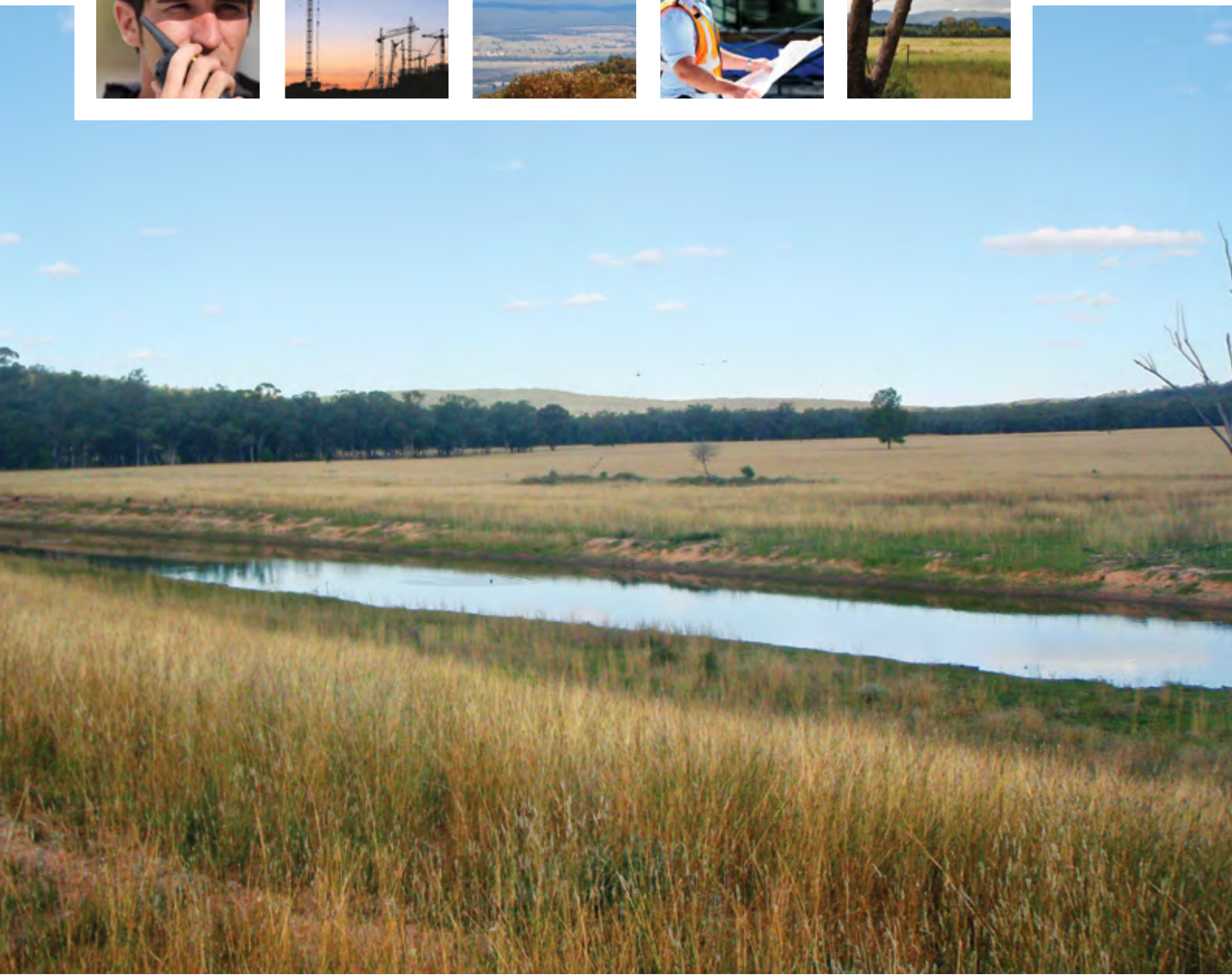
MAULES CREEK COAL MINE

Project Approval Modification 2
Environmental Assessment

February 2014







Hansen Bailey
ENVIRONMENTAL CONSULTANTS

WHITEHAVEN

MAULES CREEK COAL MINE

PROJECT APPROVAL MODIFICATION 2

ENVIRONMENTAL ASSESSMENT

Prepared by:

HANSEN BAILEY
PO Box 473
SINGLETON NSW 2330

February 2014

for:

MAULES CREEK COAL PTY LIMITED
121 Merton Street
BOGGABRI NSW 2382

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

MAULES CREEK COAL MINE

PROJECT APPROVAL MODIFICATION 2

for

Maules Creek Coal Pty Limited

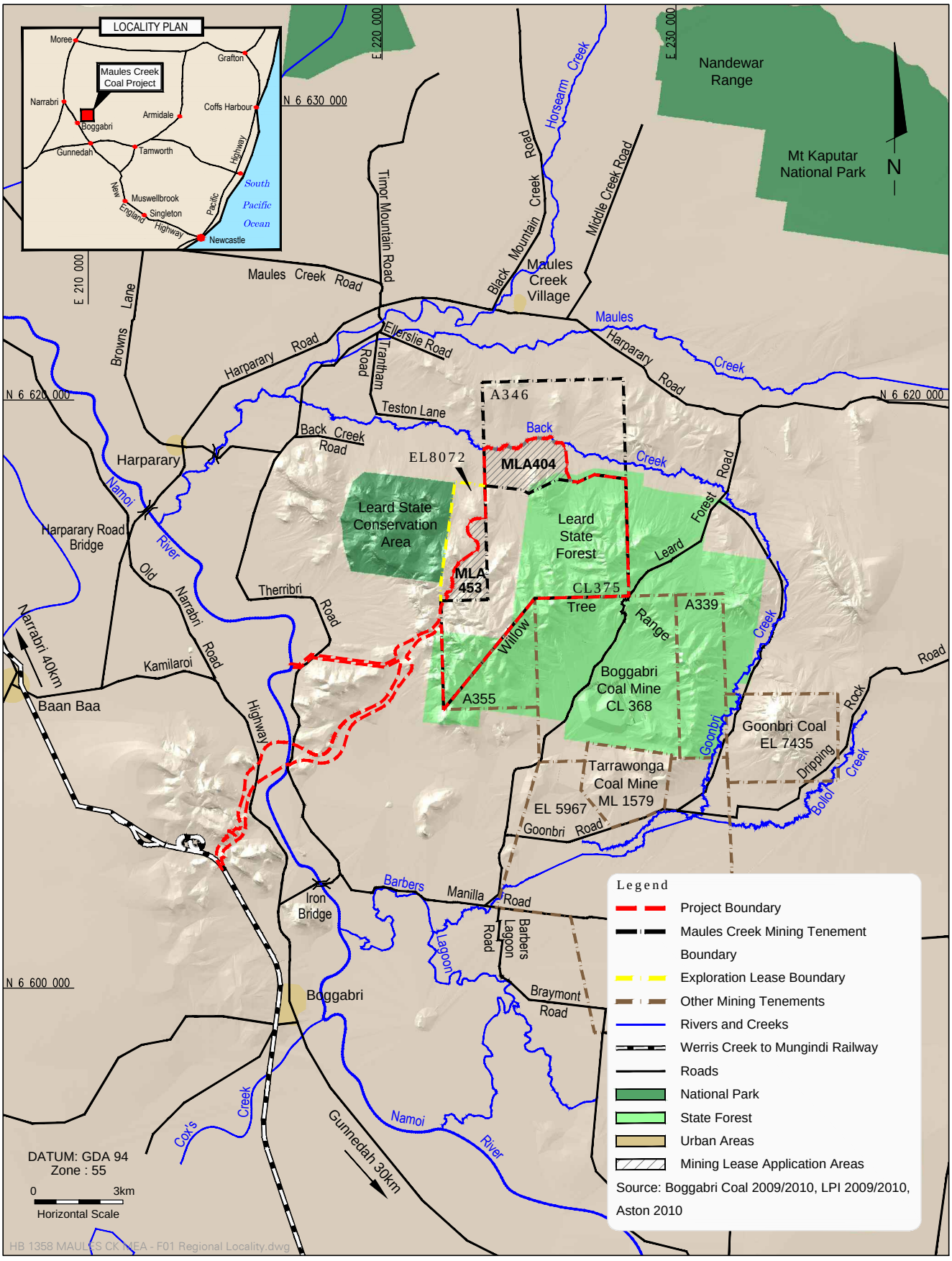
1 INTRODUCTION

1.1 BACKGROUND

Maules Creek Coal Mine is located in the Gunnedah Coal basin approximately 20 kilometres (km) to the north-east of Boggabri in the north-west region of New South Wales (NSW) within the Narrabri Local Government Area (LGA) (see **Figure 1**). Maules Creek Coal Mine is owned by Maules Creek Coal (MCC), a joint venture between Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven Coal Limited (Whitehaven)) (75%), ICRA MC Pty Ltd (15%) and J-Power Australia Pty Limited (10%). Whitehaven manages the Maules Creek Coal Mine on behalf of MCC.

Aston Coal 2 Pty Limited was granted Project Approval (PA) 10_0138 on 23 October 2012 by the Planning Assessment Commission (PAC) under delegation of the Minister for Planning and Infrastructure. PA 10_0138 provides approval for the construction and operation of the Maules Creek Coal Mine for a period of 21 years, extracting coal at a rate of up to 13 Million tonnes per annum (Mtpa) Run of Mine (ROM) coal.

The *Maules Creek Coal Project Environmental Assessment* (Maules Creek EA) (Hansen Bailey, 2011a) is the supporting document to PA 10_0138 and describes the construction, operation and closure of the mine. A modification to PA 10_0138 was granted by the acting Executive Director of NSW Department of Planning and Infrastructure (DP&I) under delegation from the Minister for Planning and Infrastructure on 25 July 2013 to enable the construction of infrastructure that was determined during the detailed design of the Maules Creek Coal Mine. The supporting document to that modification is the *Maules Creek Coal Mine Project Approval Modification Environmental Assessment* (Maules Creek Modification EA) (Hansen Bailey, 2013).



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Regional Locality

FIGURE 1

1.2 DOCUMENT PURPOSE

MCC has reviewed and optimised the design for key water related infrastructure components including the raw water pipeline and associated pump installation required for the Maules Creek Coal Mine.

In respect of the minor design amendments proposed, MCC is seeking approval from the Minister for Planning and Infrastructure for a modification to PA 10_0138 under section 75W of Part 3A (the former) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The details of the minor design change are described in **Section 3** (this Modification).

