



Liddell Coal Mine

*Section 75W
Modification Assessment
(DA 305-11-01 MOD 7)*

January 2019

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Executive Summary

Liddell Coal Operations Pty Limited is proposing to modify its development consent for the Liddell Open Cut Coal Mine (DA 305-11-01) to facilitate required remediation works in the historic Mountain Block Mining Area. Previous attempts to remediate this area have been unsuccessful and further rehabilitation works are required to achieve a self-sustaining final landform.

The proposed remediation works require a minor adjustment to the northern consent boundary and disturbance of approximately 1 hectare (ha) of remnant native vegetation within the Mountain Block Offset Area. To compensate for this, Liddell proposes to offer up 5.68 ha of surplus land within its existing biodiversity offset areas.

Liddell is also seeking minor administrative amendments to the consent to facilitate improved operational efficiencies and the flexibility to deliver an environmentally stable final landform that complies with the consent's rehabilitation objectives.

The Independent Planning Commission of NSW must determine the application because an entity related to Liddell Coal, Glencore Australia Holdings Pty Ltd, has declared a reportable political donation.

The Department has considered the potential impacts of the proposal on the natural and cultural environment and on nearby residents. The Department's assessment indicates that there are minor short-term impacts to biodiversity, but these impacts would enable a long-term stable and self-sustaining landform to be achieved. Furthermore, the Department has concluded that these impacts can be appropriately managed under modified conditions and updated management plans.

The Department considers that the modification application represents an appropriate approach to remediate the Mountain Block Mining Area and will not result in any significant environmental impacts.



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1. Introduction

1.1 Background

Liddell Coal Operations Pty Limited (Liddell), a wholly owned subsidiary of Glencore Coal Pty Limited (Glencore), operates the Liddell Coal Mine (the mine), located approximately 25 kilometres (km) north-west of Singleton and 26 km south-east of Muswellbrook (see **Figure 1**). The mine is located in the Upper Hunter Valley and covers the boundary of the Singleton and Muswellbrook local government areas. Mining operations have occurred at the site since the 1950s.

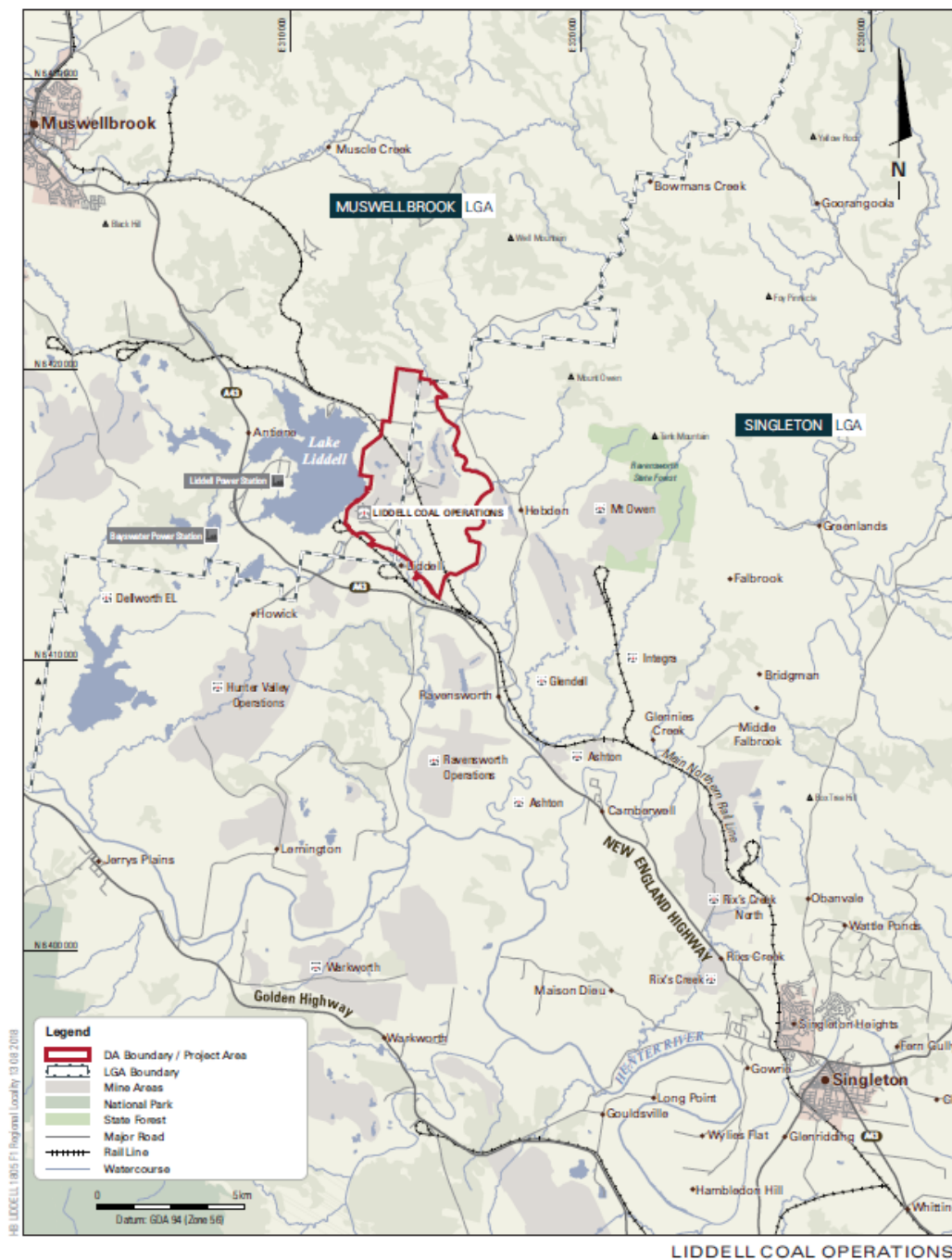


Figure 1 | Regional context

1.2 Approval History

The current operations were approved under development consent DA 305-11-01 by the then Minister for Planning on 20 November 2002 under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The development, as currently approved, includes:

- open cut coal mining and processing of up to 8 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal until 31 December 2028;
- transporting product coal by rail to the Port of Newcastle and up to 0.5 Mtpa of reclaimed tailings by truck to local power stations; and
- use of associated infrastructure to support open cut coal mining and processing of ROM coal.

DA 305-11-01 has been modified on six previous occasions. The approval history is further summarised below in **Table 1**.

