compliance with the ANZEC guidelines on any given day, but on average would be consistent with the "once per day" recommendation in the guidelines. By recommending these restrictions, the Department notes that the project would have some of the most stringent conditions regarding blast frequency in the Hunter Valley.

Under the recommended conditions, Anglo would also be required to consult closely with the studs to coordinate blasting on the site with the operations at the studs to minimise any inconvenience and annoyance from blasting on the site.

Based on the information provided, the Department is satisfied that Anglo would be able to comply with applicable criteria at all privately-owned receivers. However, the Department accepts that to achieve this in the Redbank mining area, Anglo would have to adopt a risk based assessment of blast design, meteorological and ground conditions and verify blast predictions against monitoring results as mining progresses towards the studs. If the blast criteria cannot be met, this would effectively constrain the southern extent of the Redbank mining area.

Equine Health

The Department agrees with the PAC that the opinions presented throughout the assessment process regarding the impacts of noise and blasting on the horses is contradictory. However, the Department believes that there is some merit to the argument that horses would become habituated to the acoustic impacts from the mine, even over relatively short periods.

The Department notes the concerns raised by the studs about the particular sensitivity of horses and foals to sudden noises, and the fact that many horses do not stay at the studs for sufficient time to become habituated to mine noise and/or blasts.

The equine health assessment in the EA noted a range of noises that thoroughbred horses are routinely exposed to that are well above the predicted noise levels from the mine. These noise levels would typically be well in excess of 70 dB(A), including noise during race events, transportation, operation of agricultural machinery, motorbikes, and aircraft. The EA also examined the potential for peak noise levels from blasting to startle or cause flight responses in horses. The assessment indicated than blasting could result in overpressure levels up to 109 dB(L), but that this should not startle horses. Evidence cited to support this position included sonic booms which result in noise levels up to 136 dB, and which can result in some mild startle response in horses.

Dr Kannegieter, who prepared Anglo's equine health assessment, recommended that monitoring of the response of horses to blast events be undertaken to address any uncertainty about this matter. An appropriate threshold for the overpressure from blasting could then be established in consultation with the studs and applied to the blast procedures on the site. The Department supports this adaptive management approach, and has recommended that these measures be incorporated in the Blast Management Plan for the project.

The Department acknowledges that there is uncertainty about the potential impacts of noise and blasting on horses at the studs. However, if anything, the Department believes the weight of evidence supports a view that there is unlikely to be any adverse impact of noise from the project on the safety of the horses and their reproductive capacity, and that any residual risks can be satisfactorily managed through the recommended adaptive management approach.

Conclusion

Both the Department and the EPA are satisfied that Anglo would be able to comply with the NSW Government established noise and blasting criteria for mining projects, and that there are a range of reasonable and feasible mitigation and management measures that can be implemented to ensure this is the case.

Nonetheless, the Department agrees that the noise and blasting impacts would need to be carefully managed to keep any amenity impacts on the studs to an absolute minimum. Accordingly, the Department has recommended that Anglo be required to:

- comply with contemporary noise and blasting criteria;
- prepare and implement comprehensive noise and blast management plans, in consultation with the owners of Coolmore and Woodlands;
- maintain a proactive real-time noise and blast monitoring program;
- limit blast frequency to a maximum of 2 per day and 5 per week only from Monday to Saturday, and between 9am and 5pm;
- establish appropriate blast thresholds for horses and coordinate blasting operations with the studs;
- independently investigate complaints and undertake appropriate corrective and management measures; and
- communicate regularly with the community, including publicly reporting all monitoring results.

With the implementation of these measures, the Department is satisfied that the noise and blasting associated with the retracted mine plan would not result in unacceptable impacts on the studs. Given this, and in the absence of any other applicable noise criteria, the Department believes there is limited basis for recommending the removal of the Redbank Pit from the mine plan.

6.3.3 Air Quality

PAC Review

The PAC concluded that the air quality impacts of the project are not acceptable due to the combined concerns about the additional amenity and health impacts to residents living on the studs, and the reputational damage that may be caused with the deterioration in air quality. The PAC also acknowledged the concerns raised about air quality impacts on equine health.

In arriving at this conclusion, the PAC cited the following:

- increasing cumulative impacts from mining in the region;
- exceedances of the 24-hour PM_{10} criteria up to 38 days a year in Year 10 of mining;
- concerns about the suitability and reliability of the modelling results;
- whether the worst case scenario was adequately assessed; and
- the ability of Anglo to control dust emissions from such a large mining area.

Stud Submissions

The studs raised a number of objections and concerns about the air quality impacts of the retracted mine plan, including that:

- the air quality modelling has not been updated to address the recommendations of the PAC or any changes associated with the retracted mine plan;
- the proposed dragline operations may increase the dust emissions from the mine;
- there would be exceedances of the 24-hour PM_{10} criteria; and
- dust emissions would result in significant impacts on horse health and the reputation of the studs.

Consideration

Anglo has provided additional air quality modelling for the retracted mine plan (see Appendix N). This modelling has been adjusted to address the concerns raised by the EPA and SKM in its review of the assessment presented in the EA. Specifically, the revised modelling now assumes 80% dust control for haul roads in the Redbank Pit (instead of 85% control) and silt and moisture contents that are comparable to those used for other mining projects in the Hunter Valley.

The Department has received advice from the EPA (see Appendix D) and SKM (see Appendix O) that these assumptions used in the latest modelling are reasonable, and provide a sound basis for the assessment of the retracted mine plan. The advice from SKM also confirms that the years modelled

(i.e. Year 5 and Year 10) by Anglo represent worst case scenarios, and are therefore the most appropriate years to assess the maximum impacts on the studs.

Background Air Quality

Concerns were raised by the PAC about high background levels in the area. However, the Department believes that the PAC did not fully consider the background annual average PM_{10} in the area, which is the most reliable measure of ambient air quality. In this case, the data in the EA indicates that annual average PM_{10} in the area is around 16 µg/m^3, which is well below the EPA's ambient air quality goal of 30 µg/m^3. This is consistent with recent data collected for the assessment of other mining projects to the west of Muswellbrook, and with the EPA's regional air quality monitoring network, which measured annual average PM_{10} concentrations of 15.4 µg/m^3 in Jerrys Plains during 2012 and 2013.

Furthermore, the Department believes that the data used by Anglo in its assessment of 24-hour background PM_{10} concentrations is significantly higher than would be expected in this locality, and should not be relied upon. For example, the Department notes that the number of days where the 24-hour criteria is predicted to exceed 50 µg/m^3 at HV2a is 24 days a year, but the other representative locations (i.e. HV5 and DFO 3) used in the assessment, which are located on either side of HV2a, only exceed the criteria between 7 and 11 days a year (see Figure 19).

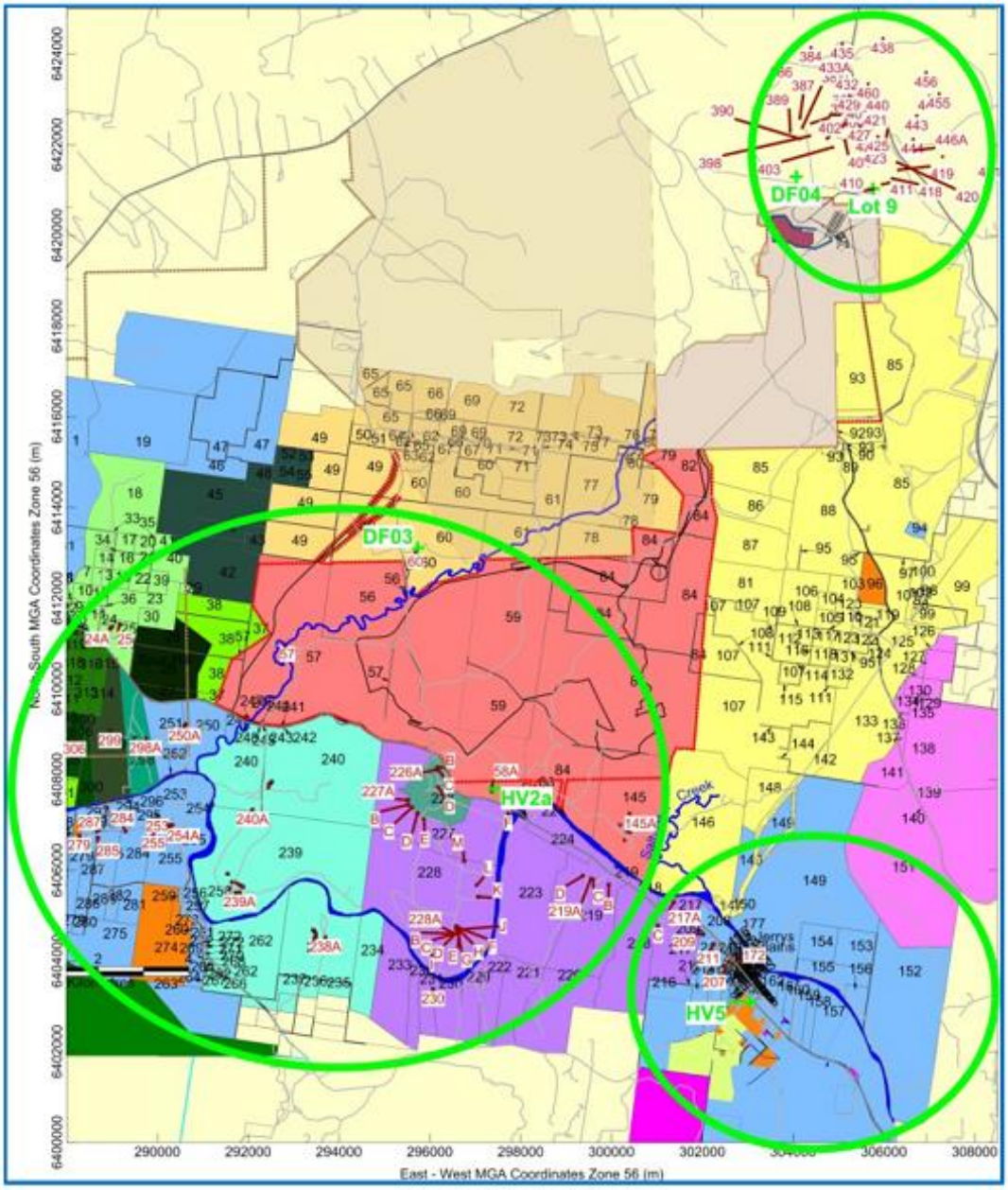

Figure 19: *Representative Air Quality Monitoring Locations*

There is no obvious reason why HV2a would be so much higher than the other representative locations, and if anything, it would be expected that DFO 3 would be higher than HV2a as it is located far closer to existing open cut mining operations. This is supported by the EPA's regional air quality monitoring network which indicates that in 2012 there was only 1 exceedance of the 24-hour PM_{10} criteria of 50 µg/m^3 in Muswellbrook and no exceedances in Jerrys Plains.

Analysis of the data for HV2a shows some years of data are significantly higher than others, suggesting that either the monitor is faulty or that there were some historical activities in the immediate vicinity of the monitor that increased localised dust concentrations. If these years are excluded from the data, a conservative estimate of the number of days greater than the criteria is up to 9 days a year (based on 5 years of data from HV2a and DFO 3 - 2007 to 2011). This is typical of most regional areas in NSW where there are usually a number of exceedances each year due to natural events such as bushfires.

Given the above, the Department is satisfied that the background air quality in the vicinity of the studs is generally well below the EPA's ambient air quality goals, and can be considered to be relatively good.

Air Quality Impacts

The revised modelling submitted by Anglo indicates that the retracted mine plan would reduce the overall dust emissions from the project by around 15% compared with the full mine plan modelled in the RTS. The proportional decrease has been confirmed by SKM as a reasonable outcome given the significant reduction in the surface disturbance footprint of the mine (i.e. around 320 ha).

The modelling also indicates that dust generated by the retracted mine plan would comply with the applicable cumulative EPA criteria at *all* privately-owned receivers for total suspended solids, deposited dust, and annual average PM_{10}. It also shows that the mine *by itself* would not result in any exceedances of the 24-hour PM_{10} criteria.

However, under the retracted mine plan, the modelling predicts there would be between 2 and 4 days a year of additional exceedances of the 24-hour PM_{10} criteria at 4 receivers on the stud properties (227A, 227F, 240A, 217A), and the Arrowfield Estate (226B and 226 D - which is now owned by Coolmore) (see Tables 3 and 4).

The Department notes that the cumulative assessment of 24-hour PM_{10} concentrations uses a statistical probabilistic approach (known as a "Monte Carlo Simulation") at a number of representative locations on the studs. However, this provides a very conservative approach as the highest predictions are based on worst case emissions combined with the worst case background levels. When this data is analysed it is clear that the contribution from the mine is generally very low. For example, in Year 5 at the closest receiver (i.e. Arrowfield – 226B) the contribution to short term dust impacts from the mine is 1 µg/m^3 or less more than half the time, and would be less than 10 µg/m^3 for 95% of the time (see Figure 20 and 21).

Anglo is proposing to implement a range of measures to minimise its dust emissions, particularly short term emissions that may be visible from the studs. These measures include:

- real-time monitoring and proactive management of operations based on predictive meteorological forecasting to avoid adverse weather conditions;
- restricting topsoil removal to a single strip ahead of mining;
- utilisation of water carts and chemical dust suppressants;
- limiting operations on exposed areas to daytime only; and
- progressive stabilisation and rehabilitation.

The Department is satisfied that the proposed measures are generally consistent with best practice in the NSW mining industry, and with the 2011 benchmarking study for the control of dust from coal mines in NSW prepared by Katestone Environmental for the EPA.