This Environmental Assessment (EA) has been prepared by Hansen Bailey Environmental Consultants (Hansen Bailey) on behalf of MCC to support an application for this Modification. Operations under this Modification will be generally in accordance with those described in this EA and consistent with the Maules Creek EA and Maules Creek Modification EA.

1.3 DOCUMENT STRUCTURE

This EA is structured as follows:

- **Section 2** provides information relating to Maules Creek Coal Mine as currently approved;
- **Section 3** provides a description of this Modification;
- **Section 4** describes the regulatory framework relevant to this Modification;
- **Section 5** details the stakeholder engagement program that has been undertaken and any issues raised during that process;
- **Section 6** assesses the predicted environmental impacts and outlines the management and mitigation measures to be implemented by MCC;
- **Section 7** presents MCC's statement of commitments for this Modification;
- **Section 8** provides a justification for this Modification;
- **Section 9** lists abbreviations used throughout this EA; and
- **Section 10** provides a list of all materials referenced throughout this EA.

2 APPROVED OPERATIONS

This section describes the approved works at Maules Creek Coal Mine and the existing Environmental Management System (EMS) and associated monitoring program.

2.1 OVERVIEW

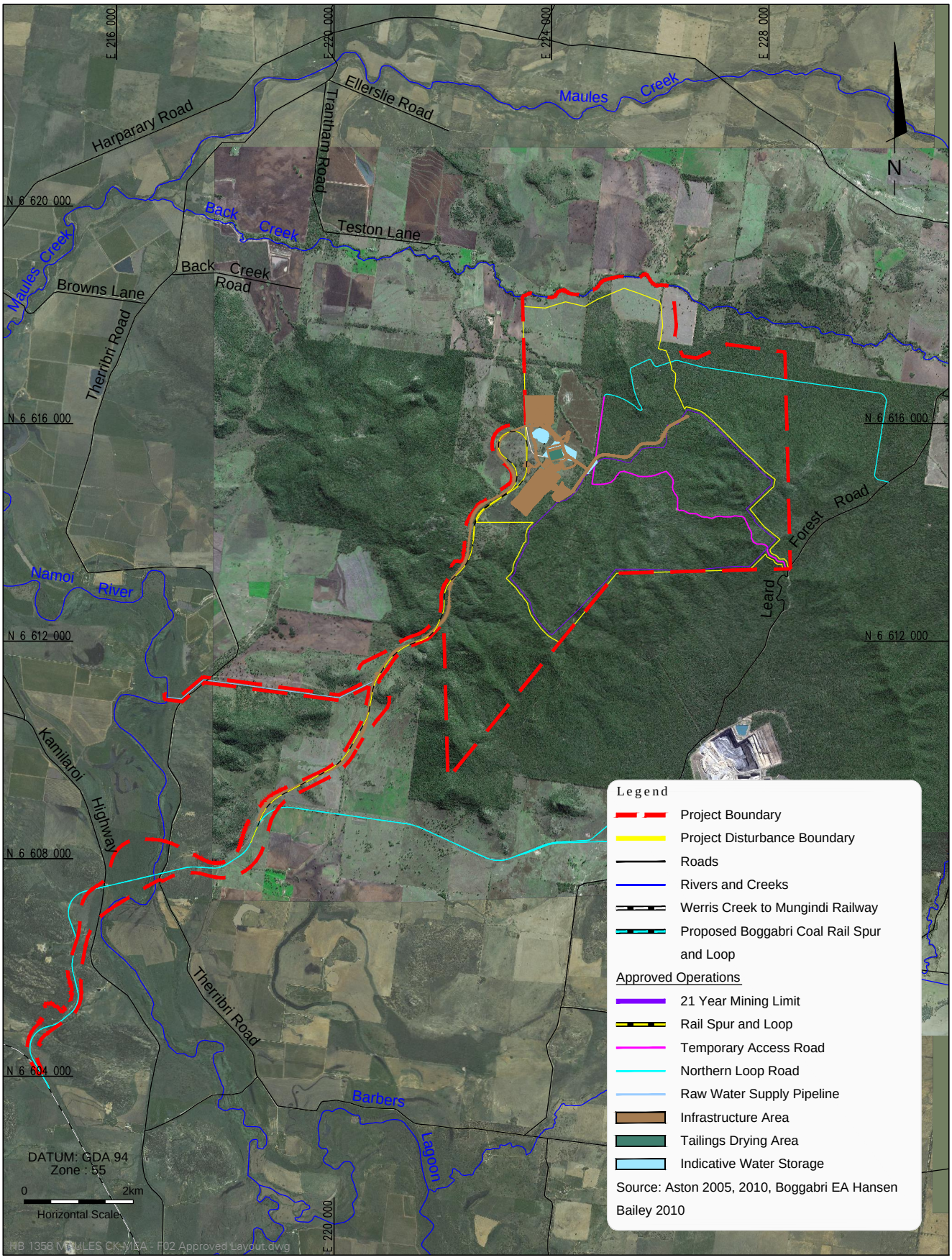
The construction and operation of the Maules Creek Coal Mine is to be undertaken generally in accordance with PA 10_0138 and as described within its supporting documents: the Maules Creek EA and the Maules Creek Modification EA.

The Maules Creek Coal Mine has approval to mine coal until December 2034, including:

- The construction and operation of an open cut mining operation extracting up to 13 Mtpa ROM coal to the Templemore Seam;
- Open cut mining fleet including excavator/shovels and fleet of haul trucks, dozers, graders and water carts utilising up to 470 permanent employees;
- The construction and operation of a Coal Handling and Preparation Plant (CHPP) with a throughput capacity of 13 Mtpa ROM coal;
- The construction and operation of a Tailings Drying Area;
- The construction and operation of a rail spur, rail loop, associated load out facility and connection to the Werris Creek to Mungindi Railway Line;
- The construction and operation of a Mine Access Road;
- The construction and operation of administration, workshop and related facilities;
- The construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River;
- The installation of supporting power and communications infrastructure;
- The Construction and operation of a high voltage (132 kV) transmission line and switching station;
- The minor extension of an existing low voltage (11 kV) transmission line to the Project Boundary; and
- The construction and operation of explosive magazine and explosives storage areas.

The conceptual mine layout within the Project Boundary is illustrated in **Figure 2**.

MCC holds three mining authorisations relevant to the Project, being Authorisation (A) 346, Coal Lease (CL) 375 and Exploration Lease (EL) 8072 as shown on **Figure 1**.



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Approved Conceptual Infrastructure Layout

FIGURE 2

Additionally, MCC has submitted a Mining Lease Application (MLA) 404 over a portion of A346, and second MLA (MLA453) over the portion of EL8072 that falls within the Project Boundary to the west of CL 375. These applications are currently being reviewed and determined by the relevant regulatory authorities.

2.2 RAW WATER PIPELINE AND PUMP INSTALLATION

Where additional water is required in the mine water management system during construction and operations, MCC will utilise its current works approval and high security water allocation from the Namoi River.

PA 10_0138 provides approval for the construction of a raw water pipeline and pump installation to enable the transfer of water from the Namoi River to Maules Creek Coal Mine to supplement onsite water supplies (see **Figure 2**).

2.3 ENVIRONMENTAL MANAGEMENT SYSTEM

MCC has implemented an EMS that provides the framework to facilitate compliance with legal and other requirements (including statutory approval and stakeholder expectations).

A component of the EMS is the development and implementation of a number of Environmental Management Plans (EMPs) as required under various conditions within PA 10_0138, including:

- Water Management (Schedule 3, Condition 40 of PA 10_0138);
- Air Quality and Greenhouse Gases (Schedule 3, Condition 34 of PA 10_0138);
- Biodiversity (Schedule 3, Condition 41 to 53 of PA 10_0138);
- Heritage (Schedule 3, Condition 58 of PA 10_0138);
- Noise (Schedule 3, Condition 16 of PA 10_0138);
- Rehabilitation (Schedule 3, Condition 73 of PA 10_0138);
- Blast Management (Schedule 3, Condition 25 of PA 10_0138); and
- Traffic (Schedule 3, Condition 64 of PA 10_0138).

These EMPs are to be prepared in consultation with relevant stakeholders and to the approval of the Director-General of DP&I.

2.4 ENVIRONMENTAL MONITORING PROGRAM

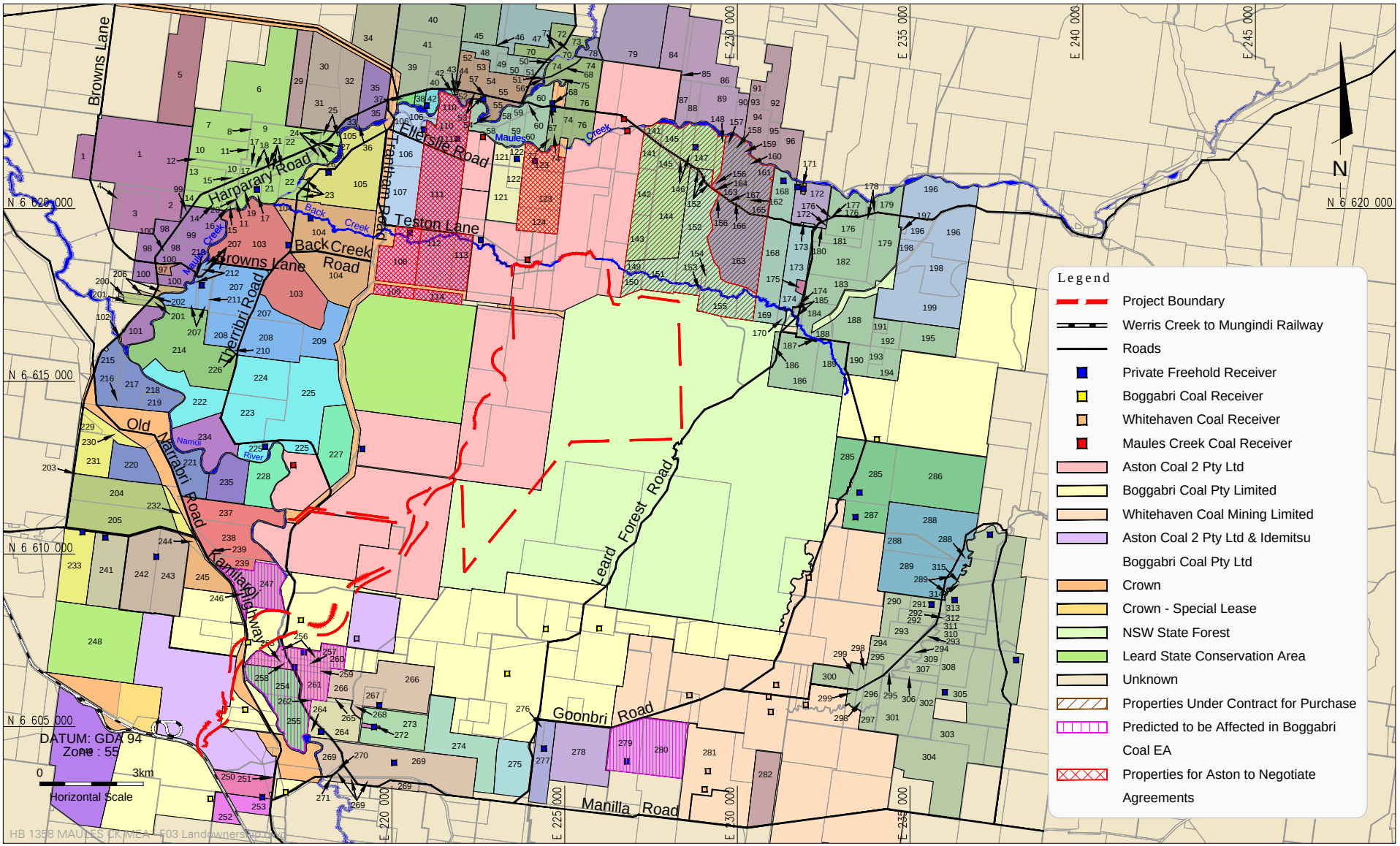
An environmental monitoring program was developed and implemented by MCC during the planning and preparation of the Maules Creek EA.

