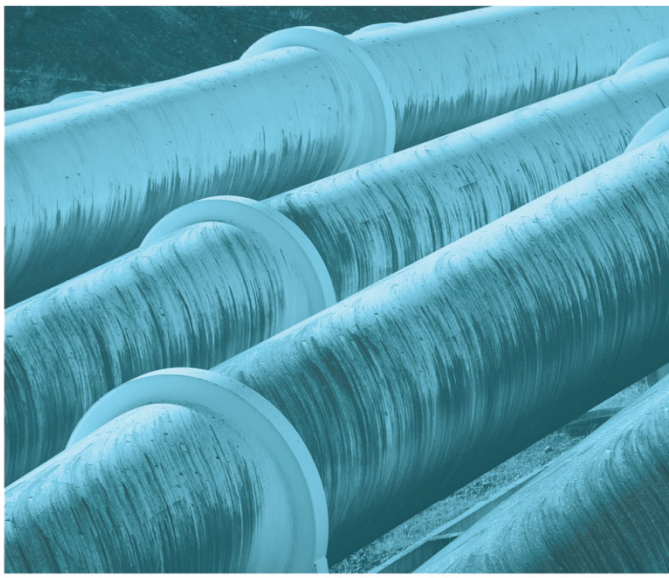



Lidsdale Siding

Environmental assessment for modification to development consent 08_0223

Prepared for Ivanhoe Coal Pty Ltd
June 2019

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Lidsdale Siding

Environmental assessment for modification to development consent 08_0223

Report Number

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Client

Ivanhoe Coal Pty Ltd

Date

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Version

v1 Final

Prepared by	**Approved by**
	
Lia Zwolinski	**Phil Towler**
Environmental Scientist	Associate Director
25 June 2019	25 June 2019

Executive Summary

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services (WCS) Project to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow within the Lithgow Local Government Area (LGA) of New South Wales (NSW).

The facility operates under development consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by the Department of Planning and Environment (DPE). The original consent has since been declared a State significant development (SSD) under clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

Ivanhoe Coal is seeking to modify conditions 7 and 8 of Schedule 2 of the consent pursuant to Section 4.55(2) of the EP&A Act to allow for:

- receival and unloading of one coal laden train (nominal net tonnage of up to 3,900 tonnes (t) per train) each day (Monday to Saturday between 7:00 am and 6:00 pm, and Sunday between 8:00 am and 6:00 pm); and

- transfer of coal received via rail to the overland conveyor for dispatch to the WCS.

This will require modification of the train loading facility to allow for the unloading of coal and also the construction of surface facilities, including a conveyor system between the existing under-rail sump, stockpile area and existing overland conveyer.

It is proposed that these activities will only operate during emergency situations when coal stockpiles at Mount Piper Power Station (MPPS) are forecast to decline below 400,000 t for an extended period. An indicative trigger action response plan (TARP) has been developed to define the emergency situations when rail unloading activities will be required at the facility.

It is proposed that a maximum of one coal-laden train will be received and unloaded on any given day during emergency situations. Coal-laden train receival and unloading will not occur on the same day as approved loading activities and does not require an increase to the currently approved coal handling rate at the facility of 6.3 Mtpa. The modification will not increase overall train movements, with an average of five laden trains to be received or dispatched each day.

The proposed modification will allow Ivanhoe Coal to provide an alternative source of coal of suitable quality to MPPS to supplement coal supply shortfalls from Springvale Mine. If no emergency coal supply provisions are put in place to address potential coal supply shortfalls, there is a risk that declining stockpiles at MPPS will impact the efficiency of operations at MPPS and threaten the reliable supply of electricity to NSW.

The DPE and key stakeholders have been consulted to notify them of the proposed modification and to assist to identify all of the relevant issues to be assessed. This environmental assessment (EA) and supporting technical assessments examines the potential impacts from the proposed modification.

The proposed modification will not result in significant biophysical, social or economic impacts and any residual impacts can be appropriately managed in accordance with Ivanhoe Coal's existing approved environmental management system.

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1 Introduction

1.1 Overview

Lidsdale Siding (the facility) is an existing rail loading facility that automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services (WCS) Project. The facility operates under Development Consent 08_0223 (the consent). The facility is approximately 500 m north of Wallerawang and approximately 9 km north-west of Lithgow within the Lithgow local government area (LGA) of New South Wales (NSW) (refer Figure 1.1). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

EMM Consulting Pty Limited (EMM) has been engaged by Ivanhoe Coal to prepare an environmental assessment (EA) to accompany an application for a modification to the consent.

The consent relates to the facility and surrounding study area as shown in Figure 1.2. The operational area that relates to the facility and the proposed modification (the project site, as defined in Appendix 1 of the consent) is also shown on Figure 1.2. The consent allows the facility to receive 6.3 million tonnes per annum (Mtpa) of coal via overland conveyors, with all coal to be transported from the facility by rail. Coal is transported from the facility to various destinations across the rail network.

In addition to dispatching coal from the facility by rail as approved, it is proposed to accept coal at the facility from rail and transfer this coal to the WCS site for use at the Mount Piper Power Station (MPPS). Acceptance and transfer of coal from the facility is critical to guaranteeing supply of coal to MPPS during any coal supply shortfalls. Future shortfalls could threaten the reliable supply of electricity from MPPS.

The proposed modification includes delivery of coal to the facility by train (once per day); coal unloading, handling and stockpiling; and coal dispatch using the existing overland conveyor network to the WCS site. Coal-laden train receival and unloading will not occur on the same day as approved loading activities and does not require an increase to the currently approved coal handling rate at the facility of 6.3 Mtpa.

A modification to the consent, under Section 4.55(2) of the *NSW Environmental Protection & Assessment Act 1979* (EP&A Act), is sought to undertake these activities during emergency situations when coal stockpiles at MPPS are forecast to decline below 400,000 tonnes (t) for an extended period. An indicative trigger action response plan (TARP) has been developed to outline the necessary actions prior to the commencement of rail unloading activities at the facility (refer Table 4.1).

The proposed modification will allow Ivanhoe Coal to provide an alternative source of coal of suitable quality to MPPS to supplement any future coal supply shortfalls at MPPS from Springvale Mine which may occur for various reasons. If no emergency supplementary coal supply provisions are in place to deal with coal supply shortfalls in the future, there is a risk that declining coal stockpiles at MPPS will impact the efficiency of operations at MPPS and threaten the reliable supply of electricity to NSW.

This EA assesses the impacts of the proposed modification and proposes mitigation measures where required to minimise potential impacts.

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Source: EMM (2019); DFSI (2017); GA (2011)

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GDA 1994 MGA Zone 56

N

KEY

- Project site
- Rail line
- Highway
- Main road
- Local road
- Named watercourse
- Waterbody
- NPWS reserve
- State forest

Regional context

Lidsdale Siding Upgrade Project
Modification 1 - Environmental assessment
Figure 1.1

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1.2 Proponent

Ivanhoe Coal Pty Limited (Ivanhoe Coal) is a wholly owned subsidiary of Centennial Coal. Centennial Coal is a wholly owned subsidiary of Banpu Public Company Limited (Banpu).

Ivanhoe Coal is the proponent for the modification. The relevant address is:

Ivanhoe Coal Pty Limited
Level 18, 1 Market Street
Sydney NSW 2000

1.3 Background

The facility is on Main Street, approximately 500 m north of Wallerawang, 9 km north-west of Lithgow and 120 km west of Sydney in the Lithgow LGA (refer Figure 1.1 and Figure 1.2).

The primary operations of the facility are:

- receiving coal from the WCS currently via overland conveyor;
- transferring coal to an elevating stockpile conveyor;
- depositing coal in an elongated conical stockpile;
- reclaiming coal from the stockpile via gravity fed reclaimers;
- transferring coal to a train loading bin via conveyor; and
- loading coal into train wagons for distribution.

The facility is permitted to dispatch up to seven laden trains on any single day with an average of up to five laden trains per day over a calendar year.

The facility and operations are described in Chapter 3.

The consent was granted in May 2013 under Part 3A of the EP&A Act. The consent has not been modified. The original consent has since been declared a State significant development (SSD) under Clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility also operates under Environment Protection License (EPL) 5129.

Source: EMM (2019); DFSI (2017); GA (2011)

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KEY

- Study area
- Project site
- Rail line
- Highway
- Main road
- Local road
- Vehicular track
- Watercourse/drainage line
- Cadastral boundary
- Waterbody
- State forest
- Noise receptor

Local context

Lidsdale Siding Upgrade Project
Modification 1 - Environmental assessment
Figure 1.2

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1.4 Objectives

It is proposed to modify the consent under Section 4.55(2) of the EP&A Act to allow the facility to:

- receive and unload one coal-laden train (nominal net tonnage of up to 3,900 t per train) each day (Monday to Saturday between 7:00 am-6:00 pm, and Sunday between 8:00 am-6:00 pm); and
- transfer coal received via rail to the overland conveyor for dispatch to the WCS.

It is proposed to undertake these activities during emergency situations only when coal stockpiles at MPPS are forecast to decline below 400,000 t for an extended period. An indicative TARP has been developed to outline the necessary actions prior to the commencement of rail unloading activities at the facility (refer Table 4.1).

Works associated with the proposed modification will include:

- modification of the train loading facility to allow for the unloading of coal wagons into a hopper in the existing under-rail sump;
- installation of hopper-feeder conveyors within the existing under-rail sump to extract the unloaded coal;
- installation of conveyors and a radial stacker to stockpile the coal;
- establishment of a temporary coal stockpile and tunnel reclaimers within the approved push out area; and
- installation of a conveyor system and second stacker between the temporary coal stockpile and overland conveyor.

Works and activities associated with the proposed modification will be within the project site.

Additional details regarding the modification are provided in Chapter 4.

1.5 Justification and alternatives

Springvale Mine is the primary source of coal for MPPS. In early 2019, due to continued lower yields from Springvale Mine associated with the commencement of mining in the southern longwall blocks, a potential shortfall in coal supply to MPPS was identified. As a result, Centennial Coal has conceptualised and implemented supplementary coal supply measures to ensure coal demands by MPPS can continue to be met. As an immediate, short-term measure, Centennial Coal has sought a modification to Clarence Colliery's development consent (DA 504-00) to:

- increase total allowable coal haulage off-site from Clarence Colliery by road from 200,000 t to 300,000 t for a limited period of time up to 31 December 2020; and
- increase total allowable coal haulage off-site from Clarence Colliery to the west by road from 100,000 t to 200,000 t for a limited period of time up to 31 December 2020.

This supplementary coal supply measure is a short-term, temporary solution only and is not considered a suitable long-term option to provide additional coal supplies to MPPS should coal supply shortfalls be experienced again in the future. This is due to the limited volume of coal that can be transported by road from Clarence Colliery and the potential impacts associated with a sustained increase in heavy vehicle movements on the local and regional road network.

As a result, Centennial Coal and EnergyAustralia NSW Pty Ltd (EnergyAustralia) have investigated other opportunities to provide supplementary coal supplies to MPPS should a shortfall in coal supply be experienced again. In addition to the proposed modification, the alternatives considered to date include:

- Road haulage from Airly Mine – Airly Mine has sufficient available coal; however, this was not considered a viable alternative due to potential impacts on the local and regional road network and the outcomes of community engagement during previous environmental assessments.

- Extraction and transfer from Angus Place – Angus Place was placed on care and maintenance in 2015 and additional approvals under the EP&A Act would be required to facilitate the transfer of coal from Angus Place to MPPS. Due to the length of time associated with the additional approvals, this is not considered an option to meet predicted shortfalls in coal supply to MPPS.

- Other historic local suppliers – none of MPPS's other local suppliers are currently operational and, subsequently, there would likely be significant delays as well as greater risks associated with obtaining the necessary approvals to reopen these mines. Due to the length of time and risks associated with the obtaining the approvals, this is not considered an option to meet predicted shortfalls in coal supply to MPPS.

- Other rail unloading and coal transfer options – EnergyAustralia received approval for the construction of the Pipers Flat rail unloader facility in 2009 and a modification to the consent in 2019 included a revised design to improve efficiency and reduce the environmental impacts of the development, as well as a request to extend the required start date of the approval permit. Construction of the Pipers Flat rail unloader facility is anticipated to take a number of years and therefore this is not considered an option to meet predicted shortfalls in coal supply to MPPS.

- Road haulage from other operations in NSW – the additional heavy vehicle traffic required to meet predicted shortfalls in coal supply to MPPS would be significant and it is anticipated that associated impacts to the local and regional road network would not be considered acceptable by affected local communities or regulatory stakeholders.

These investigations indicate that the proposed modification to Lidsdale Siding's consent to allow coal to be received via rail from other Centennial Coal mining operations is the most viable option. The proposed modification will allow coal to be unloaded, handled and transported off-site to MPPS using the existing overland conveyor system via the WCS site.

If no emergency supplementary coal supply provisions are in place to alleviate coal supply shortfalls in the future, there remains a risk that declining coal stockpiles at MPPS will impact on the efficiency of operations at MPPS and threaten the reliable supply of electricity to NSW.

The proposed modification does not require a modification to the amount of coal handled by the facility, an expansion of the developed or cleared portion of the project site or an increase in approved stockpile locations, as discussed further in Chapter 4.

The proposed modification, to unload a single coal laden train per day would be within the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries, and thus is substantially the same development as the original project, as discussed in Chapter 5.

1.6 Report contents

This EA describes the project site, surrounding area, existing operations at the facility, details of the proposed modification, legislative framework, stakeholder consultation and provides an environmental assessment and justification of the proposed modification.

This EA is supported by the following:

- noise impact assessment (refer Appendix A);
- social impact assessment (SIA) (refer Appendix B);
- economic effects analysis (EEA) (refer Appendix C); and
- biodiversity development assessment report (BDAR) waiver request (refer Appendix D).

Other environmental impacts have been considered in Table 7.1.

2 Site description

2.1 Site location and land ownership

The facility is north of Wallerawang within the Lithgow LGA (refer Figure 1.2). The project site is on land leased by Ivanhoe Coal from Delta Electricity and the State Rail Authority.

The project site is zoned IN1 General Industrial and RU1 Primary Production under the *Lithgow Local Environmental Plan 2014* (Lithgow LEP).

The project site and broader study area, as defined in Appendix 1 of the consent, is located on:

- Lot 1 of DP 776498;
- Lots 1, 2, 6, 7, 8 and 9 of DP 252472;
- Lot 13 of DP 827839;
- Lot 32 of DP 827807;
- Lot 101 of DP 1137972; and
- Lots 16, 164 and 174 of DP 751651.

2.2 Surrounding land uses

The surrounding environment generally consists of low-density development and rural uses. The primary land uses immediately around the facility include community, commercial and industrial uses (refer Figure 1.2), notably:

- Black Gold Motel (approximately 250 m south);
- St John the Evangelist Church, Wallerawang (approximately 250 m south-east); and
- residences approximately 300 m to the west, 500 m to the north and 600 m to the south.

The decommissioned Wallerawang Power Station is approximately 200 m east of the facility.

Sensitive receivers, including regional receivers, and potential impacts on those receivers are discussed in Chapter 6.4.

2.3 Environmental setting

The project site has generally been cleared of vegetation and is used for internal roads, stockpiles, conveyors, train loading infrastructure and environmental management measures. An approximately 30 m-wide vegetation screen towards the southern end of the project site serves as a visual amenity buffer for motorists and sensitive receptors.

2.4 Historical and current uses

The facility has been used for coal storage and rail loading since 1974. Historically, coal was received at the project site via the overland conveyor and road. Stockpiled coal was loaded onto trains by front end loaders (FELs) for transport via the Main Western Railway line. Stockpiles were formed by moving coal from the overland conveyor and truck stockpiles to a train stockpile by FELs.

As discussed in Chapter 3, the consent allowed for the extension of the rail line and establishment of a purpose-built train loading facility. Deliveries by truck have ceased, with conveyors and reclaimers being installed between the overland conveyor and train loading facility to largely automate the handling and transport of coal. Front end loaders (FELs) are still required for the clearing of sumps and general stockpile management.

Environmental management measures have been implemented across the project site, including air quality, noise and surface water management measures. These measures are discussed in Chapter 3 and Chapter 7.

3 Existing operations

3.1 Development consent

As noted in Section 1.1, the facility currently operates under Development Consent 08_0223, as supported by *Lidsdale Siding Upgrade Project Environmental Assessment* (RPS Australia East 2012) (ie the original EA) and *Lidsdale Siding Upgrade Response to EA Submissions* (Centennial Coal 2012) (RTS).

3.2 Overview of operations

The facility is designed to supply coal across the regional rail network, capable of supplying coal to domestic and international markets via rail. The rate of stockpiling and distribution of coal is based on a combination of market forces and production capabilities and is therefore variable.

The existing operations at the facility were considered in the original EA, with key aspects of the facility's operations summarised in Table 3.1.

Table 3.1 Existing and approved operations summary

Component	Approved development
Lifespan	Coal handling and train loading operations may occur until 31 December 2042.
Coal receival	6.3 Mtpa (all coal to be delivered to the facility by the existing overland conveyor system).
Operational hours	24-hours a day, seven days a week.
Stockpile capacity	50,000 t.
Dispatching (absolute daily maximum)	Seven trains in a single day. No dispatching by truck.
Dispatching (average daily maximum)	Five trains a day averaged over the year. No dispatching by truck.

Table 3.1 Existing and approved operations summary

Component	Approved development
Site infrastructure	Approved infrastructure includes: • diversion chute at the end of the existing overland conveyor; • stockpiling conveyor; • auxiliary stockpile under the existing overland conveyor; • elongated conical stockpile and associated push-out area (50,000 t); • underground tunnel with reclaimers beneath the elongated conical stockpile; • conveyor from reclaim tunnel to train loading bin; • train loading bin; • spillage reclaim pit beneath the train loading bin; • control room adjacent to the train loading bin; • 260-m-long track extension to accommodate train loading bin; • dust suppression and supporting water management infrastructure (ie improved clean water diversion channels); • landscaping and bunding; • power upgrades; • lighting for night operations and security; • site security fencing; • storage infrastructure; and • refuelling infrastructure. Key components of the existing approved infrastructure are identified on Figure 3.1.
Miscellaneous operations	Miscellaneous operations at the facility include: • storage, provisioning and minor maintenance of locomotives and wagons; • maintenance of infrastructure and amenities; and • fuelling of plant and locomotives from mobile tanks/transportable fuel tanks.
Employees	10 employees.
Rehabilitation	Rehabilitation is to be in accordance with the existing *Rehabilitation and Closure Plan* (2018). The site is to be safe, stable and non-polluting, with the final land use compatible with surrounding land uses. Closure is to ensure public safety, with minimal adverse socio-economic effects associated with the closure of the facility.

3.3 Environmental management

The facility's environmental and planning compliance is managed under a suite of management plans approved by the Director General/Secretary of the NSW Department of Planning and Environment (DPE), including:

- *Western Region – Noise Management Plan* (2018);
- *Western Region – Air Quality and Greenhouse Gas Management Plan* (2018);
- *Western Region – Historic Heritage Management Plan* (2018) (HHMP);
- *Western Region – Aboriginal Cultural Heritage Management Plan* (2017) (ACHMP);
- *Environmental Management Strategy: Lidsdale Siding* (2017) (EMS);

- *Lidsdale Siding: Water Management Plan* (2014) (WMP);
- *Biodiversity Management Plan: Lidsdale Siding* (2013) (BMP);
- *Lidsdale Siding: Site Specific Particulate Matter Control Bust Practice Assessment* (2012);
- *Rehabilitation and Closure Plan – Lidsdale Siding* (2018); and
- *Lidsdale Siding Pollution Incident Response Management Plan* (2017) (PRIMP).

