

Abel Upgrade Modification Environmental Assessment

EXECUTIVE SUMMARY

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The Abel Underground Mine is owned and operated by Donaldson Coal Pty Limited (Donaldson Coal), a wholly owned subsidiary of Yancoal Australia Limited.

Project Approval 05_0136 for the Abel Underground Mine was granted in 2007 pursuant to section 79J of the New South Wales (NSW) *Environmental Planning and Assessment Act, 1979*.

The Abel Upgrade Modification (the Modification), is a modification of Project Approval 05_0136 for upgrades to underground mining operations at the Abel Underground Mine.

Existing Approved Abel Underground Mine

The Abel Underground Mine is located approximately 23 kilometres north-west of the Port of Newcastle, NSW in the Newcastle Coalfield. The Abel Underground Mine area is within the Cessnock, Maitland and Newcastle Local Government Areas (Figure ES-1).

Run-of-mine (ROM) coal is approved to be extracted using the bord and pillar extraction method from the Upper and Lower Donaldson Seams within Mining Lease (ML) 1618.

Up to 4.5 million tonnes per annum (Mtpa) ROM coal is currently approved to be extracted over a mine life of approximately 21 years (i.e. until 31 December 2028).

ROM coal is transported to the ROM coal stockpile located within the Abel Box Cut (Plate ES-1). It is then transported via internal sealed roads to the Bloomfield Coal Handling and Preparation Plant (CHPP). ROM coal is also approved to be transported by overland conveyor from the ROM coal stockpile to the Bloomfield CHPP should financial circumstances permit. This would replace truck haulage.

Project Approval 05_0136 also covers the operation of the Bloomfield CHPP, which is currently approved to process up to 6.5 Mtpa ROM coal from the Abel Underground Mine, Tasman Underground Mine, Bloomfield Colliery and other sources.

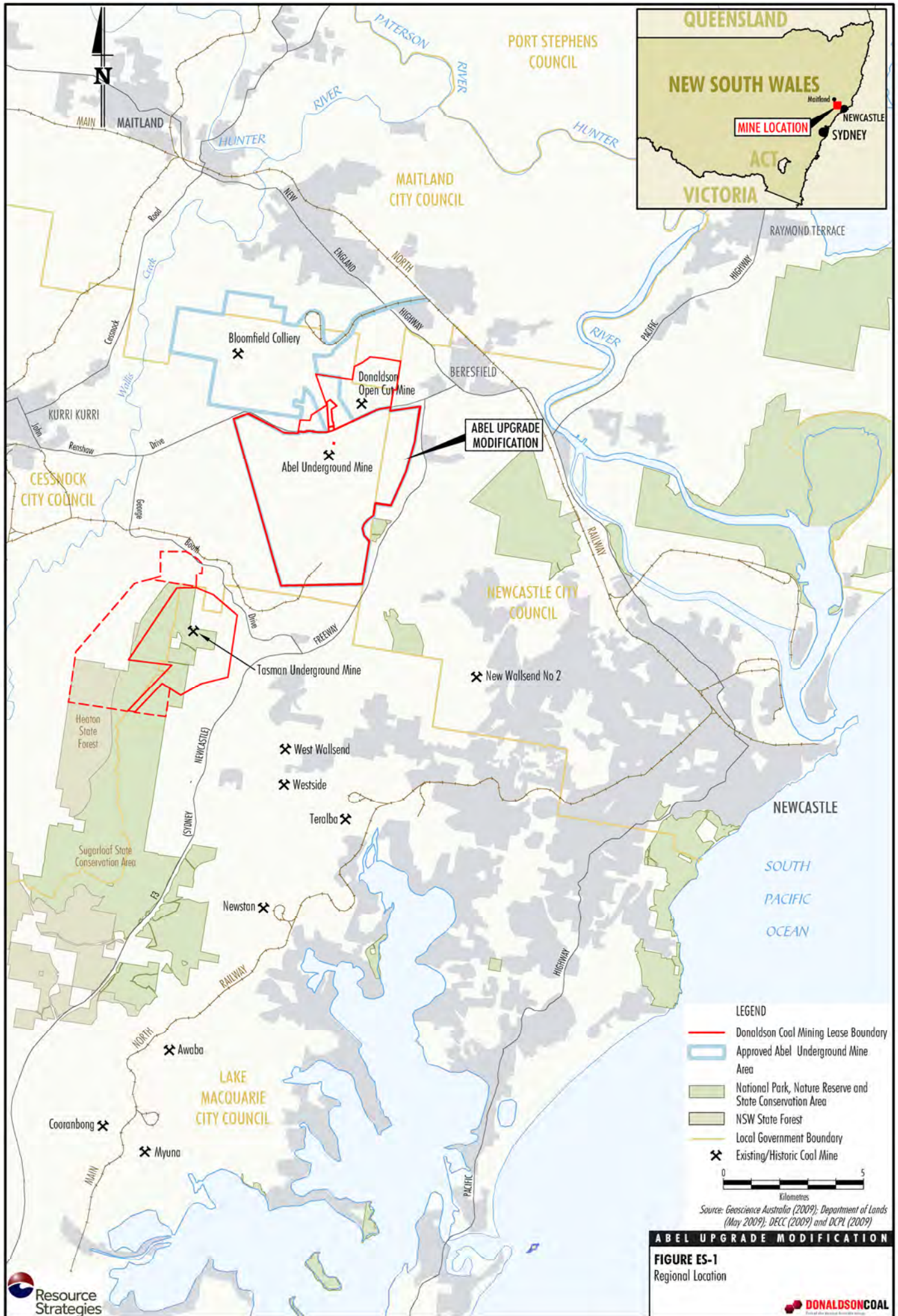
Product coal from the Bloomfield CHPP is loaded to trains and transported by rail to the Port of Newcastle and other customers.