Baseline monitoring has continued to be collected up to the commencement of construction and operational activities. The groundwater monitoring network has recently been expanded with the installation of an additional 17 monitoring bores in line with the recommendations from the Groundwater Impact Assessment provided in the Maules Creek EA.

MCC in conjunction with the neighbouring coal mines (Boggabri Coal Mine and Tarrawonga Coal Mine) have developed cumulative environmental monitoring protocols in consultation with regulatory stakeholders to manage potential cumulative environmental impacts of these coal mining projects within the region. The environmental monitoring protocols have been developed to share environmental monitoring data and enable operations to be modified where possible to reduce the cumulative impacts on neighbouring receivers.

2.5 LAND OWNERSHIP

Land ownership within and surrounding the Project Boundary is shown on **Figure 3**. There are no private freehold landholders (with whom MCC does not have an agreement in place with) located within the Project Boundary. This Modification will take place on land that is owned by MCC and across the Therribri Road, which is managed by NSC.



HB 1358 MAULES CK MEA - F03 Landowners.mxd

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Land Ownership

FIGURE 3

3 MODIFICATION DESCRIPTION

This section provides a description of this Modification, the need for it, the alternatives considered and the associated land ownership particulars.

3.1 BACKGROUND

Since grant of PA 10_0138, MCC has further evaluated and tested the functionality of the mine layout presented in the Maules Creek EA as part of the detailed engineering design phase. This work has resulted in the development of an optimised design for key water related infrastructure components (raw water pipeline and pump installation) that are required to facilitate the construction and operation of the Maules Creek Coal Mine. In respect of the design amendments proposed, MCC seeks to modify PA 10_0138 as described in the following sub-sections.

3.2 RAW WATER PIPELINE ALIGNMENT AND PUMP INSTALLATION

As approved under PA 10_0138, a raw water pipeline and pump installation will be constructed to enable the transfer of water from the Namoi River to Maules Creek Coal Mine to supplement onsite water supplies (see **Section 2.2**).

Following the detailed engineering design phase, the alignment of the water pipeline to the Namoi River and the arrangement of the associated pump installation is proposed to be amended. These amendments are required to:

- Allow access to a more practical pumping location from the Namoi River, where depths are greater and allow for more efficient pumping operations; and
- Ensure this water management infrastructure is situated on land owned by MCC.

The pipeline (which has a nominal 315 mm diameter) is proposed to be constructed on an alternative alignment to that described within the Maules Creek EA. The western portion of the water pipeline is proposed to be diverted on an alignment south of the currently approved alignment. The water intake for the pipeline on the Namoi River will be located approximately 300 m upstream of the location as described within the Maules Creek EA.

Figure 4 illustrates a comparison between the conceptual alignment of the water pipeline as illustrated within the Maules Creek EA and as proposed for this Modification.

Figure 5 illustrates the proposed realignment of the pipeline and the location for the pump installation as sought in as part of this Modification. To allow for associated construction works, narrow corridor for the pipeline and pump installation has been assessed (consistent with the Maules Creek EA). The section of the pipeline that is subject to this Modification will be placed directly on the surface of the land with no disturbance required. The portion of the pipeline that will intersect with Therribri Road will be buried below the road formation.

The pipeline and pump installation will be constructed in consultation with the NSW Office of Water (NOW) and Narrabri Shire Council (NSC) (see **Section 5.1**) and in accordance with the relevant Australian Standards. The construction of the pipeline below the Therribri Road has been approved by NSC.

As described further in **Section 3.3**, the land required to facilitate the realignment of the pipeline and relocation of the pump installation is on a separate Lot and Deposited Plan (DP) than that currently approved under PA 10_0138 and outlined in the Maules Creek EA. In this regard, MCC will consult with NOW (see **Section 5.1**) regarding a change in the particulars of the land to the existing water works approval for the pipeline and associated pump installation.

All of the other components of the Maules Creek Coal Mine remain consistent with the Maules Creek EA and Maules Creek Modification EA.

3.3 LAND OWNERSHIP

Under PA 10_0138, the pipeline and associated pump installation is currently approved to be constructed on Lot 2 DP 62275 (held by Aston Coal 2 Pty Limited), Lot 7002 DP 1051146 and Lot 7300 DP 1143939 (Crown Land).

The land required to facilitate the amended pipeline alignment is situated within Lot 54 DP 754948, which is adjacent to the Project Boundary (see **Figure 6**). MCC has recently acquired this land.

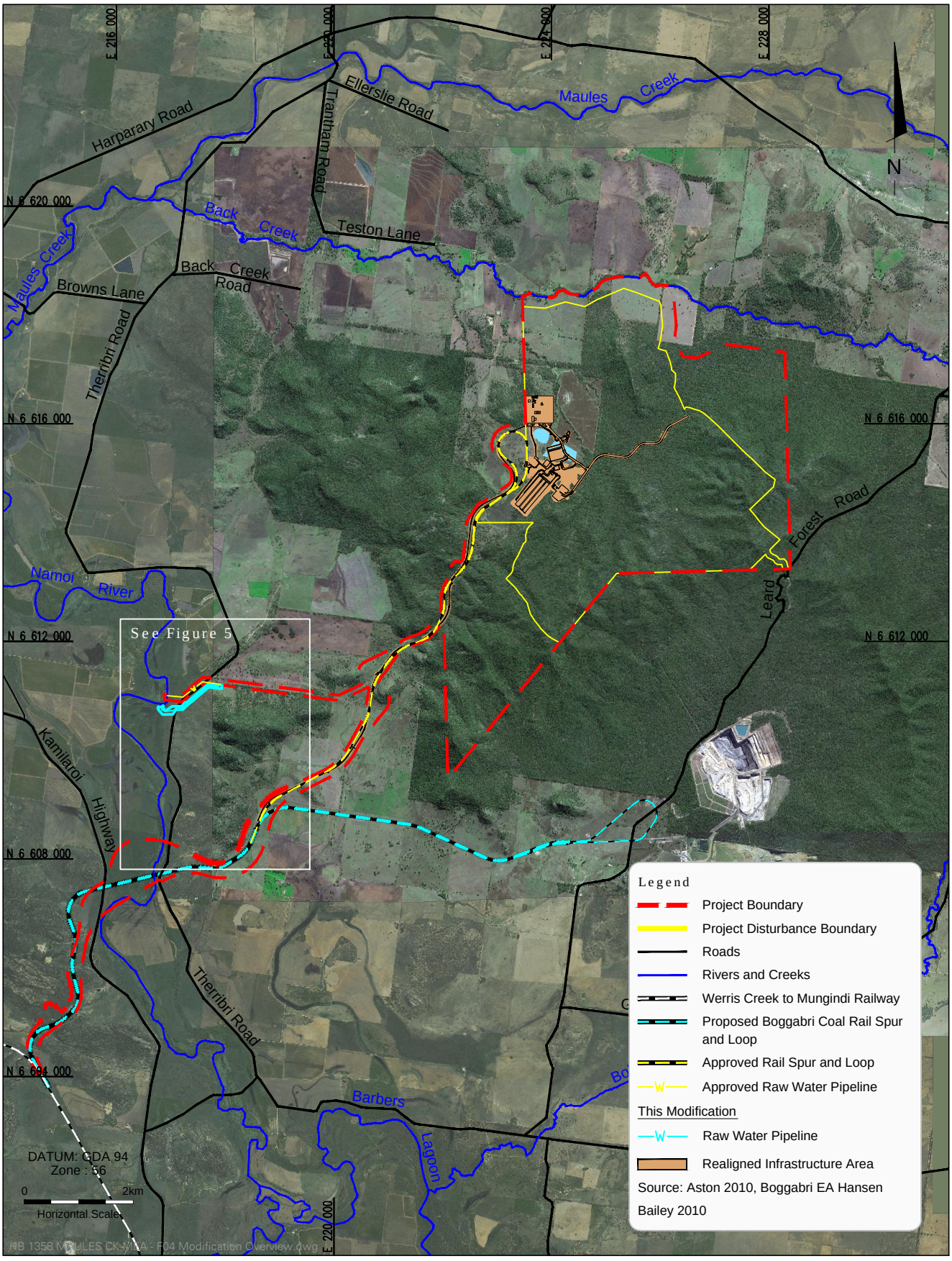
As part of this Modification, MCC seeks approval to amend the Project Boundary to accommodate the changes described in **Section 3** (see **Figure 4** and **Figure 5**).

The schedule of lands to which PA 10_138 is also proposed to be amended as part of this Modification, as illustrated in **Appendix A**.

3.4 MODIFICATION NEED

This Modification is required to enable the realignment of the pipeline and relocation of the pump installation where the final engineering design has resulted in minor adjustments to that currently approved.

Grant of approval for this Modification will enable the construction of the Maules Creek Coal Mine water management infrastructure to the Namoi River in the most efficient method practical. Ultimately, this will allow the transfer of water from the Namoi River to the mine to supplement onsite water supplies, which is critical for the construction and operational activities.