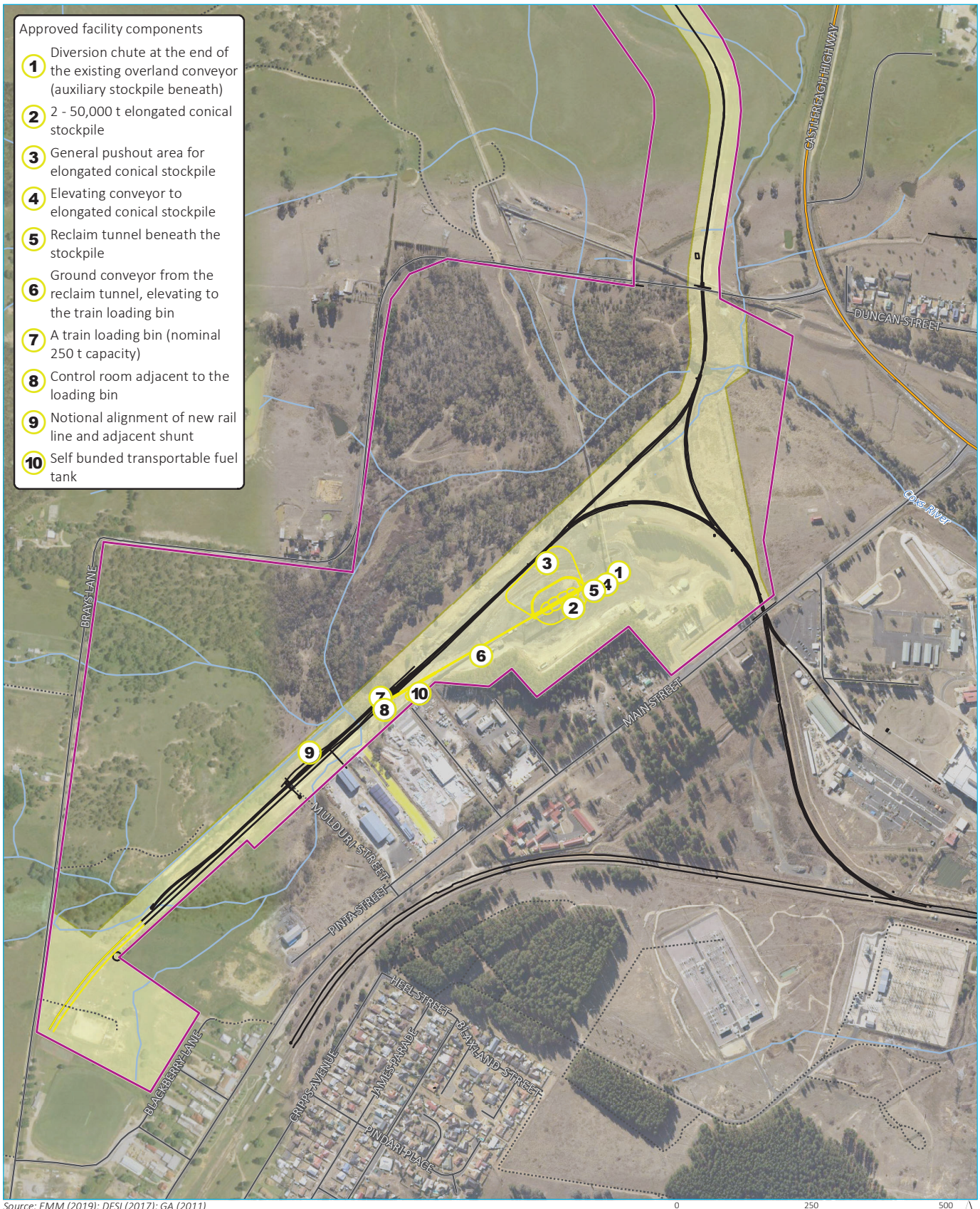
3.4 Environment protection license

The facility is a 'premises-based scheduled activity' under Schedule 1 (10) and (28) of the NSW *Protection of the Environment Operations Act 1997* (POEO Act). The facility operates under EPL 5129, which is administered by the NSW Environment Protection Authority (EPA) under Sections 43 (b) and 48 of the POEO Act.

The licence allows for 'Coal works' as a scheduled and fee-based activity of a scale between 2,000,000 and 5,000,000 t handled per annum. The EPL also regulates several aspects of the facility, including, but not limited to air quality and noise limits and monitoring and recording requirements.

The proposed modification does not require amendment of the EPL, as stockpiles will be within assessed and approved stockpile areas and handling of coal will not exceed approved limits.

Potential noise and air quality impacts from the proposed modification have been described in Section 7.2 and 7.3.



Source: EMM (2019); DFSI (2017); GA (2011)

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KEY

- Study area
- Project site
- Existing features
- Approved facility
- Highway
- Local road
- Vehicular track
- Watercourse/drainage line

Approved site

Lidsdale Siding Upgrade Project
Modification 1 - Environmental assessment
Figure 3.1

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4 Proposed modification

4.1 Overview

As noted in Section 1.4, Ivanhoe Coal propose to modify the consent under Section 4.55(2) of the EP&A Act to allow the facility to:

- receive and unload one coal laden train (nominal net tonnage of up to 3,900 t per train) each day (Monday to Saturday between 7:00 am and 6:00 pm, and Sunday between 8:00 am and 6:00 pm); and
- transfer coal received via rail to the overland conveyor for dispatch to the WCS.

Works associated with the proposed modification will include:

- modification of the train loading facility to allow for the unloading of coal wagons into a hopper in the existing under-rail sump;
- installation of hopper-feeder conveyors within the existing under-rail sump to extract the unloaded coal;
- installation of conveyors and a radial stacker to stockpile the coal;
- establishment of a temporary coal stockpile and tunnel reclaimers within the approved push out area; and
- installation of a conveyor system and second stacker between the temporary coal stockpile and overland conveyor.

4.2 Proposed activities

The proposed modification seeks to allow for the following activities to occur at the facility:

- unloading a single coal laden train per day between the hours of 7:00 am and 6:00 pm, Monday to Saturday and 8:00 am and 6:00 pm Sunday, with no loading activities to occur on the same day as unloading activities; and
- dispatching of coal from the project site via the topside strand of the existing overland conveyor (within existing handling limits).

Approval is sought to undertake these activities during emergency situations when coal stockpiles at MPPS are forecast to decline below 400,000 t for an extended period.

An indicative TARP has been developed to outline the necessary actions to be undertaken prior to the commencement of rail unloading activities at the facility (refer Table 4.1).

Table 4.1 Trigger action response plan for rail unloading activities

Operations	Trigger	Action and response
Typical (ie rail loading)	Coal stockpiles at MPPS are greater than 400,000 t.	No action or response required – continue typical operations.
	Forecast coal stockpiles expected to remain at, or above, 400,000 t.	No action or response required – continue typical operations.
Emergency (ie rail unloading required)	Coal stockpiles at MPPS are forecast to fall below 400,000 t for two consecutive months.	Procure temporary rail unloading infrastructure and commence rail unloading activities. Notify DPE of intent to commence temporary rail unloading activities.

Notes: Rail unloading activities will continue until coal stockpiles at MPPS are greater than 400,000 t and the forecast coal stockpile is likely to remain above 400,000 t for a six month period.

4.3 Proposed changes to infrastructure at the facility

As part of the proposed modification, the following new and/or upgrades to existing infrastructure at the facility will be required (refer Figure 4.1):

- upgrading of the train loading facility to allow for unloading and capturing of coal, including:
  - wagon triggers to unload coal from a train car into the existing under-rail sump; and
  - low height hopper within the sump to accept coal and two hopper-feeder conveyors to extract it;
- installation of conveyors from the sump to the existing push-out area associated with the approved elongated conical stockpile, including:
  - ground mounted modular conveyors; and
  - jump conveyors and two radial stackers.
- establishment of a new conical stockpile:
  - 8,500 t storage capacity;
  - up to 17 m tall; and
  - up to 50 m in diameter;
- installation of up to four tunnel reclaimers with vibrating feeders to feed coal from the new stockpile onto another conveyor system; and
- installation of conveyors and a stacker from the tunnel reclaimers to the existing overland conveyor.

Some infrastructure may be secured and installed on-site prior to the occurrence of an emergency situation in preparation for when it will be required. Other infrastructure will likely be procured and brought to site when required depending on infrastructure procurement lead times.

4.4 Construction activities

The proposed modification will require the:

- minor excavation and levelling associated with footings/pads to support conveyors and stackers;
- assembly of nominally:
  - pre-fabricated conveyors including two radial stackers;
  - two hopper-feeders at the existing under-rail sump at the train loading area; and
  - three to four tunnel reclaimers with vibrating feeders.

Construction is estimated to take approximately four to six weeks, if all components are installed at the same time, once all temporary infrastructure has been delivered to site, with up to ten people required on-site during construction.

The proposed modification does not require the clearing of vegetation. All construction activities will take place within existing disturbed areas at the facility and within the project site.

The capital investment value of the proposed modification is approximately $4 million.

4.5 Management measures

The proposed modification will utilise the facility's existing air quality, surface water and noise management measures, including but not limited to:

- dust suppression via water sprays;
- surface water discharge management via the existing drainage system and dirty water dam; and
- noise management via processes and procedures detailed in the approved Noise Management Plan.

No additional management measures are required to address the potential impacts associated with the proposed modification.

4.6 Conditions of consent

Ivanhoe Coal is seeking to modify Condition 7 and Condition 8 of Schedule 2 of the consent, which currently states:

Coal Transport

Condition 7 – The proponent shall ensure that:

a) all coal is transported to the site by conveyer;

b) all coal is transported from the site by rail:

c) no more than 7 laden trains leave the site each day; and

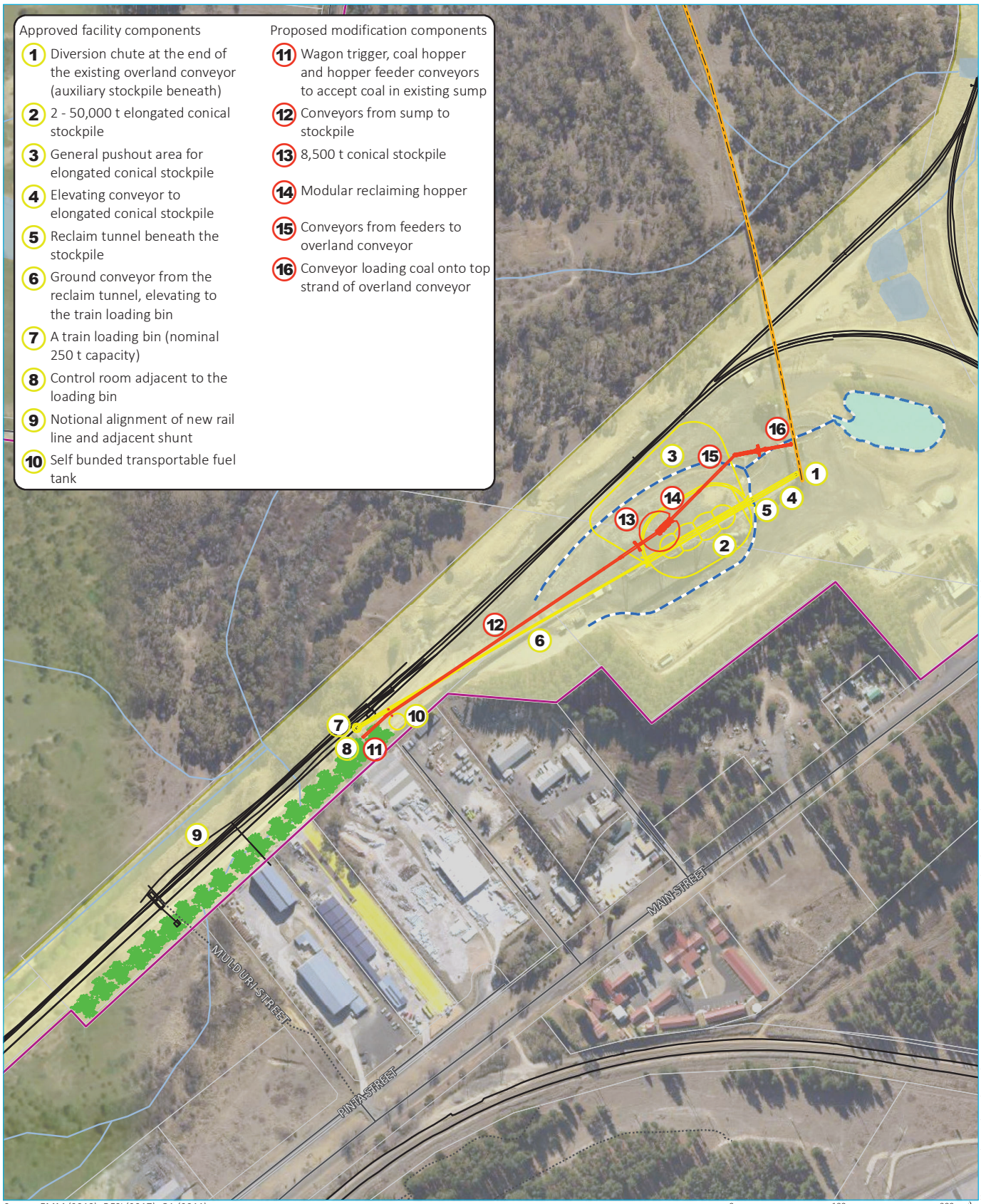
d) no more than 5 laden trains leave the site each day, when averaged over a calendar year.

Hours of operation

Condition 8 – The proponent may undertake coal handling and train loading operations on site 24 hours a day, 7 days a week.

To achieve the proposed modification, Ivanhoe Coal propose the following amendments to Condition 7 and Condition 8 Schedule 2 of the consent:

- Condition 7:
  - amend 7(d) to allow for an average of 5 laden trains arriving or leaving the site each day;
  - add 7(e) to allow for no more than 1 laden train to arrive at the site each day; and
  - add 7(f) so that either loading or unloading occurs on a given day (not both).
- Condition 8:
  - amend condition to reflect daytime unloading, handling and transport of coal from laden trains.



Source: EMM (2019); DFSI (2017); GA (2011)

0 100 200 m

GDA 1994 MGA Zone 56

N

KEY

- Study area
- Project site
- Proposed modification
- Existing features
- Approved facility
- Landscaping buffer
- Overland conveyor
- Existing dirty water dam
- Existing dirty water drainage channels
- Local road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary

Proposed modification

Lidsdale Siding Upgrade Project
Modification 1 - Environmental assessment
Figure 4.1

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5 Legislation and policy

5.1 Commonwealth legislation

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of the Environment and Energy. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined as 'matters of national environmental significance' (MNES). If significant impacts are considered likely, and the action is deemed to be a 'controlled action', the proponent may be asked to provide further information about the proposal.

Ecological and heritage impacts are discussed in Table 7.1. As discussed, the project site is generally clear of vegetation and the proposed modification will not result in further clearing. The project site is also heavily disturbed. The original EA did not identify non-Aboriginal or Aboriginal cultural heritage sites within the project site.

As the proposed changes to infrastructure at the facility are within the footprint of the original project site, it is unlikely that the proposed modification will have a significant impact on any MNES listed under the EPBC Act and consequently has not been referred to the Commonwealth Department of Environment and Energy (DoEE).

5.2 NSW State legislation

5.2.1 Environmental Planning and Assessment Act 1979

i Section 4.55(2) modification

Application 08_0223 was approved under Part 3A of the EP&A Act in May 2013. Amendments have since been made to the EP&A Act that removed the ability for Part 3A project approvals to be modified under Section 75W of the EP&A Act. The final date for Section 75W modification applications was 1 March 2018.

Modifications to Part 3A projects are available to projects that had been declared as State Significant Development (SSD) under Clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The order of transition for the original project was published in the Government Gazette on 3 October 2018.

As the project is now SSD, Ivanhoe Coal is seeking to modify the consent for application 08_0223 under Section 4.55(2) of the EP&A Act. Compliance of the proposed modification with the requirements of Section 4.55(2) is summarised in Table 5.1.

Table 5.1 Compliance with Section 4.55(2) requirements

Section 4.55 (2) requirements	Comment
(a) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all), and	The environmental assessment in Chapter 7 found that the proposed modification will have minimal environmental impacts.

Table 5.1 Compliance with Section 4.55(2) requirements

Section 4.55 (2) requirements	Comment
(b) it has consulted with the relevant Minister, public authority or approval body (within the meaning of Division 4.8) in respect of a condition imposed as a requirement of a concurrence to the consent or in accordance with the general terms of an approval proposed to be granted by the approval body and that Minister, authority or body has not, within 21 days after being consulted, objected to the modification of that consent, and	Ivanhoe Coal has consulted with DPE as part of the preparation of this EA. DPE confirmed that the appropriate approval pathway for the modification is by way of Section 4.55(2) of the EP&A Act. Further consultation information is provided in Chapter 6.
(c) it has notified the application in accordance with: i) the regulations, if the regulations so require, or ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and	Clause 118 of the NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) relates to the notification period associated with 4.55(2) modifications. Notice of the application must be published in a local newspaper by DPE. DPE must also cause notice of the proposed modification to be given to each person who made a submission in relation to the original development application. This EA will be placed on public exhibition for a minimum of 14 days.
(d) it has considered any submissions made concerning the proposed modification within the period prescribed by the regulations or provided by the development control plan, as the case may be.	Any submissions made concerning the proposed modification will be reviewed by DPE and forwarded to Ivanhoe Coal to consider and respond to (via a response to submissions (RTS) report).

ii Matters for consideration

Modification applications under Section 4.55(2) of Division 4.9 are required to take into consideration the relevant matters referred to in Section 4.15 of the EP&A Act which include:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and

(v) (Repealed)

that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environment, and social and economic impacts in the locality,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) the public interest.

Matters a (i), (iii) and (iv) have been addressed in the following sections of this chapter. Matters (b) to (e) are addressed in Chapters 6, 7 and 8.

5.2.2 NSW Environmental Planning and Assessment Regulation 2000

Clause 115 of the EP&A Regulation states the required information an application for development consent under Section 4.55(2) of the EP&A Act must include. Table 5.2 provides an outline of where in this document the required information is addressed. The modification is not considered designated development under the EP&A Regulation.

Table 5.2 EP&A Regulation Clause 115 information requirements

Clause 115 information requirement	Where addressed
(a) the name and address of application	Section 1.2 of this EA.
(b) a description of the development to be carried out under the consent (as previously modified)	Section 3 of this EA.
(c) the address, and formal particulars of title, of the land on which the development is to be carried out,	Section 2.1 of this EA.
(d) a description of the proposed modification to the development consent,	Section 4 of this EA.
(e) a statement that indicates either: i. that the modification is merely intended to correct a minor error, misdescription or miscalculation, or ii. that the modification is intended to have some other effect, as specified in the statement,	Section 4.1 of this EA.
(f) a description of the expected impacts of the modification,	Chapter 7 of this EA.
(g) an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	Chapter 7 of this EA.
(g1) in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the *Biodiversity Conservation Act 2016*,	There will be no increase in impacts to biodiversity values (refer Appendix D). A BDAR waiver request is provided as Appendix D.

Table 5.2 EP&A Regulation Clause 115 information requirements

Clause 115 information requirement		Where addressed
(h)	if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	The application for the consent the subject of the modification was made, or could have been made, without the consent of the owner of the land. Under Clause 49(2) of the EP&A Regulation, landowner's consent is not required for an application for public notification development if the application instead gives notice of the application by written notice to the owner of the land before the application is made or by advertisement published in a newspaper circulating in the area in which the development is to be carried out no later than 14 days after the application is made.
(i)	a statement as to whether the application is being made to the Court (under Section 4.55) or to the consent authority (under Section 4.56)	The proposed modification application is not being made to the NSW Land and Environment Court.
	and, if the consent authority so requires, must be in the form approved by that authority.	Not applicable.

5.2.3 NSW Protection of the Environment Operations Act 1997

As discussed in Section 3.4, the facility is a 'premises-based scheduled activity' under the POEO Act and is therefore required to operate under an EPL.

Licensed activities are detailed in Condition O1.1 of the EPL, which include the processing, handling, movement and storage of materials. These activities are inclusive of the activities related to the proposed modification and would not require an amendment to the EPL.