Overall, the Department believes that the modelling represents worst case scenarios with conservative assumptions, and is confident that with the implementation of these measures, Anglo would be able to achieve lower short term dust emissions than predicted by the modelling. This is the case with the majority of mines in the Hunter Valley where the actual dust concentrations at receivers tends to be less than predicted during the assessment process, and the Department has no reason to believe that this project would be any different.

Table 3: *Predicted Number of Days Exceeding 24-Hour PM_{10} Criteria in Year 5*

Receptor ID	Maximum predicted PM_{10} 24-hour concentrations	Predicted number of days exceeding 50 µg/m³ cumulative criteria							
	Project Alone		Background		Cumulative (Monte Carlo)		Days more than background due to Project	
	Year 5	Year 5	All HV2a/DF03 data	Exc. HV2a pre-2006	All HV2a/DF03 data	Exc. HV2a pre-2006	All HV2a/DF03 data	Exc. HV2a pre-2006
Units	µg/m³	Number of days						
Privately owned residences								
226B	16	0	24	9	28	10	4	1
226D	14	0	24	9	27	10	3	1
227A	8	0	24	9	26	9	2	0
227F	17	0	24	9	27	10	3	1
240A	6	0	24	9	25	9	1	0
250A	8	0	24	9	25	9	1	0
Mine owned residences								
57	17	0	24	9	28	11	3	2
58A	19	0	24	9	28	11	3	2
145A	14	0	24	9	31	12	5	3

Table 4: *Predicted Number of Days Exceeding 24-Hour PM_{10} Criteria in Year 10*

Receptor ID	Maximum predicted PM_{10} 24-hour concentrations	Predicted number of days exceeding 50 µg/m³ cumulative criteria							
	Project Alone		Background		Cumulative (Monte Carlo)		Days more than background due to Project	
	Year 10	Year 10	All HV2a/DF03 data	Exc. HV2a pre-2006	All HV2a/DF03 data	Exc. HV2a pre-2006	All HV2a/DF03 data	Exc. HV2a pre-2006
Units	µg/m³	Number of days						
Privately owned residences								
226B	20	0	24	9	27	11	3	2
226D	17	0	24	9	26	10	2	1
227A	12	0	24	9	26	9	2	0
227F	13	0	24	9	26	10	2	1
240A	6	0	24	9	25	9	1	0
250A	9	0	24	9	25	9	1	0
Mine owned residences								
57	16	0	24	9	27	10	3	1
58A	18	0	24	9	27	10	3	1
145A	14	0	24	9	29	11	5	2

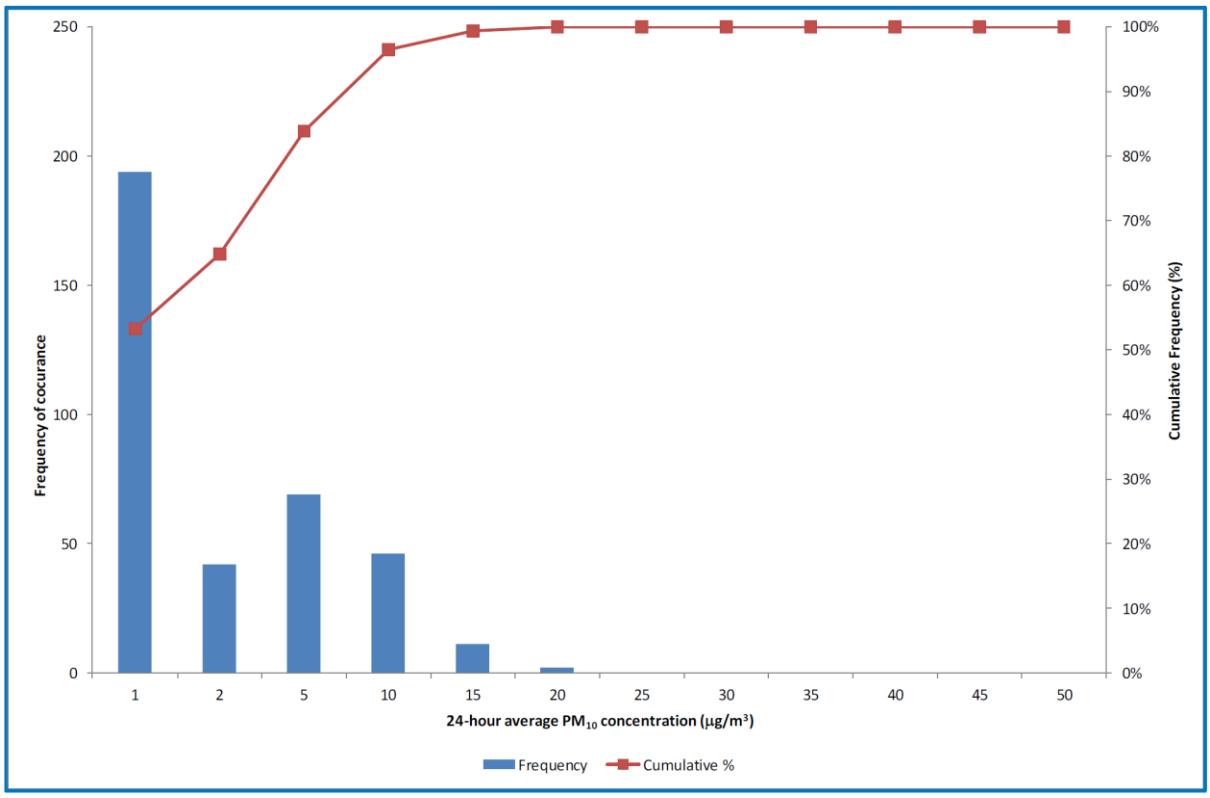

Figure 20: *Frequency Distribution of Predicted 24-Hr PM_{10} Concentrations - Receiver 226B (Year 5)*

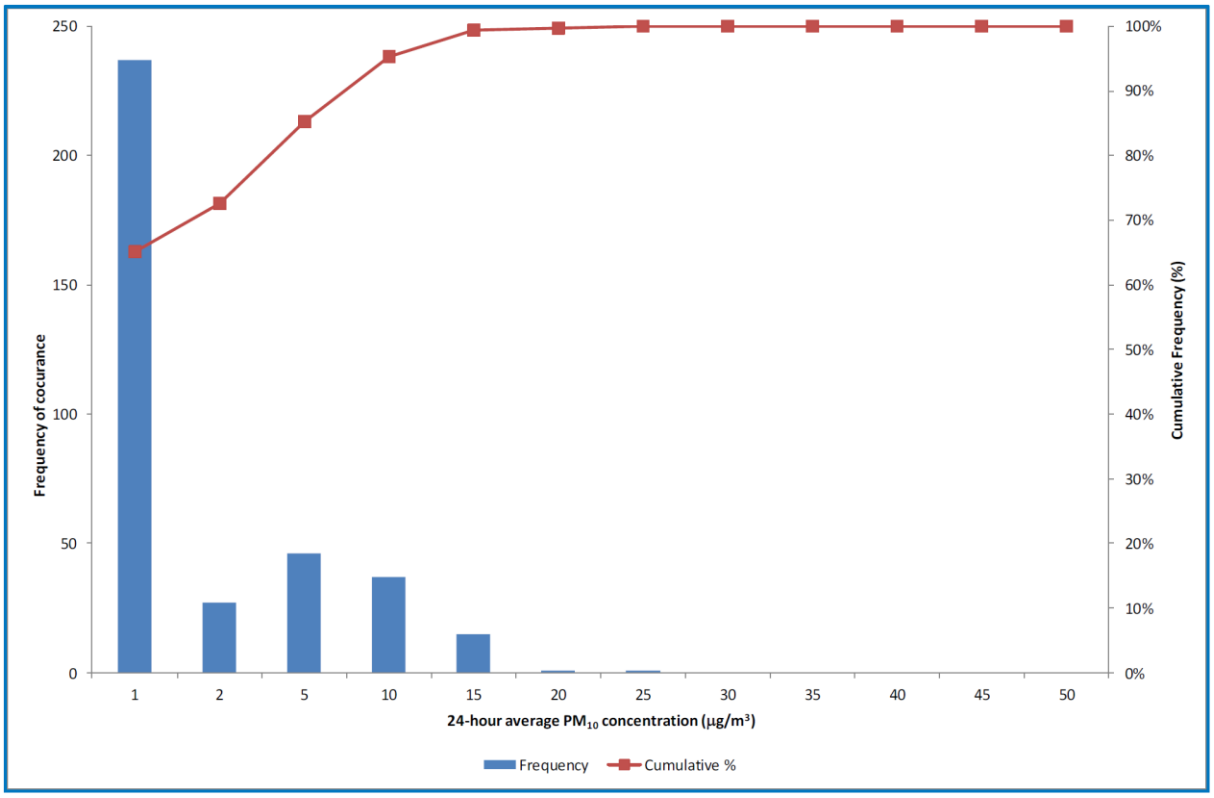

Figure 21: *Frequency Distribution of Predicted 24-Hr PM_{10} Concentrations - Receiver 226B (Year 10)*

Equine Health

While some concerns have been raised in submissions about the air quality impacts on horses, the majority of the commentary has been focused on noise and blasting impacts. As described above, the project would be able to generally comply with the ambient air quality goals set by the EPA, and there is no reason to believe that horses are more sensitive than people or that a more stringent criteria should be applied to horses.

In terms of relative change, the revised modelling indicates that under worst case conditions the project would generate an additional 1 or 2 $\mu g/m^3$ to the annual average PM_{10} concentrations, and less than 10 $\mu g/m^3$ for 95% of the time in regard to 24-hour PM_{10} concentrations. The Department has no evidence to suggest that a relative change of this magnitude would result in any adverse health impacts on horses. Consequently, if Anglo is required to ensure compliance with the EPA criteria at the studs (as recommended in the conditions of approval), the Department is satisfied that this would provide adequate protection for the horses that visit and/or reside at the studs.

Acceptability of Impacts

In its review, the PAC concluded that the air quality impacts of the project are not considered acceptable due to the combined concerns about the additional amenity and health impacts on residents living on the studs and the reputational damage that may be caused with the deterioration in air quality. The PAC also noted that the receivers on the stud properties cannot be acquired by the mine as usually would be allowed, presumably as they are part of the broader Coolmore property and cannot easily be acquired individually.

In regard to the acceptability of impacts, the Department notes that as a result of the retracted mine plan, the predicted dust emissions would reduce by around 15%. The Department is also satisfied that with best practice mitigation, the project would not result in any additional exceedances of the applicable air quality criteria. In the absence of any alternative criteria, both the Department and the EPA are satisfied that the air quality impacts of the project would be acceptable from both an amenity and health perspective.

The Department notes that the concerns of the PAC about the amenity and health of the residents at the studs was presumably based on the assessment in the EA that incorporated erroneous background monitoring data (i.e. from HV2a). This assessment predicted that the project would increase the existing number of exceedances of the short term PM_{10} criteria from 25 to 38 days a year.

Clearly, this is not an acceptable number of exceedances, and would typically trigger acquisition rights for affected receivers. However, given that the revised modelling indicates that the project would not result in any exceedances of the criteria on its own, and a maximum of 4 additional exceedances a year under worst case conditions, the Department does not believe that acquisition would be warranted in this case, even if the receivers on the studs were not part of the stud complex. Furthermore, the Department believes that with the implementation of real-time monitoring and proactive management on the site, it can ensure that the mine would not result in any additional exceedances of the 24-hour PM_{10} criteria.

Conclusion

While the Department accepts the sensitivity of the studs to the potential impacts of mining, it does not agree that the air quality impacts of the project are unacceptable. Both the Department and EPA are satisfied that the proposed management measures are consistent with best practice, and that the project can be managed to ensure it would not result in additional exceedances of the applicable EPA air quality criteria.

Given this, the Department does not believe it is reasonable to conclude that the project presents an unacceptable risk to the amenity and health of residents living at the studs, or the health of horses that visit or reside at the studs. Furthermore, the Department believes the assessment demonstrates that the project would not result in a significant deterioration in air quality at the studs, and therefore it questions the basis for the claims that this would damage the reputation of the studs. Accordingly, the Department also believes there is limited justification to require Anglo to modify its project further by removing the Redbank Pit from the mine plan.

6.3.4 Water Resources

PAC Review

The PAC did not consider the potential impacts of the project on water resources in detail, but noted a number of concerns raised by the horse studs. In particular, the PAC noted the concerns of Coolmore about the proposal to discharge excess water from the mine a short distance upstream from its water extraction points in the Hunter River. The PAC concluded that the proposed discharge location posed an unnecessary risk to the studs.

The PAC recommended that Anglo be required to:

- demonstrate that it would be able to obtain sufficient credits for discharging saline water under the Hunter River Salinity Trading Scheme; and
- provide further information about long term water impacts, including the connectivity and water quality of the final void.

Stud Submissions

The studs raised similar concerns to the PAC, including that:

- no additional assessment has been provided to address the recommendations of the PAC;
- no meaningful assessment of the groundwater and surface water impacts of the retracted mine plan have been provided, including the long term impacts of the final void; and
- the assessment does not comply with the *NSW Aquifer Interference Policy*.

Consideration

Access to low salinity clean water for irrigation and watering horses is clearly an important aspect of the stud operations. The submissions from Coolmore and Woodlands on the EA indicate that both studs extract water from the Hunter River at a number of locations, and also extract some groundwater from the Hunter River alluvial aquifer. The Department does not have detailed information on the location of the extraction points or the volumes extracted by the studs, but understands that 3 of Coolmore's 9 extraction points are situated downstream of Anglo's proposed discharge point on the Hunter River (see Figure 22).