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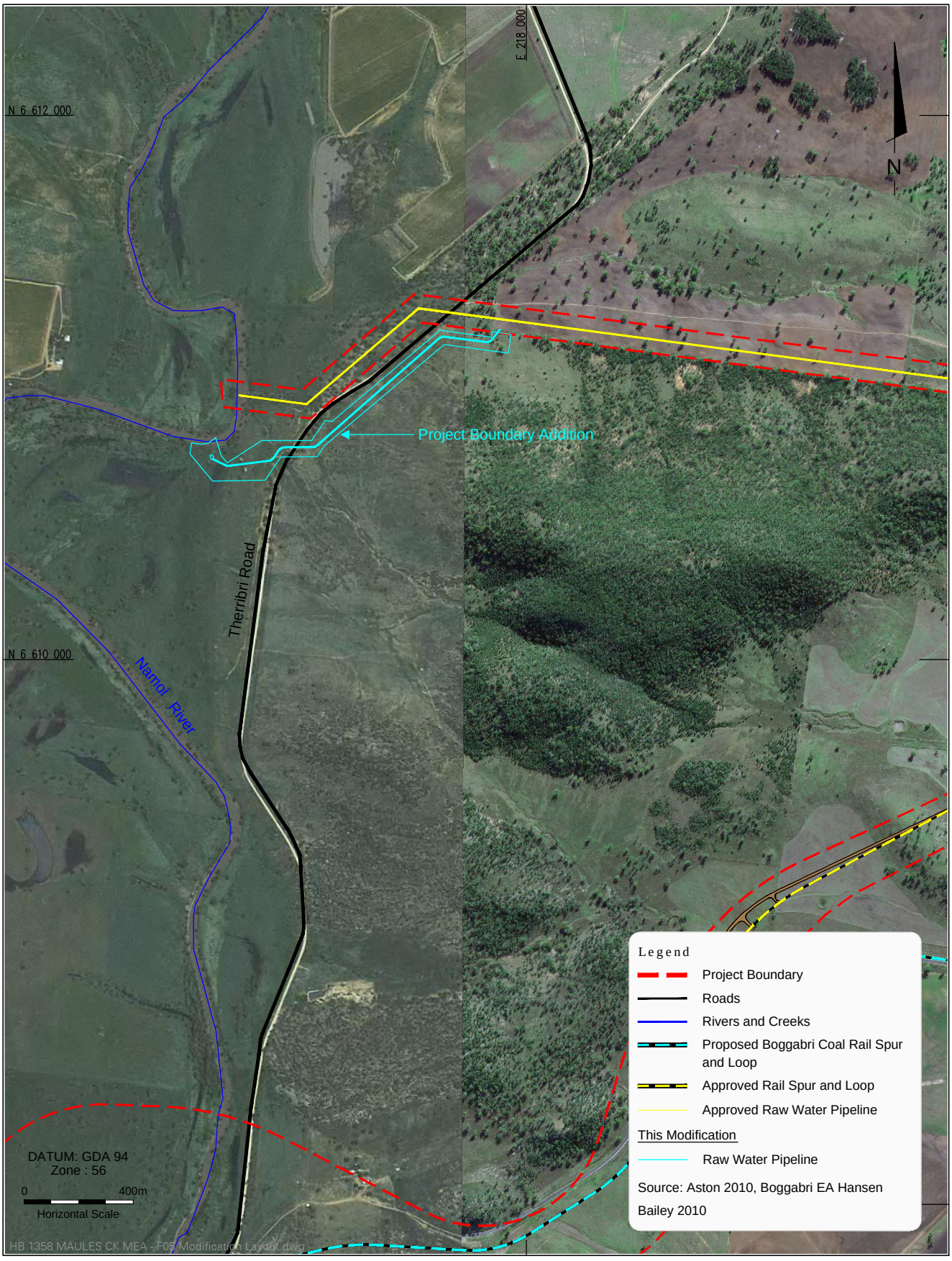
Modification Overview

FIGURE 4



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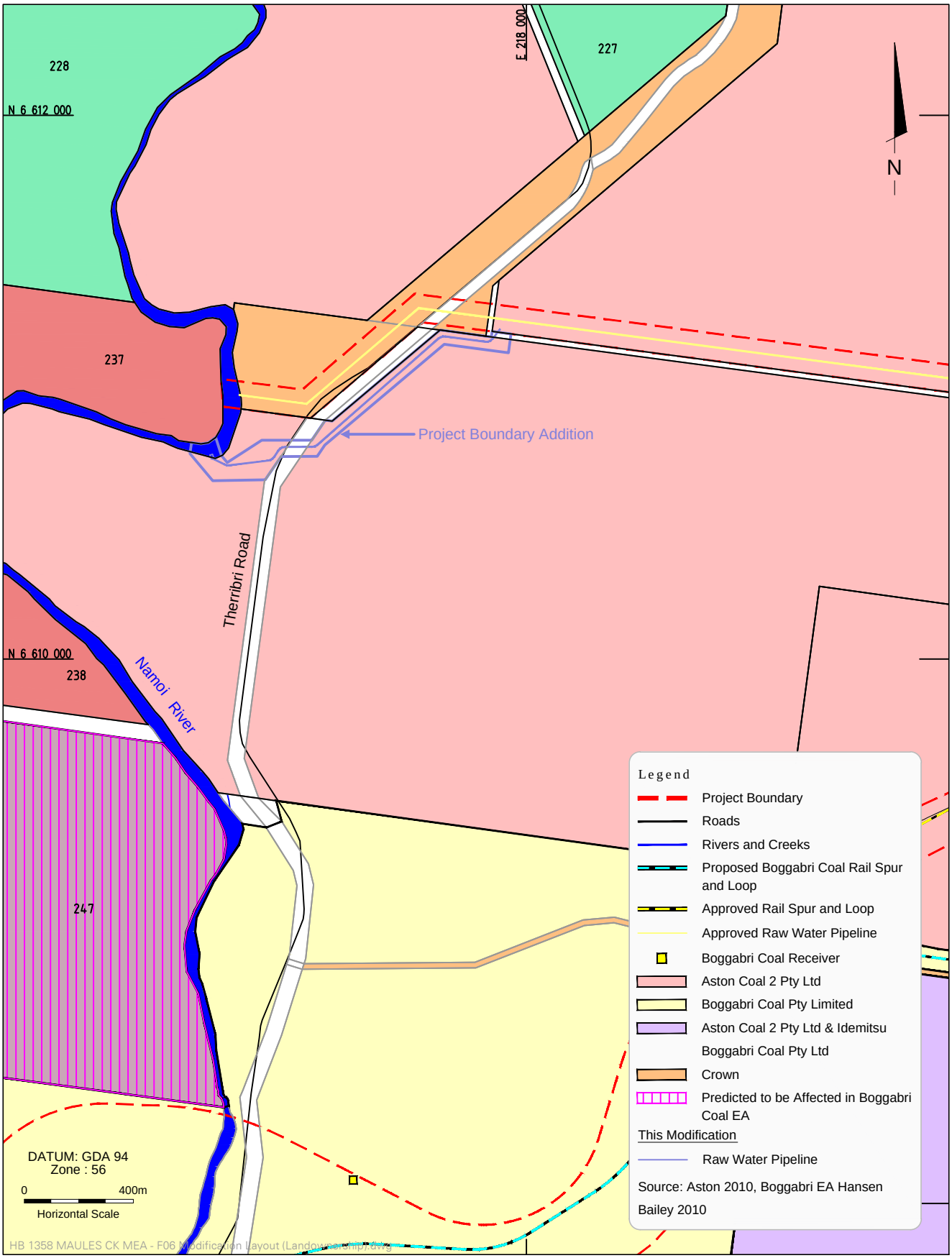
Modification Overview

FIGURE 5



MAULES CREEK COAL MINE

Whitehaven Logo.jpg | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Modification Layout (Landownership)

FIGURE 6

3.5 ALTERNATIVES CONSIDERED

MCC has considered alternatives to this Modification having regard to potential environmental impacts as well as the principles of ESD and the "*objects*" of the EP&A Act. The alternatives considered include:

- Alternative 1 – Construction of the pipeline and pump installation in the location as conceptually illustrated within the Maules Creek EA;
- Alternative 2 – Consideration of different alignments and sites for the pipeline and pump installation, respectively; and
- Alternative 3 (this Modification) – Construction of the pipeline and pump installation as described in **Section 3**.

In consideration of the need for this Modification and the alternatives reviewed, this Modification (as sought) offers the preferred alternative for the following reasons:

- Provides security on tenure for infrastructure to be installed on MCC owned land; and
- Effectively eliminates impacts on sensitive surface features, such as ecology, Aboriginal archaeology and European heritage in the area of the realigned pipeline.

4 REGULATORY FRAMEWORK

This section sets out the regulatory framework under which the Maules Creek Coal Mine is approved to operate and as relevant to this Modification of PA 10_0138 as sought.

4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

4.1.1 Applicability of Part 3A

On 16 August 2010, Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven) submitted an application for Project Approval under section 75E of Part 3A of the EP&A Act for the construction and operation of the Maules Creek Coal Mine. On 23 October 2012, Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven) was granted PA 10_0138 by the PAC (as a delegate of the Minister for Planning and Infrastructure) under Part 3A of the EP&A Act.

Part 3A of the EP&A Act was repealed on 1 October 2011. However, Schedule 6A of the EP&A Act provides that the provisions of the former Part 3A continue to apply to *"transitional Part 3A projects"*. Under clause 2 of Schedule 6A, an approved project under Part 3A of the EP&A Act constitutes a transitional Part 3A project. Therefore, Maules Creek Coal Mine constitutes a transitional Part 3A project. Clause 3 of Schedule 6A of the EP&A Act provides:

> *"Part 3A of this Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project".*

4.1.2 Section 75W

Given that the Maules Creek Coal Mine is a "*transitional Part 3A project*", this Modification is made pursuant to section 75W of the EP&A Act. Section 75W relevant states:

> *"(1) In this section:*
>
> ***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*
>
> ***modification of approval** means changing the terms of a Minister's approval, including:*
>
> *(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
>
> *(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
>
> *(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
>
> *(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*

> *(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.*
>
> *(5) The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made) may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal."*

In Barrick Australia Limited v Williams [2009] NSWCA 275, Justice Basten found that section 75W "*confers on the Minister an implicit obligation to be satisfied that the request falls within the scope of the section".* In this case, it was accepted that to engage "*the power to modify"* under section 75W of the EP&A Act, the Minister is called upon to form a view as to whether the proposed changes amount "*to a radical transformation of the terms of the existing development consent*". The Court found that this finding is a question of jurisdictional fact for the Minister.