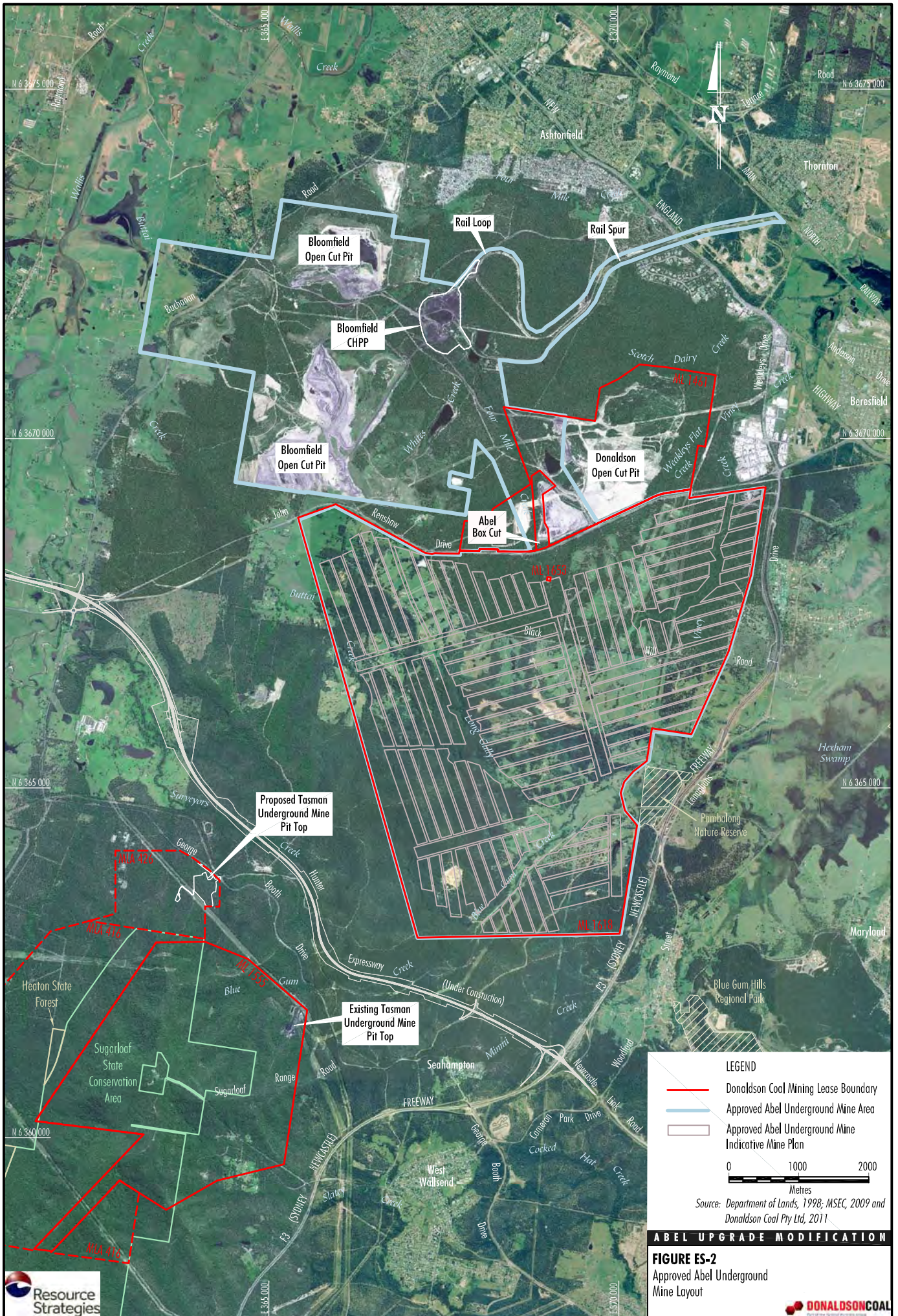
Reject material from the Bloomfield CHPP is currently approved to be disposed at the Bloomfield Colliery.