As discussed in Chapter 7, the environmental impacts of the proposed modification are predicted to be within the thresholds of the original project. As such, the remaining conditions of the EPL do not require amendment.

5.3 Applicable environmental planning instruments

5.3.1 State Environment Planning Policies

The following State Environment Planning Policies (SEPPs) are considered relevant for the facility and considered in the original EA:

- State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP);
- State Environmental Planning Policy No 33 – Hazardous and Offensive Development;
- State Environmental Planning Policy No. 44 – Koala Habitat Protection;
- State Environmental Planning Policy No 55 – Remediation of Land; and
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.

As noted in Chapter 4, the proposed modification does not seek to expand the development footprint of the project site, excavate, or clear vegetation. The proposed stockpile will be within the footprint of a currently approved stockpile. The primary land use, being the receipt, handling, stockpiling and transport of coal will remain. As such, the findings of the original EA, that the facility is consistent with these SEPPs continues to apply to the proposed modification.

Of specific relevance is Clause 7(1)(b)(i) of the Mining SEPP, which allows for mining to be carried out on land where development for the purposes of agriculture or industry may be carried out (with or without development consent). Further, it defines mining thus:

> **mining** means the winning or removal of materials by methods such as excavating, dredging, or tunnelling for the purpose of obtaining minerals, and includes:
>
> (a) the construction, operation and decommissioning of associated works, and
>
> (b) the stockpiling, processing, treatment and transportation of materials extracted, and
>
> (c) the rehabilitation of land affected by mining.

As noted below, on this basis any provision in the Lithgow LEP that would otherwise operate to prohibit the proposed modification has no effect. The proposed modification is permissible with development consent.

5.3.2 Lithgow Local Environmental Plan 2014

At the time of the development application in 2012, the relevant environmental planning instrument was Lithgow Local Environmental Plan 1994, with the project site and larger project area zoned as Rural (General) (1a) and Village 2(v). The original application was permissible as the land use was permissible under Rural (General) (1a), and while it was prohibited within the Village 2(v) zone, Clause 7 of the Mining SEPP overruled that prohibition.

As noted in Section 2.1, the Lithgow LEP is the relevant LEP for the project site, with the project site being zoned as IN1 General Industrial and RU1 Primary Production. The objectives and relevant permitted uses of those zones are provided in Table 5.3.

Table 5.3 Lithgow LEP 2014 Land use zoning extract

Zone	Objectives	Relevant permitted uses
IN1 General Industrial	To provide a wide range of industrial and warehouse land uses. To encourage employment opportunities. To minimise any adverse effect of industry on other land uses. To support and protect industrial land for industrial uses. To maintain or improve the water quality of receiving water catchments.	General industries.

Table 5.3 Lithgow LEP 2014 Land use zoning extract

Zone	Objectives	Relevant permitted uses
RU1 Primary Production	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. To minimise the environmental and visual impact of development on the rural landscape. To provide for recreational and tourist development and activities of an appropriate type and scale that do not detract from the economic resource, environmental or conservation value of the land. To maintain or improve the water quality of receiving water catchments.	Aquaculture; intensive livestock agriculture; Intensive plant agriculture.

As noted in Section 5.3.1, the Mining SEPP allows for mining, including the stockpiling, processing, treatment and transportation of materials extracted on land where agriculture or industry is permitted. The uses of industry and agriculture are both permitted on land associated with the project site. As such, the stockpiling and transportation of coal, as per the proposed modification, continues to be permissible on the project site with development consent.

6 Stakeholder consultation

6.1 NSW Department of Planning and Environment

Ivanhoe Coal wrote to DPE on 31 May 2019 to introduce the proposed modification and seek initial advice with regard to the assessment pathway and scope of this EA. DPE responded on 6 June 2019 to confirm the assessment scope and nominated application under Section 4.55(2) of the EP&A Act as the appropriate approval pathway. A copy of this correspondence is provided in Appendix E. Feedback provided by DPE and how this has been addressed is summarised in Table 6.1.

Table 6.1 Feedback from DPE and how it has been addressed

Matter raised	Response
DPE confirms that the appropriate approval pathway for the modification application is Section 4.55(2) of the EP&A Act.	The appropriate approval pathway for the modification is nominated and described in Section 5.2.1 of this EA.
DPE confirmed that the issues identified in the Ivanhoe Coal letter to DPE (31 May 2019) need to be addressed in the EA.	The technical assessments proposed in Ivanhoe Coal's letter are appended to this EA and the findings summarised in Chapter 7. Other environmental matters have been addressed in Table 7.1.
Biodiversity impacts – evidence that there would not be any increase in impacts to biodiversity values using Table 2 of the BDAR Waiver Fact Sheet for reference.	A BDAR waiver request is included as Appendix D of this EA. The likelihood of impacts on native vegetation as a result of the proposed modification is considered negligible.
Social and economic impacts – describe any social and economic consequences (and environmental impacts, if applicable) of the proposal not going ahead, including any power generation related impacts.	A SIA has been prepared to assess the potential social impacts of the proposed modification and is included as Appendix B and summarised in Section 7.4. An economic effects analysis (EEA) has been prepared to assess the potential economic impacts of the proposed modification and is included as Appendix C and summarised in Section 7.5.
Alternatives – advise what alternatives have been considered for providing coal to Mount Piper Power Station during 'emergency coal supply' situations and why the proposed modification is the preferred option.	A detailed justification for the proposed modification is provided in Section 1.5 and includes discussion of the alternatives that have been considered.
Traffic and transport impacts – describe the traffic and transport impacts associated with the proposed rail operation, in comparison to the existing (approved) train loading operations.	The traffic and transport impacts associated with the proposed modification have been addressed in Table 7.1.
Consultation outcomes – outline how the outcomes of proposed stakeholder consultation have been incorporated into the proposed modification.	Consultation has been undertaken with Lithgow City Council (LCC), Wallerawang Lidsdale Progress Association (WLPA), the Western Region Combined Community Consultative Committee (CCC), Clarence CCC and neighbouring landholders. The outcomes of this consultation are described below.
If your proposal is likely to have a significant impact on MNES, it will require an approval under the EPBC Act.	As noted in Section 5.1, the proposed changes to infrastructure at the facility are within the footprint of the original project site. It is unlikely that the proposed modification will have a significant impact on any MNES listed under the EPBC Act.

6.2 Lithgow City Council

Lithgow City Council, including elected councillors and senior managers, were briefed on the proposed modification on 20 March 2019. In addition, a letter was sent to LCC on 8 May 2019 to further introduce the proposed modification and provide information on the key issues to be addressed in the accompanying EA, particularly noise and, to a lesser degree, dust. The letter noted that preliminary noise modelling had been undertaken, which indicated that the proposed modification would result in negligible change to the existing noise environment. Additional mitigation and management measures were also noted to further reduce noise below current assessed operational levels. A copy of this correspondence is provided in Appendix E. No feedback regarding the proposed modification has been received to date.

6.3 Wallerawang Lidsdale Progress Association

The WLPA was briefed on the proposed modification on 7 May 2019. The following concerns were raised:

- potential of trains blocking Main Street in Wallerawang and proposed that there be notification when traffic would potentially be delayed; and
- condition of road at the Main Street level crossing.

In response to the concerns raised by WLPA, notification boards will be installed at appropriate locations to identify when trains will be accessing the facility and, consequently, when there could be potential delays at the Main Street level crossing.

6.4 Sensitive receivers

Consultation with sensitive receivers commenced 6 May 2019 with a letter which summarised the proposed modification and provided contact details of a project representative. Face-to-face discussions were held with landholders of R1, R2 and R7 (refer Figure 1.2). No issues were raised regarding the proposed modification.

6.5 Western Region Combined Community Consultative Committee and Clarence Community Consultative Committee

The proposed modification was discussed at the Western Region Combined CCC meeting on 9 April 2019 and Clarence CCC meeting on 21 March 2019. Minutes from CCC meetings are available on the Centennial Coal website. No concerns were raised regarding the proposed modification at either meeting.

Both CCCs are comprised of representatives from the local community and LCC and are independently chaired. The CCCs provide a forum for open discussion between Ivanhoe Coal, Centennial Coal, the community, LCC and other stakeholders on issues directly relating to operation, environmental performance and community relations.

7 Environmental assessment

This section addresses the potential impacts of the proposed modification.

7.1 Overview of impacts

The proposed modification has been compared to existing operations, as assessed in the original 2015 EA, as summarised in Table 7.1

Table 7.1 Potential impacts of the proposed modification

Environmental consideration	Impact assessment
Surface water/groundwater	New conveyors and the additional stockpile are within existing operational areas that are serviced by the water management system under an approved WMP. The system includes culverts that capture dirty water from the operational area of the site and divert it to a dirty water dam. The system and its management are outlined in the WMP. All dirty water associated with the proposed modification would be captured by the system. The WMP details erosion and sediment control measures undertaken during the construction of the original project. The approved Erosion and Sediment Control Plan will be updated to reflect the construction of the proposed modification. Surface water impacts associated with construction are limited and are associated with minor works required to construct footings and the assembly of new equipment. As the project area is generally unsealed, erosion and sediment impacts are predicted. Excavation associated with construction of the proposed modification is negligible, with no groundwater expected to be intersected during construction.
Biodiversity	As requested in consultation with DPE, a BDAR waiver request has been prepared as part of the proposed modification (refer Appendix D). The proposed modification is sited at an existing rail loading facility within a heavily disturbed area. The likelihood of impacts on native vegetation as a result of the proposed modification is considered negligible. Ecology monitoring, assessment and reporting are currently managed through the facility's EMS and BMP. The EMS and BMP will continue to operate under the proposed modification.
Aboriginal archaeology/historic heritage	The proposed modification does not require clearing. Very limited excavation is required to allow for construction of footings. As per the original EA and RTS, the project site has previously been surveyed, with no Aboriginal or historic heritage sites identified. The potential for the proposed modification to impact heritage sites is considered to be very low. Conveyors associated with the project site are visible from a nearby heritage item, St John Evangelist Church (refer Figure 1.2). As detailed in the RTS, trees were planted along the sight-line to screen the conveyors. The proposed modification's conveyors will be similar in height to those assessed and constructed on site and will be screened by additional trees. The site's heritage is currently managed through the HHMP and ACHMP. Construction management and ongoing consultation with stakeholders will continue as per these management plans. Screening of the conveyors will improve as screening vegetation matures.

Table 7.1 Potential impacts of the proposed modification

Environmental consideration	Impact assessment
Traffic and transport	A traffic and rail impact assessment was prepared by Barnson (2012) as part of the EIS for the Lidsdale Siding Upgrade Project. The assessment addressed impacts associated with road and rail movements, including potential impacts at the Main Street and Brays Lane level crossing. The assessment concluded that queuing at the Main Street level crossing would be minimal; however, some upgrading to the current road line marking at this location was proposed to satisfy Australian Standard 1742.7-2007 Manual of uniform traffic control devices – Part 7: Railway crossings. The assessment also concluded that the potential for traffic queues at the Brays Lane level crossing would be minimal due to the low level of local traffic associated with this land. No additional train safety mitigation measures were recommended and the impact on the existing rail network was considered negligible. There are likely to be a number of light and heavy vehicle movements to and from the site during project civil works and plant establishment/mobilisation. Construction is estimated to take approximately four to six weeks, if all components are installed at the same time, once all temporary infrastructure has been delivered to site, with up to ten people required on-site during construction. Given the brief duration of these vehicle movements, no significant impacts on traffic flow or safety of major and local roads are anticipated as a result of the proposed modification. The modification will allow the facility to receive laden trains, in addition to loading and dispatching laden trains. As described in Section 1.1, one single laden train will be received per day. The facility is currently permitted to dispatch an average of five laden trains each day over a calendar year. The modification will not increase overall train movements, with an average of five laden trains to be received or dispatched each day. As noted in Section 6.3, the delay caused by slow moving trains at the Main Street level crossing was identified as a key concern by the WLPA. In response, notification boards will be installed at appropriate locations to identify when trains will be accessing the facility and, consequently, when there could be potential delays at the Main Street level crossing.
Visual amenity	The facility is currently required to minimise visual impacts, including off-site lighting impacts. The modification will allow for unloading of trains during daytime hours and will not result in additional lighting impacts. The visual impacts of the conveyors were assessed as part of the original application. As described in Section 2.3, an approximately 30 m-wide vegetation screen towards the southern end of the project site serves as a visual amenity buffer for motorists and sensitive receptors. The new conveyors are within the assessed operational area and would be screened by the vegetation.
Waste	Waste production is predicted to increase during construction of the proposed modification due to the additional construction workforce at the facility and small amounts of construction waste. However, any increases to waste production are anticipated to be negligible due to the small construction workforce. Waste will continue to be managed in accordance with the EMS with all waste disposed of at a licenced waste management facility.

7.2 Air quality

An air quality impact assessment (AQIA) was completed for the original EA (SLR 2012). The AQIA quantified emissions of particulate matter, specifically:

- total suspended particulate matter (TSP);
- particulate matter less than 10 microns in aerodynamic diameter (PM_{10}); and
- particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$).

In order to understand the implications for air quality associated with the modification, particulate matter emissions and associated atmospheric modelling predictions from the AQIA have been referenced.

Relative to the current configuration of the facility, the modification would nominally introduce the following additional particulate matter emission sources:

- rail wagon unloading to a below-ground sump;
- three conveyor transfer points between the wagon unloading sump and the new stockpile;
- new stockpile for unloaded coal; and
- two conveyor transfer points between the new stockpile and the existing OL2 conveyor.

The following assumptions have been made in quantifying particulate matter emissions from these additional sources:

- for all new conveyor transfer points, including the rail wagon unloading process, the emission factors for conveyer transfer points from the AQIA (SLR 2012) were adopted;
- a control factor of 70% for enclosure has been adopted for rail wagon unloading to account for the below ground sump;
- a control factor of 50% for water sprays has been adopted for all other conveyor transfer points to account for the use of water sprays and carry over moisture in the conveying system; and
- because the new coal stockpile is located within the existing stockpiling area and the AQIA assumed the entire available area was active for wind erosion calculations, no additional wind erosion emissions were included.

The total approved coal handling rate at the facility is 6.3 Mtpa. This is not proposed to be modified. In order to calculate emissions from the proposed delivery of coal to the facility, a worst case scenario was derived by determining the maximum amount of incoming coal by rail wagon that would balance the existing maximum and average daily outgoing train rates (seven and five respectively). The derived amount is 468,000 tpa incoming by rail wagon, with the adjusted incoming amount from overland conveyor adjusted to 5,832,000 tpa.

The emissions calculated for proposed modification operations at the facility are presented in Table 7.2. The corresponding calculated totals from Appendix A of the AQIA and the relative change in annual emissions are also presented in Table 7.2 for comparative purposes.

Table 7.2 Emissions inventory comparison – approved operations versus modification operations

Emissions scenario	Annual emissions (kg)		
	TSP	PM_{10}	$PM_{2.5}$
Approved operations (SLR 2012)	28,475	9,774	1,083
Modification operations	28,735	9,988	1,099
Percentage change in emissions	**0.9%**	**2.2%**	**1.5%**

Note: Values for approved operations taken from Appendix A of SLR (2012).

The relative change in annual TSP, PM_{10} and $PM_{2.5}$ emissions is 0.9%, 2.2% and 1.5% respectively. It is considered that this change in emissions is very low and the resultant change in impacts from those predicted in the AQIA would be negligible.

As presented in the AQIA (SLR 2012), the dispersion modelling conducted for the operation of the facility predicts compliance for all assessed particulate matter air pollutants at all surrounding sensitive receptor locations. The proposed modification would not significantly change air quality impacts from those currently generated by the facility. The same conclusion therefore applies to the proposed modification.

Due to the minimal impacts associated with the proposed modification, no additional mitigation measures have been proposed. The proposed modification will utilise the facility's existing management measures relating to air quality as detailed in the Air Quality and Greenhouse Gas Management Plan.

7.3 Noise

A noise assessment was completed by EMM (refer Appendix A) for the proposed modification taking into consideration the noise assessment completed for the original EA (Hatch 2012) and the Noise Management Plan.

The noise assessment for the original EA attributed noise emissions to result from trains manoeuvring in and out of the facility and the use of mobile plant on coal stockpiles (Hatch 2012). Concurrently to this, noise emissions from the use of conveyors were predicted to be negligible (Hatch 2012).

Noise levels were assessed at sensitive receivers which surround the northern, eastern, southern and western boundaries of the facility (refer Figure 1.2).

The proposed noise levels from the modification are presented in Table 7.3. The existing noise levels are also presented in Table 7.3 to provide a basis for comparison between existing and proposed noise levels.

Table 7.3 Predicted noise levels

Assessment location	Description	Predicted existing noise levels $L_{Aeq\ 15minutes}$ dB	Predicted proposed noise levels $L_{Aeq\ 15minutes}$ dB	Predicted changes dB
1	Lot 2 Main Street, Wallerawang	54	52	-2
2	Black Gold Cabins, Main Street, Wallerawang	52	49	-3
3	"Killarney", Brays Lane, Wallerawang	53	51	-2
4	"Fairview", Brays Lane, Wallerawang	46	44	-2
5	Duncan Street, Lidsdale	44	41	-3
6	Old Castlereagh Highway, Lidsdale	<30	<30	-2
7	Royal Hotel, Main Street, Wallerawang	52	49	-3
8	Corner of Heel Street and Cripps Avenue, Wallerawang	49	46	-3

Table 7.3 Predicted noise levels

Assessment location	Description	Predicted existing noise levels $L_{Aeq\ 15minutes}$ dB	Predicted proposed noise levels $L_{Aeq\ 15minutes}$ dB	Predicted changes dB
9	Corner of Cripps Avenue and Pindari Place, Wallerawang	47	44	-3
10	Brays Lane South, Wallerawang	50	47	-3
11	"Tara", Brays Lane, Wallerawang	46	44	-2
12	Brays Lane Corner, Wallerawang	45	43	-2

As illustrated in Table 7.3, proposed noise levels will be 2 to 3 dB quieter than existing noise levels at sensitive receivers. This is mainly because the proposed unloading of one coal laden train per day will not occur concurrently to existing operations.

Additionally, noise levels from the use of mobile equipment are predicted to remain the same or similar to existing noise levels. Incoming coal laden trains will also be operated in a specialised manner which will reduce resulting noise levels.

The noise assessment has also taken into consideration the potential duration of noise emissions. As noted in Section 3.2, the site can load and dispatch up to seven trains in a single day, which can take up to approximately 14 hours to complete. The unloading of one coal laden train per day as part of the proposed modification will take approximately 6 hours to complete.

The noise assessment found that the proposed modification will have a negligible impact on noise levels currently generated by the facility and experienced at the sensitive receivers. Because of this, no additional mitigation measures have been proposed. The proposed modification will utilise the facility's existing management measures relating to noise as detailed in the Noise Management Plan.

7.4 Social

A SIA was prepared by Centennial Coal (refer Appendix B) that describes the potential social impacts arising from the proposed modification. The SIA applied the scoping tool from the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (DPE 2017) and a social risk assessment.

Stakeholder consultation undertaken to date regarding the proposed modification is described in Chapter 6.

The SIA scoping tool notes the following social impacts which may arise from the proposed modification:

- noise;
- air quality; and
- increased rail movements at Main Street level crossing.

The matrix in Figure 7.1 was applied to potential social impacts associated with the proposed modification to determine the following social risk ratings:

- noise – social risk rating of B2 (high);
- air quality – social risk rating of B3 (high); and
- increased rail movements at Main Street level crossing – social risk rating of B3 (high).

			Consequence Level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Catastrophic
Likelihood Level	A	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5
Social Risk Rating							
	Low		Moderate		High		Extreme

Source: Adapted from SIA Guidelines

Figure 7.1 Social risk assessment matrix

All three potential social impacts were awarded a high social risk. Noise impacts are considered likely to occur as a result of the proposed modification but are anticipated to be minor in nature. Air quality and traffic impacts from the interface between trains and vehicles at the Main Street level crossing are also considered likely to occur but moderate in nature.