Table 1 | Summary of DA 305-11-01 approval history

Approval / Modification No.	Approval Date	Summary
DA 305-11-01	20 November 2002	<ul style="list-style-type: none"> • consolidation of DA 24/90 and DA 101/93 into one approval; • continuation of open cut mining operations and use of existing infrastructure; and • increased ROM coal production to 4.5 Mtpa and use of Liddell loading facility to transfer product coal via rail to Port of Newcastle
MOD 1	11 August 2003	<ul style="list-style-type: none"> • amendment to schedule of land
MOD 2	18 July 2007	<ul style="list-style-type: none"> • extension of open cut mining area by 47 hectares (ha); • increased ROM coal production to 8 Mtpa and rail transportation of product coal to 6 Mtpa; • modification to existing infrastructure and construction and operation of a new Coal Handling and Preparation Plant (CHPP); and • new access haul road and overpass haul bridge
MOD 3	7 May 2008	<ul style="list-style-type: none"> • re-alignment of Old New England Highway; and • re-use of treated effluent in an on-site dam
MOD 4	27 October 2009	<ul style="list-style-type: none"> • construction of additional offices and workshop facilities within the Mining Infrastructure Area (MIA)
MOD 5	1 December 2014	<ul style="list-style-type: none"> • extension of mine life to 2028; • extension of Entrance Pit and South Pit to the south-east; • establish Mining Infrastructure Area Pit following completion of mining in the South Pit and Entrance Pit; • emplacement of tailings in South Pit void; and • construction of additional infrastructure
MOD 6	16 February 2016	<ul style="list-style-type: none"> • construction and operation of tailings pipelines from the CHPPs at Ravensworth Operations and Liddell to West Pit Void at Ravensworth East Mine



2. Proposed Modification

On 27 February 2018, Liddell lodged a modification application and supporting Environmental Assessment (EA, see **Appendix A**) under section 75W of the EP&A Act.

The modification involves:

- minor adjustment to the northern boundary of the consent area to facilitate remediation works in the completed Mountain Block Mining Area (MBMA);
- disturbance of approximately 1 ha of remnant vegetation within the established Mountain Block Offset Area (MBOA) to facilitate these remediation works; and
- minor administrative changes.

The proposed administrative amendments include modification of:

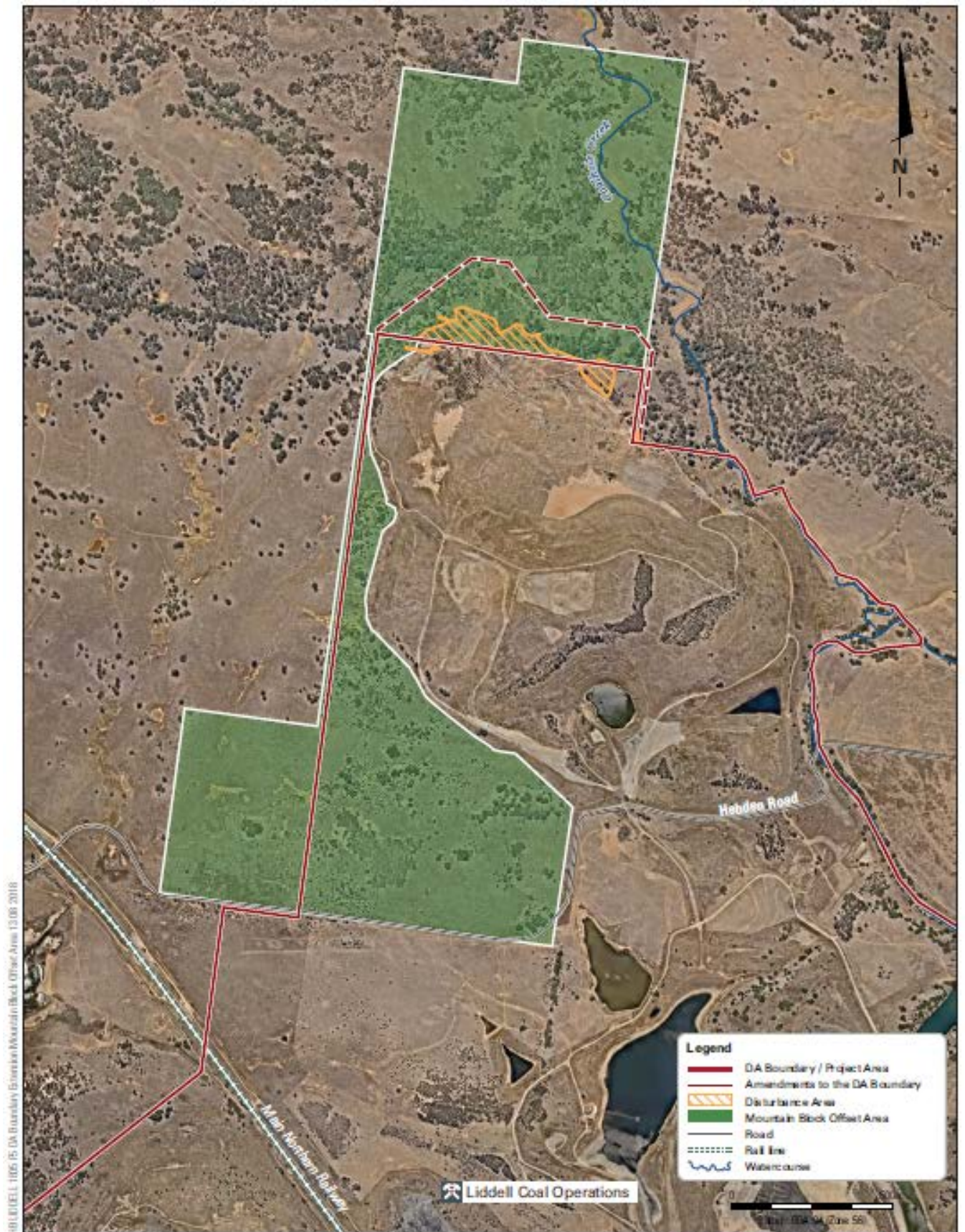
- condition 2 of Schedule 2 relating to the development layout plans and updating the consent boundary;
- condition 16 of Schedule 3 relating to the air quality assessment criteria and updating to the short-term assessment criteria for 24-hour PM₁₀ to ensure consistency with the Department's policies;
- condition 37 of Schedule 3 relating to rehabilitation objectives, to adjust grazing land requirements to align with the available land remaining, following completion of requirements for rehabilitating Central Hunter Box Ironbark Woodland; and
- condition 39 of Schedule 3 updating the appropriate revision agency for the Rehabilitation Management Plan (RMP) to the Department's Division of Resources and Geosciences (DRG).