Figure ES-2 shows the general arrangement of the approved Abel Underground Mine, as well as the locations of the Bloomfield CHPP, Tasman Underground Mine, Donaldson Open Cut Mine and Bloomfield Colliery.



Plate ES-1 – Existing Surface Infrastructure in the Abel Box Cut





LEGEND

- Donaldson Coal Mining Lease Boundary
- Approved Abel Underground Mine Area
- Approved Abel Underground Mine Indicative Mine Plan

0 1000 2000
Metres

Source: Department of Lands, 1998; MSEC, 2009 and Donaldson Coal Pty Ltd, 2011

ABEL UPGRADE MODIFICATION

FIGURE ES-2
Approved Abel Underground Mine Layout

Modification Description

The proposed Modification would involve the continuation of underground mining within the approved area (i.e. ML 1618) and the approved seams.

However, in addition to approved bord and pillar extraction, it is proposed to also employ a combination of longwall, shortwall and bord and pillar mining.

The Modification would enable increased efficiency and quantity of coal recovery within the approved mining areas and seams for the Abel Underground Mine.

ROM coal extraction from the Abel Underground Mine would increase from 4.5 Mtpa to up to 6.1 Mtpa due to the Modification.

Modification Mine Layout

The Modification mine layout (Figure ES-3) has been designed to meet the existing subsidence management commitments designed to protect key natural and built surface features.

To meet these existing subsidence commitments, the Modification mine layout has been designed so that there would be no longwall or shortwall mining beneath:

- principal residences and other specified structures (without the approval of the relevant landowner) (Box ES-1);
- Schedule 2 streams (i.e. third order and above streams);
- rainforest areas;
- Blue Gum Creek alluvium; and
- identified cliff areas.

The Subsidence Assessment prepared for the Modification demonstrated that the Modification mine layout could be developed to meet the existing subsidence management commitments.

Bloomfield CHPP

The amount of ROM coal processed at the Bloomfield CHPP would increase from 6.5 to 8.5 Mtpa due to the increases in ROM coal extraction for the Modification and at the Tasman Underground Mine (subject to approval of the Tasman Extension Project).

Box ES-1 Subsidence Management Commitment – Principal Residences



Principal Residence*

Subsidence Management Commitments:

- Limit mining operations to first working beneath principal residences (without agreement from the landowner).
- Ensure that mining causes no subsidence impacts that require mitigation works.
- Subsidence control zone around each principal residence based on 26.5° angle of draw.

Modification Mine Layout:

- No longwall or shortwall mining beneath principal residences (without agreement from the landowner).

* Source: Strata Engineering (2006)

There would also be an associated increase in the amount of reject material produced at the Bloomfield CHPP.