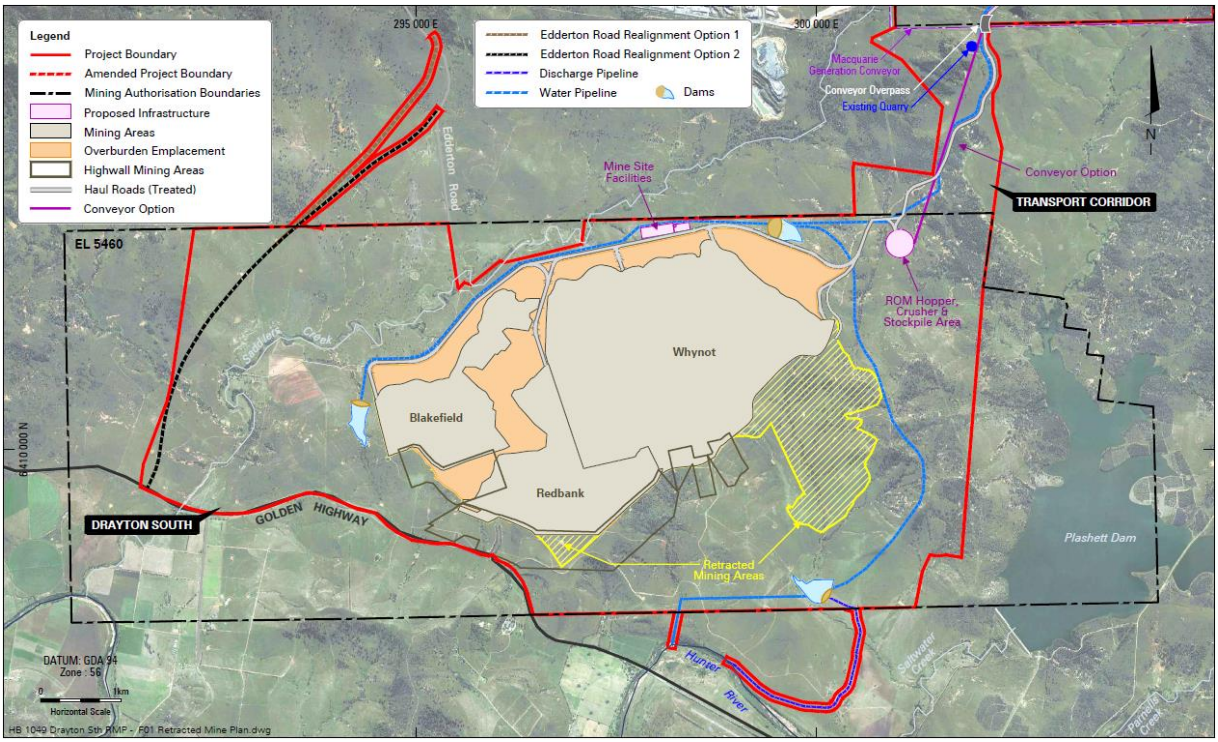

Figure 22: *Discharge and Water Pipelines*

In terms of the potential impacts of the project on the quantity and quality of the water supply for the studs, the relevant aspects to consider are:

- any impacts on flow volumes in the Hunter River as a result of reduced catchment areas and/or groundwater contributions to base flows;
- short and long term risks to water quality in the Hunter River as a result of saline surface water discharges and groundwater migration from the mine and/or incidents on the site; and
- reduced yields in groundwater bores on the studs as a result of depressurisation of aquifers.

Hunter River Flows

The retracted mine plan effectively confines all surface water impacts to the Saddlers Creek catchment to the northwest, which is an ephemeral creek that only flows after rain. Consequently, any material impacts on surface water flows in the Hunter River would only occur as a result of changes to flows in Saddlers Creek.

During operations, the project would remove up to 14% of the Saddlers Creek catchment, which would reduce flows by the same proportion. As there would be a final void retained in the mining area, the post-mining reduction in flows would be in the order of 10% in the Saddlers Creek catchment.

On a regional scale, the project is predicted to reduce total water catchments feeding into the broader Hunter River catchment upstream of Jerrys Plains by less than 0.1% during mining. This would reduce significantly as the mine is rehabilitated and returned to the catchment.

The estimates of groundwater inflows during mining in the EA would result in up to 45 ML/year loss of baseflow into Saddlers Creek and up to 4 ML/year loss to the Hunter River. However, given that these inflows would reduce by around 10% as a result of the retracted mine plan, the potential loss of baseflows, particularly to the Hunter River, would be significantly less that those predicted in the EA.

Concerns have been raised about how the final void would function under the retracted mine plan. The additional information provided by Anglo indicates that the final void would function as a localised groundwater sink in the short term, but in the longer term (i.e. after more than 100 years) would function as a flow through system, resulting in additional groundwater contributions into both Saddlers Creek and the Hunter River. However, the reduction and increase in groundwater baseflows to Saddlers Creek are predicted to be minor, with a maximum reduction of 73 ML/year (50 years post-mining) and a maximum increase of 88 ML/year once the final void reaches equilibrium. For the Hunter River, the final void would result in an overall *increase* in groundwater baseflows in order of 18 ML/year.

By way of comparison, the average annual flows in the Hunter River are in the order of 100,000 ML/year, and under 98th percentile low flow conditions, 11,000 ML/year. Consequently, even in the driest years, the Department is satisfied that the project would not result in any significant impacts on flows in the Hunter River.

Hunter River Salinity Trading Scheme

For the project described in the EA, the assessment found that the mine was generally a net producer of water requiring the discharge of 740 ML/year of saline mine water into the Hunter River under median conditions. Under the retracted mine plan the project is expected to be a net water producer in the early years, albeit at a much lower rate. Later in the life of the project, the mine is expected to be a net user of water. Given this, it is likely that significantly lower volumes of saline water would need to be discharged under the Hunter River Salinity Trading Scheme (HRSTS) than predicted in the EA.

The Department acknowledges the concerns raised by Coolmore about saline water discharges, particularly as it has 3 extraction points downstream of Anglo's proposed discharge point. However, the Department notes that the HRSTS has been operating since 2002, and is specifically designed to ensure that the total salt load in the Hunter River does not exceed the cap imposed by the EPA so that the interests of all water users are protected.

Anglo would need to obtain sufficient credits under the HRSTS, and would only be able to discharge during high flow conditions where saline water can be effectively mixed and diluted. If Anglo is unable to secure sufficient credits, it would need to retain saline water on the site, and pump any excess water into tailings dams and/or mining voids. While this situation is both undesirable and unlikely, it provides a robust safeguard against any uncontrolled discharge of saline water from the site.

The Department also notes that Coolmore's nearest extraction point is approximately 750 m downstream of Anglo's proposed discharge point, and consequently there would be a reasonable opportunity for dilution and mixing to occur, particularly as discharges are only permitted during high flow conditions when there would be greater turbulence in the river. Furthermore, the EPA has recommended that Anglo be required to conduct water quality monitoring both upstream and downstream of its discharge point. The Department supports the EPA's recommendation for this additional monitoring, and has recommended a condition to this effect.

Groundwater Salinity

Concerns have been raised about the salinity of groundwater migrating from the final void, and whether the salinity levels may be higher than predicted by Anglo. The assessment of the retracted mine plan indicates that the maximum salinity concentrations in the final void would gradually increase to a maximum 5000 mg/L (400 to 500 years post-mining) which is moderately saline. As indicated above, the volume of groundwater that may potentially migrate from the void to the Hunter River would be negligible (i.e. up to 18 ML/year). In regard to Saddlers Creek, the EA indicates that the alluvials are categorised as moderately saline (i.e. 3,000 to 7,000 mg/L). Consequently, the salinity of any groundwater flow from the final void would be similar to the salinity of the creek, and hence the final void is unlikely to result in any significant deterioration in the water quality of Saddlers Creek (or of the water quality in the Hunter River).

Groundwater Drawdown

The Department notes that the Gateway Panel advised that it was generally satisfied with the groundwater modelling of the original mine plan, and that the impacts on the groundwater resources would not be significant. The Panel also noted that Coolmore has 2 wells in the Hunter River alluvial aquifer, and that it is unlikely that the project would result in any measurable change in the water level at these sites. Given that the retracted mine plan would reduce the area of depressurisation in groundwater aquifers, the Department is satisfied that the project would not result in any significant impacts on the availability of groundwater for the studs.

Conclusion

Based on its assessment, the Department is satisfied that the retracted mine plan would not result in any significant impacts on the quantity or quality of water resources relied on by Coolmore and Woodlands studs. Given this, the Department believes there would be limited justification in removing the Redbank Pit from the proposed mine plan based on any perceived impacts on water resources.

6.3.5 Highwall Mining

The retracted mine plan involves highwall mining from each of the 3 mining pits up to a distance of approximately 500 m from the edge of the pit (see Figure 14). Highwall mining involves partial extraction of the coal seam from the final highwall, and because a significant proportion of the coal remains in-situ between the entries, this type of mining can readily be designed to ensure there is no subsidence or surface disturbance.

The Department notes that concerns expressed by the studs about the proximity of highwall mining to their properties. The retracted mine plan shows highwall mining would extend to the Golden Highway directly north of Coolmore's property boundary in the western part of the mine plan. While the Department understands the concerns of Coolmore about the encroachment of mining, the Department does not believe that this mining would result in any noticeable impacts on the Coolmore property or the Golden Highway. The Department notes that the highwall mining in the proximity of the Golden Highway would be at least 70 m below the surface.

Nonetheless, the Department has recommended that Anglo be require to ensure that the proposed highwall mining would not result in any measurable subsidence at the surface, and is designed to remain safe and stable in the long term. The Department believes the performance criteria would be readily achievable, and Anglo would be required to provide technical details to DRE to demonstrate this is the case.

6.3.6 Economic Impacts

PAC Review

The PAC noted the substantial social and economic benefits of both mining and the equine industry, and the importance of maintaining both industries in the Hunter Valley. It also acknowledged the competing concerns about the economic implications of proceeding or not proceeding with the project. However, while the PAC acknowledged the economic benefits of the project, it found that these benefits do not outweigh the potential risks to the equine industry as a whole. In particular, the PAC concluded that this one mining project has the potential to severely impact the studs, and represents a serious risk to the equine CIC.

Stud Submissions

Representatives of the equine industry have provided a number of submissions about the economic benefits of the studs, and have questioned the assumptions used by Anglo in its assessment of the benefits of the project. In short, the studs claim that the benefits of the equine industry have been devalued and the benefits of mining exaggerated.

The submissions from the studs on the retracted mine plan incoporate a separate economic assessment. The assessment found that the economic assessment of the retracted mine plan remains fundamentally deficient and misleading for the following reasons:

- the economic analysis does not comply with NSW Government guidelines;
- the coal price assumptions remain unspecified, unjustified and unrealistically high;
- the economic analysis continues to overestimate the benefits and underestimate the costs; and
- the economic analysis ignores the impact of the project on Coolmore and Woodlands and their critical contribution to the regional and NSW economies.

If the project proceeds, the economic assessment found that this decision could:

- put 640 sustainable jobs at risk in the Hunter Valley;
- strip over $120 million a year in production from the regional economy;
- result in a net economic loss to the NSW economy of between $153 million and $457 million.

Consideration

Relocation of the Studs

The Department considers that the assessment of this project has been characterised as a choice between the interests of the equine industry and the interests of the mining industry. This has stemmed from concerns expressed by the equine industry about the impacts of the project being so significant that the studs would be have no choice but to leave the Hunter Valley. Various economic assessments have been submitted by both sides of the debate highlighting the relative economic importance of either the equine or mining industry, and relying on these findings as the basis for making a decision about whether or not the project ought to be approved.

However, in the Department's view, the primary role of the approval authority is not to choose between the mine and the studs, but to determine whether the potential impacts of the proposed development on surrounding land uses are acceptable having regard to relevant standards, policies and guidelines. If the approval authority is satisfied that the impacts on the studs are acceptable, and if the stud owners and operators then choose to relocate, this is entirely a matter for them. The risk of this occurring should not be the primary focus in the assessment of the proposal, and should not be the basis for ignoring the broader economic implications of any recommendation to refuse or constrain the project.

Consequently, while the Department acknowledges the professional differences of opinion about the relative economic benefits of the mine and the studs (and the consequences of losing either industry), the Department believes that this is not a debate that needs to be resolved in the assessment of this proposal.

Furthermore, the Department questions the claims that the studs would be forced to leave the Hunter Valley if the mine proceeds. There are considerable economic and practical barriers to relocation, and significant benefits of the current location within an existing CIC, including:

- the proximity of and reliance on other horse breeding operations near Scone;

- the significant capital investment that Coolmore and Darley have made in developing the studs; and
- the various support industries and services that can be easily accessed in the Upper Hunter.

Clearly, these are all reasons for ensuring the current locations are afforded an appropriate level of protection, but are also strong disincentives for the studs to abandon the current location if the retracted mine plan proceeds.

Operation of the Studs

As outlined above, the Department believes that physical impacts on the studs would be relatively minor as they would comply with relevant criteria for noise, blasting and air quality. The Department is therefore satisfied that the project would not diminish the physical agricultural capability and suitability of the land for horse breeding. The key question about the impacts of the project on the economic viability of the studs arguably then relates to indirect impacts on the reputation and branding of the studs.

In response to the PAC review, Dr Kannegieter prepared a report regarding equine health and industry considerations on behalf of Anglo. In this report, Dr Kannegieter makes a number of relevant points about the potential for impacts of the project on the reputation and branding of Coolmore and Woodlands (Darley). In particular, Dr Kannegieter argues that:

"The attraction of Coolmore and Darley to horse breeders in the stallions they stand. Success in racing and breeding is determined mostly by genetics. Owners wish to breed the best with the best and will do so irrespective of where the horse stands. The best stallions, which can demand the highest service fees, are determined purely by the success of their progeny on the racetrack. Owners do not choose a stallion based on the visual impact the stud presents. They will send a mare to a stallion anywhere in Australia if they consider him the most suitable mating for that mare…

However, while the brand of these studs is important in the equine industry it primarily relates to the racing and breeding credentials of the stallions and brood mares it uses and the progeny that can be produced rather than the landscape within which they operate." - *Equine Health and Industry Considerations* prepared by Dr Kannegieter, February 2014 (page 6).