The MBMA includes an area of steep unstable land that was once subject to previous mining operations. Previous attempts to stabilise this landform have been unsuccessful and further remediation works are required to ensure successful rehabilitation outcomes (ie to establish self-sustaining vegetation and minimise safety risks). To achieve this, Liddell is proposing to reshape and stabilise the steep slopes which would require additional surface disturbance beyond the northern consent boundary.

These works are considered to be '*designated ancillary mining activities*' under the *Mining Act 1992* (Mining Act) and to require a variation to existing mining lease (ML 1597) conditions. Before an ancillary mining activity condition can be approved, a development consent must be granted, to approve the activities being carried out on that land. Liddell is therefore seeking to extend the consent boundary to the north to include a small portion of the MBOA (see **Figure 2**). Minor adjustments to the consent boundary and schedule of lands are also required to align with contemporary cadastral boundaries and remove areas of private land (see Inset in **Figure 3**).

Liddell is also seeking minor administrative amendments to DA 305-11-01 to facilitate improved operational efficiencies and the flexibility to deliver an environmentally stable final landform to comply with the consent's rehabilitation objectives.

A full description of the proposed modification is provided in the EA (see **Appendix A**).



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Mountain Block Offset Area Remediation Activities

Figure 2 | Proposed boundary adjustment and area of disturbance

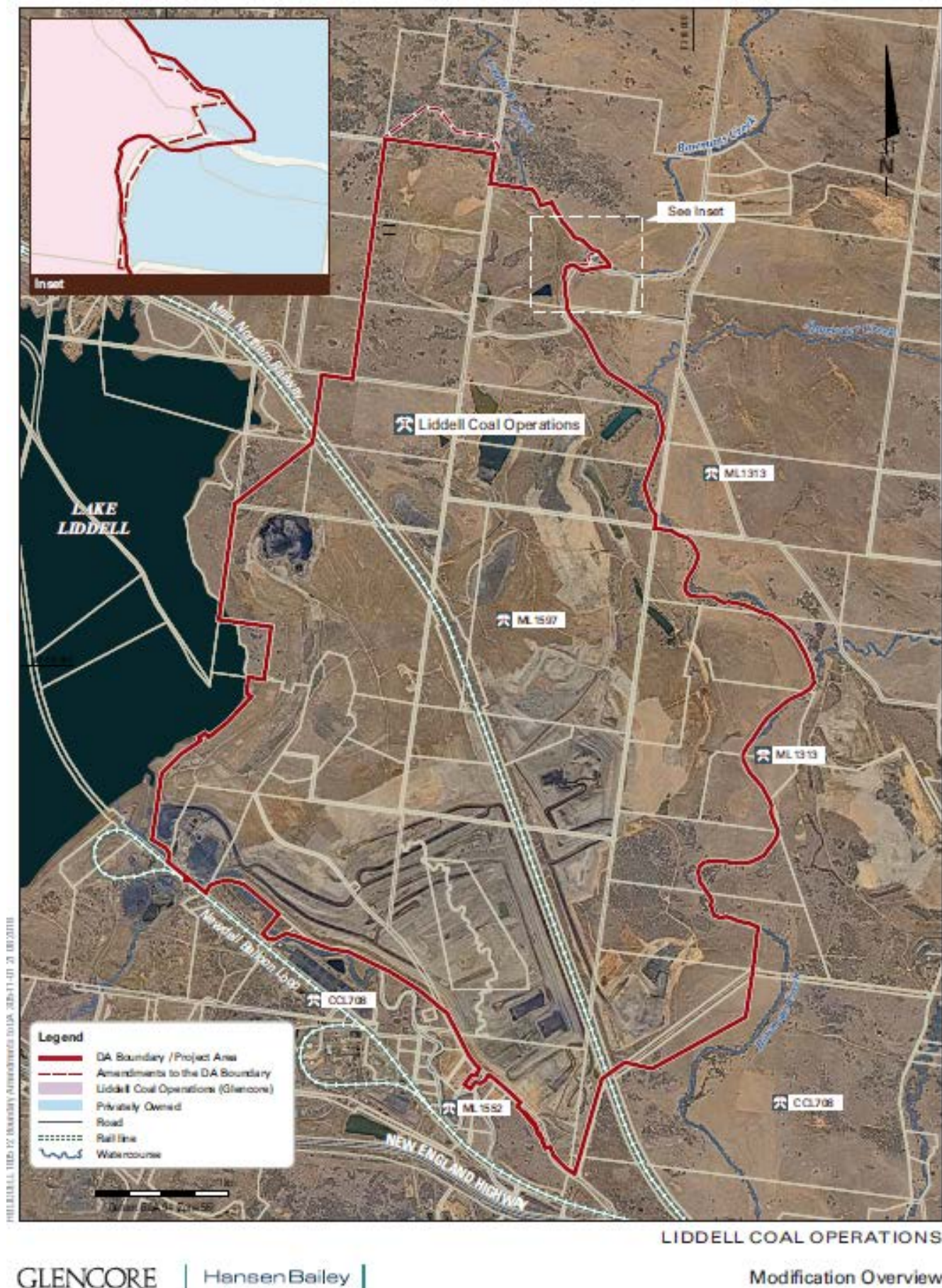


Figure 3 | Site and proposed boundary modification



3. Statutory Context

3.1 Section 75W

This modification request was made under the former section 75W of the EP&A Act and can continue to be assessed under this pathway in accordance with Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*, as the request was made prior to 1 March 2018. The Department considers that the proposed modification is within the scope of section 75W and may be determined accordingly, as:

- the principal components of the development, such as rate of production, mining method and project duration, would remain unchanged; and
- the environmental impacts would not significantly change compared to the approved development.

3.2 Consent Authority

The Minister for Planning is the approval authority for this application. However, the Independent Planning Commission of NSW (the Commission) must determine the application under the Minister's delegation of 14 September 2011 because a related entity, Glencore Australia Holdings Pty Ltd, has declared a reportable political donation.