Mitigation and management measures to be implemented include:

- continued noise monitoring as per the *Western Region - Noise Management Plan* (2018);
- continued air quality monitoring as per the *Western Region – Air Quality and Greenhouse Gas Management Plan* (2018); and
- implementation of a roadside notification board identifying approximate times when trains will be accessing the facility and when there may be delays at the Main Street level crossing.

The proposed modification will result in negligible air quality (refer Section 7.2) and noise impacts (refer Section 7.3). Existing road signage is in place at the level crossing on Main Street, including railway crossing signs and road markings and red-light signals. It is anticipated that the local road network has capacity for the small increase of vehicle movements associated with construction contractors and operational staff.

The SIA scoping tool indicates that the proposed modification will positively impact local employment, as local construction contractors and operational staff will be employed. Additionally, it will prolong the operation and subsequent employment of MPPS. It is anticipated that community housing, support services, infrastructure and identity will not be impacted by the proposed modification due to the limited construction contractor workforce.

Overall, the proposed modification will not result in a significant social impact. As described in Chapter 6, stakeholder groups, apart from the WLPA, did not raise any concerns regarding the proposed modification.

7.5 Economic

An economic effects analysis (EEA) was completed by Aigis Group (refer Appendix C).

Quantitative and qualitative approaches were utilised to assess the economic implication of potential impacts associated with the proposed modification, primarily noise and traffic. Due to the contingent nature and relatively brief duration of any operations required under the proposed modification, a full cost-benefit analysis or estimation of net present values was not undertaken. A qualitative approach was adopted to determine the positive economic outcomes for the local and regional economy resulting from the proposed modification.

The EEA found that neither noise nor traffic impacts associated with the proposed modification will have a material economic effect. As described in Section 7.3, the proposed modification will have a negligible impact on noise levels at sensitive receivers. Additionally, the receival of one coal laden train per day is not anticipated to significantly impact road traffic at the Main Street level crossing. As noted in Section 7.4, road signage, markings and red-light signals are located at the crossing. In addition, a roadside notification board identifying approximate times when trains will be accessing the facility and when there may be delays at the Main Street level crossing will be installed. It is anticipated that vehicle movements associated with the small construction workforce will have negligible impact on the local road network.

The EEA concluded that local and regional benefits and costs of the proposed modification are unlikely to be material in scale or duration. A broader material benefit will result from the proposed modification to the extent that it will allow the continued operation of the MPPS and therefore provide energy security for NSW.

The main positive economic outcome of the proposed modification is the employment of local contractors and tradespeople during construction. During operation, it is likely that local train crew for the driving of trains and local contractors for the operation of the conveyer system will be hired. The EEA notes that the proposed modification will help to secure fuel supply for MPPS, which has a workforce of 185 employees and contractors local to the Lithgow LGA. The proposed modification will support existing employment levels and create a short-term increase in available work in the region.

8 Conclusion

A description of the need and justification for the proposed modification is provided below with regard to biophysical, social and economic factors; the principles of ecologically sustainable development (ESD); and the consistency of the proposed modification with the objects of the EP&A Act.

8.1 Modification impacts

This EA and supporting technical assessments examine the potential impacts that may result from the proposed modification. The assessment of environmental issues has been multi-disciplinary and involved consultation with DPE and other key stakeholders (including LCC, WLPA, the Western Region Combined and Clarence Colliery CCCs and sensitive receivers).

The proposed receival and unloading of one coal laden train per day will not occur on the same day as currently approved unloading activities. The proposed modification does not require an increase to the currently approved coal handling rate of 6.3 Mtpa and will result in minimal air quality, noise, social and economic impacts.

The proposed modification will not result in significant biophysical, social or economic impacts and the EA has identified that any residual impacts can be appropriately managed.

8.2 Modification benefits

The proposed modification is in the public interest as it will help to maintain current operations at MPPS. The proposed unloading of trains at the facility will only occur in emergency situations as defined by the TARP.

The supplementary supply of coal to MPPS will provide indirect social and economic benefits through increased job security for MPPS employees and subsequent benefits to the local and regional economy through income and expenditure and more widely in NSW in assisting to secure the current electricity supply. In addition, increased employment during construction and operation will result in minor economic benefits relating to household consumption and investment activities in the surrounding local and regional economies in which they reside.

The proposed modification is an alteration with minimal environmental impact to an approved rail loading facility, which represents an orderly and economic use of a resource approved for extraction for use in domestic power generation.

All aspects relating to environmental management will continue in accordance with the consent, EPL 5129, the approved management plans and the other elements of the development consent.

8.3 Ecological sustainable development

Under Section 516A of the EPBC Act, Commonwealth organisations have a statutory requirement to report on their environmental performance and how they accord with, and advance, the principles of ESD.

Australia's National Strategy for Ecologically Sustainable Development (AGESDSC 1992), which was prepared by the ESD Steering Committee, defines ESD as “using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased”.

The principles of ESD, for the purposes of the EP&A Act, are provided in Clause 7(4) of Schedule 2 of the EP&A Regulation. The four principles of ESD are:

- precautionary principle – the precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- inter-generational equity – the principle of inter-generational equity is that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
- conservation of biological diversity and maintenance of ecological integrity – the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; and
- improved valuation and pricing of environmental resources – improved valuation, pricing and incentive mechanisms should be promoted.

The overall objectives of ESD are to use, conserve and enhance natural resources. This ensures that ecological processes are maintained facilitating improved quality of life, now and into the future. Centennial Coal is committed to the principles of ESD and understands that biophysical, social and economic objectives are interdependent. Centennial Coal acknowledges that a well-designed and effectively managed operation will avoid significant and/or costly environmental impacts or degradation.

The proposed modification has been designed to reduce impacts to a level which is as low as is reasonably practicable. As noted above, the proposed receival and unloading of one coal laden train per day will not occur on the same day as approved unloading activities. No additional management measures are therefore required to mitigate residual impacts.

Consideration has been given to appropriately identifying, avoiding, mitigating and managing environmental risks. This demonstrates environmental due diligence and will provide for ongoing and adaptive monitoring and management of the operation in line with the principles of ESD outlined in the following sections.

8.3.1 Precautionary principle

The EA has enabled an understanding of the potential impacts of the proposed modification on biophysical, social and economic factors. As noted in Section 6.3, the delay caused by slow moving trains at the Main Street level crossing was identified as a key concern by the WLPA. In response, notification boards will be installed at appropriate locations to identify when trains will be accessing the facility and, consequently, when there could be potential delays at the Main Street level crossing. No additional safeguards are warranted to monitor, mitigate and/or manage the potential impacts or residual impacts.

8.3.2 Inter-generational equity

Centennial Coal undertakes ongoing environmental monitoring with mitigation measures to provide effective environmental management across its existing operations. This management is provided through planning, communication, documentation, review and feedback. These environmental management measures ensure that the health, diversity and productivity of the environment is maintained or enhanced for future generations. The proposed modification is temporary and will not impact future generations.

8.3.3 Conservation of biological diversity and maintenance of ecological integrity

The potential environmental impacts of the proposed modification are detailed in this EA. The proposed modification is unlikely to cause any impacts to threatened species or Endangered Ecological Communities

8.3.4 Improved valuation and pricing of environmental resources

Centennial Coal will optimise the valuation and pricing of receiving coal resources to the facility by efficiently transporting coal by conveyer to the WCS site for use at the MPPS. The proposed modification promotes the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries.

If Centennial Coal does not provide an alternative source of coal of suitable quality to MPPS to supplement the decline in supply from Springvale Mine, on-site stockpiles at MPPS will continue to decline. The proposed modification will prevent this occurring and will support the ongoing, efficient operation of MPPS and the supply of electricity to NSW.

8.4 Conclusion

All aspects relating to environmental management will continue in accordance with the consent, EPL 5129, the various approved plans and other elements of the consent.

The proposed modification has been designed to avoid and minimise adverse biophysical, social and economic impacts, where possible and is anticipated to result in minimal environmental impacts beyond those previously assessed and approved under the consent.

The proposed modification will support the ongoing, efficient operation of MPPS thereby providing a number of benefits to the local community, region and NSW. It is consistent with the relevant objects of the EP&A Act, including Section 4.55(2) and the principles of ESD, demonstrating that the proposed modification involves minimal environmental impact, and will minimally change the nature of the development originally approved.

References

Australian Government Ecologically Sustainable Development Steering Committee (AGESDSC) 1992, *National Strategy for Ecologically Sustainable Development*, Ecologically Sustainable Development Steering Committee.

Barnson Pty Ltd (Barnson) 2012, *Traffic and rail impact assessment – Lidsdale Siding Upgrade Project*, prepared for Centennial Coal.

Centennial Coal 2012, *Lidsdale Siding Upgrade Response to EA Submissions*.

Centennial Coal 2018, *Rehabilitation and Closure Plan*.

Hatch Associates 2012, *Lidsdale Siding Upgrade Project – Environmental Noise Impact Assessment*, prepared for Centennial Coal by Hatch Associates.

NSW Department of Planning and Environment (DPE) 2017, *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development*.

RPS Australia East 2012, *Lidsdale Siding Upgrade Project Environmental Assessment*, prepared for Centennial Coal by RPS Australia East.

SLR 2012, *Lidsdale Siding Loading Facility Air Quality Impact Assessment and Greenhouse Gas Assessment*, prepared for Centennial Coal by SLR Consulting Australia Pty Ltd.

Abbreviations

ACHMP	*Western Region – Aboriginal Cultural Heritage Management Plan* (Centennial Coal 2017)
AQIA	air quality impact assessment
Banpu	Banpu Public Company Limited
BC Act	NSW *Biodiversity Conservation Act 2016*
BMP	*Biodiversity Management Plan: Lidsdale Siding* (Centennial Coal 2013)
Centennial Coal	Centennial Coal Company Limited
CCC	Western Region Community Consultative Committee
DoEE	Commonwealth Department of the Environment and Energy
EA	environmental assessment
EEA	economic effects analysis
EMM	EMM Consulting Pty Limited
EnergyAustralia	EnergyAustralia Pty Ltd
EPA	NSW Environment Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPL	environment protection licence
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
ESD	ecologically sustainable development
EMS	*Environmental Management Strategy: Lidsdale Siding* (Centennial Coal 2017)
FELs	front end loaders
FTE	full-time equivalent
ha	hectares
HHMP	*Western Region – Historic Heritage Management Plan* (Centennial Coal 2018)
Ivanhoe Coal	Ivanhoe Coal Pty Ltd
kL	kilolitres
km	kilometres
kT	kilotonnes
LCC	Lithgow City Council
LGA	local government area
Lithgow LEP	Lithgow Local Environmental Plan 2014

LOS	level of service
Mining SEPP	State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
mm	millimetres
MNES	matters of national environmental significance
MPPS	Mount Piper Power Station
Mtpa	million tonnes per annum
MW	megawatts
NEPM	*National Environmental Protection (Ambient Air Quality) Measure* (DoE 2016)
NSW	New South Wales
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PRIMP	*Lidsdale Siding Pollution Incident Response Management Plan* (Centennial Coal 2017)
POEO Act	NSW *Protection of the Environment Operations Act 1997*
ROM	run-of-mine
RTS	response to submissions
SEPP	State Environment Planning Policy
SEPP 33	State Environmental Planning Policy No 33 – Hazardous and Offensive Development
SIA	social impact assessment
SSD	State significant development
Springvale Coal	Springvale Coal Pty Limited
STP	sewerage treatment plant
t	tonnes
TARP	trigger action response plan
the consent	development consent 08_0223
the facility	Lidsdale Siding
tpa	tonnes per annum
TSP	total suspended particular matter
WCS	Western Coal Services Project
WLPA	Wallerawang Lidsdale Progress Association
WMP	*Water Management Plan* (Centennial Coal 2015a)

Appendix A

Noise impact assessment

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8 May 2019

James Wearne
Group Manager - Approvals
Centennial Coal
100 Miller Road
Fassifern NSW 2283

Re: Lidsdale Rail Siding modification: Noise assessment

Dear James,

1 Introduction

1.1 Overview

Lidsdale Siding (the 'facility') is an existing rail loading facility that automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services (WCS)Project. The facility operates under development consent 08_0223 (the 'consent'). The facility is approximately 500 m north of Wallerawang and approximately 9 km north-west of Lithgow within the Lithgow local government area (LGA) of New South Wales (NSW). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

The consent allows the facility to receive 6.3 million tonnes per annum (Mtpa) of coal via overland conveyor, with all coal transported from the facility by rail. Coal is transported from the facility to various destinations across the rail network. The site is consented to load up to seven trains per day, with loading operations taking approximately two hours per train or up to 14 hours per day for seven trains, as currently approved.

In addition to dispatching coal from the facility by rail as approved, it is proposed to accept coal at the facility via rail and transfer this coal to the Springvale Coal Services Site for use at the Mount Piper Power Station (MPPS). Acceptance and transfer of the coal is critical to guaranteeing supply of coal to the power station over the medium term.

The proposed modification includes delivery of coal to the facility by train (once per day), coal unloading, handling and stockpiling and coal dispatch using the existing overland conveyor network to the Springvale Coal Services Site. The Springvale Coal Services Site and associated overland conveyor network are approved under the WCS Project (development consent SSD 5579).

1.2 Proposal

Springvale Mine is the primary coal supplier to MPPS, a coal-fired power station approximately 25 km north-west of Lithgow. Springvale Coal Pty Limited (Springvale Coal) is contracted to supply coal of a specific quality to MPPS. Historically, this has been achieved by washing ROM coal to reduce the ash content. Following the commencement of mining of the southern longwall blocks at Springvale Mine in July 2018, the quality of ROM coal has declined. This has resulted in lower washed coal yields and, subsequently, Springvale Mine is experiencing shortfalls in the contracted amount of coal that is required to be supplied to MPPS.

In order to address the shortfall and support the continued operation of MPPS, Centennial Coal has identified the potential to use the facility for importing, handling and transporting coal from other mines. The modification of the facility will require minor additional infrastructure (reclaimers and conveyors) and will be entirely within the existing approved footprint.

The proposed modification does not require a modification to the amount of coal handled by the facility, nor an expansion of the developed or cleared portion of the project site or an increase in approved stockpile locations.

The proposed modification, of unloading a single coal laden train, would be within the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries, and thus is substantially the same development as the original project.

The proposed unloading operations of a single daily train will take approximately six hours. Importantly, no trains are proposed to be loaded on the same day when train unloading is proposed to occur at the site.

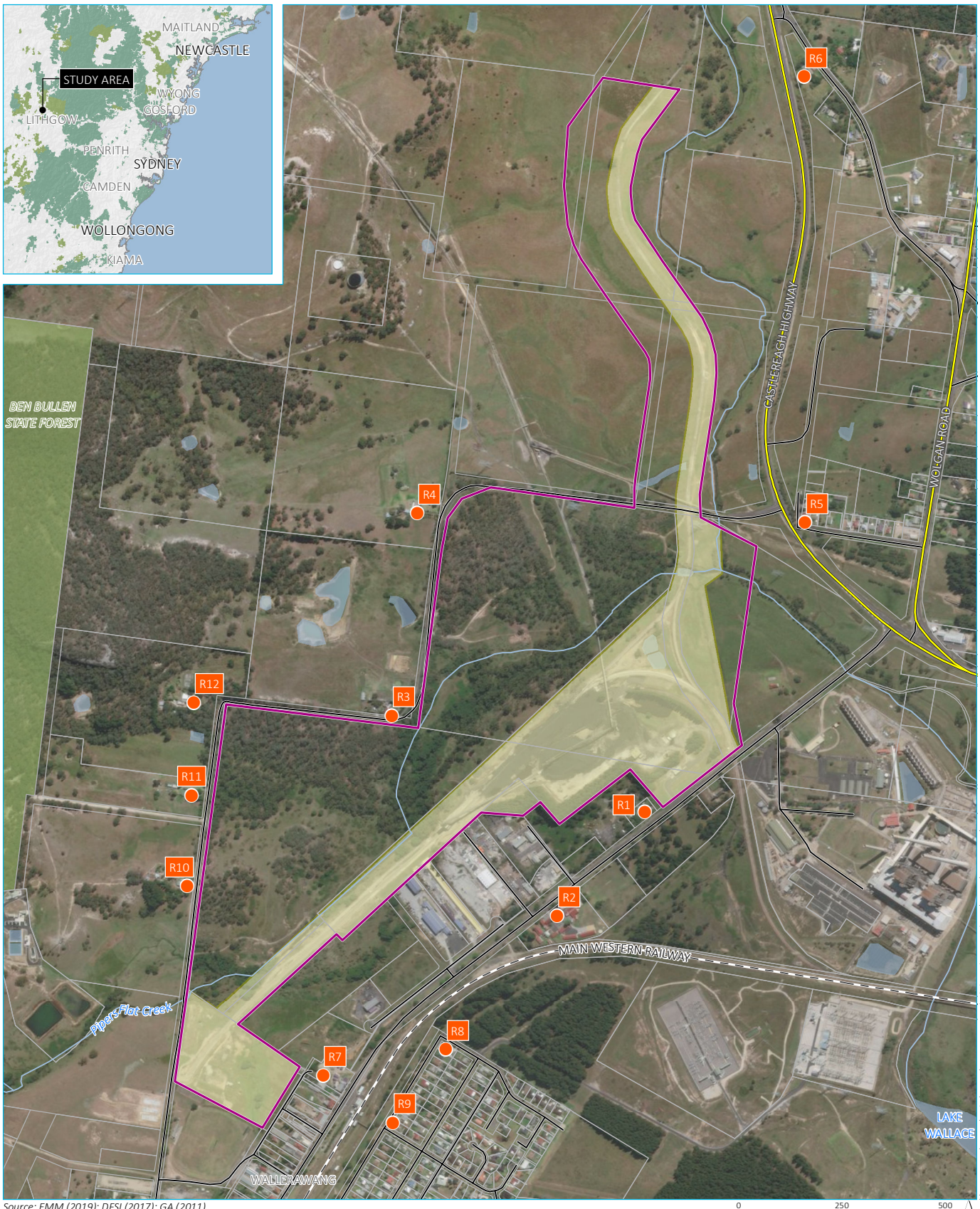
2 Proposed operations

Ivanhoe Coal propose to modify the consent to allow the facility to:

- receive and unload one coal laden train (nominal net tonnage of up to 3,900 t per train) each day (Monday to Saturday between 7am and 6pm, and Sunday between 8am to 6pm);
- no loading activities anticipated to occur on the same day as unloading activities; and
- transfer coal received via rail to the overland conveyor for dispatch to WCS.

Works associated with the proposed modification will include:

- modification of the train loading facility to allow for the unloading of coal wagons into a hopper in the existing under-rail sump;
- installation of hopper-feeder conveyors within the existing under-rail sump to extract the unloaded coal;
- installation of conveyors and a radial stacker to stockpile the coal;
- establishment of a temporary coal stockpile and tunnel reclaimers within the approved push out area;
- installation of a conveyor system and second stacker between the temporary coal stockpile and overland conveyor; and
- operation of either a dozer or front end loader (FEL) (or similar) for stockpile management between the hours of 7 am and 6 pm Monday to Saturday and 8 am to 6 pm on Sunday, which is within the existing mobile equipment hours of operation limits.



Source: EMM (2019); DFSI (2017); GA (2011)

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KEY

- Study area
- Project site
- Noise assessment location
- Rail line
- Main road
- Local road
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- State forest

Site boundary and assessment locations

Lidsdale rail siding modification
Noise assessment
Figure 1

EMM
creating opportunities

3 Existing noise emissions

The last noise impact assessment for the Lidsdale Siding (refer *Centennial Ivanhoe Proposed Lidsdale Siding Upgrade Project – Environmental Noise Impact Assessment* prepared by Hatch and dated 14 August 2012) predicted that noise emissions from the Lidsdale Siding would be controlled by trains (locomotive and wagon noise) manoeuvring in and out of the rail siding and noise from the mobile plant (dozer or front end loader) working on the coal stockpiles. Noise emissions for all conveyors and conveyor drives was predicted to be negligible at the nearest residences whilst trains and mobile equipment are operational.