The decision of owners to breed horses at Coolmore and Woodlands may therefore not be deterred by the presence of the mine provided it complies with applicable criteria and can demonstrate that it would not result in an adverse impact on the health of the mare or any progeny born or raised at the stud.

In the Department's view, as discussed above, the scientific evidence strongly supports the position the mine would not result in any adverse impacts on equine health, including mares, foals and reproductive rates.

Conclusion

The Department recognises the significant economic benefits of Coolmore and Woodlands, and their pivotal role within the Upper Hunter Equine CIC. However, the Department believes that claims about the potential risks to the operations of the studs have been exaggerated.

The Department considers that there are a range of significant incentives for the studs to remain in their current location, and is not convinced that the impacts of the retracted mine plan would result in any significant impacts on the operations of the studs. In this regard, the Department is satisfied that the project would be able to comply with applicable environmental performance standards, and would not result in any adverse impacts on equine health.

Given that the success of a stud is based primarily on a combination of having the best stallions and maintaining equine health, the Department is satisfied that the project would not result in any material impacts on these aspects of the operations of the studs. Consequently, the Department believes that the changes proposed by Anglo in its retracted mine plan would be sufficient to enable the mine and the studs to successfully co-exist.

6.4 Other Environmental Impacts

The Department has considered the potential impacts of the project on the environment and the amenity of the local community more broadly (see below). However, it is important to put this assessment into context.

Operations at the existing Drayton mine are currently winding down in line with the current approval which expires in 2017. As part of the project application, Anglo is seeking approval for some minor areas of additional mining adjacent to the existing pits at the Drayton mine. However, the application is primarily seeking approval for the continued use of existing coal processing and transport infrastructure to support mining at Drayton South, and mining at the Drayton mine is still expected to cease in 2017.

Based on its assessment, the Department is generally satisfied that the nature and extent of the impacts associated with continued operations at the Drayton mine would be essentially be the same as the current situation for the next 3 years, and would reduce significantly once mining ceases in 2017. Consequently, the focus of the Department's assessment has been on the potential impacts of the new mining area at Drayton South.

6.4.1 Biodiversity

Assessment	*Recommended Conditions*
• The site is comprises predominantly (i.e. around 80%) low diversity grassland with patches of remnant native woodland (see Figure 23). • The retracted mine plan has reduced the proposed area that would be directly disturbed by the project by about 320 ha. Importantly, this includes 161 ha of Upper Hunter White Box-Ironbark Grassy Woodland EEC that would have otherwise been disturbed. • In total, the retracted mine plan would result in clearing of 1,618 ha of vegetation, including: - 324 ha of remnant native woodland; - 7 ha of derived native grassland (DNG); and - 1,288 ha of low diversity native grasslands. • There is 295 ha of EEC on the site that would be cleared – mainly Central Hunter Box Ironbark Woodland (177 ha) and Narrabeen Footslopes Slaty Box Woodland (98 ha), although the Slaty Box Woodland is listed as a Vulnerable Ecological Community (not an EEC). • The project would also result in direct impacts on 3 threatened flora species listed under the *Threatened Species Conservation Act 1995* (TSC Act): - *Acacia pendula* (Weeping Myall) – 1 patch; - *Cymbidium canaliculatum* (Tiger Orchid) – 1 individual; and - *Diuris tricolor* (Pine Donkey Orchid) - ~30 individuals. • Without appropriate mitigation and offsetting, the assessment presented in the EA concluded that the project would result in significant impacts on up to 10 species of woodland birds, hollow dependent bats and migratory species listed under the TSC Act and/or EPBC Act. However, under the retracted mine plan, the total area of woodland proposed to be cleared would be reduced by around 15%. This would reduce the impacts on threatened fauna species reliant on woodland habitat such as woodland birds and hollow dependent bats. • To further minimise impacts on biodiversity, Anglo is proposing a range of standard mitigation and management strategies, including progressive clearing, preclearance protocols, progressive clearing salvage of habitat resources, and weed and feral animal control. • Anglo is also proposing a range of direct and supplementary measures for the 3 threatened flora species as follows: - Weeping Myall ▪ Supplementary - propagation trials and translocation from the patch located outside the disturbance area. ▪ Direct – conservation of two stands of Weeping Myall located within the Saddlers Creek Restoration Area. - Tiger Orchid ▪ Supplementary - translocation of the individual recorded plant to be impacted to a suitable location in	• Prepare and implement a comprehensive Biodiversity Management Plan in consultation with OEH including measures for: - managing remnant vegetation and fauna habitat; - pre-clearing protocols; - maximising salvage of resources including transplant/ propagation protocols; - managing feral animals and weeds; and - monitoring and reporting on the effectiveness of these measures. • Implement the proposed direct and supplementary mitigation measures for the 3 threatened flora species, including propagation trials and transplantation, in consultation with OEH.

the on-site offset areas. - Pine Donkey Orchid ▪ Direct - Increased protection and management of known sub-population of Pine Donkey orchids located within the existing Drayton Wildlife Refuge, including increased security of these areas through long term conservation under the NPW Act. • Both the Department and OEH support the proposed supplementary and direct offsets for threatened flora species, and are satisfied that the proposed avoidance and mitigation measures are consistent with best practice. The Department also believes that there is limited opportunity to reduce the biodiversity impacts of the project further without significant implications for resource recovery.	
Biodiversity Offset Strategy	
• Anglo is proposing to implement a comprehensive biodiversity offsets strategy comprising both on-site and off-site offsets. These offsets comprise (see Figures 8 and 9): - *On-site Offsets* – 171 ha immediately south of the mine and along the Saddlers Creek riparian corridor; and - *Off-site Offsets* – 1,643 ha located approximately 75 km north in the Upper Hunter. • In all, the proposed offsets would deliver 1,814 ha of native vegetation comprising 982 ha of woodland and 828 ha of DNG. Importantly, 1,398 ha of the offsets are EECs, particularly Box Gum Woodland communities. • In addition to the biodiversity offsets, Anglo is proposing to establish a further 1,319 ha of woodland communities as part of the rehabilitation of the mine, including 719 ha of Central Hunter Box-Ironbark Woodland (compared to the clearing of 177 ha) and 600 ha of Narrabeen Footslopes Slaty Box Woodland (compared to the clearing of 98 ha). • Overall, the combined offset areas and proposed rehabilitation areas will ultimately provide for at least 3,133 ha of woodland habitat, following restoration of DNG in the offset areas and rehabilitation of mining areas. • These offsets are complemented by existing offset and conservation requirements for the existing Drayton mine comprising some 217 ha of land (see Figure 7). It is proposed to increase the security of these areas through a Conservation Agreement under the NPW Act (pending final OEH approval). • In regard to evaluating the quantum of the offsets against contemporary standards, both OEH and DOE have advised that the final offsets package complies with relevant State and Commonwealth offset requirements. • From a regional biodiversity perspective, the Department notes that if the low diversity grasslands and the rehabilitation of the site are removed from the calculations, the overall offset strategy would deliver a ratio of 5:1 for woodland and DNG, and a ratio of nearly 70:1 for Box Gum Woodland communities. • However, while the Department acknowledges the positive regional outcomes that the offset strategy would deliver for the Box Gum Woodland EEC, it remains concerned that the only direct offset proposed for the direct loss of 177 ha of Ironbark Woodland EEC is the 54 ha to the south of the mine. • Anglo is relying on the rehabilitation of the mine to make up for any shortfall in offsets for the Ironbark EEC. While the Department accepts that mining companies should be encouraged to rehabilitate mine sites to woodland communities in most circumstances, the Department believes that substantial uncertainty remains about whether functioning EECs can be established on rehabilitated mining areas.	• Implement the proposed Biodiversity Offset Strategy, including the existing offset obligations for the Drayton mine and an additional 60 ha of remnant Ironbark EEC. • In the biodiversity offsets and rehabilitation areas, prioritise the re-establishment of key EECs, including - Ironbark Woodland and Slaty Gum Woodland. • By the end of June 2015, make suitable arrangements for the long term protection of the offset areas. • Lodge a conservation bond with the Department for the full cost of implementing the biodiversity offset strategy.

- Consequently, the Department believes that Anglo should be required to identify and secure additional areas of Ironbark EEC to achieve a minimum 1:1 offset ratio and incorporate these areas into the offset strategy. Preferably these offsets should be adjacent to the site and build on existing habitat corridors, including those associated with the neighbouring Mt Arthur mine.
- The Department also believes that the proposed revegetation of the Saddlers Creek riparian corridor is too narrow and potentially subject to significant edge effects.
- To address these shortcomings, the Department has recommended an additional 345 ha of land be added to the overall offset strategy (see Figure 24). This would provide 60 ha of additional remnant Ironbark Woodland EEC and 285 ha of native grassland that would be managed to regenerate Ironbark EEC and other communities that occur in the area. In total, this has the potential to result in more than 200 ha of Ironbark EEC in the long term to offset the 177 ha that would be cleared as a result of the project. It would also provide a significant habitat corridor along Saddlers Creek that would join Mt Arthur's Saddlers Creek offset area.
- Overall, the Department is satisfied that, with the adoption of the proposed avoidance and mitigation strategies and the offsetting of residual impacts, the project's impacts on biodiversity values can be maintained or improved over the medium to long term.