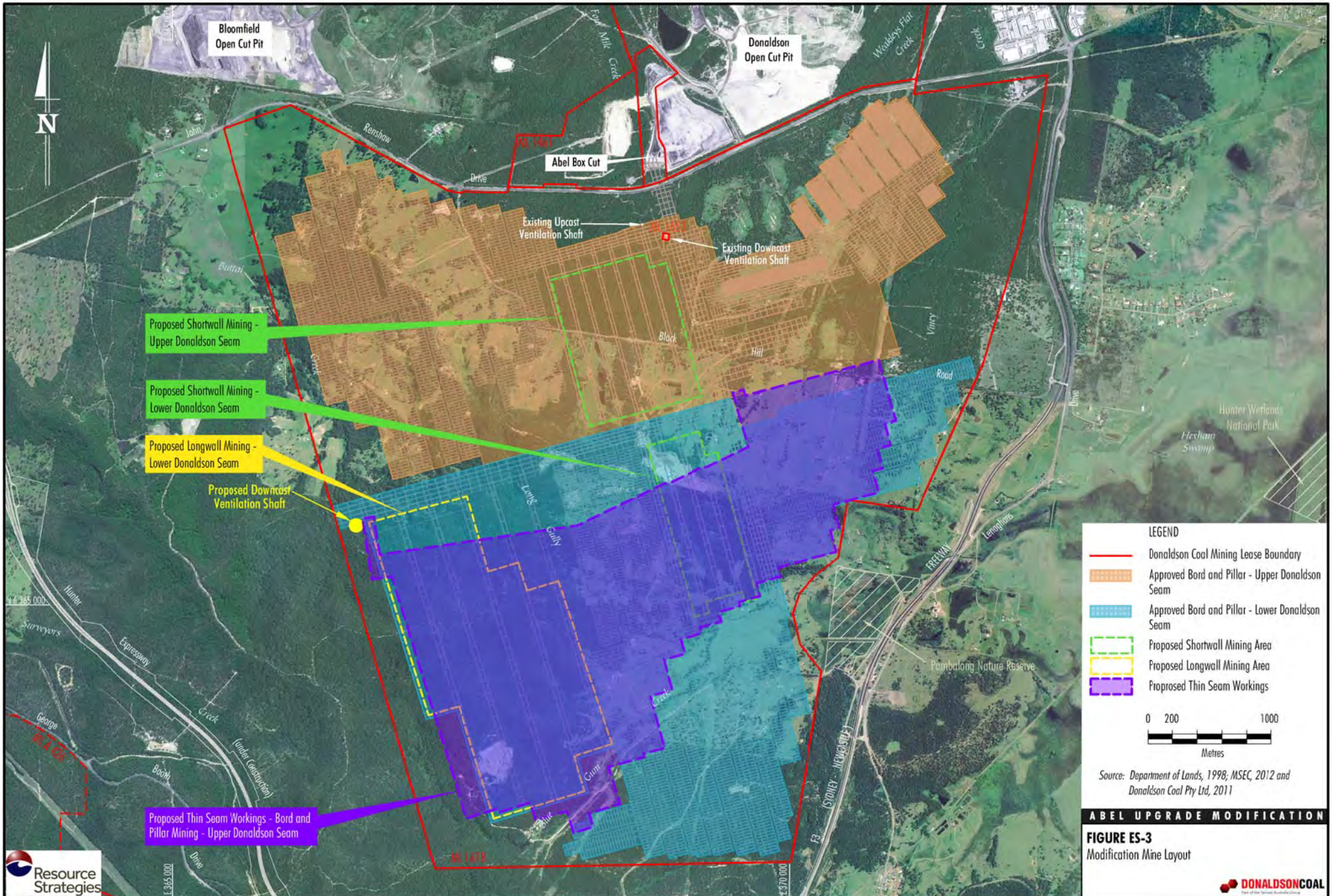
Surface Infrastructure

Modifications and upgrades to the Bloomfield CHPP within the existing approved disturbance area would be necessary to accommodate the peak increase in processing requirements.

Should financial circumstances permit, the approved overland conveyor would be constructed using a slightly revised alignment (i.e. in comparison to the approved alignment).

Figure ES-4 shows surface infrastructure for the Modification.

In addition, a downcast ventilation shaft would be required to support the longwall mining in the Lower Donaldson Seam (Figure ES-3).