It is understood that the site does not have a history of noise complaints. Except for an isolated complaint in 2016 regarding noise from a train horn, no other noise complaints have been received since the facility was upgraded in 2014. Centennial has self imposed operating restrictions at the facility and limits rail loading activities to day time hours to minimise noise impacts from operations at the facility. We understand that the neighbouring residences are generally very supportive of the site and appreciate the economic input it provides to the local community.

4 Noise management

The proposed modification will utilise the facility's existing noise management measures detailed in the approved *Western Region – Noise Management Plan* dated June 2018.

Further, the trains are proposed to operate in a specialised method with the aim to reduce noise emissions from wagons and eliminate noise from wagon stretch or come together/bunching. The method is detailed below:

- trains will be approximately 850 metres long and will arrive with three locomotives at the head of the train;
- once the train reaches the siding, two locomotives will detach from the head of the train, with one remaining non-operational off the rail siding and one reattaching to the rear of the train to establish a push/pull configuration (i.e. one locomotive at each end of the train).
- the assistant driver will walk the train in to the rail siding, while setting the track in the required configuration to eliminate unnecessary stopping and the possibility of wagon stretch or come together; and
- locomotive power will be reduced to 30%, the train will travel and unload at a speed of approximately 0.2 km/hour, and state-of-the-art electronically controlled pneumatic (ECP) brakes would be utilised to keep the train in a "stretched" configuration which will aid in the avoidance of stop/start operations and eliminate any noise from stretch and come together between wagons.

Operation of the proposed additional infrastructure (conveyors and reclaimers) would not occur concurrently with the existing material handling infrastructure. Further, it would be used during the daytime period only with mobile equipment restricted to a single dozer or front end loader.

In regard to potential duration of noise emissions, train loading operations (existing scenario) take approximately two hours per train or up to 14 hours total per day if all seven trains were loaded as currently approved to do. The proposed unloading operations of a single daily train will take approximately six hours. Importantly, the site is currently approved to load up to seven trains per day (at any time of day) while the proposal is to unload one train per day (during daylight hours only).

As described earlier, no trains are proposed to be loaded on the same day when train unloading is proposed to occur at the site.

5 Noise emissions

Table 2 compares the predicted noise levels from train unloading operations with the predicted existing noise levels for currently approved train loading operations.

Table 2 Predicted noise levels

Assessment location	Description	Predicted existing noise levels $L_{Aeq,15\ minute}$, dB	Predicted proposed noise levels $L_{Aeq,15\ minute}$, dB	Predicted change dB
1	Lot 2 Main Street, Wallerawang	54	52	-2
2	Black Gold Cabins, Main Street, Wallerawang	52	49	-3
3	"Killarney", Brays Lane, Wallerawang	53	51	-2
4	"Fairview", Brays Lane, Wallerawang	46	44	-2
5	Duncan Street, Lidsdale	44	41	-3
6	Old Castlereagh Highway, Lidsdale	<30	<30	-2
7	Royal Hotel, Main Street, Wallerawang	52	49	-3
8	Cnr Heel Street & Cripps Avenue, Wallerawang	49	46	-3
9	Cnr Cripps Avenue & Pindari Place, Wallerawang	47	44	-3
10	Brays Lane South, Wallerawang	50	47	-3
11	"Tara", Brays Lane, Wallerawang	46	44	-2
12	Brays Lane Corner, Wallerawang	45	43	-2

All new train unloading equipment/infrastructure (conveyors, conveyor drives, tele-stackers) are proposed to operate in lieu of the existing train loading infrastructure, and as such, noise emissions from these sources are predicted to remain the same or reduce on existing noise levels.

Existing noise emissions from the mobile equipment (stockpile dozer or front end loader) are predicted to remain the same or similar to their current and approved noise levels. Noise emissions from train operations are expected to decrease due to the specialised method that is proposed, as described in Section 5.

Hence, noise emissions associated with the proposal are expected to remain substantially the same or reduce compared to those associated with the current approved activities.

6 Conclusion

EMM has prepared an assessment to accompany Centennial Coal's application to modify PA 08_0223 to include delivery of coal to the facility by train, coal unloading, handling and stockpiling, and coal dispatch using the existing overland conveyor network to the WCS site. Operational noise emissions are expected to reduce or remain unchanged for the proposed modification compared to current approved operations.

It is predicted that, as a result of the proposed modification, noise emissions from the site will reduce by 2 to 3 dB compared to existing noise levels from currently approved coal loading activities. The specialised method in which the trains are proposed to be operated is predicted to contribute to a decrease in noise emissions from train activity at the site.

We trust the preceding meets your current requirements. If you require any further information, please do not hesitate to contact our office.

Yours sincerely

Lucas Adamson
Acoustic Consultant
ladamson@emmconsulting.com.au

Review: Katie Teyhan (8/5/2019)

Appendix B

Social impact assessment

Centennial Coal

Lidsdale Siding

Rail Loading Modification

Social Impact Assessment

June 2019

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Springvale Mine is the primary source of coal for the EnergyAustralia owned Mount Piper Power Station. In early 2019, due to continued lower yields from the Springvale Mine being experienced since mining commenced in the southern longwall blocks, a forecast shortfall in coal supply to Mount Piper Power Station was identified. As a result, Centennial Coal conceptualised and implemented supplementary coal supply measures to ensure coal demands by Mount Piper Power Station could be met.

In implementing an immediate and short term measure, Centennial Coal sought a modification to the Clarence Colliery development consent to:

- increase total allowable coal haulage off-site from the Clarence Colliery by road from 200,000 tonnes (t) to 300,000 t for a limited period of time up to 31 December 2020; and
- increase total allowable coal haulage off-site from the Clarence Colliery to the west by road from 100,000 t to 200,000 t for a limited period of time up to 31 December 2020.

This supplementary coal supply measure is a short term temporary solution only and is not considered a suitable long term option to provide additional coal supplies to the Mount Piper Power Station, in the event coal supply shortfalls are experienced again in the future.

As a result, Centennial Coal has investigated other opportunities to provide supplementary coal supplies to the Mount Piper Power Station, should these shortfalls be experienced again. The most viable opportunity identified is to modify/upgrade Centennial Coal's Lidsdale Coal Loading facility to allow coal to be received via rail from other Centennial Coal mining operations. The proposed upgrade / modifications would allow coal to be unloaded, handled and transported offsite to the Mount Piper Power Station using the existing overland conveyor system via the Springvale Coal Services Site.

1.1.1 Lidsdale Rail Loading Facility

Centennial Ivanhoe Pty Limited (Centennial Ivanhoe), a subsidiary of Centennial Coal, own and operate the Lidsdale Coal Loader Facility located adjacent to the Wallerawang Power Station, approximately 12 kilometres north-west of Lithgow in the Lithgow Local Government Area (LGA). Development consent for the Lidsdale Coal Loader Facility was issued on 3 May 2013 by the Planning Assessment Commission. The development consent was granted as a transitional Part 3A project under Part 4 of the EP&A Act. The consent has since been transitioned to a State Significant Development (SSD 2709).

The consent allows the facility to receive 6.3 million tonnes per annum (Mtpa) of coal via overland conveyor, with all coal transported from the facility by rail. Coal is transported from the facility to various destinations across the rail network. The site is consented to load up to seven trains per day, with loading operations taking approximately two hours per train or up to 14 hours per day for seven trains, as currently approved.

1.1.2 Proposed Modification

Centennial Ivanhoe is seeking to modify the Lidsdale Coal Loader development consent to allow the delivery of coal to the facility by train (one train per day); coal unloading, handling and stockpiling;

and coal dispatch. Coal dispatched from the Lidsdale Coal Loader Facility will be conveyed to the Springvale Coal Services Site utilising the existing overland conveyor system, where it will be handled and transported on to the Mount Piper Power Station in accordance with the activities approved by the Western Coal Services Project development consent (SSD 5579). Activities authorised under the Western Coal Services Project development consent (SSD 5579) will remain unchanged.

The works associated with the proposed modification will include:

- modification of the train loading facility to allow for the unloading of coal wagons into a hopper in the existing under-rail sump;
- installation of hopper-feeder conveyors within the existing under-rail sump to extract the unloaded coal;
- installation of conveyors and a radial stacker to stockpile the coal;
- establishment of a temporary coal stockpile and tunnel reclaimers within the approved push out area;
- installation of a conveyor system and second stacker between the temporary coal stockpile and overland conveyor; and
- operation of either a dozer or front end loader (FEL) (or similar) for stockpile management between the hours of 7 am and 6 pm Monday to Saturday and 8 am to 6 pm on Sunday, which is within the existing mobile equipment hours of operation limits.

With the above works in mind it is noted that:

- The operation of additional infrastructure will be within existing disturbed areas.
- The coal stockpiling will be within the footprint of existing approved coal stockpiles.
- No additional vegetation clearing will be required.
- No changes to the existing water management system will be required.
- Proposed coal unloading operations and train loading operations (approved) will not be undertaken simultaneously so there will be no cumulative impacts from these combined activities.

The train unloading activities would only be implemented in an emergency event, where on site coal stockpiles at the Mount Piper Power Station are reduced to a point where continued electricity generation supplies are threatened. The activities at Lidsdale Coal Loader Facility would only be undertaken until a suitable margin of coal stockpile at Mount Piper is re-established and maintained. The trigger for rail unloading activities will occur when the coal stockpile at Mount Piper Power Station is forecast to fall below 400,000 t for two consecutive months. Rail unloading activities will continue until coal stockpile capacity at Mount Piper Power Station are greater than 400,000 t and the 6 month forecast coal stockpile capacity is to remain greater than 400,000 t.

1.2 Social Impact Assessment

This SIA has been prepared by James Marshall, Group Manager Stakeholder Engagement, Centennial Coal in accordance with the Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development September 2017. James Marshall has over twenty years' experience in the social planning sector with experience in local

government (10 years), the NGO sector (5 years) and as a private consultant (7 years). During this time expert advice and support has been provided in relation to:

- Strategic social planning;
- Social Impact Assessment;
- Community and Stakeholder Engagement;
- Safer by Design (CPTED);
- Mediation;
- Community and Social Research;
- Feasibility Studies; and
- Urban Design and Master Planning.

James Marshall joined Centennial Coal in July 2015.

1.3 Information Used to Inform this Report

Information that has been used to inform the potential social impacts arising from the propose modification includes:

- Review of project design and alternatives considered.
- Review of specialist reports including:
    - Economic Effects Analysis (Aigis Group: June 2019).
    - Noise Assessment (EMM: June 2019).
- Review of previous reports and environmental assessments undertaken in 2012 relating to the Lidsdale Siding Upgrade, in particular the Air Quality Impact Assessment (SLR: 2012), Road and Rail Traffic Impact Assessment (Barnson: 2012).
- Review of the previous SIA and consultation outcomes relating t the Lidsdale Siding Upgrade (2012).
- Compilation and understanding of social and demographic profile of the community (refer attached community profile prepared for Centennial Coal).
- Site visit to understand the areas of affectation and how the specialist reports relate to these areas of affectation.
- Consultation with:
    - Western Region Combined Community Consultative Committee (CCC);
    - Clarence CCC;
    - Wallerawang / Lidsdale Progress Association;
    - Lithgow City Council (elected councillors and senior managers);
    - Lithgow Environment Group
    - Black Gold Cabins

- Near Neighbours
- Consultation / notification with identified Receptors (Noise Monitoring Location (NML))

- Analysis of the above information and interpretation of the potential social impact against the SIA Scoping Tool and SIA Guidelines (NSW DPE September 2017).

2. LIDSDALE SIDING

Lidsdale Siding is an existing rail loading facility that automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services Project (WCS). The facility is approximately 500 m north of Wallerawang and approximately 9 km north-west of Lithgow within the Lithgow local government area (LGA) of New South Wales (NSW). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

The consent allows the facility to receive 6.3 Mtpa of coal via overland conveyor, with all coal transported from the facility by rail. Coal is transported from the facility to various destinations across the rail network. The site is bounded by industrial facilities to the south-west (including a bulk raw materials distribution facility). The site is situated on flat land with Pipers Flat Creek flowing from west to east close to its northern boundary. The site is located upstream of the confluence of Pipers Flat Creek and Cox's River. Cox's River flows past Wallerawang Power Station into Lake Wallace approximately 700 m south of the site. Lidsdale Siding joins the main western railway line.

Areas within the vicinity of the facility include Wallerawang and Lidsdale. These areas are characterised by mining and power generation, evidenced by the physical (and therefore visual) presence of mine related infrastructure, power stations and associated business / industry. The employment profile also reflects that of the local industry.

Wallerawang and Lidsdale include a main township (Wallerawang) and surrounding rural areas. The area is bounded by the locality of Blackmans Flat, Coxs River and the locality of Wolgan Valley in the north, the Wolgan River and the localities of Springvale and Marrangaroo in the east, Coxs River, the locality of Rydal, Solitary Creek and the locality of Mount Lambie in the south, and Thompsons Creek Road, Pipers Flat Road and the locality of Portland in the north west.

Wallerawang is named from an Aboriginal word thought to mean "water on rocks" or "plenty of water". Settlement of the area dates from the 1820s, with land used mainly for farming. Population was minimal until the 1860s, with growth during the late 1800s, aided by the opening of the railway line in 1871. Significant development did not occur until the late 1950s, spurred by the opening of a power station in 1957. The population declined slightly from the mid 1990s. This was a result of few new dwellings being added to the area, and a decline in the average number of persons living in each dwelling.

Primary access to Wallerawang is along Main Street via the Castlereagh Highway. Wallerawang Power Station (now closed and decommissioned) sits at this intersection as does Lidsdale Siding. The Wallerawang CBD is located on Main Street, approximately 1.5 klm from the Castlereagh Highway intersection. The CBD is well defined and contains a range of retail and commercial outlets to support day to day needs of residents with higher order commercial and retail needs being met in the Lithgow urban area.

Residential housing is located to the south and south west of the Wallerawang CBD. Closer to the CBD is older housing of fibro, timber and brick veneer construction. Towards Lake Wallace is newer residential housing and further along the Wallerawang Rydal Road is large lot rural residential.

Lidsdale sits to the east of the Castlereagh Highway intersection and residential housing is located primarily along the Wolgan Road.

Major features of the area include Lake Wallace, Wallerawang Power Station, Wallerawang Oval, several state forests and one school. Key services for the area include:

- Community facilities: Council library and depot; medical and community health centres; recreational facilities including PJ Hall Memorial Park, Lake Wallace, playing fields and skate park; police, fire services; Country Women's Association; churches; primary school; bowling club.
- Retail and commercial facilities /services: supermarket; post office (with a pharmacy prescription service (drop in (am) and pick up (pm)); bank; newsagent; bakery; butcher; service stations; hotels; takeaway store; hairdresser.
- Lidsdale facilities: Rural Fire Service; tennis courts; Ted Hughes Memorial Park; church.

A socio-economic profile for the Lithgow Region is found in the Appendix.

The main retail centre of Wallerawang

Wallerawang Library

2.1 Sensitive Receivers

Table 1 lists the nearest sensitive receivers located around Lidsdale Siding that are potentially affected by noise and air criteria. The nearest privately owned residence to the siding operations is Lot 2, Main Street, Wallerawang (identified as R2), located approximately 65 m to the west of the site entrance. Receivers are shown on Figure 2.

Table 1: Sensitive Receivers (Reference and Location)

Receiver ID	Location
R1	Lot 2, Main Street Wallerawang
R2	Black Gold Cabins, Main Street, Wallerawang
R3	Killarney, Bray's Lane, Wallerawang
R4	Fairview, Bray's Lane, Wallerawang
R5	Duncan Street, Lidsdale
R6	Old Highway, Lidsdale
R7	Royal Hotel, Wallerawang
R8	Corner of Heel Street and Cripps Avenue, Wallerawang
R9	Corner of Cripps Avenue and Pindari Place, Wallerawang
R10	Brays Lane South, Wallerawang
R11	Tara, Brays Lane, Wallerawang
R12	Brays Lane Corner, Wallerawang

Figure 1: **Aerial of Lidsdale Siding and Sensitive Receiver Locations (Source: Noise Assessment EMM: June 2019))**

2.2 Current and Proposed Site Operations

Rail haulage and coal loading activities have not been undertaken at Lidsdale Siding since 5 January 2018 as no coal has been directed to export since this time. The site is currently being maintained to ensure compliance with statutory approvals and to facilitate the recommencement of loading activities when export activities recommence. Current site operations include:

- Maintenance inspections, including mechanical and electrical;
- Weekly environmental site inspections;
- Maintenance of the water management system (Dirty Water Dam, Triangle Dam, drains etc.);
- Environmental monitoring and reporting of noise, dust and surface water discharges (LDP004);
- Weed management, including management and control of Willow trees;
- Native vegetation planting programs and visual screening planting and maintenance; and
- Continuing community consultation.

2.3 Existing Noise Emissions

The last noise impact assessment for the Lidsdale Siding (refer *Centennial Ivanhoe Proposed Lidsdale Siding Upgrade Project – Environmental Noise Impact Assessment* prepared by Hatch and dated 14 August 2012) predicted that noise emissions from the Lidsdale Siding would be controlled by trains (locomotive and wagon noise) manoeuvring in and out of the rail siding and noise from the mobile plant (dozer or front end loader) working on the coal stockpiles. Noise emissions for all conveyors and conveyor drives are predicted to be negligible at the nearest residences whilst trains and mobile equipment are operational.

The site does not have a history of noise complaints. Apart from an isolated complaint in 2016 regarding noise from a train horn, no other noise complaints have been received since the facility was upgraded in 2014. Centennial has self imposed operating restrictions at the facility and limited rail loading activities to day time hours to minimise noise impacts from its operations at the facility.

2.4 Proposed Noise Management and Emissions

The proposed modification will utilise the facility's existing noise management measures detailed in the approved *Western Region – Noise Management Plan.*

Further, the trains are proposed to operate in a specialised method with the aim to reduce noise emissions from wagon noise and eliminate noise from wagon stretch or come together/bunching. The method is detailed below:

- trains will be approximately 850 metres long and will arrive with three locomotives at the head of the train;
- once the train reaches the siding, two locomotives will detach from the head of the train, with one remaining non-operational off the rail siding and one reattaching to the rear of the train to establish a push/pull configuration (i.e. one locomotive at each end of the train).
- the assistant driver will walk the train in to the rail siding, while setting the track in the

required configuration to eliminate unnecessary stopping and the possibility of wagon stretch or come together; and

- locomotive power will be reduced to 30%, the train will travel and unload at a speed of approximately 0.2 km/hour, and state-of-the-art electronically controlled pneumatic (ECP) brakes would be utilised to keep the train in a "stretched" configuration which will aid in the avoidance of stop/start operations and eliminate any noise from stretch and come together between wagons.

Operation of the proposed additional infrastructure (conveyors and reclaimers) would not occur concurrently with the existing material handling infrastructure. Further, it would be used during the daytime period only with mobile equipment restricted to a single dozer or front end loader.

EMM have completed a noise assessment for the proposed rail unloading activities. Their assessment has concluded that noise will be substantially the same or improved (reduced) to those of the current approved activities. This means that EMM predicts rail unloading will make no additional noise contribution. Table 2 highlights the existing noise levels compared to the proposed noise levels. It should also be noted that the noise environment from Lidsdale Siding has been significantly improved as a result of the upgrade of the rail loading facility completed in 2014.