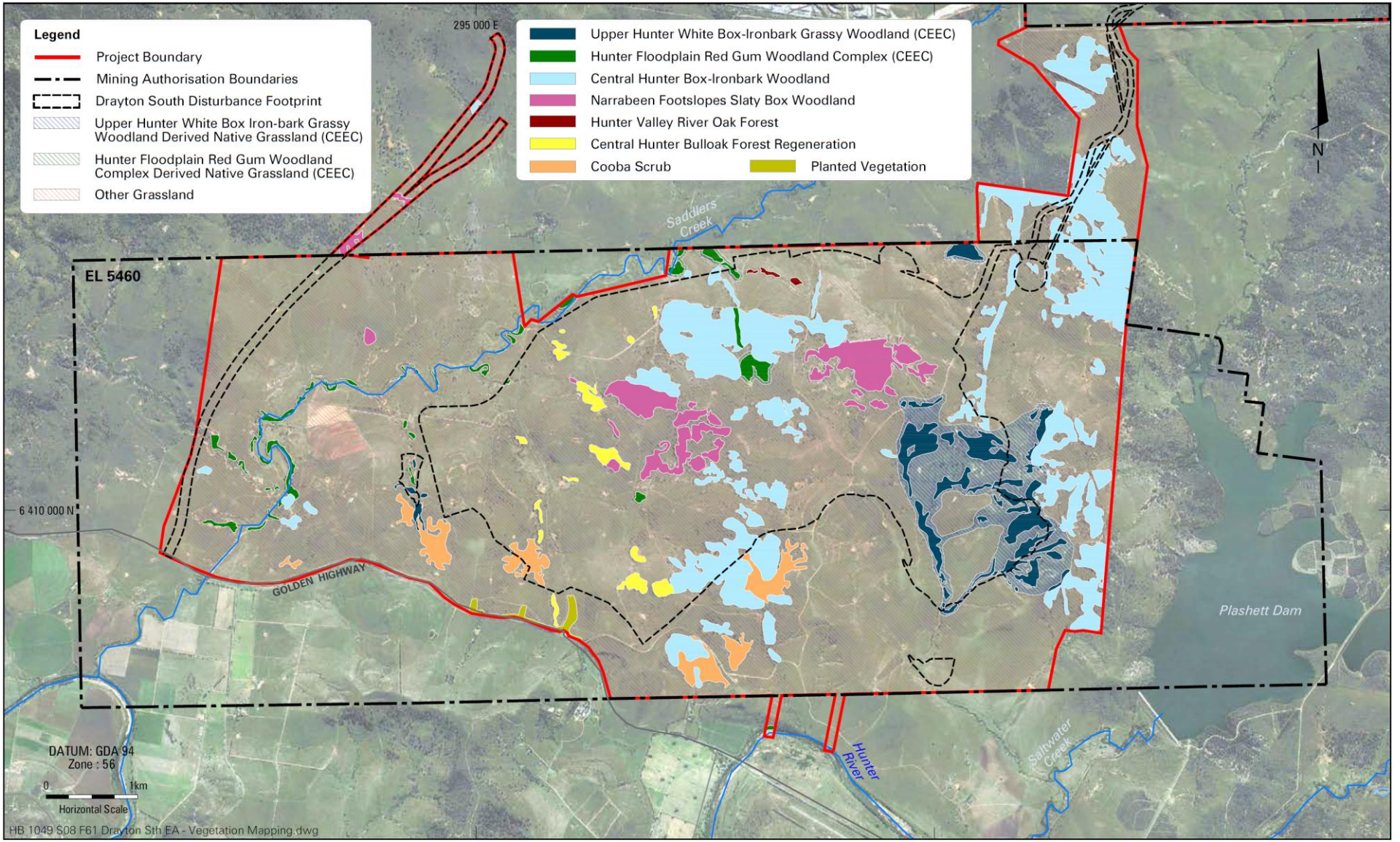

Figure 23: *Drayton South - Vegetation Communities*

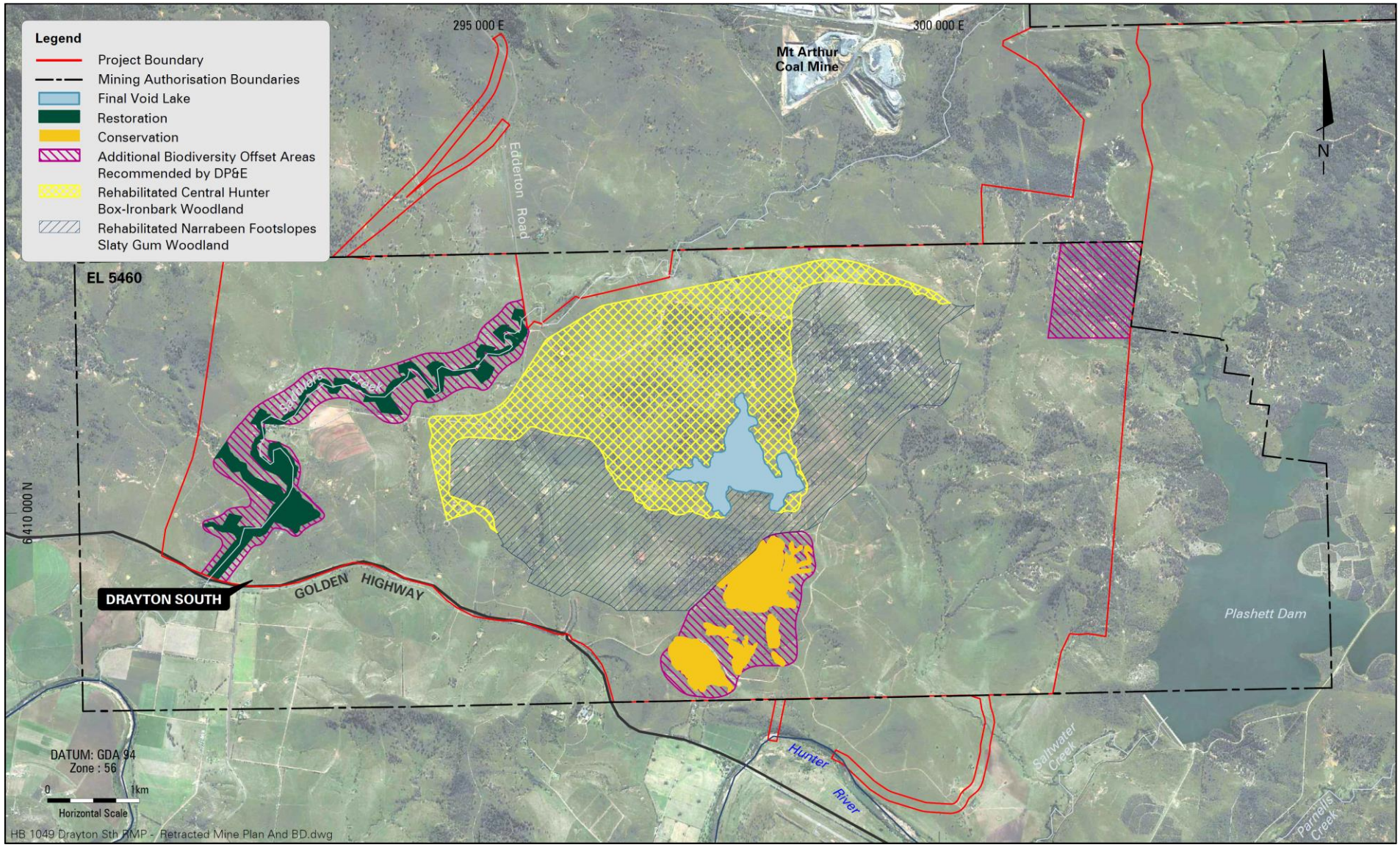

Figure 24: *Additional Biodiversity Offsets*

6.4.2 Noise & Blasting

Assessment	*Recommended Conditions*
• The EPA has advised that it is satisfied that the noise impact assessment is consistent with the *NSW Industrial Noise Policy*, and provides a robust basis for the assessment of noise impacts generated by the project. • The noise assessment indicates that the project would comply with the applicable intrusive and amenity criteria at all privately-owned receivers in the Drayton South area. • Following the cessation of active mining at the Drayton mine in 2017 and noise mitigation works proposed for the CHPP, the noise in the Antiene Estate would reduce by about 3 dB(A). • However, residents in the Antiene area would still be affected by the cumulative mine and rail noise on the Antiene rail spur. • While the Mt Arthur mine would be major contributor to this noise, the Department notes that one receptor (Receiver 411) is predicted to experience noise levels greater than 5 dB(A) above the applicable Project Specific Noise Levels as a result of mining and rail noise from the Drayton mine. • This residence is already in Mt Arthur's acquisition zone, but given the impacts of the Drayton mine, the Department believes that the owner of this residence should also be entitled to acquisition by Anglo, in accordance with the Department's acquisition procedures. • The Department also notes that there are 17 properties in the Antiene Estate entitled to additional noise mitigation under the existing Drayton approval. The Department believes these residents should be entitled to maintain their existing noise mitigation rights while extraction continues at the Drayton mine. • There would be no change to the existing traffic noise impacts of the mine, apart from some temporary increase in traffic noise during construction. The assessment indicates that the additional construction would not increase traffic noise by more than 0.1 dB(A), which is less than the allowable increase for existing developments under the EPA's *Road Noise Policy*. • Apart from the realignment of Edderton Road, all construction noise would be regulated as operational noise, and would need to comply with operational noise limits. For Edderton Road, the assessment indicates that the construction activities would be confined to day time only, and would comply with the applicable criteria of 40 dB(A) under the EPA's *Interim Construction Noise Guideline*.	• Acquire receiver 411 at the request of the landowner. • Comply with INP operational noise criteria. • Implement all reasonable and feasible measures to minimise noise. • Prepare and implement a detailed Noise Management Plan. • Operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and real-time monitoring data. • Implement proactive and reactive noise mitigation to ensure compliance with noise criteria. • Implement noise mitigation measures (upon request) for the 17 receivers identified in the existing Drayton Mine approval. • Undertake independent reviews (as required) of noise impacts and implement reasonable mitigation measures and/or acquire any private landholdings identified as exceeding the noise criteria.
Blasting and Vibration	
• Based on a 2,000 kg maximum instantaneous charge (MIC) the ANZEC blasting and vibration criteria for amenity and structural damage would be met at all privately-owned receivers, with the exception of residences and structures on Arrowfield Estate. • To avoid impacts at Arrowfield Estate, Anglo is proposing to reduce the MIC progressively to approximately 500 kg as mining approaches the southern areas of the Redbank Pit to comply with the relevant criteria. • The existing Drayton mine approval allows for up to 2 blasts per day and a maximum of 8 blasts per week. Under the retracted mine plan, Anglo is proposing to undertake up to 2 blasts per day and an average of 5 blasts per week. • The assessment indicates that with appropriate blast management, Anglo would be able to comply with	• Comply with ANZEC blasting amenity criteria at all privately-owned receivers. • Carry out a maximum of 2 blasts a day, and 5 blasts a week between 9am and 5pm Monday to Saturday. • Restrict blasting within 500 m of a public road unless Department and/or infrastructure owner agrees • Coordinate the timing of blasting to minimise

applicable structural criteria at the 7 heritage buildings in the vicinity of the project. However, Anglo is proposing to undertake pre-blasting and ongoing risk-based dilapidation surveys at the heritage buildings, subject to landowner approval.	disturbance of the operations at Coolmore and Woodlands studs. • Ensure no damage to heritage buildings. • Conduct property inspections (upon request) at residences within 3 km of mining. • Prepare and implement a detailed Blast Management Plan, including a monitoring program to evaluate and report on compliance with the blasting criteria and operating conditions.

6.4.3 Air Quality

Assessment	***Recommended Conditions***
• Both the EPA and SKM (the Department's expert peer reviewer) have advised that their concerns about the modelling inputs have been satisfactorily addressed through the provision of additional information and revised modelling for the retracted mine plan, and is consistent with the *Approved Methods for the Modelling and Assessment of Air Pollutants*. • The assessment indicates that the retracted mine plan would not result in exceedances of the cumulative annual average PM_{10} assessment criteria of 30 µg/m^3, which is the critical parameter for protecting ambient air quality in the region. • Exceedances of the 24-hour PM_{10} assessment criteria of 50 µg/m^3 for between 2 and 4 days a year under worst case operational and weather conditions at the Arrowfield Estate and at a number of receivers at Coolmore. • The Department considers that these exceedances are relatively low, and within the margin of error of the probabilistic modelling that was used to predict these impacts. The Department is confident that with proactive dust management on the site, these impacts could be avoided. • Two mine-owned residences are predicted to exceed applicable dust criteria. However, this is primarily due to the emissions from the nearby Mt Arthur mine. • The EA identified a low risk of spontaneous combustion due to low sulphur content in coal and overburden/interburden at Drayton South. Anglo has committed to revising its existing Spontaneous Combustion Management Plan to include the Drayton South mining area; • Anglo has also committed to implement a blast management plan for the Drayton mine complex, which would aim to mitigate the generation of blast fumes and manage any impacts should they arise.	• Comply with contemporary air quality criteria. • Implement all reasonable and feasible measures to minimise dust emissions and the area of disturbance on the site. • Prepare and implement a detailed Air Quality Management Plan. • Operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data. • Implement proactive and reactive dust mitigation to ensure compliance with air quality criteria. • Undertake independent reviews (as required) of air quality impacts and implement reasonable mitigation measures.
Greenhouse Gases	
• This assessment identified that direct or indirect (i.e. scope 1 and 2) greenhouse gas emissions (GHG) emissions from the project would contribute some 391 kt C02-e per year, or less than 0.0007%, of Australia's annual average emissions under the Kyoto Protocol. Further, this assessment indicates that including total	• Implement all reasonable and feasible measures to minimise GHG emissions from the site

indirect (i.e. scope 3) GHG emissions (which represent 96% of project emissions or 9,310 kt C02-e) the project would comprise a very small contribution to annual global anthropogenic emissions. • The Department believes there is limited scope for reducing scope 1 and 2 emissions as this primarily comes from fugitive emissions from the mine itself. However, the Department notes that it is in Anglo's financial interests to minimise its GHG emissions from diesel and fugitive emissions. The Department also notes that the project would not significantly alter the annual GHG emissions relative to the existing Drayton Mine.	• Prepare and implement a detailed Air Quality Management Plan that describes the measures to minimise GHG emissions.

6.4.4 Water Resources

Assessment	***Recommended Conditions***
• The potential impacts of the Drayton South mining area are considered in detail in Section 6.3.4 above. • The Department has also considered the impacts associated with the proposed minor extensions to the open cut pits at the Drayton mine, the continuing water demand for processing coal, and the management of rejects and tailings generated by mining at Drayton South. *Water Impacts* • The Department notes that the minor extensions at the Drayton mine would cover less than 40 ha, which represents a 3% increase in the approved disturbance footprint. • Given the limited changes to the mining footprint and the requirement to progressively rehabilitate the site, the Department is satisfied that proposed extensions would not materially increase the surface water or groundwater captured by the existing operations at the Drayton mine. *Water Supply* • The site water balance indicates that under typical climatic conditions, the project would be able to meets its operational water requirements through a combination of surface and groundwater captured on the site. • However, under dry conditions the mine may require up to 198 ML a year in make-up water from the Hunter River. Anglo has also committed to would reducing its reliance on the Hunter River through water sharing with nearby mines and various water saving measures on the site. • NOW has confirmed that there are sufficient tradable water licences available for Anglo to purchase under the applicable Water Sharing Plans to account for the predicted surface and groundwater take associated with the project. *Rejects & Tailings* • Mining at Drayton South would substantially increase the total volume of tailings and rejects generated at the CHPP. • Currently, the North Pit is used to dispose of rejects, and the East Pit is used for disposal of tailings. Tailings are also co-disposed of in the overburden emplacements. The South Pit would remain as the only final void at the Drayton mine (see Figure 7).	• Ensure that sufficient water licences are held to account for the maximum take from relevant water sources for all stages of the project, and if necessary adjust the scale of the operations to match available water supply. • Provide compensatory water supply to any private landowner where the water supply has been directly impacted by the project. • Only discharge water from the site in accordance with an EPA Environment Protection Licence and/or the Hunter River Salinity Trading Scheme requirements. • Comply with a range of best practice water management performance measures. • Prepare and implement a comprehensive Water Management Plan that includes appropriate controls and measures to monitor, mitigate and manage any water quality impacts and ensure compliance with the water management performance measures. • Prepare a Tailings Management Strategy, including contingency measures for managing any leachate migration from open cut pits. • Avoid emplacing tailings in the North Pit unless and until the Tailings Management

• Under the project, Anglo is proposing to manage rejects and tailings in much the same manner as is currently the case. However, there is an agreement in place with Macquarie Generation to use the East Pit for emplacement of ash from the power stations. It is not certain whether Macquarie Generation would require the additional capacity, but as a contingency, Anglo is proposing to emplace tailings in the North Pit (in addition to rejects) if necessary. • If this occurs, there is some potential for leachate to migrate to the north of North Pit, and the Department is not satisfied that there is sufficient information about how this would be managed. • Consequently, while the Department is satisfied that there is sufficient capacity for the rejects and tailings generated by the project, it believes that Anglo should be required to prepare a detailed Tailings Management Strategy as part of the Rehabilitation Management Plan for the mine, including detailed leachate management measures. The Department also believes that Anglo should not be permitted to emplace tailings in the North Pit unless and until the Department and NOW are satisfied that this risk can be appropriately managed.	Strategy for the site is approved.