3.3 Permissibility

The subject northern extension area is located on Lot 13/C/DP6841, owned by Liddell (except for a Crown road subject to current acquisition process), and is zoned RU1 'primary production' under the *Muswellbrook Local Environmental Plan 2009* (Muswellbrook LEP). Development for the purposes of open cut mining is permissible in this zone under the Muswellbrook LEP.

3.4 Environmental Planning Instruments

Under section 4.15 of the EP&A Act, the consent authority is required to take into consideration any environmental planning instrument (EPI) that is of relevance to the development. The following EPIs apply to the site:

- *State Environmental Planning Policy (State and Regional Development) 2011*;
- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP);
- *State Environmental Planning Policy No.55 (Remediation of Land)*;
- *Singleton Local Environmental Plan 2013*; and
- Muswellbrook LEP.

The Department has considered the modification against the relevant provisions of these EPIs. The Department is satisfied that the modification is permissible and can be undertaken in a manner that is generally consistent with the aims, objectives and provisions of these EPIs.

3.5 Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles upon which the assessment is conducted, and they must be considered by the consent authority when making a decision. The Department has assessed the proposed modification against the current objects found in section 1.3 of the EP&A Act, which were updated on 1 March 2018. **Table 2** summarises how the most relevant objects have been considered.

Table 2 | Consideration of the proposal against the objects of the Act

Objects of the EP&A Act	Consideration
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources;	<ul style="list-style-type: none"> The modification would provide a better environmental outcome with improved biodiversity conservation
(b) to facilitate ecologically sustainable development (ESD) by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	<ul style="list-style-type: none"> The modification can be carried out in a manner that is consistent with the principles of ESD. The Department's assessment has sought to integrate all significant environmental, social and economic considerations
(c) to promote the orderly and economic use and development of land;	<ul style="list-style-type: none"> The modification would improve final land use outcomes by resolving final landform issues The modification involves a permissible land use where a Site Verification Certificate has been issued to verify the absence of Biophysical Strategic Agricultural Land (BSAL) Existing infrastructure and operational equipment would be used for the modification
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats;	<ul style="list-style-type: none"> The modification would not significantly impact any threatened species, populations or ecological communities
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage);	<ul style="list-style-type: none"> The modification would not impact on Aboriginal cultural heritage or historic heritage
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State	<ul style="list-style-type: none"> The Department publicly exhibited the proposal (Section 4.1) and consulted with both affected Councils and other public authorities. The Department has considered all responses in its assessment
(j) to provide increased opportunity for community participation in environmental planning and assessment	<ul style="list-style-type: none"> The Department publicly exhibited the proposal and made the modification application and accompanying EA publicly available on its website

3.6 Site Verification Certificate

Under the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and the Mining SEPP, mining proposals that are outside an existing mining lease must first consider whether the new land contains BSAL. Applicants are required to verify this through obtaining a site verification certificate (SVC) that certifies that the land on which the proposed development is to be carried out does not contain BSAL, or, if the site does contain BSAL, the applicant must apply for a gateway certificate issued by the NSW Mining and Petroleum Gateway Panel.

On 27 March 2018, Liddell lodged an application for a SVC, prepared in accordance with the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land*. On 18 April 2018, the Department issued a SVC confirming that the site does not contain BSAL (see **Appendix B**), as the soil, slope and contiguous land requirements do not meet the criteria for BSAL.

3.7 Other Licences

Under the Mining Act, Liddell Tenements Pty Limited currently holds mining lease ML 1597 for the mine. In November 2017, Liddell lodged an *Application to vary a mining lease to attach an ancillary mining activity condition* for the purposes of carrying out remediation works within the proposed modification area. Development consent is required before an ancillary mining activity can be approved by DRG.

Liddell currently holds an Environment Protection Licence (EPL 2094) issued under the *Protection of the Environment Operations Act 1997* for coal works and coal mining activities. If approved, the Environment Protection Authority (EPA) will advise Liddell if a variation to EPL 2094 is required.



4. Engagement

4.1 Departmental Engagement

The Department exhibited the modification application and supporting documents from 30 August 2018 until 13 September 2018:

- on the Department's website;
- at Singleton Council's office in Singleton;
- at Muswellbrook Shire Council's office in Muswellbrook; and
- at the Nature Conservation Council's office in Sydney.

The modification application was advertised in the *Singleton Argus*, *Muswellbrook Chronicle* and *Hunter Valley News*. Notification was also sent to State Government agencies, Singleton Council and Muswellbrook Shire Council.

The Department is satisfied that the notification process met the requirements of the EP&A Act and the EP&A Regulation.

4.2 Agency Advice

In response to the exhibition and notification process, the Department received six submissions from Government agencies (including both local Councils) and no submissions from the public or special interest groups. Copies of these submissions are provided in **Appendix C**. A summary of agency advice is provided below.

The **EPA** acknowledged that, while the modification is relatively minor, it would result in activities being closer to sensitive receivers. As such, the EPA requested that an updated acoustics report is provided that suitably calculates and models the likely noise impacts on residential receivers. Liddell subsequently provided an updated noise impact assessment to address these concerns. Noise impacts are further considered and addressed in **Section 5.3** below.

The **Office of Environment and Heritage (OEH)** advised that it is satisfied with the proposed biodiversity offset package and requested that Liddell undertake ongoing consultation with registered Aboriginal parties, update the Aboriginal Cultural Heritage Management Plan and ensure that flood characteristics are not adversely affected by the final landform. These matters are further addressed in **Section 5.3** below.

The **DRG** did not object or provide substantive comments except that it be consulted about any additional biodiversity offsets to ensure that there is no consequent reduction in access to land prospective for mineral exploration or potential sterilisation of mineral or extractive resources.

The **Resources Regulator (RR)** requested that an updated final landform plan and mine layout and scheduling plan are provided, and that additional information is provided to better define the rehabilitation outcomes for the site. The concerns raised by the RR are considered and addressed in **Section 5** below.

Muswellbrook Shire Council requested clarification that adequate investigations have been carried out to confirm that the proposal would ensure that rehabilitation objectives and outcomes can be achieved. Further to this, that consideration is given to include conditions of approval to ensure minimal ecological disturbances, weed management and the requirement for GIS tracking of vehicles undertaking rehabilitation works. The concerns raised by Muswellbrook Shire Council are addressed in **Section 5** below.

The **Department of Industry (Dol)** and **Singleton Council** did not object or provide any specific comments on the proposal.