Table 2: Predicted Noise Levels

Assessment location	Description	Predicted existing noise levels $L_{Aeq,15\ minute}$, dB	Predicted proposed noise levels $L_{Aeq,15\ minute}$, dB	Predicted change dB
1	Lot 2 Main Street, Wallerawang	54	52	-2
2	Black Gold Cabins, Main Street, Wallerawang	52	49	-3
3	"Killarney", Brays Lane, Wallerawang	53	51	-2
4	"Fairview", Brays Lane, Wallerawang	46	44	-2
5	Duncan Street, Lidsdale	44	41	-3
6	Old Castlereagh Highway, Lidsdale	<30	<30	-2
7	Royal Hotel, Main Street, Wallerawang	52	49	-3
8	Cnr Heel Street & Cripps Avenue, Wallerawang	49	46	-3
9	Cnr Cripps Avenue & Pindari Place, Wallerawang	47	44	-3
10	Brays Lane South, Wallerawang	50	47	-3
11	"Tara", Brays Lane, Wallerawang	46	44	-2
12	Brays Lane Corner, Wallerawang	45	43	-2

2.5 Air Quality Existing and Proposed

An Air Quality Impact Assessment (AQIA) was completed for the original EA (SLR 2012). The AQIA quantified emissions of particulate matter, specifically:

- total suspended particulate matter (TSP);
- particulate matter less than 10 microns in aerodynamic diameter (PM_{10});
- particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$).

In order to understand the implications for air quality associated with the modification, particulate matter emissions and associated atmospheric modelling predictions from the AQIA have been referenced. Relative to the current configuration of the facility, the modification would introduce the following additional particulate matter emission sources:

- rail wagon unloading sump;
- three conveyor transfer points between the wagon unloading sump and the new stockpile;
- new stockpile for unloaded coal; and
- two conveyor transfer points between the new stockpile and the existing OL2 conveyor.

EMM have made the following assumptions in quantifying particulate matter emissions from these additional sources:

- for all new conveyor transfer points, including the rail wagon unloading process, the emission factors for conveyer transfer points from the AQIA (SLR 2012) were adopted;
- a control factor of 70% for enclosure has been adopted for rail wagon unloading to account for the below ground sump;
- a control factor of 50% for water sprays has been adopted for all other conveyor transfer points to account for the use of water sprays and carry over moisture in the conveying system; and
- because the new coal stockpile is located within the existing stockpiling area and the AQIA assumed the entire available area was active for wind erosion calculations, no additional wind erosion emissions were included.

As previously stated, the total approved coal handling rate at the facility is 6.3 Mtpa which will not change under the modification. In order to calculate emissions from the proposed delivery of coal to the facility, a worst-case scenario was derived by determining the maximum amount of incoming coal by rail wagon that would balance the existing maximum and average daily outgoing train rates (seven and five respectively). The derived amount is 468,000 tpa incoming by rail wagon, with the adjusted incoming amount from overland conveyor adjusted to 5,832,000 tpa. The emissions calculated for proposed modification operations at the facility are presented in Table 3.

Table 3: Approved and Proposed Air Quality

Emissions scenario	Annual emissions (kg)		
	TSP	PM_{10}	$PM_{2.5}$
Approved operations (SLR, 2012)	28,475	9,774	1,083
Modification operations	28,735	9,988	1,099
Percentage change in emissions	**0.9%**	**2.2%**	**1.5%**

Source: EMM

The relative change in annual TSP, PM_{10} and $PM_{2.5}$ emissions is 0.9%, 2.2% and 1.5% respectively. It is considered that this change in emissions is very low and the resultant change in impacts from those predicted in the AQIA would be negligible.

Consequently it is considered that the proposed modification would not change air quality impacts from those currently generated by the facility. As presented in the AQIA (SLR 2012), the dispersion modelling conducted for the operation of the facility predicts compliance for all assessed particulate matter air pollutants at all surrounding sensitive receptor locations. The same conclusion therefore applies to the proposed modification.

2.6 Traffic

A Traffic and Rail Impact Assessment (TRIA) prepared by Barnson (2012) formed part of the EIS for the Lidsdale Siding Upgrade Project that was approved in May 2013. The object of that project was to enable export of coal by train rather than delivery to the siding as is currently proposed. The TRIA addressed impacts associated with road traffic movements, particularly those associated with heavy vehicle movements in the construction stage, and rail movements. All construction vehicles can be parked within the facility however train movements and the interface with vehicular traffic resulting in potential traffic delays at the Main Street Wallerawang crossing (and to some degree Brays Lane) has been an ongoing concern and was again raised during consultations undertaken as part of this SIA.

As previously stated there has not been any train loading since 5 January 2018. The proposed modification will result in the recommencement of train movements however the total number of approved daily train movements will not be exceeded.

3. COMMUNITY STAKEHOLDER CONSULTATION

3.1 Overview

Community stakeholder consultation has been undertaken with the following:

- Western Region Combined Community Consultative Committee (CCC);
- Clarence CCC;

- Wallerawang / Lidsdale Progress Association;
- Lithgow City Council (elected councillors and senior managers);
- Consultation / notification with identified Receptors (Noise Monitoring Location (NML)) including Black Gold Cabins, Near Neighbours.

3.1.1 Community Consultative Committee

Both the Western Region Combined CCC (9 April 209) and Clarence CCC (21 March 2019) have received presentations in relation to the proposed modification (both Clarence road haulage and Lidsdale Siding). Discussion related to the duration of the modifications (i.e. in relation to coal quality). No other issues were raised.

3.1.2 Lithgow City Council

Lithgow City Council (elected councilors and senior managers) were briefed on both Clarence and Lidsdale Siding modifications on 20 March 2019. No issues were raised.

3.1.3 Wallerawang Lidsdale Progress Association

The Wallerawang Lidsdale Progress Association was briefed on the modification to both Clarence and Lidsdale Siding on 7 May 2019. Members discussed the impact of trains blocking Main Street and requested that there be notification (i.e. a sign) advising when a train would be at the siding and when traffic would be delayed. The condition of the road at the crossing was also raised as a concern and road maintenance / upgrade was requested.

3.1.4 Sensitive Receivers

Notification and consultation with sensitive receivers commenced the week beginning Monday 6 May. A written summary of the modification elements was provided along with contact details of a company representative if any further information was required. Face to face discussions were held with R1, R2, R7 and NML3. There were no issues raised and generally feedback received was that there are no impacts from this facility after the upgrade works were completed in 2014.

4. IMPACT ASSESSMENT SUMMARY

4.1 Impact Summary

The SIA has considered the elements of this modification as well as the upgrade to the facility that was approved in 2013; specialist studies (Noise Assessment, Traffic, Air Quality and Economic Effects Analysis) and the outcome of consultations undertaken in relation to this modification. Given the project elements will remain within distributed areas and that the activities are consistent with current activities and rail unloading will only be undertaken on an intermittent basis, it is anticipated that there will be limited change to the existing social and physical environmental conditions.

With regards to noise, it was agreed that the noise environment from Lidsdale Siding has improved as an outcome of the upgrade that was completed in 2014. However, given there has been no rail

loading activities since January 2018, it is acknowledged that the recommencement of operations will result in a change in amenity (noise).

The main issue (arising from consultation with the Wallerawang Lidsdale Progress Association) was the inconvenience caused by the interface of the trains and road traffic at the level crossing at Main Street Wallerawang resulting in traffic delay.

Air quality impacts are described as negligible and generally in accordance with approved limits, but again the recommencement of operations will result in changes to air quality despite being within approved limits.

4.2 Summary of Social Impacts Arising

Based on the findings of the specialist studies prepared for the Environmental Assessment (EA) the SIA Scoping Tool has been completed. The potential for social impacts is summarised in Table 4.

Table 4: Social Impact Assessment Scoping Tool Summary.

Potential Material Impact	Cause	Extent	Duration	Severity	Sensitivity	Investigations
Noise	Construction and Rail Unloading	Rail unloading activities will result in no more (or less) noise as loading activities.	Intermittent	Activities at Lidsdale Siding will be within the current approved daily limits however the recommencement of train movements will result in a change to amenity.	Impacts on sensitive receivers outlined in the Noise Imact Assessment.	Noise Impact Assessment
Impact of rail movements on road traffic.	Increased rail movements	Wallerawang community.	Ongoing while Lidsdale Siding is operational.	No change from exisitng conditions but identified as an inconvenience.	Rural road and amenity.	Rail and Traffic Impact Assessment
Reduced air quality	Fugitive dust from rail unloading.	Sensitive receivers	Temporary (also need to consider ongoing operation of Lidsdale Siding)	Slight change	Rural amenity	Air Quality Impact Assessment

4.3 Evaluating Social Impact

An assessment of the potential material impacts are outlined in Tables 5 to 13 below. The purpose of the assessment is to cross reference potential impacts and controls to establish the likely social impacts arising from the proposed modification.

Table 5: Population

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
The development will change the characteristics of the general population or persons who live or interact in or around any site in question.	Purchase property due to adverse social amenity impacts that cannot be mitigated.	X					No acquisition is required for the proposed modification.
	Existing landholders relocate from the area due to mine operations and loss of social fabric, knowledge, networking and sense of community.	X					No relocation required.
	Increased in the number of tenancies across the area due to property in mine ownership. This results in different values to the area, land management practices and loss of social fabric, neighbouring etc.).	X					No tenancies required.
	FI/FO or DI/DO workers coming to the area resulting in positive financial contribution to some sectors however do not contribute to the sense of community and create other impacts such as increased housing costs.	X					Contractors used are within local area.

Table 6: Disadvantage and Benefit

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
It is likely the development will disadvantage or benefit individuals or groups (including specific target/population groups).	Positive pay packet effect in the immediate local area to some / all sectors.	X					Not identified as contractors will be used.
	Positive pay packet effect however not in the immediate area, but on a broader regional level.			X			Contractors will be engaged to undertake construction works.
	Increase in housing rental and housing purchase prices due to demand brought about by the project.	X					Not identified.
	Increased number of housing investors taking advantage of accommodation demand for mine personnel.	X					No property acquisitions being undertaken.
	Artificial increase in pricing for certain commodities / goods / housing.	X					No property acquisitions or sale identified.
	Sterilisation of land for private development.	X					All works within Lidsdale Siding boundary.
	Reduced access to publicly accessible land.	X					Not identified. All works within Lidsdale Siding boundary.

Table 7: Employment

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
Changes to employment opportunities	Direct and indirect employment created by the project.			X			Possible employment of contractors.
	Longevity / certainty of employment for existing employees and indirect employment.					X	Maintain coal supply to Mount Piper Power Station.
	Redistribution of employment patterns – i.e. mining attracting people due to higher wages whereas other sectors may not have this advantage.	X					Not identified due to limited nature of contract employment.
	Increased trade in other services (i.e. accommodation, retail) resulting in additional employment opportunities.	X					Not identified due to limited nature of contract employment.

Table 8: Housing

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
Impacts on existing housing stock will occur	Increase in demand from FI/FO or DI/DO workers.	X					Not identified due to limited construction period.
	Increased demand for tenancies.	X					Not identified.
	Increased / inflated housing costs making housing unaffordable for a larger cohort of the community.	X					Not identified.
	Decrease in the availability of and access to affordable housing stock.	X					Not identified.

Table 9: Community Infrastructure

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
Additional utilisation of community infrastructure will occur (roads, community halls, child care facilities, sporting and recreation etc.)	New services and facilities required ancillary to the project due to population increase arising from the project.	X					Not identified.
	Increase in employee traffic to and from the site.			X			Slight increase in traffic however will remain within approved limits.
	Ongoing use of existing services by existing workforce.					X	No interruption to existing service use identified.

Table 10: Community Support Services

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
Additional support services will be required to meet the demands of any identified changes	New services and facilities required ancillary to the project due to population increase or decrease (in the case of mine closure).	X					Not identified.

Table 11: Service Demand

Affect	Causes	Rare	Unlikely	Possible	Likely	Almost Certain	Comments
Existing support services will be utilised to an extent where they are unable to meet the demand	Ongoing use of existing services however demand increased as a result of this modification.	X					Not identified.

Table 12: Conflict

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
The proposal is likely to cause conflict within the community (i.e. is not supported, or there is conflict between supporters and non-supporters)	Visual impact caused by the location of infrastructure, lighting etc.		X				New infrastructure will be required however a visual impact not identified.
	Change in environmental conditions (e.g. adverse noise and air quality impacts from the mines operations, changes to water quality and availability).					X	Construction and recommencement of operations at Lidsdale Siding will change the existing amenity.
	Transport noise caused by trucks and employee movements.		X				Not identified.

Table 13: Community Identity

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
An impact on community identity is likely	Caused by a change in population structure (i.e. relocation of landholders due to property purchase).	X					Not identified.
	Change in land characteristics that prevent use, development and / or access to certain areas.	X					Not identified.
	Change to the social amenity due to noise, air quality, visual etc.					X	Construction and recommencement of operations at Lidsdale Siding will change the existing amenity.

Table 14: Cultural Identity

Affect	Causes	N/A	Unlikely	Possible	Likely	Almost Certain	Comments
An impact on cultural identity is likely	Loss of community / public access to certain areas.	X					Not identified.
	Loss of or reduced access to sites of significance (indigenous and European)	X					Not identified as all work is within private property.
	Threat of a change in lifestyle for land holders.	X					Not identified; however, it is recognised that amenity will change with the recommencement of operations.
	New project proposed within an existing community	X					Modification to existing project.

5. SOCIAL RISK

Given the assessment of social impacts, the adequacy of mitigation and resulting material impacts the social risks can be determined. The potential for social impact arising from the modification to the Lidsdale Siding facility is identified as:

- Change in amenity due to noise arising from rail unloading operations.
- Inconvenience to residents due to train movements across Main Road (Wallerawang) level crossing.

Table 15: Social Risk Assessment

			Consequence Level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Catastrophic
Likelihood Level	A	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5

Social Risk Rating							
	Low		Moderate		High		Extreme

Source: Adapted from SIA Guidelines

Table 16: Social Risk Rating

Social Impact	Social Risk	Justification
Noise	B2	Intermittent rail unloading operations will change the amenity of the area despite noise levels being at or below current approved limits.
Increased rail movements at Main Road	B3	This matter has always been identified as an issue in the local community for many years.
Air Quality	B3	Intermittent rail unloading operations will change the amenity of the area despite emissions being at or close to current approved limits.

6. RESPONSE TO SOCIAL IMPACTS

6.1 Overview

This SIA has been prepared for the impacts associated with the modification allowing for coal to be unloaded at Lidsdale Siding when required. The specialist reports along with locally focussed consultation has identified the impacts that will be experienced by the community; which are determined to be a change in the noise and air quality envnvironment and the inconvenience arising from the interface between trains and vehicles at Main Road crossing. All of which are associated with the recommencement of operations. The activity of unloading coal does not create any greater impact than the approved operations wich are generally accepted by the community, especially after the facility was upgraded in 2014.

6.2 Management and Monitoring

Monitoring of noise and dust will be ongoing and any exceedance to the predicted or current approved limits should be reviewed and strategies put in place to maintain current approved limits. All monitoring data / results are to be reported to the Western Combined CCC and any non-compliance is to be reported to sensitive receivers at each NML.

Further, the recommencement of trains to the facility will result in trains crossing Main Road which has been a source of frustration for the local community. A suggestion by the Wallerawang Lidsdale Progress Association was to have a notification board stating when trains would be accessing the facility so any travel could be taken to avoid this inconvenience or an alternative route taken.

7. CONCLUSION

Centennial Ivanhoe is seeking to modify the Lidsdale Coal Loader development consent to allow the delivery of coal to the facility by train (one train per day); coal unloading, handling and stockpiling; and coal dispatch. Coal dispatched from the Lidsdale Coal Loader Facility will be conveyed to the Springvale Coal Services Site utilising the existing overland conveyor system, where it will be handled and transported on to the Mount Piper Power Station in accordance with the activities approved by the Western Coal Services Project development consent (SSD 5579).

The Lidsdale Siding facility is generally accepted by the local community and there have been no ongoing issues associated with its operation. Because the facility has not undertaken rail loading activities since January 2018, any recommencement of activities will result in a change to the noise and air quality environment, despite levels being predicted to be within or less than current operational levels or consented limits.

Furthermore, the delay caused by slow moving trains at Main Road is a source of inconvenience within the local community and is highlighted as a key concern raised by the Wallerawang Lidsdale Progress Association. In response, notification boards will be installed that will identify when trains will be accessing the facility and when there could be potential delays at the crossing.

The proposed modification does not create any significant social impact.

8. REFERENCES

Aigis Group: June 2019: Economic Effects Analysis

Aigis Group: February 2017 Lithgow Region Socio-economic Profile

Barnson: May 2012 Traffic and Rail Impact Assessment Lidsdale Siding Upgrade Project

EMM: June 2019 Lidsdale Rail Siding Modification: Noise Assessment

SLR: 2012 Air Quality Impact Assessment Lidsdale Siding Upgrade

Appendix 1: Authors Declaration

Submission of Social Impact Assessment

Prepared under Section 4.55(2) of the *NSW Environmental Planning and Assessment Act 1979*

Social Impact Assessment prepared by:

Name:	James Marshall
Position:	Group Manager Stakeholder Engagement
Qualifications:	BA (Sociology)
	Adv. DIP (Business Administration)
Company:	Centennial Coal Company Limited
Address:	Level 18, 1 Market Street, Sydney, NSW, 2000

Development Application:

Proponent Name:	Centennial Mandalong Pty Limited
Proponent Address:	Level 18, 1 Market Street, Sydney NSW, 2000
Development Description:	33kV Project

Declaration: I hereby certify that I have prepared the contents of this document and to the best of my knowledge:

- It contains all available information that is relevant to the environmental assessment of the proposed development to which the document relates; and
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

Name: James Marshall (Centennial Coal Company Limited)

Signature:	

Date: 20 June 2019

Appendix 2: Lithgow Region Socio Economic Profile (2017)

LITHGOW REGION SOCIOECONOMIC PROFILE

SEPTEMBER 2017

Contents

1. INTRODUCTION

This socioeconomic profile addresses two geographic areas and population groups. These are the Lithgow City Council (LCC) Local Government Area (LGA), which is the area most directly affected by operation of Centennial's mines in the Western Coalfield, and the Australian Bureau of Statistics (ABS) Lithgow-Mudgee Statistical Area Level 3 (SA3). NSW Department of Planning and Environment (DPE) *Guidelines for the economic assessment of mining and coal seam gas proposals* (December 2015) mandates the SA3 as the locality in which Centennial's mines are located, for the purposes of economic assessment. Figures 1 and 2 illustrate the extents of both the LGA and the SA3. The analysis of some regional economic effects also includes consideration of activity in neighbouring LGAs (Bathurst, Blue Mountains, Mid-Western and Oberon in particular), on the basis of their respective proximities to Lithgow.