In making that comparison between what is proposed and what is already approved, the Minister will compare what is proposed in this application with "*the approval, with any earlier modifications, as it stood at the time of the modification request. The relevant comparison… is with the modified development consent as at the date of the modification request*." (Williams v Minister for Planning 2009 BC 200900319, page 54).

This Modification is not a "*radical transformation*" of what has been already approved under PA 10_0138 for the Maules Creek Coal Mine. The following essential elements of Maules Creek Coal Mine will remain unaltered by this Modification:

- Total tonnes of coal to be extracted, processed or transported does not change;
- Total annual extraction, processing and transportation of coal does not change;
- Workforce remain the same;
- Methodology of mining, processing and transportation of coal does not change; and
- The disturbance limit generally remains as detailed in the Maules Creek EA.

Therefore, the Minister for Planning and Infrastructure may invoke the power to modify under section 75W of the EP&A Act.

4.1.3 Objects of the Environmental Planning and Assessment Act 1979

The objects of the EP&A Act are specified in section 5 of the Act. Section 9 of the Maules Creek EA explains that the Maules Creek Coal Mine is consistent with the objects of the EP&A Act. This Modification does not materially alter the character of the mine. Therefore, the Maules Creek Coal Mine will remain consistent with the objects of the Act.

4.2 ENVIRONMENTAL PLANNING INSTRUMENTS

4.2.1 Narrabri Local Environmental Plan 2012

This Modification is located within the Narrabri LGA. The relevant environmental planning instrument for the Narrabri LGA is the *Narrabri Local Environmental Plan 2012* (Narrabri LEP).

This Modification is located on land zoned as RU1 Primary Production. The objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base;
- To encourage diversity in primary industry enterprises and systems appropriate for the area;
- To minimise the fragmentation and alienation of resource lands;
- To minimise conflict between land uses within this zone and land uses within adjoining zones; and
- To allow for non-agricultural land uses that will not restrict the use of other land for agricultural purposes.

The land use table in the Narrabri LEP provides that open cut mining is permissible with consent on land zoned as Rural (RU1).

4.3 OTHER NSW LEGISLATION

4.3.1 Mining Act 1992

The mining of coal in NSW is regulated by the *Mining Act 1992* (Mining Act). Section 6 of the Mining Act specifies the mining purposes for which a mining authorisation is required. A mining authorisation is not required for the construction and use of a pipeline and associated pump installation. Therefore, this Modification does not require any additional authorisations under the Mining Act.

4.3.2 Protection of the Environment Operations Act 1997

Section 48 of the *Protection of the Environment Operations Act 1997* (POEO Act) provides that an Environment Protection Licence (EPL) is required for scheduled activities under the Act. MCC holds EPL 20221 for the Maules Creek Coal Mine.

This Modification is proposed to take place on land that is currently outside of the Project Boundary. An administrative variation to the EPL will be sought in relation to update the premises details contained within the EPL.

4.3.3 Water Management Act 2000

A water supply work approval under section 90 of the *Water Management Act 2000* (WM Act) is required for the construction and use of any water supply work. The construction and use of a water supply pipeline would ordinarily require such an approval. However, Section 75U of the EP&A Act provides that an approval under section 90 of the WM Act is not required for an approved project under Part 3A of the EP&A Act.

Section 60A of the WM Act provides that a Water Access Licence (WAL) is required for taking water from a water source. MCC currently holds WALs with the necessary water allocations required for the take of surface water from the Namoi River. The Modification will not alter the volumes of water that will be extracted from the Namoi River. Therefore, the Modification will not require any additional WALs.

4.3.4 National Parks and Wildlife Act 1974

Pursuant to sections 86 and 87 of the *National Parks and Wildlife Act 1974* (NPW Act), it is an offence to harm any Aboriginal object unless authorised by an Aboriginal Heritage Impact Permit (AHIP). Section 75U of the EP&A Act provides that an AHIP is not required for any approved project under Part 3A of the EP&A Act. The activities that are proposed to be undertaken by this Modification are not anticipated to disturb any items of Aboriginal archaeology. Therefore, this Modification does not require any approvals under the NPW Act.

4.3.5 Native Vegetation Act 2003

Section 12 of the *Native Vegetation Act 2003* (NV Act) states that native vegetation cannot be cleared except in accordance with a development consent or property vegetation plan. However, section 75U of the EP&A Act provides that an authorisation under section 12 of the NV Act is not required for an approved project under Part 3A of the EP&A Act. Further, this Modification does not propose any additional disturbance to native vegetation. Therefore, this Modification does not require any approval under the NV Act.

4.3.6 Roads Act 1993

Under section 138 of the *Roads Act 1993* (Roads Act), the consent of the roads authority is required for excavating or disturbing the surface of a public road. The construction of the pipeline will involve interactions with Therribri Road. This Modification will therefore require consent under section 138 of the Roads Act. Section 75V of the EP&A Act provides that this consent must be granted if it is required for the carrying out of an approved project under Part 3A of the EP&A Act.

4.3.7 Pipelines Act 1967

The *Pipelines Act 1967* (Pipelines Act) imposes licensing requirements for the construction and operation of certain pipelines. However, section 5 of the Pipelines Act states that a licence is not required for *"a pipeline constructed or to be constructed for the purpose of the supply of water"*. The pipeline that is the subject of this Modification is to be used solely for the purpose of water supply. Therefore, this Modification does not require any licences under the Pipelines Act.

4.4 COMMONWEALTH LEGISLATION

4.4.1 Environment Protection and Biodiversity Conservation Act 1999

An approval under section 133 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for any action that is to have a significant impact on a Matter of National Environmental Significance (MNES).

The Maules Creek Coal Mine was determined to be a *"controlled action"* under the EPBC Act on 9 August 2010, with further correspondence on 13 August 2010 confirming the assessment approach being the accreditation of Part 3A of the EP&A Act. The Maules Creek Coal Mine was deemed to be a controlled action due to its potential impacts on listed threatened species and ecological communities.

On 11 February 2013, the Commonwealth Minister for the Environment approved the taking of the action (subject to conditions) following a review of the Part 3A Project Approval and associated Assessment Report.

This Modification involves placing a water pipeline directly on the ground surface with no ground preparation required. Further, the pipeline will be aligned in an area that will not result in any impacts to listed threatened ecological communities. Since this Modification will not result in any additional impacts to any MNES, this Modification does not require an approval under the EPBC Act.

5 STAKEHOLDER ENGAGEMENT

This section provides a summary of the stakeholder engagement undertaken for this Modification by MCC.

5.1 REGULATORY ENGAGEMENT

MCC has held discussions with the Department of Planning and Infrastructure (DP&I) regarding this Modification and to discuss the scope for the preparation of this EA. This EA has been prepared consistent with these discussions.

5.2 COMMUNITY ENGAGEMENT

MCC has recently purchased the land on which the raw water pipeline and associated pump installation will be constructed. No other private land holders are anticipated to be directly impacted as a result of this Modification.

6 IMPACTS, MANAGEMENT AND MITIGATION

This section describes the environmental impacts of this Modification and the measures that will be implemented to mitigate and manage these impacts.

This EA generally adopts and draws from the studies undertaken for the Maules Creek EA. The reliance on these assessments will result in a materially conservative approach for the assessment of the environmental effects of the Maules Creek Coal Mine with regards to this Modification.

Additional works have been undertaken to assess the potential impacts of this Modification, where required.

6.1 AIR QUALITY AND GREENHOUSE GAS

6.1.1 Background

The Air Quality Impact Assessment (PAE Holmes, 2011) prepared for the Maules Creek EA provided a quantitative assessment of the air quality impacts resulting from Maules Creek Coal Mine. For the purpose of this Modification, a qualitative assessment has been undertaken based on the former air quality impact assessment.

6.1.2 Impact Assessment

Since the construction activities proposed for this Modification are limited to placing a water pipeline on the ground surface with no clearing to take place, emissions of dust will be negligible. The proposed construction works are scheduled to be effectively completed within two days of work.

The nature of construction works and the associated schedule for the pipeline and pump installation are substantially less than that assessed in the Maules Creek EA. These works are also proposed to be undertaken at a location further to the south (within approximately 300 m) of that currently approved. Given the works required for the Modification are less than that currently approved, the impacts of this Modification are considered to be significantly less when compared with that originally forecast in the Maules Creek EA. In this regard, this Modification will have negligible impacts on air quality.

6.1.3 Mitigation and Management

Since the Modification will not result in additional air quality emissions, no further management and management measures are proposed. Other activities at the Maules Creek Coal Mine will continue to be managed in accordance with the approved Air Quality Management Plan.

6.2 NOISE

6.2.1 Background

An Acoustics Impact Assessment (Bridges Acoustics, 2011) prepared for the Maules Creek EA provided a quantitative assessment of the noise impacts resulting from Maules Creek Coal Mine.

For the purposes of this Modification, a supplementary Noise Assessment has been prepared by Global Acoustics and is provided in **Appendix B**.

The assessment provides an overview of the potential implications to noise impacts as a result of this Modification and is detailed further below.

6.2.2 Impact Assessment

The impact assessment undertaken for the Maules Creek EA completed an assessment of noise generated by various construction activities, including construction of the raw water pipeline and associated pump installation. Global Acoustics confirmed that no additional construction noise impacts to those previously assessed are likely to occur as a result of this Modification.

Receiver 225 has been identified as the closest noise sensitive private receiver to the proposed associated pump installation. Accordingly, a computer based environmental noise model was developed to generate predicted noise levels to this receiver as a result of the operation of the pump installation at its proposed location. An average nominal sound pressure level of 64 dB(A) at 7 m according to manufacturer's pump specifications was utilised.

The noise model predicted that receiver 225 would experience a noise level of LAeq, 15 minute, 10 dB(A) under worst-case prevailing meteorological conditions due to the operation of the Namoi River pump installation at the proposed location. This noise level prediction is considered very low level and is unlikely to be audible at any private receiver above other background noise for the majority of time. It is also important to note that the pump installation is proposed to be located further from private receiver 225 when compared to the currently approved location.

Since the predicted noise level from the pump installation is more than 10 dB below the operational noise criterion (35 dB(A)), noise generated by the pump at the proposed location could not combine with any other noise generated by the Mine to cause exceedance of the operational noise criterion.

6.2.3 Mitigation and Management

All works associated with this Modification will be undertaken in accordance with the approved Noise Management Plan for the mine and safe and efficient working practices to ensure noise levels remain within relevant regulatory criteria at private receivers.