6.4.5 Aboriginal Heritage

Assessment	***Recommended Conditions***
• The project would directly impact 173 Aboriginal heritage sites including 2 sites of high scientific significance – a large artefact scatter site with potential archaeological deposits (PAD) (DS-C8) and one quarry site (DS-QR1-1) (see Figure 25), although the retracted mine plan would avoid 10 sites that would have otherwise been impacted under the EA mine plan. • An extensive consultation program was undertaken with 25 Registered Aboriginal Parties (RAPs) during the assessment in accordance with OEH's guidelines. • A range of views were expressed by RAPs, including that the area should not be disturbed due to the cultural significance of area. In this regard, Mt Arthur and Saddlers Creek were identified as features of particular cultural heritage significance, although these features would not be disturbed as a result of the project. • In accordance with standard management practice for Aboriginal heritage, Anglo is proposing to undertake an extensive salvage program with the participation of the RAPs. This would include surface collection of impacted sites, in-situ protection of sites to be conserved, and limited test and salvage excavation at the 2 sites of high significance. Additional targeted excavation at other PAD sites would be undertaken in consultation with the RAPs to assist in informing research and knowledge on Aboriginal occupation in the region and locality. • The Department acknowledges that the project would disturb a large number of sites, including at least 2 sites of high significance. However, the Department is satisfied that there is limited opportunity to avoid these sites without significant implications for resource recovery. The Department also notes that a key site in the area – the stone quarry (DS-QR1-1) adjacent to the proposed realignment of Edderton Road - would not be disturbed as a result of the project. Overall, both the Department and OEH are satisfied with the measures proposed by Anglo to salvage, protect, and build on the existing cultural knowledge of the Aboriginal heritage sites identified on the site.	• Undertake test and salvage excavation at the sites of high significance and additional representative PAD sites, following consultation with the RAPs. • Prepare and implement an Aboriginal Heritage Management Plan in consultation with relevant Aboriginal stakeholders and OEH including: - details about how sites within the disturbance area would be managed and salvaged prior to being disturbed; - details of the measures that would be implemented to protect, monitor, and manage Aboriginal sites outside of the disturbance area; - details of how Aboriginal heritage values in the biodiversity offset areas would be managed; and - a strategy for the long term storage of heritage items salvaged from the site.

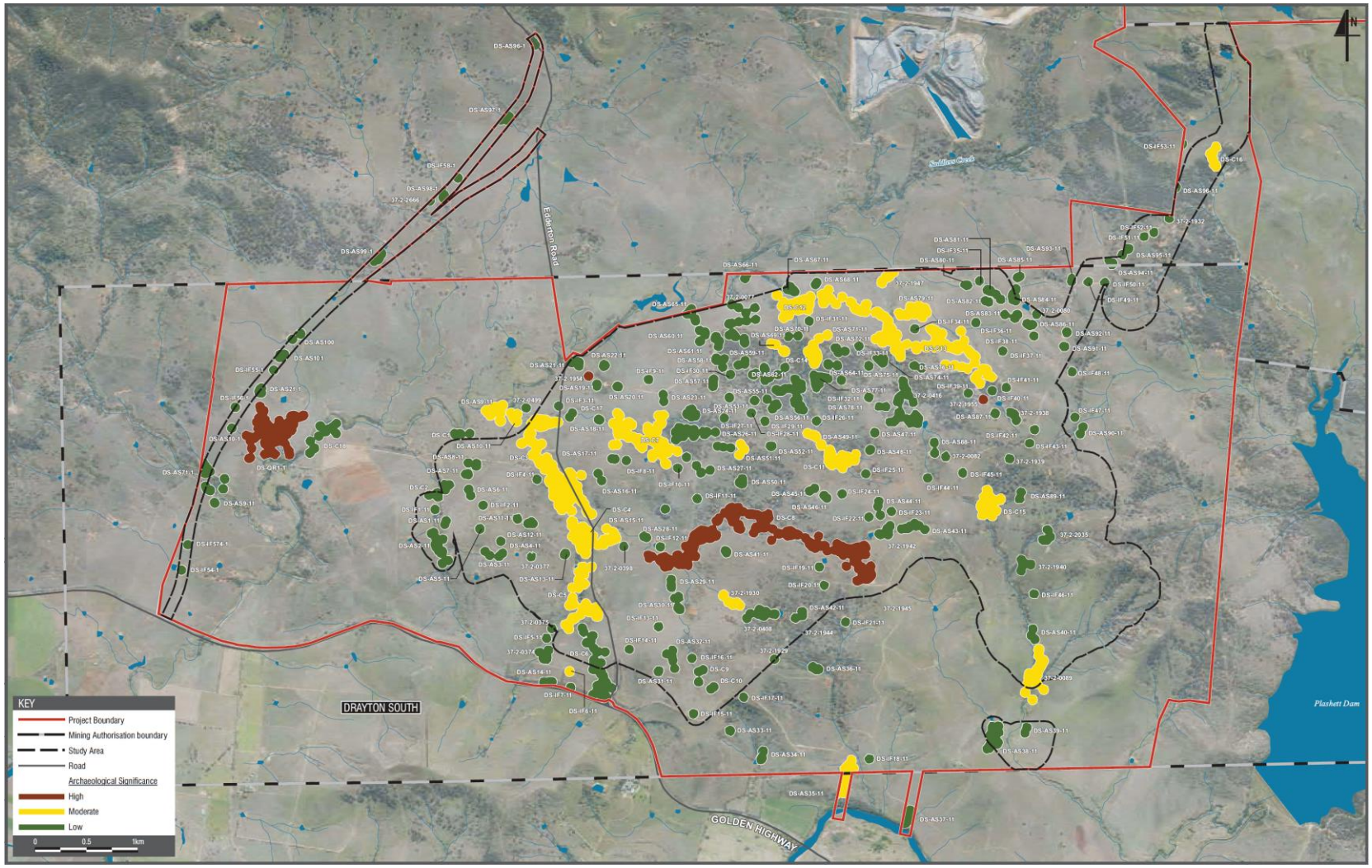

Figure 25: *Significance Assessment of Aboriginal Sites*

6.4.6 Historic Heritage

Assessment	***Recommended Conditions***
Historic Heritage	
• Ten historic heritage items were identified and assessed for the Historic Heritage Impact Assessment including 7 historic cottages/ homesteads (see Figure 26). • These include 2 homesteads located on Anglo land, one on land owned by the adjoining Mt Arthur Mine and 4 on privately-owned land – including the *nationally* significant "Strowan" homestead and the *state* significant "Woodlands" homestead. • The project would directly impact 2 *locally* significant heritage items – a post and rail fence and the Nissan Hut and associated stockyards. For these sites, Anglo is proposing the standard measures recommended by the NSW Heritage Council to ensure the heritage values of these items are appropriately recorded and archived prior to removal, including photography and scaled drawings. • For the other sites, the assessment indicates that the project would not result in any direct impacts, including overpressure and vibration associated with blasting. • Due to the separation of these items from the active areas of mining, the Department accepts that blasting impacts on these structures are unlikely. However, both the heritage and blast assessments recommended that structural stability/dilapidation surveys be undertaken at all 7 heritage homesteads/ cottages, to monitor and manage potential blast impacts. • The Department is satisfied that the project would not result on any significant impacts on historic heritage items, apart from the 2 locally significant heritage items within the mining footprint. The Department is also satisfied that any minor impacts would be identified and rectified as required through the structural and dilapidation surveys.	• Ensure no damage to heritage buildings (apart from the Nissan Hut). • Prepare and implement a Historic Heritage Management Plan in consultation with the Heritage Branch of OEH, local historical organisations and relevant landowners, including the measures that would be implemented for the archival recording of potentially affected historic heritage items. • Prior to construction, undertake structural stability and dilapidation surveys of the 7 historic homestead cottages/homesteads.
Landscape Conservation Area	
• The *Muswellbrook-Jerrys Plains Landscape Conservation Area* was listed on the National Trust Register in 1984. The National Trust has written to the Department expressing concerns about the potential impacts of the project on this area (see Appendix Q). • The conservation area focuses on protecting the scenic values of the flat alluvial flood plain associated with the Hunter and Goulburn Rivers, and incorporates the edge of the Wollemi National Park to the south and the slopes on the northern side of Jerrys Plains (see Figure 27). • The listing on the register recommends that: *"The high scenic and cultural values of the listed areas should be protected through appropriate Environment Protection zonings under a Local Environmental Plan. Open cut mining of the alluvial river flats should not be permitted. Should it be necessary for open cut mining of the non-alluvial lands, the aesthetic and social values of the classified area should be recognised in the mining operation and rehabilitation programme."*	• Progressively rehabilitate the site. • Establish and maintain a vegetation buffer north of the Golden Highway prior to commencing mining in the Redbank Pit. • Implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project, including compliance with relevant Australian Standards for controlling the obtrusive effects of outdoor lighting.

- The PAC also raised concerns in its report about the potential impacts of the project on the significant cultural and heritage values of the landscape of which the studs are an important component. The PAC also considered that the cultural landscape values of the area may satisfy the criteria for heritage significance at a state and perhaps even at a national level.
- The Department agrees that the listed area has cultural heritage value, but questions the extent to which the project would diminish these values, particularly once the site is fully rehabilitated.
- The Department notes that the majority of the project is located outside the listed area, and would not be visible from the majority of locations within the listed area (see Figure 28). The listing specifically refers to the Jerrys Plains ridge. The retracted mine plan would ensure that all mining remains behind this ridgeline, and in the context of the whole of the listed area, there would be very few areas that would have direct views of the mine.
- Nonetheless, the Department acknowledges that mining would be visible from higher parts of the listed area, and from sections of the Golden Highway and Edderton Road. However, Anglo would be required to progressively rehabilitate the site, and establish significant vegetation buffers along the Golden Highway prior to mining in the Redback Pit to shield direct views of the mine as far as practicable.
- The Department notes that there is no formal protection for the areas covered by the National Trust conservation area. The listing focuses on the protection of the alluvial flats, and contemplates mining in non-alluvial areas provided appropriate measures are put in place to protect the scenic values of the area in the long term.
- It is also important to note that that the listing covers a very large area, and there are a variety of land uses that currently co-exist within the conservation area and surrounds, particularly to the immediate west of Muswellbrook where mining, viticulture, and horse breeding activities occur in close proximity to the conservation area.
- Overall, the Department considers that this issue is linked to ensuring an appropriate level of protection for the scenic and landscape values associated with the studs. As discussed in detail above, the Department is satisfied that the nature and extent of impacts on these values are acceptable. Accordingly, the Department does not believe that the project is incompatible with maintaining the landscape values for which the conservation area was listed, either in the short or longer term.