Proposed Shortwall Mining - Upper Donaldson Seam

Proposed Shortwall Mining - Lower Donaldson Seam

Proposed Longwall Mining - Lower Donaldson Seam

Proposed Downcast Ventilation Shaft

Proposed Thin Seam Workings - Bord and Pillar Mining - Upper Donaldson Seam

LEGEND

- Donaldson Coal Mining Lease Boundary
- Approved Bord and Pillar - Upper Donaldson Seam
- Approved Bord and Pillar - Lower Donaldson Seam
- Proposed Shortwall Mining Area
- Proposed Longwall Mining Area
- Proposed Thin Seam Workings

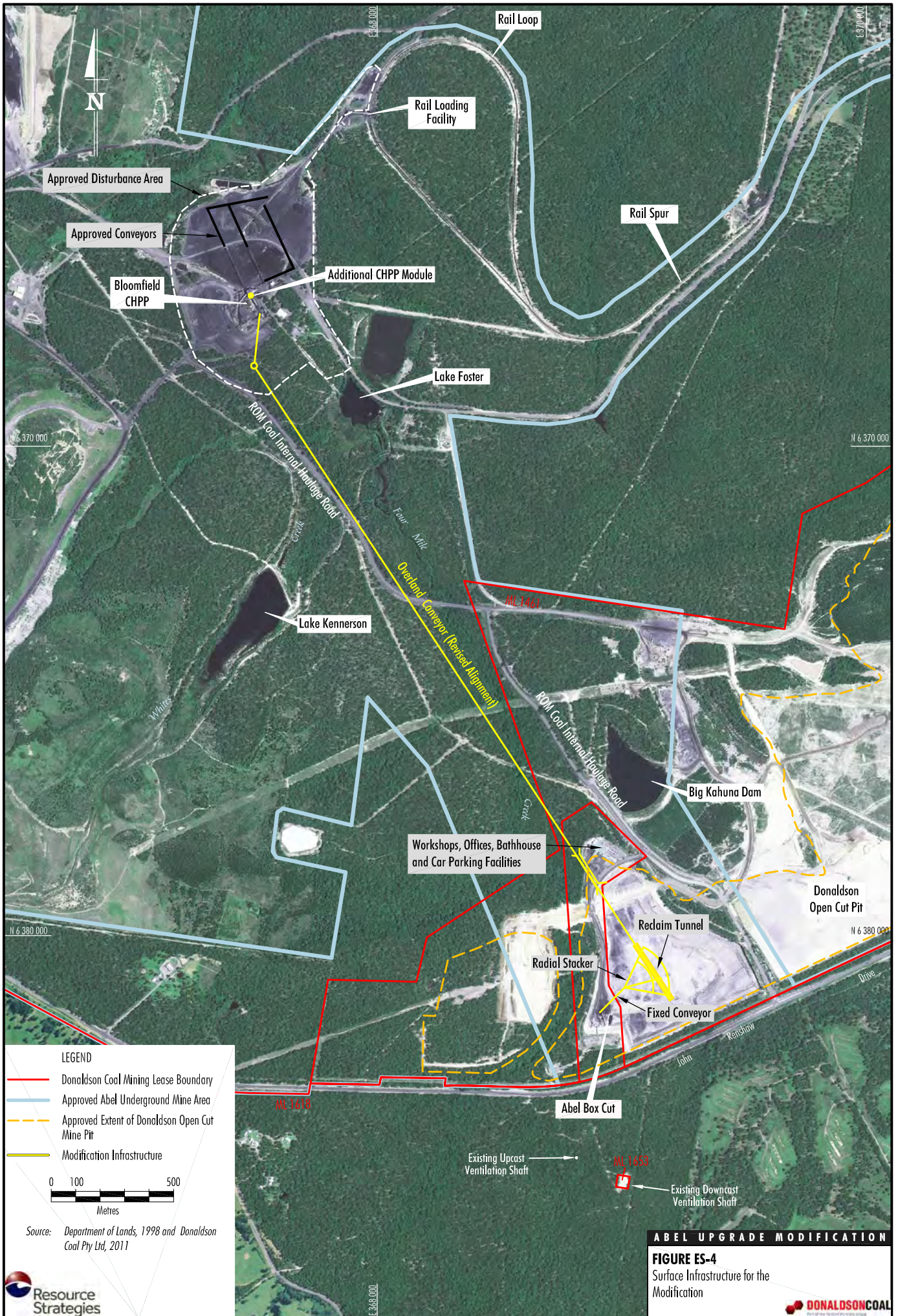
0 200 1000
Metres

Source: Department of Lands, 1998; MSEC, 2012 and Donaldson Coal Pty Ltd, 2011

ABEL UPGRADE MODIFICATION

FIGURE ES-3
Modification Mine Layout





Environmental Review

Underground Mining Areas

In comparison to the approved mine layout, changes in predicted subsidence would only occur in the longwall and shortwall mining areas.

In the longwall and shortwall areas, predicted maximum tilts and curvatures for the Modification mine layout are similar in magnitude, or less than, those predicted for the approved mine layout.

Therefore, potential subsidence impacts associated with the Modification mine layout would be similar in nature to those associated with the approved mine plan.

As the Modification mine layout would meet existing subsidence management commitments, no additional consequences from subsidence to key natural and built surface features are predicted, in comparison to those predicted for the approved Abel Underground Mine.

There would be no additional impacts to groundwater or surface water resources, or groundwater dependent ecosystems, due to the Modification.

No additional potential impacts to ecology, including rainforest areas (Box ES-2), are predicted due to the Modification.

Changes in the method of mining (i.e. longwall or shortwall mining) may increase the potential for impacts to Aboriginal heritage sites with either a low, or low to moderate significance. These potential impacts were described in the draft Aboriginal Cultural Heritage Assessment, which was reviewed by the relevant Aboriginal stakeholders. Mitigation measures for the sites were developed in consultation with these stakeholders.

Surface Infrastructure

No exceedances of relevant operational noise or air quality criteria are predicted at receiver locations despite the changes in surface infrastructure, the increased ROM coal production rate and the associated increase in the processing rate at the Bloomfield CHPP for the Modification.

Minor additional vegetation clearance would be required for additional surface infrastructure. However, this clearance would not include any threatened ecological communities.