4.3 Response to Submissions

On 9 November 2018, Liddell provided its Response to Submissions (RTS) report to address the issues raised by agencies (see **Appendix D**). The RTS was made publicly available on the Department's website and also forwarded to agencies for review and comment. Agency comments on the RTS have been considered and addressed in **Section 5** below.



5. Assessment

In assessing the merits of the proposed modification, the Department has considered the:

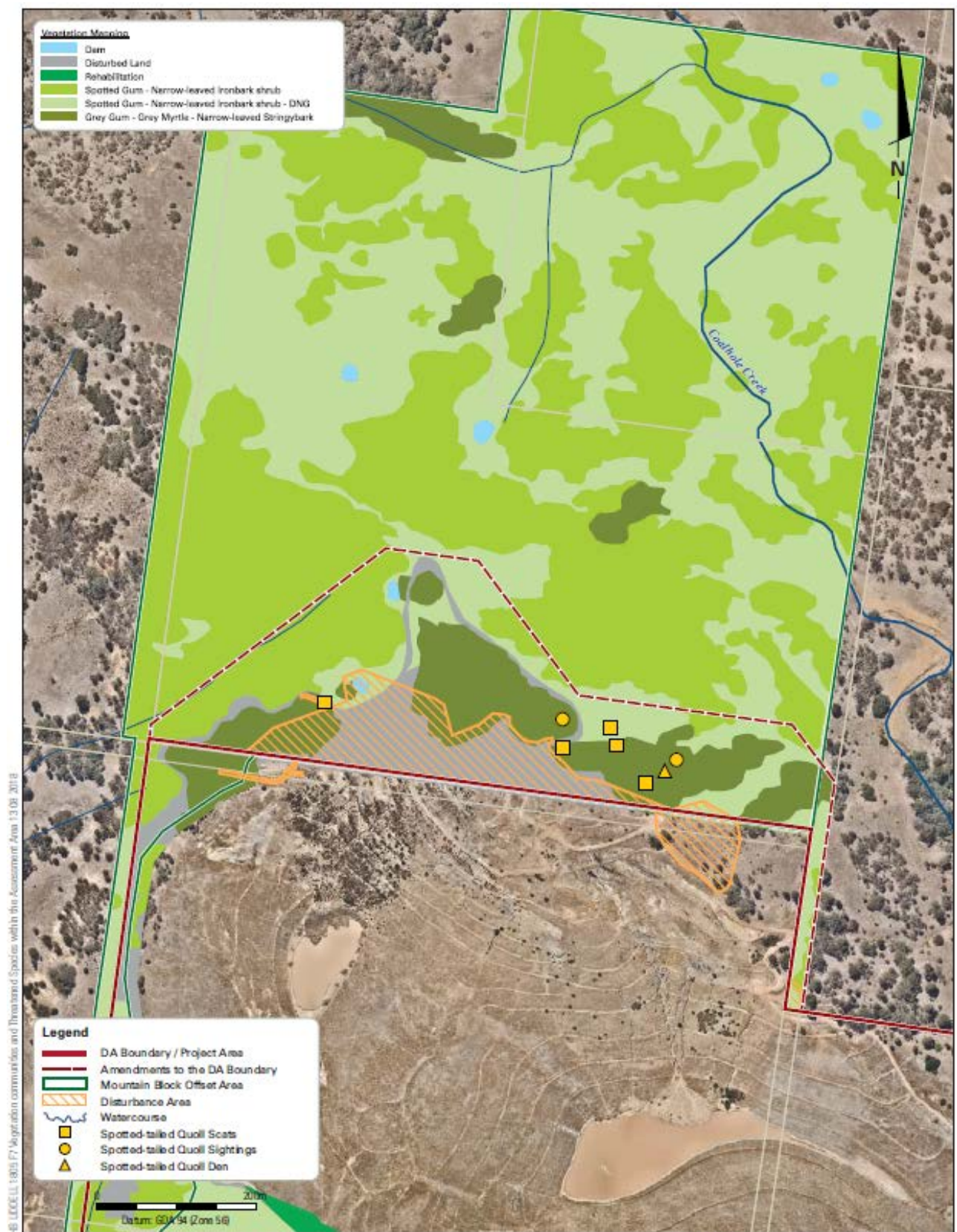
- modification application and accompanying EA;
- agency advice and the RTS;
- existing conditions of consent;
- relevant EPIs, policies and guidelines; and
- requirements of the EP&A Act, including the objects of the Act.

The Department considers that the key assessment issues relate to biodiversity and rehabilitation. A summary of the Department's assessment is set out in **Section 5.1** (biodiversity), **Section 5.2** (rehabilitation) and in **Section 5.3** (other issues) below.

5.1 Biodiversity

The EA included an Ecological Assessment, prepared by Umwelt, which assessed the potential biodiversity impacts of the proposed modification, in particular clearance of 1 ha of remnant vegetation. The study area covered 14.81 ha and included both desktop analysis and field surveys to assist in identifying potential threatened and migratory species, endangered populations and threatened ecological communities. Existing vegetation mapping was analysed to identify plant communities and verified with flora field survey results. Targeted fauna field surveys were also undertaken to identify key species such as the Spotted-tailed Quoll (*Dasyurus maculatus*) and winter bird species including the Regent Honeyeater (*Anthochaera phrygia*) and Swift Parrot (*Lathamus discolor*).

The survey results identified several vegetation communities within the study area which were categorised by plant community types (PCT) (see **Figure 4**).



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Vegetation Communities

Figure 4 | Vegetation communities

Predicted Impacts

The proposed remediation works would disturb approximately 3.5 ha of land in the MBOA, of which 2.5 ha has been previously disturbed, and the remaining 1 ha is remnant native vegetation with up to four hollow bearing trees (see **Figure 4** and **Figure 5**). This 1 ha of disturbance comprises:

- 0.26 ha of Spotted Gum – Narrow-leaved Ironbark Shrub – Grass Open Forest of the Central and Lower Hunter – Derived Native Grassland;
- 0.71 ha Grey Gum – Grey Myrtle – Narrow-leaved Stringybark – Rusty Fig Open Forest on Ranges of the Upper Hunter; and
- 0.03 ha of water bodies.

The disturbance area includes a very small area (less than 0.01 ha) of Spotted Gum – Narrow-leaved Ironbark Shrub – Grass Open Forest of the Central and Lower Hunter which represents *Central Hunter Ironbark – Spotted Gum – Grey Box Forest* in the NSW North Coast and Sydney Basin Bioregions, which is listed as an endangered ecological community (EEC) under the *Biodiversity Conservation Act 2016* (BC Act). This area was reported during the GIS analysis but was considered to be too small (0.00000012 ha) to have any relevant or significant impact. The presence of the EEC has only been included in the assessment due to the precision of the GIS analysis and consistency in reporting to two decimal places (ie less than 0.01 ha).