6.3 ECOLOGY

6.3.1 Background

The Ecological Impact Assessment (Cumberland Ecology, 2011) prepared for the Maules Creek EA identified and mapped the ecological communities within the Project Boundary. Using this vegetation mapping, a desktop analysis was undertaken to assess any potential impacts on vegetation as a result of this Modification. The results of this analysis are summarised in the following section with a letter report prepared by Cumberland Ecology included in **Appendix C**.

6.3.2 Impact Assessment

This Modification will involve placing a water pipeline on the surface of land with no clearing required, with the exception of the portion of the pipeline that will be buried below Therribri Road which will not result in any impacts on native vegetation.

The alignments of the currently approved pipeline and the proposed route are located in areas that contain the following vegetation communities:

- Pilliga Box – Poplar Box – White Cypress Pine Grassy Open Woodland; and
- Low Diversity Native/Exotic Grassland and Cultivation.

None of these vegetation communities are listed under the *Threatened Species Conservation Act 1995* or EPBC Act.

The Modification will avoid the disturbance to approximately 10 ha the Pilliga Box – Poplar Box – White Cypress Pine Grassy Open Woodland community that was assessed to be disturbed within the Maules Creek EA for the currently approved alignment. The proposed pipeline realignment will be adjusted to ensure that no disturbance is required to any trees or shrubs within this area. This has been confirmed by a recent detailed field inspection of the proposed pipeline route.

The vegetation that exists on the land that is proposed to accommodate the pipeline alignment on the western side of Therribri Road has been mapped as Low Diversity Native/Exotic Grassland and Cultivation. A negligible amount of this vegetation community will be disturbed as a result of placing the raw water pipeline directly on the land surface.

The proposed pipeline corridor will traverse through a portion of land that has been proposed as part of the biodiversity offset for the Mine. However, the pipeline route is located along a fence line and would not interfere with the future restoration and management of these offset lands.

The pump installation is proposed to be constructed in an area that comprises cleared and largely exotic grassland. Accordingly, there is not anticipated to be any additional ecological impacts as a result of this component of this Modification.

Overall, the assessment confirmed that the proposed route for the raw water pipeline and associated pump installation would result in significantly reduced impacts on the ecology of the area when compared to the currently approved alignment.

6.3.3 Mitigation and Management

Since the Modification will not result in additional impacts to ecological values in the area, no further management and management measures are proposed. Other activities at the Maules Creek Coal Mine will continue to be managed in accordance with the approved Biodiversity Management Plan.

6.4 ABORIGINAL ARCHAEOLOGY

6.4.1 Background

The Aboriginal Archaeological and Cultural Heritage Impact Assessment (AECOM, 2010) prepared for the Maules Creek EA characterised the archaeological landscape within the Project Boundary and determined the impacts of Maules Creek Coal Mine on Aboriginal cultural heritage values.

For the purpose of this Modification, a desktop analysis has been undertaken based on this impact assessment.

6.4.2 Impact Assessment

The impact assessment indicated that there were no Aboriginal archaeological sites to be disturbed by the currently approved pipeline alignment.

The pipeline alignment sought as part of this Modification is situated in a similar Aboriginal archaeological setting as that currently approved.

As the pipeline is located on the ground surface and negligible ground disturbance will be required, the risk of any harm to cultural items is considered to be negligible. In addition, it is anticipated that any potential impacts may be able to be avoided with the minor adjustment to the alignment of this infrastructure. For those reasons, the desktop analysis has resulted in the conclusion that Aboriginal cultural heritage values are highly unlikely to be impacted within the proposed water pipeline corridor.

In accordance with Step 1 of the *draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005), it was therefore unnecessary to proceed with more detailed assessment and consultative work. Nonetheless, for the sake of abundant caution, Whitehaven will commission an expert archaeologist, accompanied by two traditional knowledge holders who are Registered Aboriginal Parties under the Project's existing Aboriginal Archaeology and Cultural Heritage Management Plan, to inspect the water pipeline corridor before construction commences.

The objects of this inspection will be:

1. To verify the findings of the desktop analysis; and
2. If necessary, to suggest any minor deviations to the proposed water pipeline corridor that would avoid impacting Aboriginal cultural values and/or objects.

6.4.3 Mitigation and Management

Prior to the commencement of construction works, MCC will undertake monitoring as set out above as a component of the approved Land Disturbance Protocol for the area outside the current Project Boundary.

Any additional sites that are identified will be managed in accordance with the procedures outlined in the Aboriginal Cultural Heritage Management Plan.

6.5 NON-INDIGENOUS HERITAGE

6.5.1 Background

The Non-Indigenous Heritage Impact Assessment (Archaeology Australia, 2010) prepared for the Maules Creek EA determined the impacts of Maules Creek Coal Mine on non-Indigenous heritage items identified within and adjacent to the Project Boundary. For the purpose of this Modification, a desktop analysis has been undertaken based on this impact assessment.

6.5.2 Impact Assessment

The Non-Indigenous Heritage Impact Assessment (Archaeology Australia, 2010) did not identify any items of non-Indigenous heritage significance within the Project Boundary. Five locally significant non-Indigenous heritage items are located in the immediate vicinity of the Project Boundary. However none of these locally significant non-Indigenous heritage items are in the vicinity of the pipeline realignment sought as part of this Modification.

No non-Indigenous heritage items are to be impacted as a result of the proposed realignment of the pipeline and associated pumping infrastructure.

6.5.3 Mitigation and Management

As this Modification will not impact identified non-Indigenous heritage items, no additional mitigation or management measures beyond that outlined in the Maules Creek EA, the approved Historic Heritage Management Plan and PA 10_0138 are proposed.

6.6 WATER

6.6.1 Background

The Surface Water Impact Assessment (WRM, 2011) undertaken for the Maules Creek EA predicted the potential impacts on water resources using water balance modelling (GoldSim).

The Groundwater Impact Assessment (AGE, 2011) undertaken for the Maules Creek EA predicted the potential impacts on groundwater systems using groundwater flow modelling (MODFLOW SURFACT).

For the purpose of this Modification, a desktop analysis has been undertaken based on these impact assessments.

6.6.2 Impact Assessment

The water balance model determined that the Maules Creek Coal Mine would need to extract water from an external source to meet operational water demands. Raw water will be extracted from the Namoi River using the pipeline that is the subject to a minor alteration as part of this Modification.

This Modification will alter the location of the water intake from the Namoi River, but will not alter the volumes of water that will be extracted from the Namoi River. Therefore, this Modification is not expected to result in any additional impacts on surface water resources.

The installation of the water pipeline will involve a shallow excavation through the formation of the Therribri Road, which is not expected to impact upon groundwater sources.

6.6.3 Mitigation and Management

As this Modification will not result in any further impacts to water resources, no additional mitigation or management measures beyond that outlined in the Maules Creek EA, Water Management Plan and PA 10_0138 are proposed.

6.7 SOILS AND LAND CAPABILITY

6.7.1 Background

The Soil and Land Capability Impact Assessment (GSSE, 2010) prepared for the Maules Creek EA described the soil landscape within the Project Boundary and determined the impacts of Maules Creek Coal Mine on this resource. For the purpose of this Modification, a desktop analysis has been undertaken based on this impact assessment.

6.7.2 Impact Assessment

The impact assessment identified a number of soil types within the Project Boundary. Three soil types are located along the currently approved pipeline alignment, including brown and grey vertosols, self-mulching brown vertosols, and brown and grey chromosols.

The realignment of the pipeline as sought as part of this Modification is situated in a similar soil landscape setting as that currently approved. Based on the *Land Management Units of the Namoi Catchment* (Namoi CMA, 2009), the pipeline is situated on the Central Black Earth Floodplain, which is associated with the major rivers and creeks in the central part of the catchment (Liverpool Plains to Narrabri). This land management unit has a land capability classification of 2, 7 or 8. Soils include deep black earths, brown or grey clays and some earthy sands. It is representative of a dynamic environment and subject to inundation and severe erosion.

This Modification does not propose any disturbance to soils apart from those within the Therribri Road corridor. Given the negligible extent of the disturbance, there will be no material impact on soil resources.

6.7.3 Mitigation and Management

As this Modification will not result in any further impacts to soil resources, no additional mitigation or management measures beyond that outlined in the Maules Creek EA, Soils Management Protocol and PA 10_0138 are proposed.

6.8 AGRICULTURE

6.8.1 Background

Agricultural activities in the vicinity of the Maules Creek Coal Mine consist predominantly of grazing and on the better quality soils associated with the Namoi River alluvials, dry land cropping activities.

6.8.2 Impact Assessment

The proposed alignment of the pipeline sought as part of this Modification will pass through a property that adjoins the Namoi River. The pipeline will pass through land containing Low Diversity Native/Exotic Grassland and the broader Central Black Earth Floodplain land management unit. As provided in **Section 6.7.2**, this land management unit represents land capability classification 2, 7 or 8. This land is capable of supporting agricultural production; however, may be restricted in its use given physical and/or chemical limitations.

There is no cropping or intensive agricultural activities currently occurring on this land, nor has there been known cropping on this land in the past. The pipeline is generally proposed to follow the fence lines of the property. Accordingly the potential for future use in agricultural production will generally remain unaffected. Given the negligible extent of disturbance, there will be no material impact on agricultural production.

6.8.3 Mitigation and Management

As this Modification will not result in any further impacts to agricultural resources, no additional mitigation or management measures are proposed.

6.9 VISUAL

6.9.1 Background

The Visual Impact Assessment (Integral, 2010) prepared for the Maules Creek EA depicted the visual landscape of the area and determined the impacts of Maules Creek Coal Mine on the character of this landscape within and adjacent to the Project Boundary. For the purpose of this Modification, a desktop analysis has been undertaken based on this impact assessment.

6.9.2 Impact Assessment

The impact assessment classed the pipeline and pump installation as a minor visual component of the mine layout given that this infrastructure has insignificant horizontal and vertical scale. Further, existing intervening topography and vegetation shields the majority of the views in the line of sight to this infrastructure. When considered holistically, the pipeline and pump installation results in a minimal visual effect on the primary viewing catchment, including private receivers.

The pipeline alignment and pump installation proposed as part of this Modification will be constructed at a location marginally south (within approximately 300 m) of that currently approved. Given the extent of the proposed change is minor, the impacts of this Modification are considered to be relatively consistent with that predicted in the Maules Creek EA. In this regard, this Modification will have negligible impacts on the visual character of the landscape.