Box ES-2 Subsidence Management Commitment – Rainforest Areas



Rainforest Area*

Subsidence Management Commitments:

- Limit mining operations to first working beneath rainforest areas.
- Ensure that mining causes no subsidence impacts that require mitigation works.
- 20 millimetre line of subsidence set back from the rainforest protection zone.

Modification Mine Layout:

- No longwall or shortwall mining beneath rainforest areas.

* Source: Appendix A.

Mitigation Measures, Management and Monitoring

There would be limited additional environmental impacts due to the Modification in comparison to those approved for the existing Abel Underground Mine.

The existing mitigation measures and monitoring requirements specified in the conditions and limits in Project Approval 05_0136 and Donaldson Coal's Environment Protection Licences (EPLs) 11080 and 12856 would be maintained for the Modification, and are considered suitable for the ongoing management of potential environmental impacts.

Notwithstanding, existing management plans would be updated as required for the Modification (e.g. the Water Management Plan). In addition, Subsidence Management Plans/Extraction Plans would be prepared prior to the commencement of any second workings at the Abel Underground Mine.

A draft revision of the Aboriginal Heritage Management Plan has been prepared in consultation with Aboriginal stakeholders, which describes mitigation measures for additional potential impacts to Aboriginal Heritage. The Aboriginal Heritage Management Plan would be revised further, if required.

Biodiversity offset land would be secured, as required, prior to the commencement of any additional clearing associated with the Modification.

Modification Justification

The Modification would enable increased efficiency and quantity of coal recovery within the approved mining areas and seams at the Abel Underground Mine, resulting in increased employee numbers, revenue and associated taxes and royalties to the NSW State Government.

The Modification is justified on the basis that the changes in mining method would result in limited additional environmental impacts.

The Modification would not change the existing approved subsidence management commitments detailed in Project Approval 05_0136 for the Abel Underground Mine, and ROM coal handling and other surface management issues (e.g. surface water management) would be conducted in accordance with existing environmental conditions and limits specified in Project Approval 05_0136 and Donaldson Coal's EPLs 11080 and 12856.