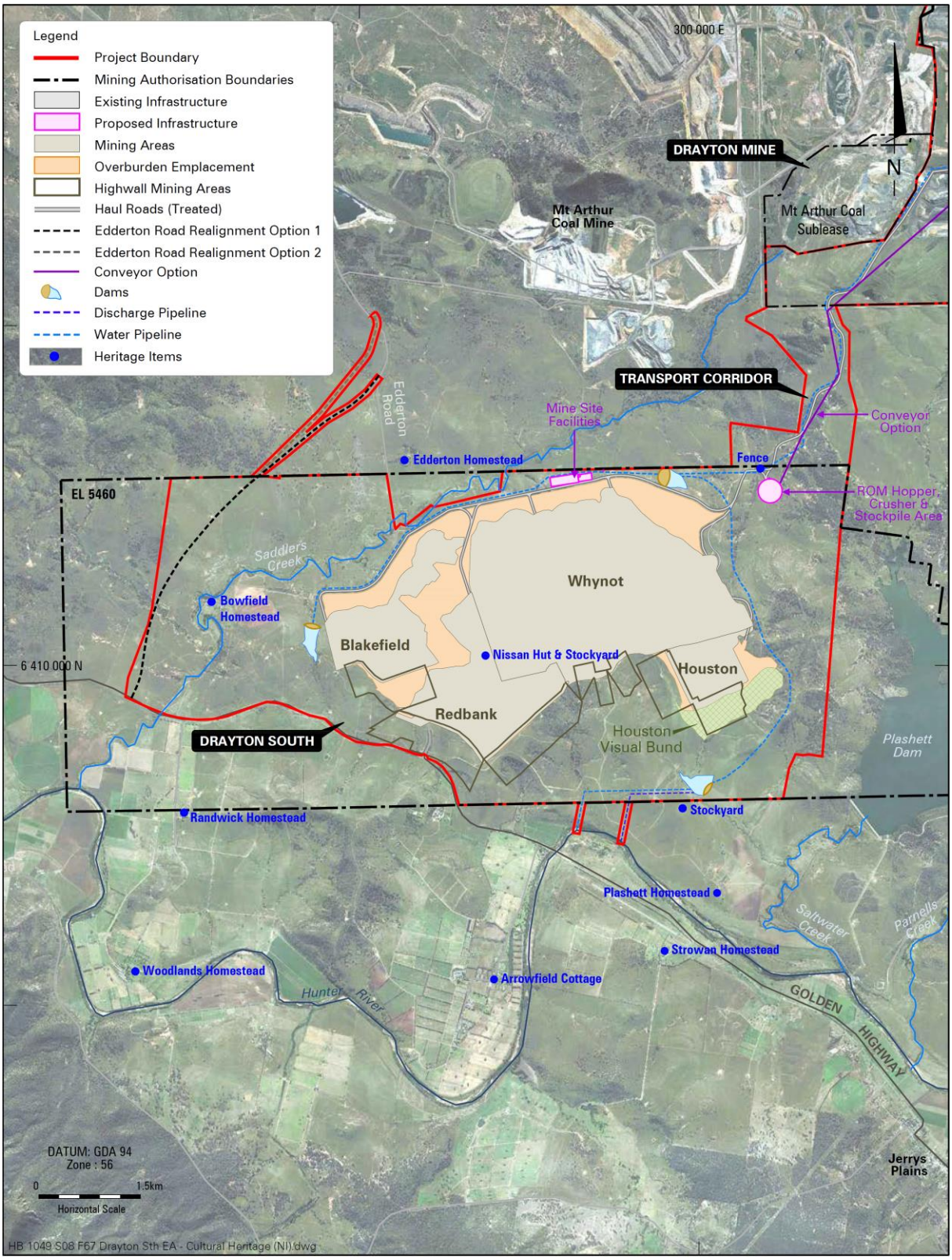

Figure 26: *Historic Heritage Items*

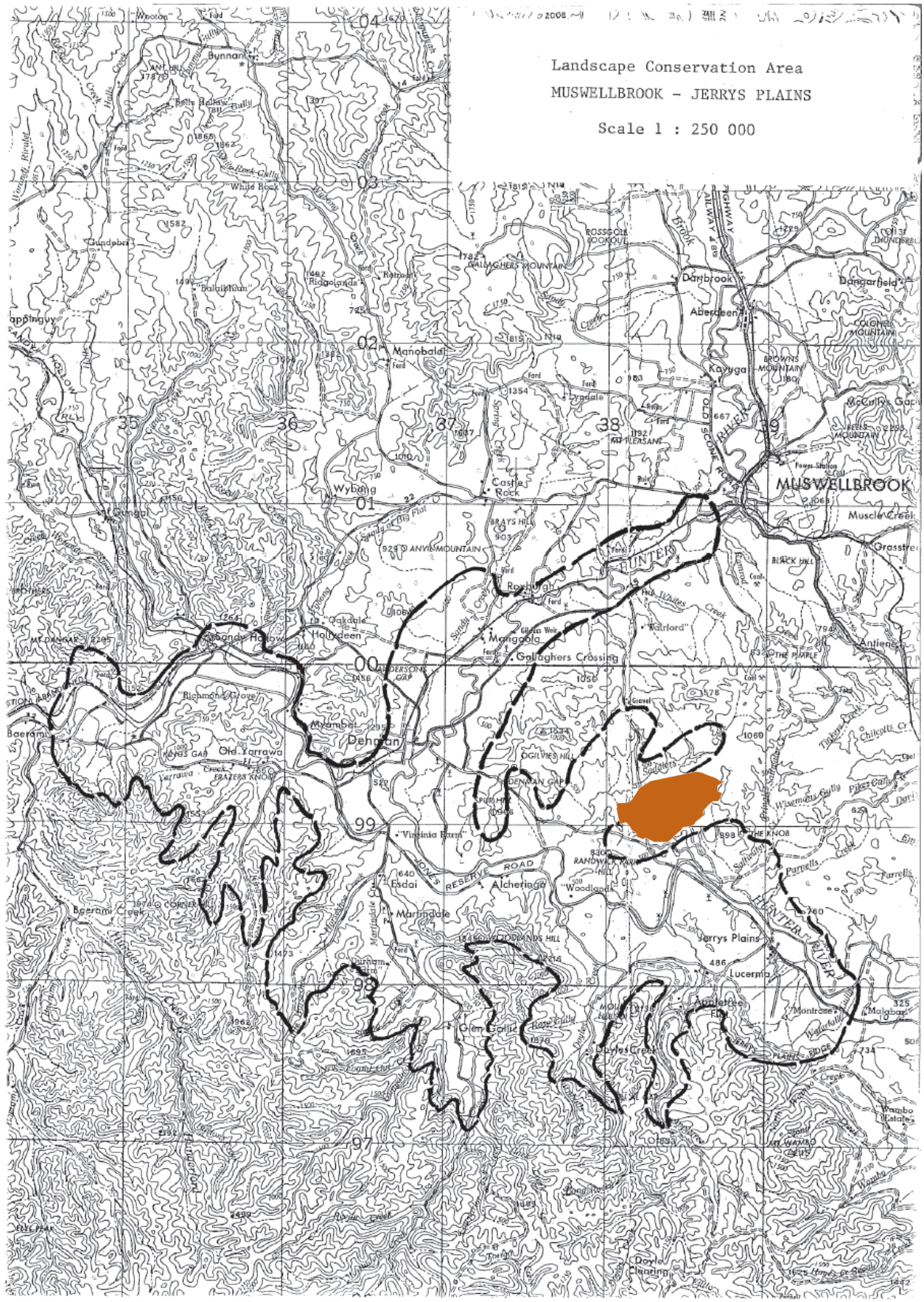

Figure 27: *Muswellbrook-Jerrys Plains Landscape Conservation Area*

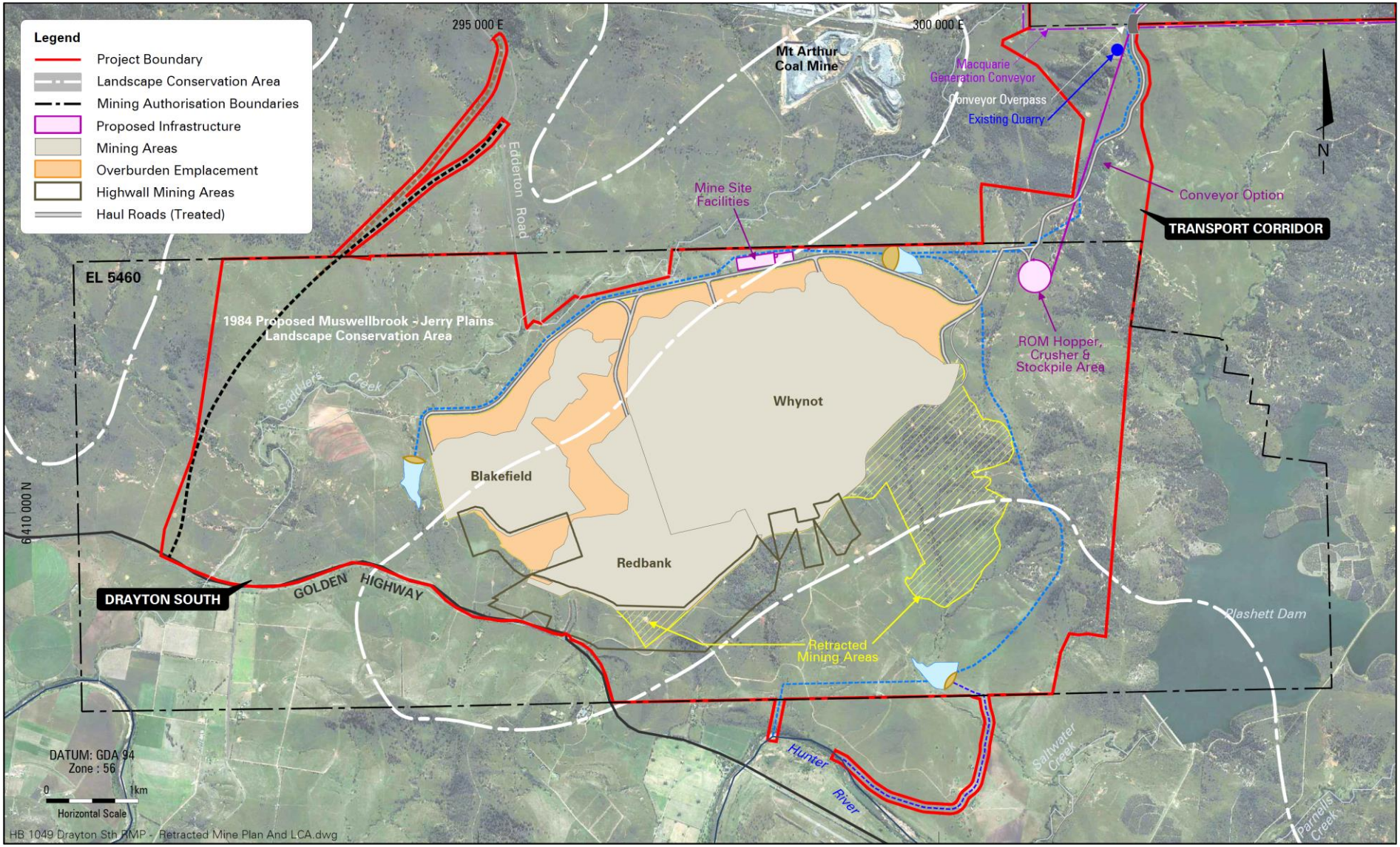

Figure 28: *Landscape Conservation Area & Retracted Mine Plan*

6.4.7 Transport

Assessment	Recommended Conditions
Road Traffic	
• The traffic assessment found that, with the exception of the realignment of Edderton Road, the project was unlikely to significantly increase traffic impacts beyond those of the existing Drayton mine. This is due to the fact that the project would not increase the operational workforce or the access arrangements for the mine off Thomas Mitchell Drive. • However, the project would have some additional short term impacts associated with the temporary construction workforce, and would contribute to the long term cumulative traffic impacts on the local road network, particularly Thomas Mitchell Drive. *Edderton Road* • The proposed Edderton Road realignment would be designed and constructed in consultation with the RMS and Council, and in accordance with the RMS's Road Design Guide. The realignment would be completed before the existing section of the road is closed to allow the mine to proceed. • The Department acknowledges that a number of submissions (including Muswellbrook Shire Council) raised concerns with the impacts of the realignment on traffic efficiency and travel times. However, the Department considers that the predicted 3-4 minute increase in travel times is relatively minor and would be partially mitigated by the improved condition of the road. • The Department also acknowledges the concerns of Muswellbrook Shire Council about the condition of the road in the section between the 7 km southern realignment (proposed by Anglo) and the 6 km northern realignment (that was approved as part of the Mt Arthur Mine Consolidation Project in 2010). • However, the Department notes that Council is the relevant road authority under *the Roads Act 1993* for both realignments, and all works would need to be designed and constructed to its satisfaction. If the Council wishes the 2 km central section to be upgraded to a similar standard, the Department believes that Council should be responsible for these works, rather than the mines which are upgrading significant sections to the north and south. • Nonetheless, the Department believes Anglo should be required to contribute towards the maintenance of the local road network (including Edderton Road). To this end, the Department notes that Anglo is proposing to contribute $50,000 a year to Council's road maintenance under its Voluntary Planning Agreement (VPA) offer to Council. *Thomas Mitchell Drive* • The cumulative impacts of mine-related traffic have been considered in detail by the Department during the assessment of a number of recent mining proposals (i.e. Mangoola, Mt Arthur, and Bengalla). As part of these assessments, the Department has commissioned GHD to undertake a traffic study as the basis for levying appropriate contributions from the various mining companies that rely on Thomas Mitchell Drive.	• Prior to mining within 200m of Edderton Road, the realignment of the road must be completed to the satisfaction of the RMS and Council. • Contribute to the maintenance of the local road network, in accordance with the VPA offer to Council. • Contribute to the upgrade and maintenance of Thomas Mitchell Drive and the intersection with Denman Road in accordance with the GHD contributions study.

• The study establishes a framework for contributions towards the current $18 million upgrade of Thomas Mitchell Drive currently being undertaken by Muswellbrook Shire Council, as well as ongoing maintenance contributions over the 30 year design life of the road. The study also includes the Denman Road/Thomas Mitchell Drive intersection. • The draft study indicates that of the 4 mines, Drayton accounts for the second lowest volume of traffic on Thomas Mitchell Drive (4% of total traffic) and at the intersection with Denman Road (7.3% of total traffic). • The GHD study is currently being finalised in consultation with Council and the relevant mining companies, and the Department has recommended that Anglo be required to contribute to the upgrade and maintenance of Thomas Mitchell Drive and the Denman Road intersection in accordance with the final outcomes of the study once it is complete.	
Rail Traffic	
• Under the Antiene Rail Spur consent granted in 2000 (DC 106-04-00), Anglo has approval to transport up to 7 Mt of product coal a year using up to 12 train movements per day from the Antiene Rail Spur to the Port of Newcastle until 2025. This consent would be surrendered, and the use of the rail loop and rail spur would be regulated under the new project approval until 2035. • As the project is not seeking to alter the existing arrangements for the transport of coal (apart from extending its use by 10 years), the Department is satisfied that this aspect of the project would not result in any significant additional impacts on the rail network. • The Department notes that the potential amenity impacts of continued rail transportation have been considered separately above.	

6.4.8 Rehabilitation

Assessment	***Recommended Conditions***
Drayton South	
• Following a review of the mine plan commissioned by the Department and further refinement undertaken by Anglo, the PPR significantly modified the final landform and final void compared to that presented in the original EA. These changes include: - 80% reduction in volume of the final void; - 50% reduction in the surface area of the final void (from 115 to 66 ha); - 40% reduction in the catchment area draining to the final void, allowing increased drainage to natural catchments; - re-design to incorporate principles of micro-relief, rolling hills and features to assist in integration with the surrounding landscape, including the configuration of the final void lake; - infilling of the central haul road ramp between the major overburden emplacements in the Whynot mining area; - ensuring a minimal setback of 40m from Saddlers Creek for all mine infrastructure and haul roads; - improved treatment and shaping of the highwall to ensure there is negligible highwall stability risk; and - storm water control measures in natural drainage channels that would be subject to increased runoff.	• Progressively rehabilitate the site in accordance with specific rehabilitation objectives, to the satisfaction of DRE. • Prepare and implement a detailed Rehabilitation Management Plan in accordance with DRE guidelines, including details of how the rehabilitation of the site would be integrated with the on-site biodiversity offsets, and detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site.