6.9.3 Mitigation and Management

As this Modification will not result in any additional impact on the surrounding visual landscape, no additional mitigation or management measures beyond that outlined in the Maules Creek EA and PA 10_0138 are proposed.

7 STATEMENT OF COMMITMENTS

This section provides a statement of commitments to be implemented by MCC for this Modification.

In consideration of the minor nature of this Modification (as described in **Section 3**) and the impact assessment provided in **Section 6**, the proposed works remain relatively consistent with the statement of commitments for the Project, the conditions of PA 10_0138 and the approved EMPs. In this regard, MCC proposes to undertake this Modification in accordance with the aforementioned controls.

8 JUSTIFICATION

This section demonstrates how this Modification is consistent with the objects of the EP&A Act and considered justifiable having consideration of the predicted environmental impacts.

This Modification is relatively consistent with that previously assessed and approved under PA 10_0138. Therefore, the Minister for Planning and Infrastructure may invoke the power to modify under section 75W of the EP&A Act.

The currently approved pipeline alignment and pump installation location is proposed to be amended to:

- Allow access to a more practical pumping location from the Namoi River, where depths are greater and allow for more efficient pumping operations; and
- Ensure this water management infrastructure is situated on land that MCC owns.

This Modification will enable the construction of the Maules Creek Coal Mine water management infrastructure to the Namoi River in the most efficient method practical with a material reduction to the approved environmental impacts (as described in **Section 6**). Therefore the objects of the EP&A Act will be satisfied and will be furthered by approving this Modification.

Ultimately this Modification will allow the transfer of water from the river to the mine to supplement onsite water supplies, which is critical for operations at the CHPP. The timely approval of this Modification will minimise the possible impacts associated with delays to the construction program for the Maules Creek Coal Mine.

9 ABBREVIATIONS

Abbreviation	Description
A	Authorisation
AHIP	Aboriginal Heritage Impact Permit
CEEC	Critically Endangered Ecological Communities
CHPP	Coal Handling and Preparation Plant
CL	Coal Lease
DP	Deposition Plan
DP&I	NSW Department of Planning and Infrastructure
EA	Environmental Assessment
EEC	Endangered Ecological Communities
EMS	Environmental Management System
EMP	Environmental Management Plan
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
ha	Hectare
Hansen Bailey	Hansen Bailey Environmental Consultants
LGA	Local Government Area
km	Kilometre
m	Metre
Maules Creek EA	*Maules Creek Coal Project Environmental Assessment* (Hansen Bailey, 2011)
MCC	Maules Creek Coal Pty Limited
Mining Act	*Mining Act 1992*
MNES	Matters of National Environmental Significance
This Modification	Modification to Project Approval 10_0138 (as described in **Section 3**)
Mtpa	Million tonnes per annum
Narrabri LEP	*Narrabri Local Environmental Plan 2012*
NOW	NSW Office of Water
NPW Act	*National Parks and Wildlife Act 1974*
NSC	Narrabri Shire Council
NSW	New South Wales
NT Act	*Native Title Act 1993*
NV Act	*Native Vegetation Act 2003*

Abbreviation	Description
PA	Project Approval
PAC	Planning Assessment Commission
Pipelines Act	*Pipelines Act 1967*
POEO Act	*Protection of the Environment Operations Act 1997*
Roads Act	*Roads Act 1993*
ROM	Run of Mine
SEPP Mining	*State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*
SRLUP	*Strategic Regional Land Use Plan – New England North West* (DP&I, 2012)
Whitehaven	Whitehaven Coal Limited
WM Act	*Water Management Act 2000*

10 REFERENCES

- AECOM (2010) *Maules Creek Coal Project – Aboriginal Archaeological and Cultural Heritage Impact Assessment.*
- Archaeology Australia (2010) *Maules Creek Coal Project – Non-Indigenous Heritage Impact Assessment.*
- Australasian Groundwater and Environmental Consultants (AGE) (2011) *Maules Creek Coal Project – Groundwater Impact Assessment.*
- Bridges Acoustics (2011) *Maules Creek Coal Project – Acoustics Impact Assessment.*
- Cumberland Ecology (2011) *Maules Creek Coal Project – Ecological Impact Assessment.*
- Department of Environment and Conservation (2005) *draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*.
- GSSE (2010) *Maules Creek Coal Project – Soil and Land Capability Impact Assessment.*
- Hansen Bailey (2011a) *Maules Creek Coal Project Environmental Assessment.*
- Hansen Bailey (2011b) *Maules Creek Coal Project Response to Submissions.*
- Integral (2011) *Maules Creek Coal Project – Visual Impact Assessment.*
- Namoi Catchment Management Authority (2009) *Land Management Units of the Namoi Catchment.*
- NSW Department of Planning and Infrastructure (DP&I) (2012) *Strategic Regional Land Use Plan – New England North West*.
- PAE Holmes (2011) *Maules Creek Coal Project – Air Quality Impact Assessment.*
- WRM (2011) *Maules Creek Coal Project – Surface Water Impact Assessment.*

APPENDIX A

Schedule of Lands to Which this Modification Applies

Maules Creek Coal Mine
Appendix A – Schedule of Land to Which this EA Applies

Lot	DP	Lot	DP
7001	94069	76	754948
156	455004	105	755470
1	622375	85	755475
2	622375	159	755475
1	748046	262	755475
2	748046	263	755475
3	748046	264	755475
3	754924	7002	1051146
65	754924	7001	1052587
57	754940	7300	1143939
58	754940	1	114793
59	754940	Werris Creek Mungindi Railway	
60	754940	Kamilaroi Highway	
61	754940	Namoi River	
39	754940	Therribri Road	
40	754940	NSW State Forest	
41	754940	Undefined Road 1	
42	754940	Undefined Road 2	
35	754940	Undefined Road 3	
54	754948	Undefined Road 4	
59	754948	Undefined Road 5	
60	754948	Undefined Road 6	
73	754948		

Notes:

1. The cadastral information for the lands to which the Project Application applies was sourced from the NSW LPI records database in June 2010.

APPENDIX B

Noise Assessment

Global Acoustics

Noise and Vibration Analysis and Solutions

30 January 2014

Whitehaven Coal Limited
Boggabri NSW 2382
Attention: Craig Simmons

Dear Craig,

Regarding: Maules Creek Coal Project – Project Approval Modification

1 INTRODUCTION

The Maules Creek Coal Project (MCCP) is a proposed open cut coal mine located in the Gunnedah basin of NSW. The MCCP is managed by Whitehaven Coal Pty Limited (Whitehaven) on behalf of Maules Creek Coal Pty Limited (MCC).

The MCPP was granted Project Approval by the NSW Minister for Planning and Infrastructure in October 2012. The Project Approval for the MCCP was based on an environmental assessment titled *Maules Creek Project Environmental Assessment* (the MCCP EA) (Hansen Bailey, 2011). The MCCP EA included a detailed noise impact assessment titled *Acoustics Impact Assessment, Maules Creek Coal Project, Environmental Assessment* (MCCP NIA) (Bridges Acoustics, 2011).

The MCCP NIA included an assessment of "construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River".

This letter addresses potential operational noise impact associated with an alternate water pumping station and water pipe location to that currently approved.

Figure 1 indicates the alignment assessed in the MCCP NIA, and, the proposed alignment as included in this assessment.

Noise impact associated with water management infrastructure construction was assessed in the MCCP NIA; it is Global Acoustics opinion that no significant change to construction noise impacts could be expected as a result of the proposed modification. Construction noise is not discussed further in this letter.

Global Acoustics Pty Ltd | PO Box 3115 | Thornton NSW 2322
Telephone +61 2 4966 4333 | Facsimile +61 2 4966 4330 | Email global@globalacoustics.com.au
ABN 94 094 985 734

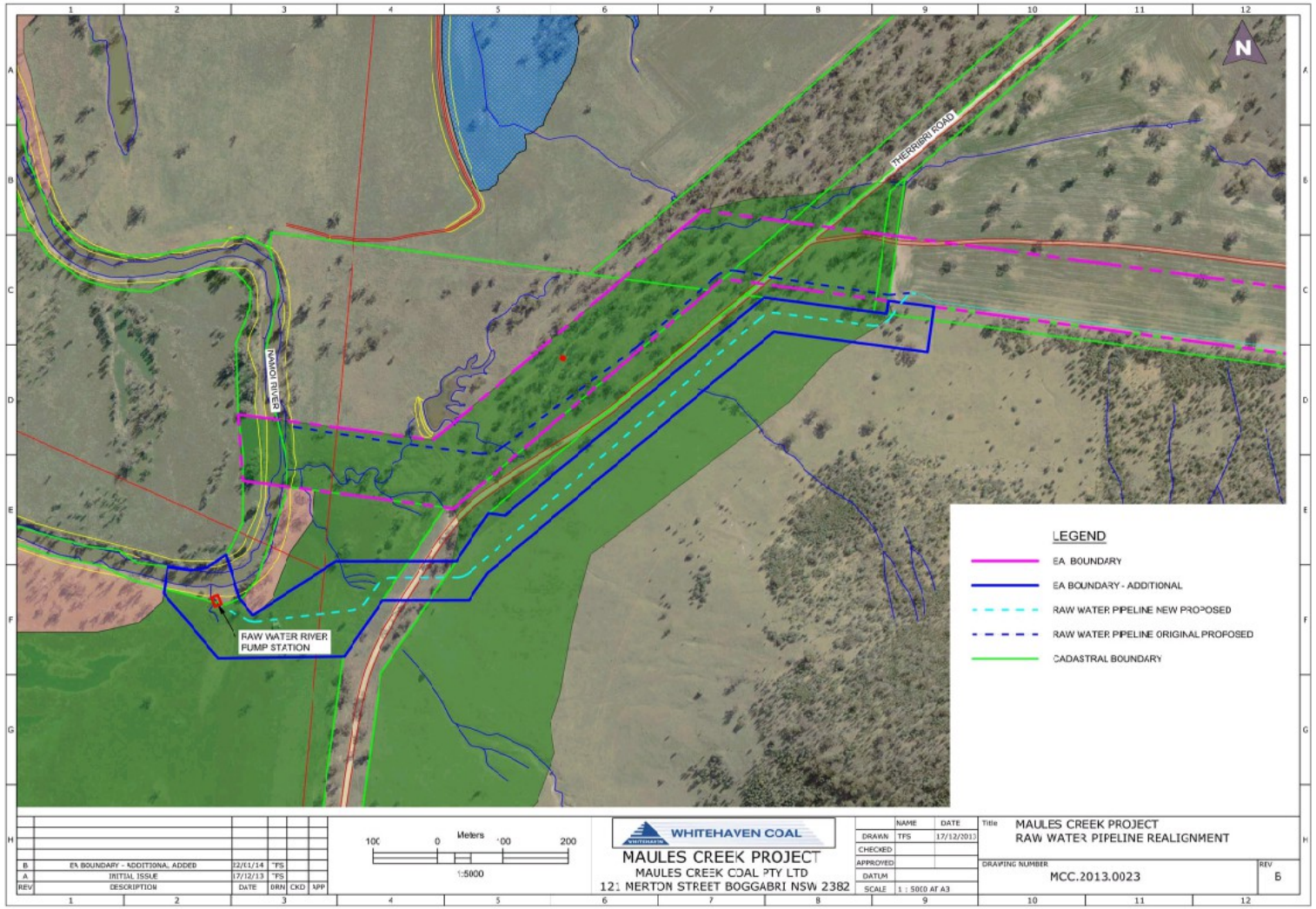


Figure 1: Water Infrastructure Alignment

2 ASSESSMENT

2.1 Criteria

Schedule 3, Condition 7 of the MCCP Project Approval details operational noise limits for noise generated by the Project. An operational noise criterion of $L_{Aeq,15\ minute}$ 35 dB applies at all privately owned residences except those that have a private agreement with the proponent.