Figure 1: Lithgow LGA

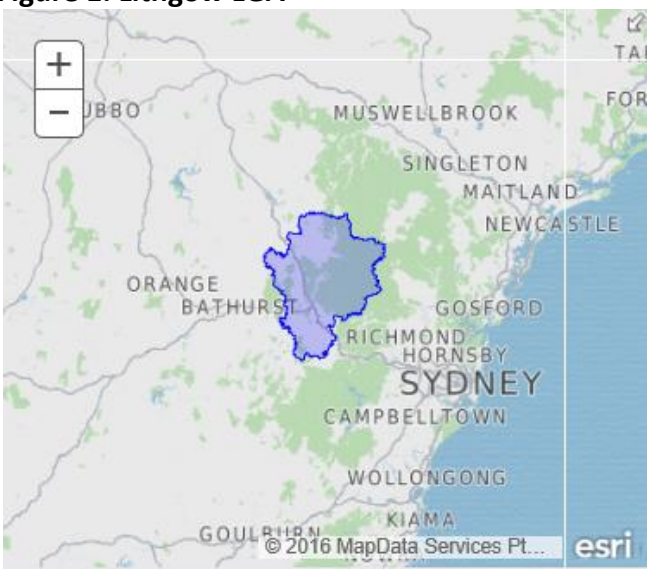
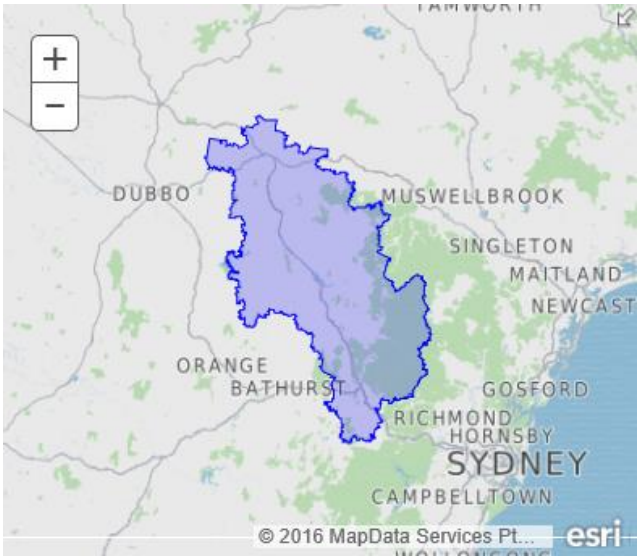


Figure 2: Lithgow-Mudgee SA3



Source: ABS Census Data 2016

2. DEMOGRAPHIC PROFILES

2.1. Demographic profiles, Lithgow LGA & Lithgow-Mudgee SA3[1]

2.1.1. Personal characteristics

Table 1: Demographic profile; personal characteristics

	LCC (%[2])	SA3 (%)	NSW (%)
Population	**21,090**	**46,612**	**7,480,228**
Male	50.7	50.5	49.3
Female	49.3	49.5	50.7
Median Age	**45 years**	**44 years**	**38 years**
< 15 years	17.0	18.8	18.5
15-29 years	16.5	15.8	19.5
30- 44 years	16.2	16.6	20.6
45-64 years	28.2	27.7	25
≥ 65 years	22.0	21.1	15.9
Ancestry (top responses)[3]			
Australian	32.3	34.0	22.9
English	29.9	29.9	23.3
Irish	8.4	8.4	7.5
Scottish	8.3	7.3	5.9
German	2.4	2.7	-
Chinese	-	-	5.2
Aboriginal/Torres Strait Islander	5.7	5.6	2.9
Born in Australia	79.7	80.3	65.5
Parents' country of birth			
Both parents born overseas	11.4	10.3	37.0
Father only born overseas	5.3	4.7	6.1
Mother only born overseas	3.2	3.4	4.3
Both parents born in Australia	67.5	69.7	45.5
Language			

[1] All data derived from ABS 2016 Census where available. Other data from ABS 2011 Census or other sources as identified.
[2] Highlighted data excepted.
[3] Census form included option of reporting two (2) ancestries, therefore responses do not reconcile with population counts.

English (only spoken at home)	84.9	86.1	68.5
Non-English language (spoken at home)	5.1	4.6	26.5
Legally registered relationship status			
Married	45.4	47.0	48.7
Separated	3.8	4.0	3.1
Divorced	10.7	10.2	8.4
Widowed	7.0	6.9	5.4
Never married	33.1	31.9	34.4
Religious affiliation			
Catholic	24.0	24.5	24.7
No religion (so described)	22.6	22.2	25.1
Anglican	20.6	24.5	15.5
Not stated	13.8	12.9	9.2
Uniting Church	6.2	4.6	-
Islam	-	-	3.6

2.1.1.1. Key observations

- The LGA and SA3 populations are significantly older than the NSW population, evidenced in particular by comparison of median ages, and specific age cohorts.
- The LGA and SA3 population is also less ethnically diverse, with around 80% of people born in Australia, compared to approximately 65% for NSW. Local and regional residents are also more likely to have parents born in Australia. The most common foreign ancestries in the LGA and SLA are European. For the NSW population, there is evidence of a larger Asian population, which is not apparent in the LGA and SA3.
- The LGA and SA3 have markedly larger proportions of Aboriginal and/or Torres Strait Islander residents than NSW in total.
- The larger proportion of widowed residents is consistent with the older populations in the LGA and SA3.
- Differences between the local and regional populations and NSW are also apparent for language and religious affiliation data. These further emphasise the relative homogeneity of the LGA and SA3 communities.

2.1.2. Household composition characteristics

Table 2: Demographic profile: families & household composition

	LGA %	SA3 %	NSW %
Couple without children	42.2	42.5	36.6
Couple with child(ren)	37.2	39.0	45.7
One parent with child(ren)	19.3	17.2	16.0
Other family	1.3	1.3	1.7
Family households	65.0	66.8	72.0
Single/lone person households	32.6	30.6	23.8
Group households	2.4	2.6	4.2
Average people/household (count)	2.3	2.4	2.6

2.1.2.1. Key observations

- The LGA and SA3 have larger proportions of couple *without* children families, and also more single/lone person households. These data are consistent with their older age profiles, with presumed larger proportions of 'empty-nester' households and widowed households. These conclusions are also consistent with the registered relationship status data (Table 1).
- The higher proportions of single parent families and single/lone person households are also consistent with higher proportions of separated or divorced persons (Table 1).
- Households in the LGA and SA3 are on average smaller than for NSW. This outcome is likely to be influenced by the characteristics discussed above.

2.1.3. Income & housing-related data

Table 3: Demographic profile: income data & housing-related data

	LGA $	SA3 $	NSW $
Income			
Median weekly personal income	510	529	664
Median weekly household income	1,328	1,375	1,780
Median weekly family income	984	1,054	1,486
% households < $650 gross p.w.	31.2	29.0	19.7
% households > $3000 gross p.w.	9.5	10.3	18.7
Housing tenure	**%**	**%**	**%**
Owned outright	41.8	40.0	32.2
Owned with a mortgage	29.3	29.7	32.3
Rented	24.6	26.1	31.8
Housing costs	**$**	**$**	**$**
Median monthly mortgage repayment	1,387	1,517	1,986
Median weekly rent	230	245	380

2.1.3.1. Key observations

- Incomes in the LGA and SLA are significantly lower than state averages. For example, personal income for the LGA is approximately 30% lower than for NSW. However, housing costs, which represent a significant element of cost of living, are 43% lower (mortgage repayments) and 65% lower (rent) in the LGA than across the state more broadly.
- Outright ownership of homes is notably higher for the local and regional areas, and rented accommodation lower. The higher rates of home ownership are interpreted as being consistent with the older populations in the LGA and SA3.

3. ECONOMIC PROFILE DATA

3.1. Economic and employment metrics

3.1.1. Headline economic data

Table 4: Headline economic indicators Lithgow LGA[4]

Economic metric	LCC value
Gross Regional Product (GRP)	$1.24 billion
Population (2016 Census)	21,090
Local businesses	1,329
Local jobs	9,038
Employed residents	9,079
Largest industry	Mining

3.1.2. Industry structure – employment by industry

Table 5: Employment by industry[5]

Industry	LGA 2015/16	NSW 2015/16	LGA 2010/11	SA3 2011	NSW 2010/11
Agriculture, forestry & fishing	3.9	2.3	2.9	9.2	2.3
Mining	14.8	1.0	14.9	21.5	0.9
Manufacturing	6.4	7.9	6.8	8.2	8.5
Electricity, gas, water & waste services	5.8	1.2	5.2	4.2	1.2
Construction	5.9	7.6	6.7	10.8	7.6
Wholesale trade	2.1	4.5	1.9	2.7	4.6
Retail trade	8.4	10.3	9.0	6.9	10.3
Accommodation & food services	8.0	7.0	8.1	5.0	6.8
Transport, postal & warehousing	4.6	5.1	5.2	6.2	5.2
Information media & telecommunications	0.8	2.5	0.8	0.7	2.5
Financial and insurance services	1.6	5.3	1.6	0.5	5.3
Rental, hiring & real estate services	1.0	1.8	1.0	0.9	1.8
Professional, scientific & technical services	2.5	8.5	2.6	2.6	8.4
Administrative & support services	3.1	3.5	3.0	2.0	3.4
Public administration & safety	9.8	6.3	9.4	6.3	6.3
Education & training	7.7	8.2	7.0	2.9	8.1
Health care & social assistance	9.0	11.5	9.8	2.5	11.3
Arts & recreation services	0.9	1.5	0.8	0.7	1.5
Other services	3.5	4.0	3.4	4.0	4.0

[4] Data sources: LCC Economic Profile, citing NIEIR and ABS, 2016; ABS Census 2016.

[5] 2010/2011 and 2015/2016 data for the LGA and NSW derived from LCC Economic Profile (2016). Census employment data release due October 2017. 2011 Census data only available for SA3.

3.1.2.1. Key observations

- Mining is clearly the largest employing industry in the LGA and the SA3. Both areas have very large representations when compared with NSW.
- Electricity gas, water and waste services are also comparatively over-represented compared with NSW. This emphasises the interdependencies between the regional mining and electricity generation industries in particular.

3.1.3. Industry structure – occupation

Table 6: Comparison of mining & local/regional occupational groups 2011

Occupation	Mining - LCC[6]		LGA		SA3	
	Count	%	Count	%	Count	%
Managers	63	5.7	759	9.4	2,407	13.4
Professionals	84	7.6	983	12.2	2,317	12.9
Technicians & Trades Workers	344	31.0	1,425	17.7	3,051	17.0
Community & Personal Services Workers	4	0.4	954	11.8	1,807	10.1
Clerical & Administrative Workers	35	3.2	1,066	13.2	2,035	11.3
Sales Workers	0	0.0	672	8.3	1,551	8.6
Machinery Operators and Drivers	550	49.5	1,148	14.2	2,368	13.2
Labourers	26	2.3	923	11.4	2,131	11.9
Inadequately described/not stated	5	0.5	132	1.6	301	1.7
Total	1,104	-	8,062	-	17,968	-

3.1.3.1. Key observations

- As may be expected given the nature of the industry, technicians and trades workers, and machinery operators and drivers are over-represented in the Lithgow mining category, when compared with general workforce data for the LGA and SA3. These account for 21.4% and 47.9% of all employees in the LGA for these two occupational categories.
- Also consistent with the nature of the industry, other occupations such as sales workers are not common in mining.
- The relatively small proportion of labourers working in the mining industry demonstrates that mining-related employment generally involves skilled labour.

3.1.4. Residential distribution of the mining workforce

The following table compares data from the LCC employment report (mining) and internal employee residence data. In effect this compares the distribution of the total Lithgow mining workforce, with that for Centennial's Western Coalfields operations. The comparison should be interpreted as indicative only, as the two data sets are based on different, although similar, geographic areas.

[6] Data Source: Lithgow City Council Economic Profile: Employment Reports – Mining LCC 2016.

Table 7: Mining workforce residential distribution		
LGA/SLA[7]	**SLA (LCC report data) %**	**LGA (Centennial data) %**
Bathurst	8.2	10.8
Blayney	0.3	0.3
Blue Mountains	6.5	7.4
Broken Hill	-	0.1
Cabonne	0.3	-
Campbelltown	0.3	-
Coffs Harbour	0.3	-
Gosford	0.5	-
Hawkesbury	0.4	0.4
The Hills	-	0.1
Lake Macquarie	0.5	0.1
Lithgow	**79.7**	**73.5**
Mid-Western	1.2	6.4
Oberon	0.5	0.1
Orange	-	0.1
Penrith	0.3	0.1
Queensland	-	0.1
Sydney	-	0.1
Wollongong	0.3	0.1

3.1.4.1. Key observations

- In both sets of data, the significant majority of mining employees reside in the immediate surrounds of Lithgow (≈ 80% SLA and ≈ 74% LGA).
- Including the immediately contiguous LGAs (Bathurst, Blue Mountains, Lithgow, Mid-Western and Oberon) the proportion of resident employees rises to 96.1% and 98.2% for the SLA and LGA respectively.
- The data demonstrate that the mining workforce is regionally-based. As a consequence, much of the social and economic activities of the workforce take place in the local and regional areas, further contributing to the socioeconomic functioning of these areas.
- The retention of mining employee incomes in the region is economically significant, particularly through comparing mining employee incomes with overall median personal and employee incomes for the LGA (Table 8). The higher incomes in mining employment encourage increased expenditure in the local and regional economies in which these employees live, when compared to population medians.

[7] Statistical Local Area: This is a smaller area than the SA3.

Table 8: Weekly gross personal income data comparison	
Description	**Income ($/week)**
Median personal income (LGA – Census 2016)	$510
Median employee income (Lithgow LGA, 2013)[8]	$916
Drillers, Miners, Shotfirers (Dept. of Employment Job Outlook 2015 data)[9]	$2,102
Earthmoving Plant Operators	$1,489
Geologists, Geophysicists and Hydrogeologists	$2,133
Mining Engineers	$2,037
Safety Inspectors	$2,121

3.2. Discussion of regional economic effects – LCC Economic Development Strategy (EDS)

The current LCC EDS places significant emphasis on the importance of mining to the LGA economy. A summary of relevant key observations made in the EDS is presented in Table 9. The effects recognised include both primary and secondary impacts, demonstrating that there are large numbers of businesses and industries that benefit from the presence of mining activity in the region.

[8] ABS Data by Region – derived as median employee income ($47,616)/ 52 weeks = $915.69.
[9] Selected occupational examples for brevity.

Table 9: The Lithgow City Council Economic Development Strategy 2015.	
Reference	**EDS content**
P.30	In 2011, the Mining sector employed 12.4% of the total Lithgow resident workforce
P.36	The biggest employers in the Lithgow Local Government Area (in 2011) are the Mining (14.9%) and Health Care and Social Assistance (10.7%) sectors.
P.40	Gross Regional Product contributions for the Lithgow LGA in 2014 estimated that in 2013-2014 the gross regional product for Lithgow Local Government Area was approximately $1,540.9 million. The Mining sector by far contributed the most, at $625.32 million or 40.6% of the total GRP
P.36	It is well documented, however, that recently the Lithgow LGA has suffered from extensive jobs losses in the Mining sector and this needs to be taken in to consideration when reviewing 2011 data.
P.37	One of the results of this [workforce residing within the LGA] is that the principal economic benefits of a workforces are kept within the region with local spending in particular captured within the local LGA
P.43	The Mining sector which is heavily influenced by international markets, shows the greatest capacity for fluctuating which can have a major impact on a community such as Lithgow that heavily relies upon it for work.
PP.43-44	In 2011, the Mining sector employed 12.4% of the total Lithgow resident workforce second to the Health Care and Social Assistance sector at 11%. The major concern here is that many of these Mining jobs are concentrated in a handful of businesses hence, as has been experienced in the past and currently, any 44 Lithgow Economic Development Strategy 2015 job losses tend to be on a large scale and hence may have an immediate impact upon the community.
P.44	5.2 % earn over $2 000 per week which can be partly attributed to the high numbers of resident workforce working in the Mining industry which is historically a well-paid industry sector in Lithgow.
P.50	Ongoing fluctuations in major industries (principally Mining and Energy) causes uncertainty throughout the region.
P.56	Pressures have recently been experienced within the local Energy sector (Mining and Electricity) which are major employers in the Lithgow Local Government Area. This further increases the urgency of this situation.
P.56	The Mining and Energy sectors are heavily impacted by external markets outside of Council's control.
P.70	Lithgow is heavily reliant upon a few key industry sectors for employment in particular Mining which is vulnerable to fluctuating markets. The impact of such fluctuations has been evident in the last few years resulting in significant job losses throughout the region. The unstable nature of the Mining sector in particular is expected to continue and it is inherently difficult to accurately predict future trends.
P.74	Lithgow's economic base is heavily structured around the Mining and Energy sectors and needs to develop a broader economic base where there are job opportunities to suit all segments of the community.

4. SOCIAL IMPACT DATA

4.1. Local and regional community structure

Demographic profile data identifying key characteristics of the LGA and SA3 is presented in Section 2. The data are material in assessing the social impacts of Centennial's operations in the region. However, these are not the sole source of data on which Centennial assesses its impacts and contributions, directly and through its employees and other entities. Community consultation and engagement, and employee research activity are additional sources of information, which are also discussed in this section.

4.2. Community consultation

Due to the extent of its operations in the Lithgow Region, Centennial Coal has a continuing community engagement program in operation. This program entails consultation with the broader stakeholder community, which includes the company's workforce, the resident regional community, business networks and representative groups such as the business chamber, economic development committee and various levels of government. Focused consultation is also undertaken with individuals and households which may be specifically affected by certain Centennial operations. This permits continuous monitoring of operational effects, and community attitudes to those effects and operations more generally. Issues raised by the community during consultation work since 2012 in relation to the Centennial developments in the region include:

- general visual impacts, particularly from open cut mining;
- intensification of mining activities; and
- the recognition of impacts from sources other than Centennial such as other mining operations and the two power stations[10].
- Sensitive ecology;
- Structural geology of the Newnes Plateau;
- Maintaining the 'environmental architecture'.

The consultation process also resulted in the following observations:

- There is a strong connection to mining in areas such as Lithgow, Wallerawang and Portland however this connection is not shared across the entire LGA. There has been an increasing population in rural areas and the connections that many of these landholders have to the LGA are its natural assets.
- Despite the connection to power and mining, residents do not want to be adversely impacted upon by industry when they are not at work.
- Identified benefits arising from mining such as construction of additional infrastructure, maintenance of existing, and creation of additional jobs etc. do not always outweigh the impact on community amenity even if the industry (e.g. mine) operates within approved limits.

[10] Wallerawang Power Station has subsequently ceased operating.

4.3. Social impacts

Springvale Coal has commissioned a detailed, systematic assessment of the likely social impacts of the Modification, which is presented in the Social Impact Assessment (Centennial Coal, 2017) supporting this application. This comprehensive assessment specifically addresses the effects of the Modification on the following aspects of social and socioeconomic factors in the local and regional community:

- Population;
- Economic effects;
- Employment;
- Housing;
- Community infrastructure;
- Community support services;
- Service demand;
- Conflict;
- Community identity; and
- Cultural identity.

The assessment in respect of each of these factors is that the Modification will have no material incremental or cumulative impact on available capacity of social infrastructure and services. On the other hand, it is apparent that the mine, and its employees in particular, make a valuable contribution to their communities. An assessment of these contributions forms part of the research discussed in Section 3.7.

5. Case study: Springvale Mine research project outputs

5.1. Study overview

As a consequence of the duration of the assessment stage during 2015 for the overarching Springvale Mine consent (SSD-5594), it became necessary for Centennial Coal to suspend operations at the mine for eight (8) weeks, August 2015 to October 2015. This event provided an opportunity to gather data on the effects of the suspension, which permits insight into the extent of the effects of a disruption to this regionally significant business. This research was undertaken between August and December 2016. The research methods included preliminary focus groups involving approximately 5% of the workforce, and subsequently, the principal survey, with approximately 71% of the workforce participating.

Based on the research findings, the impacts of the suspension can be appropriately described as being of regional significance. In addition to the immediate employees, the effects of the suspension were experienced by employees' families and/or households, local firms supplying good and services to the mine, and other businesses in the Lithgow area more generally. A summary of the findings of this research is provided below.

5.2. Survey outputs and analysis

Table 10: Springvale Mine suspension: summary of research project findings

Survey/sampling data			
	Total workforce	**Total Respondents**	**Response rate (%)**
Sample size	370	261	70.5
Demographic Profile			
Description	**Research finding**		**Social Impact comment**
Household composition	259 respondents, 849 residents; persons per household: 3.3.		Mine employment directly supports three times the number of employees. LGA household size is 2.3 persons[11].
Residential location	77% of employees live within a 15km radius of the mine. All lived within 70km of the mine. 48% live in the immediate surrounds of Lithgow.		The workforce must be characterised as resident. No respondents can be characterised as drive in/drive out etc.
Average duration of residence	31 years		The workforce is generally long-term resident, entailing associated personal, social and economic ties to the region.
Home ownership	20% fully owned; 73% purchasing (mortgaged).		The workforce is largely tied to the region through economic/financial commitments.
Household local expenditure	73% of 'take-home' pay.		The majority of disposable income is spent in the local economy. This supports further business activity and employment. Springvale employee incomes are approximately 2.3 times the median income for the LGA, therefore impacts are significant.
Social engagement	161 respondents (62%) reported involvements with 288 organisations in the community.		The workforce is demonstrably actively engaged in the community, contributing to social capital. Organisations include RFS, NSW Fire & Rescue, service and charitable organisations, sports groups, and cultural and community organisations, such as schools. A number of activities involve participation in volunteer workforces

[11] ABS 2016 Census data.