• Clearly, there are some significant benefits from the changes presented in the PPR. However, as discussed above, reshaping the highwall and reducing the volume of the final void, would alter the way in which the final void functions in the long term (i.e. from a groundwater sink to a flow-through function after around 140 years). The implications of this are discussed in detail in Section 6.3.4 above. • As a result of the retracted mine plan, further changes have been necessary to the final landform, and Anglo has provided conceptual mine plans and cross sections for various stages over the 20 years of mining at Drayton South, which have been accepted by DRE (see Appendix R). • The key difference with the retracted mine plan is that the area requiring rehabilitation would be substantially reduced. However, the rehabilitation criteria outlined in the PPR would remain the same, including designing a final landform to incorporate micro-relief and integrate with the surrounding landscape, and rehabilitating the majority of the site to appropriate Ironbark and Slaty Box Woodland species. • Anglo has also committed to ensuring that the slopes and heights of the final landform would be no greater than the commitments made in the EA, with a reduction proposed for the maximum height of overburden emplacement from RL 270 m to 245 m. Importantly, the height of the overburden emplacement of overburden in the Redbank Pit would remain the same (i.e. RL 215 m). • The Department acknowledges that further details are required in regard to the final landform and the final void. However, this is the case with all mining projects, and the Department is satisfied that there is sufficient information in regard to these matters to determine the application. • Nonetheless, the Department has recommended a range of rehabilitation objectives for the project, and a requirement for Anglo to prepare and implement a detailed Rehabilitation Management Plan to demonstrate how these objectives would be achieved. Both the Department and DRE are satisfied with this approach to managing any perceived uncertainty regarding the final rehabilitation of the site.	• It is also noted that Anglo would be required to lodge a substantial rehabilitation bond with DRE under the conditions of its Mining Lease.
Drayton Mine	
• The Department notes there is an approved final conceptual rehabilitation plan for existing operations at the Drayton mine (see Figure 7), and a number of approved management plans. These include a Rehabilitation and Offset Management Plan, a Mine Closure Plan, and a Final Void Management Plan. • Anglo is proposing to update these plans in accordance with contemporary DRE guidelines, and the requirements of the project approval which would integrate these plans into a single Rehabilitation Management Plan for the Drayton Complex. • However, the Department believes that there is an opportunity to improve the rehabilitation outcomes at the Drayton mine, including consideration of increasing the area that would be rehabilitated to woodland to build on existing habitat corridors to the north, and to the south at the Mt Arthur mine and the Drayton South mining area. • To this end, the Department has recommended that Anglo prepare and implement a Rehabilitation Strategy for the entire Drayton Complex. This strategy would need to be prepared in consultation with DRE and Council, and investigate opportunities for improving the final landform and potential final land use of the Drayton mine. It would also provide detailed information about the stages of the proposed rehabilitation and the timing of these stages across the Drayton Complex, and details of the specific measures proposed to manage spontaneous combustion at the Drayton mine.	• Prepare and implement a Rehabilitation Strategy for the Drayton Complex by June 2015, in consultation with DRE and Council. The strategy must include details of: - the options for the final landform and land use at the Drayton mine; and - rehabilitation stages (and a timetable for these stages) for both the existing Drayton mine and Drayton South.

7. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the project (see Appendix A). These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- ensure standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Department notes that the majority of the conditions are typical of what would normally be recommended for the regulation of a coal mine in NSW. The Department believes these conditions reflect best practice and provide a sound basis for managing the various potential impacts of the project. The conditions also incorporate the recommendations of relevant government authorities where applicable.

However, the Department notes that the conditions also include a range of measures to address the potential impacts on the horse studs. In particular, the conditions require Anglo to:

- ensure it complies with applicable EPA criteria for noise, dust and blasting at all the receivers at the studs at all times;
- minimise the visible off-site air pollution generated by the project (including dust and blast fumes);
- establish a suitable vegetation buffer between the Redbank Pit and the Golden Highway to the satisfaction of the Department, prior to mining in the Redbank Pit;
- prepare and implement a tree screening strategy along the Golden Highway and Edderton Road to minimise the visual and lighting impacts of the project;
- implement all reasonable and feasible measures to minimise off-site lighting impacts of the project, including compliance with applicable Australian Standards;
- consult with the studs in the preparation of the Blast Management Plan, and use all reasonable endeavours to co-ordinate the timing of blasting on the site to minimise disturbance to the horse studs;
- provide compensatory water supply if the project results in adverse impacts on the groundwater wells at the studs;
- only discharge saline water in accordance with the Hunter River Salinity Trading Scheme; and
- progressively rehabilitate the site and minimise the area of disturbance on the site.

Furthermore, the conditions allow the owner of any privately-owned land that considers that the project is not complying with the relevant criteria in the approval to request an independent review. If the review finds that the project is not complying with the criteria, Anglo would be required to modify its operations to ensure it complies.

8. CONCLUSION

The Department has assessed the project application, and the various documents submitted to support the application throughout the assessment process. The Department has also considered the PAC's review and the various submissions on the project.

Based on this assessment, the Department is satisfied that the retracted mine plan strikes a reasonable balance between maximising resource recovery of a recognised coal resource of significance and minimising the potential impacts on the Coolmore and Woodlands studs and the environment as far as practicable. This has been achieved primarily through removing the Houston Pit from the mine plan and remaining behind the major ridgeline on the site.

The Department acknowledges that the retracted mine plan is not entirely consistent with the recommendations of the PAC to remove the Redbank Pit from the mine plan. However, the Department notes that the Redbank Pit represents 19 Mt of ROM coal worth between $1.3 and 1.5 billion, and the Department's assessment found that the Redbank Pit could be retained without any significant additional impacts on the studs.

The Department has recommended a comprehensive and precautionary suite of conditions to ensure the project complies with relevant criteria and standards, and to ensure that the predicted residual impacts are effectively minimised, mitigated and/or compensated for. The Department believes that the conditions reflect current best practice for the regulation of mining projects in NSW, and provide an appropriate level of protection to the nearby horse studs.

The conditions also require Anglo to prepare a number of management plans for the project in consultation with relevant agencies and the owners of both Coolmore and Woodlands, and monitor the impacts of its project closely, and implement appropriate mitigation measures in the unlikely event that the impacts of the project are greater than predicted.

The Department also recognises that the project would provide major economic and social benefits for the region, including:

- direct capital investment of $368 million;
- direct employment of around 530 workers during operations and more than 300 workers during construction;
- $355,000 (present value) each year to Council for the provision of local infrastructure and community services; and
- $333 million (present value) in direct revenue for the State Government from coal royalties.

Overall, the Department is satisfied that the benefits of the project would outweigh its costs, and believes that the retracted mine plan strikes an appropriate balance between protecting the interests of the horse studs and realising the significant economic benefits that would flow to the region and the State if the project is allowed to proceed,

Consequently, the Department considers the project to be in the public interest, and recommends that it be approved subject to strict conditions.

Michael 14.7.14

Mike Young
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14/7/14

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15.7.14

Chris Wilson
Executive Director
Development Assessment Systems & Approvals

APPENDIX A – PROJECT APPROVAL

APPENDIX B – ENVIRONMENTAL PLANNING INSTRUMENTS

Reference should also be made to Section 5 of the EA where Anglo has also considered the applicable EPIs in detail.

SEPP No. 33 – Hazardous and Offensive Development

The project does not meet the definition of potentially hazardous industry. While it could be characterised as a potentially offensive industry without employing any mitigation measures, the Department is satisfied that suitable mitigation measures have been incorporated into the design of the project to ensure it will meet the relevant standards, and be compatible with the existing or likely future use of the land surrounding the project. The Department is therefore satisfied that the proposed modification is not potentially hazardous or offensive, and that the proposal is consistent with the aims, objectives and requirements of SEPP 33.

SEPP No. 44 – Koala Habitat Protection

The ecological assessment accompanying the EA identifies that the project site does not contain any areas of 'core koala habitat', as defined by SEPP 44. However, the flora surveys identified the presence of preferred feed tree species listed in Schedule 2 of SEPP 44. Consequently, the assessment concluded that the project would clear a limited amount of 'potential koala habitat'.

Nonetheless, the ecological assessment concluded that the project was unlikely to significantly impact koala habitat. This conclusion was based on the fact that no koalas have been historically recorded on the site, no evidence of koala habitation was found during targeted surveys, and the fact that the relatively fragmented nature of remnant woodland and preferred feed trees within the study area would provide a poor movement corridor.

SEPP 44 aims to conserve and manage koala habitat to reverse the current trend of koala population decline. In this respect, the Department is satisfied that the project would not significantly impact koala populations and would eventually lead to improved long term habitat outcomes through the establishment and enhancement of local offsets that would link with existing areas of vegetation.

Overall, the Department is satisfied that the project is generally consistent with the aims, objectives and requirements of SEPP 44.

SEPP No. 55 – Remediation of Land

Most of the site is rural land, which is unlikely to be contaminated. The rest of the site comprises the existing Drayton mine. While there is a small risk that some parts of the mine could be contaminated - such as the areas surrounding the existing fuel storages - the Department has no evidence to suggest that any of this land is indeed is contaminated. Nevertheless, if any of this land contaminated, the Department is satisfied that it could easily be remediated to ensure it is suitable for its existing or future use.

Overall, the Department is satisfied that there is limited risk of the land subject to the application being contaminated and that the project is generally consistent with the aims, objectives, and provisions of SEPP 55.

SEPP (Infrastructure) 2007

The Infrastructure SEPP requires the consent authority to notify relevant public authorities about developments that may affect public infrastructure or public land. To this end, the Department notified Muswellbrook Shire Council, the RMS, Transport NSW, the ARTC, Crown Lands, Ausgrid and Transgrid about the proposed project.

The RMS, Transport NSW, the ARTC, Crown Lands, Ausgrid and Transgrid did not object to the project, subject to a number of recommended conditions of approval. However, Council objected to the proposal on a number of grounds including several long standing issues that are not directly relevant or solely related to the project (such as the cumulative impacts of mining on the broader road network and existing constraints on the Muswellbrook sewerage treatment plant). With respect to the project, the Department believes that Council's main concerns (related to the Infrastructure SEPP) include the potential traffic impacts on Thomas Mitchell Drive and the realignment of Edderton Road.

All matters raised by public authorities have been extensively considered by the Department in its assessment of the project (see Section 5 above). Where appropriate, the Department has also incorporated the recommendations made by public authorities into the recommended project approval (see Appendix A). Consequently, the Department is satisfied that the requirements of the Infrastructure SEPP have been satisfied.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

Part 3 of the Mining SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of mining including:

- the significant of the resource;
- certain non-discretionary development standards in relation to noise, air quality, blasting and aquifer interference;
- the compatibility of the proposal with other land uses;
- natural resource management and environmental management;
- resource recovery;
- transport; and
- rehabilitation.

While these matters do not technically apply to Part 3A projects, such as the Drayton South Coal Project, the Department has considered all of these matters in its assessment of the merits of the project (see Section 6 above).

Based on this assessment, the Department is satisfied that:

- the resource is significant, both for the Hunter Valley and the NSW;
- the project would comply with the non-discretionary standards in the SEPP;
- the project would be compatible with other land uses in the areas, including the Coolmore and Woodlands horse studs;
- the project would not have any significant impacts on other major natural resources in the region, including:
  - surface and ground water resources;
  - the Hunter River and the BSAL associated with the alluvial floodplains of the river;
  - the biodiversity values of the site, which would ultimately be improved;
- the residual biodiversity impacts of the project would be offset;
- the greenhouse gas emissions of the project would be minimised to the greatest extent practicable;
- the resource recovery of the project is acceptable, even though up to 75 million tonnes of coal would be sterilised to minimise a range of other potential environmental impacts of the project;
- none of the coal produced by the project would be trucked on a public road; and
- the site would be suitably rehabilitated over time to blend in with the surrounding landscape, and enhance the biodiversity values of the region.

Finally, the Department is satisfied that the project would not have a significant impact on the adjoining equine or viticulture critical industry clusters.

Consequently, the Department is satisfied that the project can be carried out in a manner that is generally consistent with the aims, objectives and provisions of the Mining SEPP.

Hunter Regional Environmental Plan (REP) 1989 (Heritage)

The Department notes that the proposal is in close proximity to a number of heritage items under the *Hunter REP 1989 (Heritage).* Specifically, the Department notes that the project would occur in close proximity to the Woodlands Stud, which is an item of regional environmental heritage.

The Department has considered the potential impact of the project on these heritage items in detail, including those listed under the Hunter REP (see Section 6.4.6 above). Following this assessment, the Department is satisfied that the proposed project would not significantly impact listed historic heritage items in the vicinity of the site and can be carried out in a manner that is generally consistent with the aims, objectives, and the provisions of the Hunter REP.

APPENDIX C – ENVIRONMENTAL ASSESSMENT

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX D – SUBMISSIONS

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX E – RESPONSE TO SUBMISSIONS

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX F – PREFERRED PROJECT REPORT

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX G – MINE PLAN REVIEW (Runge Pincock Minarco)

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX H – PLANNING ASSESSMENT COMMISSION MERIT REVIEW

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX I – MINING AND PETROLEUM GATEWAY PANEL ADVICE

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX J – JUSTIFICATION REPORT

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX K – CONSEQUENTIAL ENVIRONMENTAL IMPACT STATEMENT FOR THE RETRACTED MINE PLAN

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX L – SUPPLEMENTARY SUBMISSIONS FROM COOLMORE AUSTRALIA, DARLEY AUSTRALIA AND THE HUNTER THOROUGHBRED BREEDERS ASSOCIATION ON ANGLO'S RESPONSE TO THE PAC REVIEW AND REVISED MINE PLAN

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX M – REVISED BIODIVERSITY OFFSET PACKAGE FOR REVISED MINE PLAN

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX N – SUPPLEMENTARY AIR QUALITY MODELLING FOR REVISED MINE PLAN

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX O – AIR QUALITY PEER REVIEW (Jacobs SKM)

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX P – REVISED MINE PLAN STAGES AND FINAL LANDFORM

Refer to the Department's website:
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4814

APPENDIX Q – NATIONAL TRUST - LANDSCAPE CONSERVATION AREA

APPENDIX R – FINAL SUBMISSION FROM DIVISION OF RESOURCES & ENERGY