No threatened flora species were identified during the field surveys. Tiger Orchid (*Cymbidium canaliculatum*), listed as an endangered population under the BC Act, has the potential to occur within the study area. However, the assessment concluded that it was unlikely to be impacted due to the minor extent and highly modified nature of habitat the being removed.

No threatened fauna species were identified during the field surveys. However, a male Spotted-tailed Quoll den is known to exist in an area north-east of the disturbance area. The den is assumed to be in use due to fresh scats being identified in the study area. As such, the proposed modification has been carefully designed to avoid any direct impacts to the den and surrounding vegetation that may also provide habitat. Several other threatened fauna species have the potential to occur within the study area. However, due to the minor extent of clearing and minimal impacts to habitat, it was concluded that these species are unlikely to be impacted.

Proposed Avoidance, Mitigation and Management

The proposed modification has been designed to avoid any unnecessary impacts to the MBOA. Extensive planning has been undertaken to ensure that the disturbance area is minimised as far as possible whilst still being able to achieve a final self-sustaining landform that conforms with the existing consent's rehabilitation objectives (Table 8 of Schedule 3 of condition 37) and the requirements of the RMP.

The proposed remediation works have been mapped to set out clear, predefined boundaries to ensure the disturbance footprint is minimal. Access routes for heavy equipment and machinery have also been accounted for to avoid and/or minimise unnecessary impacts (see **Figure 5**).

Rehabilitation works within the MBMA would be managed under the rehabilitation strategy outlined within the RMP and works within the MBOA would be managed under the Biodiversity Offset Strategy (BOS) and Biodiversity Management Plan (BMP).

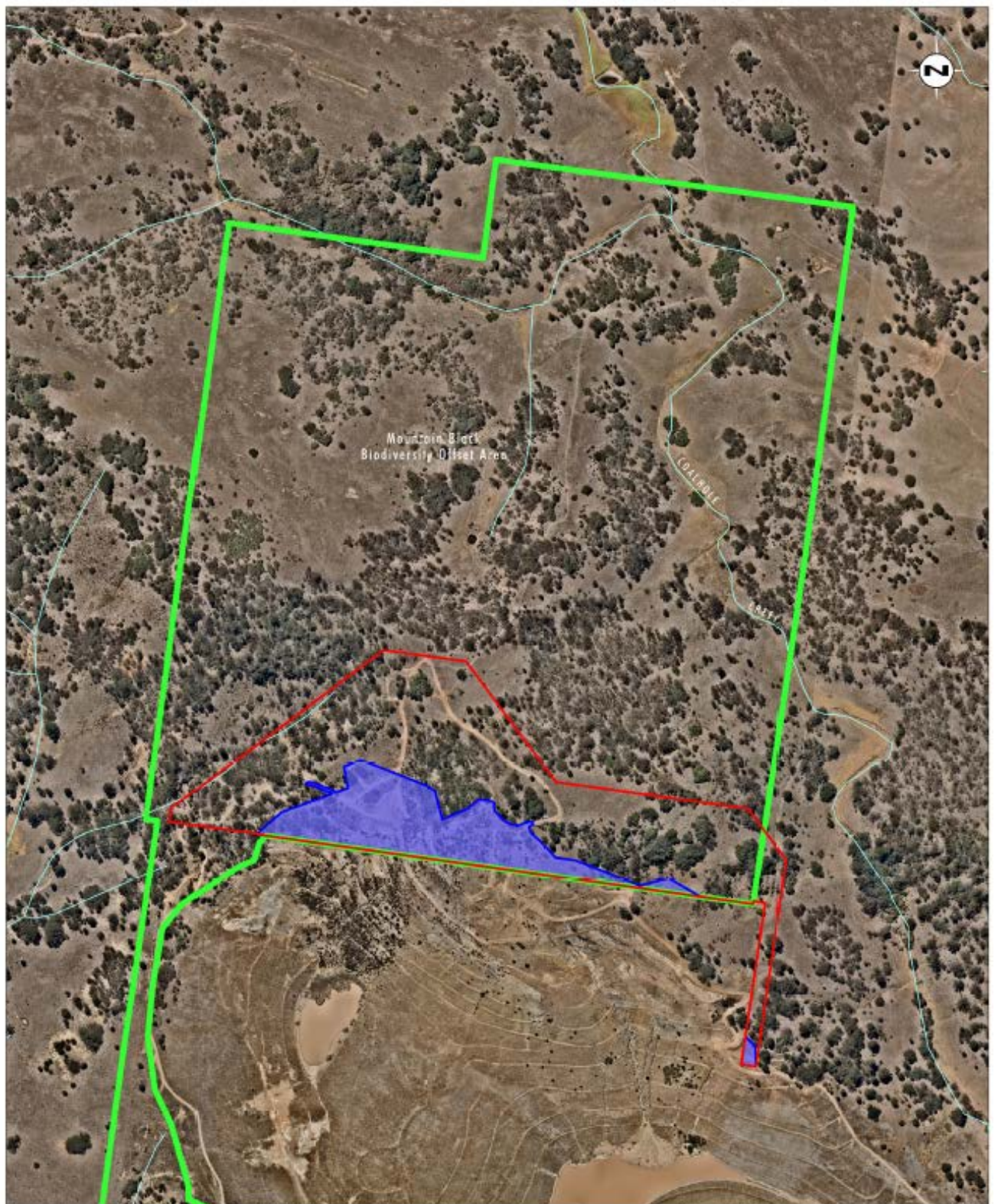


Image Source: © State of New South Wales through Spatial Services, a division of the Department of Finance, Services and Innovations (DFSI) 2016
Data Source: Glencore (2017)

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Legend

- ▬ Study Area
- ▬ Proposed Disturbance Boundary
- ▬ Mountain Block Biodiversity Offset Area

Proposed Disturbance Boundary

Figure 5 | Proposed disturbance boundary

Offset Strategy

Liddell is currently required to implement a BOS that includes a minimum of 166 ha within the MBOA and 182 ha within the Bowmans Creek Riparian Corridor (BCRC). To compensate for the proposed clearance of 1 ha of native vegetation, Liddell proposes to offer up 5.68 ha of surplus land within its existing biodiversity offset areas (which has been surveyed as exceeding existing requirements under the consent). This includes 2.34 ha in the MBOA and 3.52 ha in the BCRC.