2.2 Methodology

Noise levels were predicted using RTA Technology's Environmental Noise Model (ENM), a computer based environmental noise model, to determine the acoustic impact due the proposed infrastructure. The model takes into account geometric spreading, atmospheric absorption, and, barrier and ground attenuation. ENM Terrain Category 2, representing a rural land environment, was adopted for model input.

2.3 Receivers

The nearest privately owned noise sensitive receiver (NSR) to the proposed water management infrastructure is Riverway Boggabri Pty Ltd (MCCP NIA identification number 225). Thirty-six NSR were included in the assessment; however, results are only presented for NSR 225, as demonstration of compliance at that NSR indicates compliance at NSR further from the proposed infrastructure.

2.4 Meteorology

An assessment of prevailing meteorological conditions was undertaken for the MCCP NIA. The prevailing meteorological conditions detailed in Table 5 of the MCCP NIA were included in this assessment. The worst-case prediction from all assessed meteorological conditions was adopted as the governing result.

2.5 Noise Sources

The noise source associated with proposed realignment of the water management infrastructure covered by this modification is known as the "Namoi River Pump". The pumping station location is indicated in Figure 1.

Preliminary noise modelling of the proposed pumping station highlighted potential noise impact at NSR 225 with a standard, untreated water pump (un-attenuated). Therefore, Whitehaven propose to attenuate the pump by way of enclosure, and providing air inlet and outlet silencers as required to meet the attenuation manufacturer's noise emission targets.

The attenuation manufacturer has provided noise emission ratings for the water pump as follows:

- Namoi River Pump (QSCP150i) – average nominal sound pressure level (SPL) of 64 dB(A) at 7 metres.

Sound power levels were calculated from the nominated SPL ratings for model input.

2.6 Predictions

The model prediction under worst-case prevailing meteorological conditions at NSR 225 due to operation of the Namoi River Pump (QSCP150i) is $L_{Aeq,15\ minute}$ 10 dB.

This prediction is considered very low level, and the pump is likely to be inaudible at all NSR for the majority of time provided the attenuation manufacturer's noise emission target is achieved. Further, as the predicted noise level from the water pump is more than 10 dB below the operational noise criterion, noise generated by the pump could not combine with any other noise generated by the MCCP to cause exceedance of the operational noise criterion. On this basis, no noise impact is predicted due to operation of proposed water management infrastructure in the relocated positions.

3 CONCLUSION

Based on the above, with the pump operating at the attenuation manufacturer's noise emission rating:

1. Water management infrastructure is likely to be inaudible at all NSR for the majority of time;

2. Water management infrastructure cannot combine with any other noise generated by the MCCP to cause exceedance of the operational noise criterion; and

3. No noise impact is predicted due to operation of proposed water management infrastructure in the relocated positions.

I trust this information meets your requirements. If you have any questions or need further details please contact me.

Regards,

Jeremy Welbourne
Acoustics Engineer

APPENDIX C

Ecology Assessment

28 February 2014

Area Manager Services
Craig Simmons
Whitehaven Coal Limited
121 Merton Street
Boggabri NSW 2382

Cumberland Ecology
PO Box 2474
Carlingford Court 2118
NSW Australia
Telephone (02) 9868 1933
Mobile 0425 333 466
Facsimile (02) 9868 1977
Web: www.cumberlandecology.com.au

IMPACT ASSESSMENT FOR RAW WATER PIPELINE RE-ALIGNMENT

Dear Craig,

Please find details in **Appendix A** of the flora and fauna impact assessment that has been completed to support a Modification application to enable the re-alignment of the western section of the approved raw water pipeline and associated pump station. The original location of the raw water pipeline and associated pump station, as well as the vegetation within the disturbance boundaries are shown on **Figure B.1** in **Appendix B**.

The proposed re-alignment will occur largely within previously cleared areas of low diversity grassland and, as the pipeline will be located on the ground surface, will substantially reduce the total impact on woodland, namely "*Pilliga Box - Poplar Box - White Cypress Pine grassy open woodland*", by up to 10 ha compared with the previously approved alignment. As this woodland also provides potential habitat for threatened species, including woodland birds and woodland bats, the re-alignment would result in a signficantly improved outcome for threatened species.

Overall, this re-alignment is a better environmental outcome than the original impact assessment and should therefore not require any further investigations.

Please do not hesitate to call me if you have any questions.

Yours sincerely,

David Robertson

David Robertson
Director
david.robertson@cumberlandecology.com.au

Appendix A

Impact Assessment of Proposed Re-alignment of Raw Water Pipeline

A.1 Introduction

A raw water pipeline and associated pump station has been approved for construction as part of the Maules Creek Coal Mine (the Mine). The pipeline will allow for the supply of water from the Namoi River to the Mine under a water extraction licence held under the *Water Management Act 2000*.

The eastern and central portions of the pipeline have been constructed. However, the western end of the pipeline route is proposed to be modified, with the aim of eliminating the need to clear forest and woodland trees and constructing the pipeline on land owned by Maules Creek Coal.

The original impact assessment for the Mine found that some areas of forest and woodland would be cleared and impact upon a suite of threatened flora and fauna, including woodland birds, woodland bats and the endangered ecological community known as Box Gum Woodland.

The western end of the approved pipeline (see **Figure B.1**), would require areas of woodland to be cleared. The proposed Modification would avoid impacts to such woodland areas. Figure B.1 shows the boundary of the existing impact assessment, as well as the proposed re-alignment of the pipeline which results in a negligible impact.

The purpose of this assessment is to verify that the Modification would result in negligible ecological impacts on vegetation when compared to that currently approved. This assessment will form part of an Environmental Assessment being prepared by Hansen Bailey in support of a Modification application to be lodged with Department of Planning and Infrastructure.

A.2 Method

Cumberland Ecology staff visited the route of the proposed realignment on January 8th 2014 and verified and updated the original vegetation mapping shown within the Environmental Assessment prepared by Hansen Bailey in 2011.

The approved and proposed western portions of the approved pipeline and associated pump site and thealignment were overlaid upon an aerial photograph. Measurements were taken of the area of forest, woodland and grassland that would be cleared by the approved pipeline alignment and compared with the proposed re-alignment of the pipeline.

A.3 Key Findings

The major ecological impacts from the overall approved Mine will arise from the clearing of forest and woodland. However, the proposed re-alignment of the pipeline would reduce the ecological impacts of the pipeline construction by effectively eliminatingclearance of any existing vegetation.

The original approved pipeline alignment crosses a corridor of Pilliga Box - Poplar Box - White Cypress Pine grassy open woodland (shown as a black dotted line in **Figure B.1**) and will require an estimated disturbance of 10.51 ha of woody vegetation.

In comparison, the re-alignment would be located largely through highly cleared and modified grassland areas that are unlikely to provide major habitat for threatened flora or fauna, or major occurrences of endangered ecological communities listed by either the NSW *Threatened Species Conservation Act 1995* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.* The proposed re-alignment is shown as a blue line in **Figure B.1**.

Furthermore, as the proposed pipeline will be laid on the ground surface (with exception to the construction of the pipeline below Therribri Road), there will be no clearance of vegetation along the alignment and therefore, the disturbance associated with the realigned pipeline will be negligible. This means that the reduction in the amount of disturbance required as a result of the re-alignment of the western portion of the pipeline, when compared to that currently approved, amounts to 10.51 ha.

The re-aligned pipeline route would technically go through a portion of land that is part of the biodiversity offset. However, the pipeline route is located along a fence line and would not interfere with the future restoration and management of the offset lands.

The re-alignment would eliminate the need to disturb Pilliga Box - Poplar Box - White Cypress Pine grassy open woodland for the construction of the raw water pipeline. This would also eliminate the need to remove older trees which contain hollows that provide habitat for woodland birds, woodland bats and other threatened species.

No threatened plants have been identified, and it is considered that threatened plants are unlikely to occur, in either the original alignment or the proposed re-alignment.

The pump installation for the pipeline would also have to be moved, and under the re-alignment, it would be placed in cleared, largely exotic grassland. For that reason, it would not entail any significant ecological impacts.

A.4 Conclusion

The proposed re-alignment would provide for a substantially improved ecological outcome, significantly lessening the need to clear woodland and also threatened species habitat, as per originally approved. It is unlikely to have any significant deleterious impacts upon any known threatened flora and fauna.

The ecological impacts of the re-alignment to the proposed raw water pipeline and associated pump site are considered to be negligible and would result in a better environmental outcome. No further ecological assessment is warranted for the Modification to proceed.

Appendix B

Figures

Coordinate System: MGA 56 (GDA 94)

N
Grid North

Legend

Existing Impact Assessment

- Project Boundary
- Impact Boundary
- Raw Water Pipeline

Proposed Re-Alignment

- Impact Boundary
- Raw Water Pipeline

Vegetation Community

- Pilliga Box - Poplar Box - White Cypress Pine grassy open woodland
- Low Diversity Native/Exotic Grassland and Cultivation

CUMBERLAND ECOLOGY

I:\...\9125\Figures\Raw Water Re-Alignment 20140123\Figure B.1 Vegetation 20140123

Figure B.1 Proposed Raw Water Pipeline Re-Alignment and Impacted Vegetation

100 0 100 200 300 400 m