The proposed additional offset areas comprise:

- 2.48 ha of native woodland vegetation including 1.73 ha of Spotted Gum – Narrow-leaved Ironbark Shrub – Grass Open Forest of the Central and Lower Hunter EEC;
- 1.05 ha of non-native and disturbed native grassland to be regenerated to woodland consistent with the BOS;
- 0.37 ha of water bodies providing suitable habitat for threatened and other native species; and
- other small areas of woodland with some communities representing similar floristic attributes to other EECs in the region.

As a result, the MBOA and BCRC would now cover 168 ha and 185 ha respectively. These additional areas would continue to be managed under Liddell's BMP.

Conclusion

While the proposed modification would result in some short-term impacts on biodiversity, these impacts are minor and are able to be effectively managed and compensated for in the medium to long term.

Overall, the Department considers that the minor disturbance and vegetation clearing would achieve a stable and self-sustaining landform that would provide an improved biodiversity outcome in the long term. OEH has also confirmed that it is satisfied with the findings of Liddell's Ecology Assessment and considers that the proposed offset strategy would provide a suitable offset package for the modification.

5.2 Rehabilitation

The MBMA includes a remnant hill that was partially mined by Liddell between 2000 and 2003 and resulted in a highwall approximately 120 m high and 450 m long with an overall slope of 35-45 degrees. At the cessation of mining, stability issues in this area resulted in two major slip failures on the eastern and western sides of this slope. Subsequent remediation works were carried out between 2004 to 2006 involving the movement of soil from the upper sections of the slope to create a buttress and reinforcement for the slip failures.

In 2006, further failures occurred with a land slide on the upper western slopes. Initial remediation works were carried out to remove the slide and contour the slope with additional reshaping works carried out in 2009. Since then, Liddell has carried out ongoing monitoring, to help identify and design the best approach for successful remediation across the entire slope.

Further remediation and rehabilitation is required to ensure that suitable vegetation can be established, and disturbed land is restored to a safe, stable and non-polluting final landform. Similarly, the modification seeks amendments to existing rehabilitation conditions to allow for greater flexibility to enable Liddell to establish a final landform that complies with the consent's existing rehabilitation objectives rather than a conceptual diagram.

As such, the modification seeks to amend condition 37 of Schedule 3 to allow Liddell to carry out rehabilitation that "must comply with the rehabilitation objectives in Table 8 (of the consent), and to be generally consistent with the proposed rehabilitation strategy in the EIS and as shown conceptually in Appendix 3 (of the consent)". The

change in wording is intended to provide an element of flexibility to allow for adaptive final landform design. This wording also aligns with the Department's current standard drafting standards.

Liddell is also seeking to amend the rehabilitation objectives (Table 8 in condition 37 of Schedule 3) to adjust grazing land requirements to align with the residual land available following rehabilitation of the 731 ha of Central Hunter Box Ironbark Woodland.

Issues Raised

In its review of the EA, the RR advised that it is satisfied with the approach for addressing the issues associated with the MBMA. However, RR questioned the proposed final landform changes. In its RTS, Liddell confirmed that it was not proposing to amend the conceptual final landform figure in the consent, but instead, it was requesting that the conditions be made more flexible so that the actual final landform can be improved and refined post determination to comply with the rehabilitation objectives under the consent.

In its submission, Muswellbrook Shire Council considered that insufficient consideration had been given to the previously proposed remediation works which now requires further expansion of the disturbance footprint to achieve the required outcomes. As such, it requested confirmation that adequate investigations have already been carried out to justify the additional remediation works, and that adequate consideration is given to include conditions that will ensure minimal ecological disturbance.

In its RTS, Liddell acknowledged that the MBMA has been subject to previous rehabilitation attempts, contributing to its currently disturbed and unstable state. Liddell attributes the landform instability issues to several key factors including slope gradient (averaging 38%), highly sodic and dispersive soils, ineffective drainage design and poor vegetation cover. Furthermore, the land slip areas are generally located at the boundary of the MBOA, a non-disturbance area. To account for this, Liddell has carried out extensive geotechnical investigations and planning to overcome any previous failures using a suite of landform evolution modelling programs and design analysis tools.

The result of Liddell's planning and analysis established the need for remediation works to slightly encroach into the MBOA to effectively address the landform instability issues across the entire slope. The remediation works would require minor vegetation clearing, earthworks, reshaping and stabilisation of the steep slope areas that abut the MBOA to achieve this.

Furthermore, Liddell has engaged with key regulators to ensure that best practice landform rehabilitation design is applied to the area.

Conclusion

The Department considers that the proposed modification would enable Liddell to achieve a self-sustaining final landform that is safe, stable and non-polluting in the long-term and complies with the rehabilitation objectives set out in the consent. While the final landform figure in Appendix 3 of the consent is titled 'conceptual', the Department accepts that the current drafting of condition 37 could be unintentionally restrictive and could lead to perverse environmental outcomes. The Department considers that the design of the final landform should be adaptive to allow for minor changes to the mine plan and to promote continuous improvement. Hence the use of the words 'generally' and 'conceptually'.

Further, the Department notes that operational details of the Mountain Block remediation works would be further managed under Liddell's RMP in consultation with RR. Liddell would also continue to consult with RR over the final landform design.

The Department is also accepting of Liddell's proposal to reduce the requirements for post-mining grazing land, without sacrificing the area proposed for native woodland regeneration, to align with the actual land available for rehabilitation.

Liddell's suggested changes to the rehabilitation conditions have been incorporated in the amended conditions of consent.

5.3 Other Issues

Other issues associated with the modification include impacts on noise, air quality, flooding, surface water and Aboriginal cultural heritage.

Table 3 | Summary of other issues raised

Issue	Findings	Recommendation
Noise	<ul style="list-style-type: none"> The EA included a Noise Impact Assessment (NIA), prepared by Global Acoustics. The NIA provided a review of recent noise monitoring data and an assessment of the likely impacts from the Mountain Block remediation works, using previously modelled scenarios for Mod 5. The closest sensitive receivers were identified as R01 and R04, located approximately 2 km east of the proposed Mountain Block remediation works. The EPA noted that the modification would result in activities being closer to residential receivers and as such, requested an updated noise assessment. In response to the EPA submission, Liddell provided updated noise modelling for worst-case scenario operational noise impacts. Cumulative noise levels were also assessed by combining the predicted noise levels from the Mountain Block remediation works with Mod 5 noise levels. The revised NIA predictions demonstrated that the proposed modification would not result in any exceedances of approved noise criteria. The EPA did not raise any further concerns and was satisfied that the modification is unlikely to result in any adverse noise impacts. Under DA 305-11-01, Liddell is required to prepare and implement a Noise Monitoring Program (condition 3 of Schedule 3). This program would, be reviewed and, if necessary, updated following the modification. 	<ul style="list-style-type: none"> The Department considers that the modification is unlikely to increase noise impacts and that the existing conditions remain appropriate for the development.
Air Quality	<ul style="list-style-type: none"> The proposed Mountain Block remediation works are likely to generate dust. These impacts would be managed using appropriate dust mitigation and suppression measures including use of water carts, limiting stock pile heights, minimising the disturbance activities and undertaking progressive rehabilitation to reduce exposed areas. The modification is not expected to result in any increase to approved impacts. The EPA did not raise any concerns and noted that any potential impacts would be managed through existing EPL conditions and the approved Air Quality Management and Monitoring Program. 	<ul style="list-style-type: none"> The Department considers that the modification is unlikely to increase air quality impacts and that the existing conditions remain appropriate for the development.

Flooding	<ul style="list-style-type: none"> • The EA does not specifically address potential flood impacts from the modification. • In its submission, OEH recommended that Liddell consider potential flooding impacts of the final landform on private-owned land including flood events up to the probable maximum flood. • In its RTS, Liddell confirmed the modification is not proposing to change the conceptual final landform and that flood impacts were previously assessed under Mod 5 and the modification would not result in any change to approved impacts. • Liddell also confirmed that the proposed Mountain Block remediation works would not adversely impact on the catchment area of Bowmans Creek and as such, would not impact any privately-owned property. • OEH noted that if approved, changes to the rehabilitation objectives would allow for more flexibility in final landform outcomes and recommended that an objective be included for flooding. 	<ul style="list-style-type: none"> • To address OEH's concerns, the Department has included an additional objective in Table 8 to ensure that there are no adverse flooding impacts to privately-owned properties are caused by the mine.
Surface Water	<ul style="list-style-type: none"> • The modification would result in additional surface disturbance and a potential increase in sediment laden run-off during remediation works. • Liddell has considered the erodibility of existing soil materials for the planned surface disturbance. Appropriate erosion and sediment control measures are proposed to mitigate these potential impacts. • Liddell is required to prepare and implement a Water Management Plan and Erosion and Sediment Control Plan to effectively manage water and sediment run-off. These plans would be reviewed and, if necessary, updated to address the modification. 	<ul style="list-style-type: none"> • The Department considers that the modification is unlikely to increase surface water impacts and that the existing conditions remain appropriate for the development.
Aboriginal Cultural Heritage	<ul style="list-style-type: none"> • The EA included an Aboriginal and cultural heritage due diligence assessment prepared by OzArk Environmental and Heritage Management to assess the potential Aboriginal and cultural heritage impacts of the proposed modification. • The assessment included a desktop search, analysis of previously recorded sites and a review of existing archeological studies completed within the study area. A field survey was also undertaken as part of the assessment which focused on landforms that held greater Aboriginal archeological potential. • Liddell has consulted with registered Aboriginal parties, who were also invited to attend a briefing and site meeting on 16 July 2018. No outstanding concerns were raised following the briefing and site meeting. • The disturbance area has low archeological potential. No Aboriginal sites were identified to occur within the disturbance area and therefore, it is unlikely that Aboriginal objects or intact archeological deposits would be harmed as a result of the proposed modification. • OEH did not raise any concerns but requested ongoing consultation with registered Aboriginal parties. OEH also noted that any potential impacts can be managed through an updated Aboriginal Cultural Heritage Management Plan, required to include a protocol for the 	<ul style="list-style-type: none"> • The Department considers that the modification is unlikely to impact on Aboriginal and cultural heritage and that the existing conditions remain appropriate for the development.

management of any human remains uncovered in the works associated with the proposed modification.

Administrative amendments

- Amendments to the following conditions would facilitate improved operational efficiencies and the flexibility to deliver an environmentally stable final landform:
- condition 2 of Schedule 2 relating to the development layout plans and updating the consent boundary;
 - condition 16 of Schedule 3 relating to the air quality assessment criteria and updating to the short-term assessment criteria for 24-hour PM10 to ensure consistency with the Department's policies;
 - condition 37 of Schedule 3 relating to rehabilitation objectives, to adjust grazing land requirements to align with the available land remaining, following completion of requirements for rehabilitating Central Hunter Box Ironbark Woodland; and
 - condition 39 of Schedule 3 updating the appropriate revision agency for the Rehabilitation Management Plan (RMP) to the Department's Division of Resources and Geosciences (DRG).
- The Department has included the proposed administrative changes in the amended conditions of consent.



6. Evaluation


The Department has completed its assessment of the proposed modification, including consideration of potential environmental, social and economic impacts and the relevant requirements of the EP&A Act.

The assessment indicates that there are minor short-term impacts to biodiversity, but that these impacts would enable a long-term stable and self-sustaining landform to be achieved. The Department has carefully considered the potential impacts of the proposal on the natural and cultural environment and on nearby residents in the locality. The Department has concluded that these impacts can be appropriately managed under modified conditions and updated management plans.

Following its assessment, the Department considers that the proposed modification would provide a better environmental outcome in the long term, and is approvable, subject to the proposed conditions (see **Appendix E** Notice of Modification and **Appendix F** Consolidated Consent). The Department has also taken the opportunity to update various conditions, in order to correct minor drafting errors and to align with the Department's current drafting standards. The relevant figures and schedule of lands have also been updated to reflect the adjustments to the consent boundary. No other changes were made to these figures.

This assessment report is hereby presented to the Independent Planning Commission of NSW for determination.

Recommended by:


Howard Reed
Director
Resource Assessments
17.1.19

Recommended by:


Mike Young
A/Executive Director
Resource Assessments and Compliance
17/1/19.



Appendices

Appendix A – Environmental Assessment

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

Appendix B – Site Verification Certificate

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

Appendix C – Submissions

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

Appendix D – Response to Submissions

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

Appendix E – Notice of Modification

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147

Appendix F – Consolidated Consent

http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9147