Description	Research finding	Social Impact comment
Experiences during suspension		
Effects on employees	94%[12] of employees agreed that the suspension resulted in feelings of depression. 97% expressed concerns over the duration of the suspension and/or whether it might become permanent; 92% described tension amongst employees over such work as could be rostered during the suspension.	The workforce experienced significant stresses during the suspension, which impacted on personal wellbeing and relationships with fellow employees. The occurrence and duration of the suspension prompted many employees to begin considering their longer-term future at the mine and/or in the industry
Effect of enforced leave	98% of respondents were required to take leave when they would not ordinarily have done so. Of these, 74% have subsequently missed leave when they ordinarily would have taken it.	Qualitative input from the research indicated that due to the timing of the suspension, many employees could not use the required leave as the usually would (e.g. on a family holiday). Most of these reported having subsequently missed such a holiday as a result.
Effects on employee households	Although 92% of employees had family/household members' support during the suspension, 84% reported stress around obtaining available shifts, 91% found the strike stressful on themselves in the domestic environment, and 88% reported stress on/within their families and households.	As may be expected, given the personal and other (e.g. financial) pressures associated with a period of involuntary time off work, employees' families and other household members also experienced negative effects.
Effects on Lithgow/region	98% of employees reported being aware of concerns raised by other residents over the duration of the suspension. A similar proportion personally know local business operators who were negatively affected.	Given Lithgow's historical and ongoing connections with the coal-mining industry and its beneficial contribution to the region, indirect impacts and concerns over their extent would be anticipated. The effects of a disruption to operations has wide-reaching regional impacts.
Future implications	89% of employees have begun to reassess their long-term employment futures. 91% believe there are insufficient alternative employment opportunities in the region; and 71% believe the future of the coal mining industry is uncertain. 48% of the workforce would not leave the region to find other work; 33% would leave, 14% might 'possibly' leave, and 5% were unsure.	The results highlight the potential effects of longer term suspension or permanent cessation of mining. Although there is evidently reluctance to relocate from the region, the workforce is pragmatic, in understanding that the there is uncertainty at the future of the industry, and that relocation would become necessary for many if the mine closed.

[12] Response options to statements/propositions developed after focus groups were; 'very relevant', 'somewhat relevant' and 'not relevant'. The figures cited in this section of the table are for 'very relevant' and 'somewhat relevant' responses combined.

Description	Research finding	Social Impact comment
Estimated effect on other businesses[13]	Using internal data on a pro-rata basis, the suspension resulted in 205 weeks of contractor work engagements being lost (refer to Section 3.4).	In addition to reported effects from the survey, this assessment provides some quantification of the effects on local businesses, many of which are SMEs employing resident workforces.

[13] Estimate based on Springvale mine internal data on contractor and supplier engagements

5.2.1.1. Key observations

- Household size is larger for the surveyed workforce than for the LGA and SLA (Table 2), although this is likely to be a consequence of the larger population groups including older households, such as retirees and in particular older single person households (e.g. widowed).
- The finding that 77% of the workforce is resident in the immediate Lithgow area is consistent with estimates provided in Table 7 (≈ 80% SLA and ≈ 74% LGA). This triangulation of data sources provides conclusive evidence of a resident workforce, the economic and social contributions of which are concentrated in Lithgow and the surrounding region.
- This contribution is emphasised by the comparative income data in Table 8, and the survey finding that 73% of take-home pay is spent in the local/regional economy.
- The level of outright home ownership (20%) is significantly lower for the survey sample than for the LGA and SLA (≈ 42% and 40% respectively). As with household size, this is likely to be related to the larger groups including older, longer-established households, when compared to the younger workforce. Totalling full ownership and ownership under mortgage however, indicates that the workforce has higher levels of commitment to housing in the region (sample 93%, LGA 71%, SLA 70%[14]). This reinforces that overall the workforce is locally-based, with the attendant socioeconomic contributions this entails for the region.
- Given the long-standing residence of the majority of employees within a comparatively small region, many employees are familiar with SME operators in the district. 98% reported concerns being expressed to them about the broader consequences of the suspension. These concerns have also been expressed in engagements with groups including LCC representatives and the Lithgow District Chamber of Commerce.

5.3. Regional commercial contribution – internal contractor data

Table 11 summarises internal data on the extent of commercial engagements with local businesses for the 2015 financial year. The data were collated and analysed as part of the investigation into the effects of the suspension of operations at Springvale in 2015, to produce an indicative estimate of the loss of commercial activity in the region during the suspension. The data serve to illustrate the extent of regional engagements, and the effects the mine has on sustaining employment in associated industries and businesses.

[14] Refer to Table 3 for LGA and SLA data.

Table 11: Springvale Mine local/regional commercial engagements FY2015	
Activity measure	**Total**
Number of firms engaged	52
Number of service events	7,139
Total hours	50,746
Total days @7.6 hours	6,677
Total weeks @ 38 hours	1,335

The distribution of service events is not uniform across all firms. As a result some firms are more heavily exposed to disruption to operations at the mine. FY2015 is representative of a typical year of continuous operations at Springvale Mine. As noted previously, qualitative evidence gathered during and after the employee survey indicates that the 2015 suspension had immediate impacts on some businesses, including temporary reductions in employment.

In a comparatively small regional economy that is dependent on a small number of larger industries, particularly coal mining and power generation, a supporting economy of goods and services providers has developed to service these larger-scale industries. These economic interdependencies are critical to the region, and extend beyond their economic influences, to affect the socioeconomic fabric of the region.

5.4. Discussion

The research summary demonstrates the social and economic role of the Centennial's operations in the Lithgow area. During further engagement with management and the workforce during the first half of 2017, while disseminating and discussing the research findings, it is apparent that the effects of the suspension are still being felt. In addition to the residual uncertainty over continuing mine operations and employment and the implications of these considerations, some employees continue to experience ongoing constraints, such as in respect of leave entitlements, which were affected by the suspension. Subsequent engagement with local business, labour and public sector representatives has largely confirmed the general conclusions of the research, in terms of the effects experienced in the local economy during the disruption. The resident character of the workforce, its social and economic commitments and contributions form an important part of the region's identity and its socioeconomic welfare.

6. EXTENDED ECONOMIC IMPACTS

An estimate of the extended economic impacts associated with the Centennial's Western Coalfields operations can be derived using input-output (I/O) multipliers. The methodology is a commonly-used approach to providing an approximation of the economic effects of one industry's activities across the

rest of the economy[15]. There are certain limitations to the application of I/O multipliers. These are also acknowledged by ABS[16]. The practical effect of these limitations is that the output of multiplier analysis can only be considered as *indicative* of outcomes that may result from economic stimuli.

The NSW Department of Trade, Investment, Regional Infrastructure and Services (Division of Resources and Energy) [17] identified output and employment multipliers for mining and related services. While acknowledging the aforementioned limitations on multiplier analysis, the application of the relevant NSW Government Department's declared multipliers adds validity to the analysis. The relevant multipliers are displayed in Table 12.

Table 12: Type 2A Multipliers – mining and services

Description	Multiplier value
Output Multiplier – mining & services	2.136
Gross Value Added Multiplier – mining & services	4.099
Income Multiplier – mining & services	2.839
Employment Multiplier – mining & services	3.977

The relatively large GVA multiplier in this instance demonstrates the importance of incomes generated by the relevant project. It should be noted that GVA comprises all components of income to labour, plus the gross operating surplus of the corporate entity. Due to the foreign ownership of Centennial, the latter accrues beyond NSW; however, the former is concentrated in the State and the immediate region. In general terms, operations may result in extended economic effects of approximately 2.1 to 4.4 times the initial stimulus, dependent on the economic measure being considered. Employment of the magnitude of approximately 2.7 to 4 times the economic stimulus may also result. These indirect positions represent employment supported in the broader economy as a result of the demand for additional goods and services related to the operations. The preceding case study provides qualitative and quantitative evidence of these effects.

An alternative assessment of likely multipliers from within Government (Treasury)[18] is that mining-related multiplier effects are likely to be in the range of 1.1 to 1.4 times the initial stimulus. However, economic modelling conducted for the neighbouring Mid-Western Regional Council (MWRC) LGA (2005) assessed multipliers for mining in that comparable regional economy as being in the range of 2.75 (output) to 4.41 (GVA) and an employment multiplier of 6.45 times. The MWRC multipliers may be

[15] A detailed discussion on interpretation and limitations of multiplier analysis is included in ABS Cat No 5246.0; *Information Paper Australian National Accounts Introduction to Input-Output Multipliers*;
[16] For example, ABS Cat No 1301.0, *Year Book Australia, 2002*
[17] *The Contribution of Primary Industries to the NSW Economy, Key Data 2012*:
<http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/427645/Contribution-of-primary-industries-key-data-2012.pdf >

[18] Verbal advice provided by Treasury representatives January 2015.

considered as providing an indication of the importance of such a major industry as mining in a relatively small regional economy. Regardless of the multipliers applied, as all are in the positive (>1) range, there are positive extended benefits associated with Centennial's Western Coalfield operations, a conclusion supported by the material presented throughout this report.

Appendix C

Economic effects analysis

Modification to SSD-2709 Lidsdale Coal Loader

Economic Effects Analysis

Centennial Ivanhoe Pty Limited

June 2019

AIGIS GROUP

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Executive Summary

- This report presents an analysis of the potential economic effects of a proposal by Centennial Ivanhoe Pty Limited (Centennial Ivanhoe) for modification to existing consent SSD 2709 (formerly DA 08_0223) for the Lidsdale Coal Loader Facility. The range of potential economic effects are considered from the perspectives of likelihood of occurrence, scale, proposed mitigation initiatives and/or opportunities and potential for resultant economic effects.
- In summary, the modification would entail site works to permit receival of coal for dispatch to Mount Piper Power Station (MPPS) using the existing overland conveyor system. The modification is a contingency measure which would be used only in certain circumstances pertaining to ensuring adequate onsite coal reserves at MPPS. The circumstances in which operations would occur are defined in a Trigger Action Response Plan (TARP) developed for the modification.
- This report has been prepared with reference to NSW Department of Planning and Environment (DPE) guidelines and technical notes for the preparation of economic assessments, to the extent that these are applicable, given the limited nature of the proposed modification.
- The proposed modification entails both capital and operational expenditures by Centennial Ivanhoe. There are also expected to be positive short-term employment effects. Elements of both capital and operating expenditure are likely to directly benefit local businesses and individual employees. These positive economic effects will only be realised over the short duration of operations under the proposed modification, and may manifest as substitution impacts, based on the assumption that workers employed on the project may in any event be otherwise employed over this brief period.
- Noise generated by proposed daily train movements (one inbound, one outbound) and related operation of plant and equipment consequent to the proposed modification are considered by Centennial Ivanhoe as the highest-order potential effect to be generated by the proposed modification. EMM Consulting (2019) has prepared a noise assessment in relation to the proposed modification. The overall finding based on predictions calculated at 12 assessment locations, is that *'noise emissions from the site will reduce by 2 to 3 dB compared to existing noise levels from currently approved coal loading activities'* (EMM 2019:5).
- Other effects, in particular potential traffic impacts, are assessed as being unlikely to cause material economic effects, due to the limited scale of the proposed modification and operations consequent to it being of lower intensity than currently approved operations.
- The contingent nature and relatively brief duration of any operations required under the proposed modification, the limited scale of such operations, the application of existing mitigation measures and the introduction of additional mitigation initiatives collectively act to reduce the likely effects on the community and other stakeholders. Taking these matters into consideration, on balance it is assessed that local/regional benefits and costs

are unlikely to be material in scale or duration. A material broader benefit will be supported by the proposed modification, to the extent that it will secure fuel supply for generation of 15% of the State's electricity requirement.

Contents

Abbreviations

ABS:	Australian Bureau of Statistics
DIDO:	Drive in, drive out
DPE:	Department of Planning and Environment (NSW)
EA:	Environmental Assessment
EEA:	Economic Effects Analysis
EIS:	Environmental Impact Statement
FIFO:	Fly in, fly out
GMSE:	Group Manager, Stakeholder Engagement (Centennial Coal)
kT:	kilo-tonne/s
MPPS:	Mount Piper Power Station
SSD:	State Significant Development
TARP:	Trigger Action Response Plan
TRIA:	Traffic and Rail Impact Assessment
UCL:	Urban Centre/Locality (ABS geographic unit)
WCS:	Western Coal Services

1 Purpose of report

This report presents an analysis of the potential economic effects of a proposal by Centennial Ivanhoe Pty Limited (Centennial Ivanhoe) for modification to existing consent SSD-2709 (formerly DA 08_0223) for the Lidsdale Coal Loader Facility. The range of potential economic effects are considered from the perspectives of likelihood of occurrence, scale, proposed mitigation initiatives and/or opportunities and potential for resultant economic effects.

Given the limited extent of works associated with the modification and particularly the contingent nature and limited duration of operations as and when required under the modification, the analyses undertaken herein are restricted to specific effects, the materiality of these, and the potential for cumulative effects in the context of current operations. Taking into account these limitations on the extent of operations under the proposed modification, qualitative assessments of economic effects may be more reflective of these than the limited quantified assessments that may be drawn in these circumstances.

This report has been prepared with reference to NSW Department of Planning and Environment (DPE) guidelines and technical notes for the preparation of economic assessments, to the extent that these are applicable, given the limited and operationally contingent nature of the proposed modification.

2 Overview of proposed modification

Detailed descriptions of the proposed modification are presented in the Environmental Assessment prepared by EMM Consulting, of which this report forms part. A summary description of, and justification for, the proposed modification are presented below.

2.1 Summary of proposed modification

Centennial Ivanhoe proposes to modify the Lidsdale Coal Loader development consent to allow the delivery of coal to the facility by train (one train per day); coal unloading, handling and stockpiling; and coal dispatch. Coal dispatched from the Lidsdale Coal Loader Facility will be conveyed to the Western Coal Services (WCS) Site utilising the existing overland conveyor system, where it will be handled and transported on to the Mount Piper Power Station (MPPS) in accordance with the activities approved by WCS development consent (SSD-5579). Activities authorised under the WCS development consent will remain unchanged. The proposed operations are a contingency measure that would only take place in circumstances where onsite coal stockpiles at MPPS are reduced to a point where continued electricity generation and supply are threatened. Such circumstances are defined in a Trigger Action Response Plan (TARP), a copy of which is attached at Annexure 1.

Additional temporary infrastructure will be required to be installed and operated at the Lidsdale Coal Loader site to facilitate the proposed train unloading and coal handling activities; however, it is noted that:

- The operation of additional infrastructure will be within existing disturbed areas.
- The coal stockpiling will be within the footprint of existing approved coal stockpiles.

- No additional vegetation clearing will be required.
- No changes to the existing water management system will be required.
- Proposed coal unloading operations and train loading operations (approved) will not be undertaken simultaneously (i.e. on the same day). Consequently, there will be no cumulative impacts from these combined activities.

2.2 Project justification

The project justification developed by Centennial Ivanhoe is a key element of the underlying economic justification for the project, particularly from the perspective of the existing site's status as a State Significant Development, and the contextual importance of the proposed modification to ongoing energy security in NSW. The project justification is as outlined below.

Springvale Mine is the primary source of coal for MPPS. In early 2019, due to continued lower yields from Springvale Mine associated with the commencement of mining in the southern longwall blocks, a potential shortfall in coal supply to MPPS was identified. As a result, Centennial Coal has conceptualised and implemented supplementary coal supply measures to ensure coal demands by MPPS can continue to be met. As an immediate, short-term measure, Centennial Coal has sought a modification to Clarence Colliery's development consent (DA 504-00) to:

- *increase total allowable coal haulage off-site from Clarence Colliery by road from 200,000 t to 300,000 t for a limited period of time up to 31 December 2020; and*

- *increase total allowable coal haulage off-site from Clarence Colliery to the west by road from 100,000 t to 200,000 t for a limited period of time up to 31 December 2020.*

This supplementary coal supply measure is a short-term, temporary solution only and is not considered a suitable long-term option to provide additional coal supplies to MPPS should coal supply shortfalls be experienced again in the future. This is due to the limited volume of coal that can be transported by road from Clarence Colliery and the potential impacts associated with a sustained increase in heavy vehicle movements on the local and regional road network.

As a result, Centennial Coal has investigated other opportunities to provide supplementary coal supplies to MPPS should a shortfall in coal supply be experienced again. These investigations indicate that the proposed modification to Lidsdale Siding's consent to allow coal to be received via rail from other Centennial Coal mining operations is the most viable option. The proposed modification will allow coal to be unloaded, handled and transported off-site to MPPS using the existing overland conveyor system via the WCS site.

If no emergency supplementary coal supply provisions are in place to alleviate coal supply shortfalls in the future, there remains a risk that declining coal stockpiles at MPPS will impact

on the efficiency of operations at MPPS and threaten the reliable supply of electricity to NSW.

The proposed modification does not require a modification to the amount of coal handled by the facility, an expansion of the developed or cleared portion of the project site or an increase in approved stockpile locations, as discussed further in Chapter 4 of the Environmental Assessment (EA).

The proposed modification, to unload a single coal laden train per day would be within the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries, and thus is substantially the same development as the original project, as discussed in Chapter 5 of the EA.

3 Economic assessment of project financial aspects

The proposed modification entails both capital and operational expenditures by Centennial Ivanhoe. There are also expected to be positive short-term employment effects. These aspects of the proposed modification are assessed in the following sections.

3.1 Summary of modification financial aspects and economic effects

3.1.1 Assessment of project costs

A summary of capital and operating expenses relating to the proposed modification is included in Table 1. The costs are to be incurred by Centennial Ivanhoe in order to ensure fuel supply to MPPS.

Table 1: Summary of modification project capital and operating expenses

Classification/description of costs	Based on first 500 kT
Capital expenditure	
Main conveying system base hire/installation/demobilisation	$3,125,000
Custom Fabrication – OL2 conveyor transfer & trigger system	$400,000
Civil Works/site upgrades	$250,000
Approvals / EIS Process (currently underway)	$75,000
Contingency	$500,000
Total capital expenditure	**$4,350,000**
Operating expenditure	
Rail Operations (1 train per day)	$ 2,250,000
Conveyor system hire (includes operator labour (2 off) assumed @$200K)	$ 2,500,000
Bulldozer & operator hire	$550,000
Total operating expenditure	$5,300,000
Total project cost (capex + opex)	**$9,650,000**

3.1.2 Distribution of economic effects

Elements of both capital and operating expenditure are likely to directly benefit local businesses and individual employees. As the estimates provided in Table 1 are indicative, an accurate assessment of these effects cannot be directly estimated. As is the case with the potential externalised effects discussed in Section 4, these positive economic effects will only be realised over the duration of operations under the proposed modification, and may manifest as substitution impacts, based on the assumption that workers employed on the project may in any event be otherwise employed over this brief period. Bearing these limitations in mind, a qualitative summary of the positive economic outcomes for the regional/local economy is presented below. These stimuli involve both regional/local businesses and their employees.

- Civil works will be carried out by a local contractor, with attendant employment benefit. Installation/mobilisation of the conveyor system will employ 5 to 10 tradespeople, with a mix of local contractors and FIFO/DIDO workers.
- The rail service provider, Southern Shorthaul Railroad, operates a depot in Lithgow. It is likely that train crew will be locally based, operating from this depot.
- Operators for the conveyor system once mobilised will be sourced through a local labour hire provider.

A discussion of the additional short-term economic effects resulting from locally-based employment is presented in Section 5. The broader and more critical effects of the proposed modification are those relating to ensuring supply of fuel to, and therefore full generating capacity of, MPPS.

3.2 Economic implications of maintaining MPPS generating capacity

Section 2.2 provides a description of the relationship between Centennial's supply of coal, and optimal ongoing operation of MPPS: '*Springvale Mine is the primary coal supplier to MPPS, a coal-fired power station approximately 25 km north-west of Lithgow. The MPPS has a rated capacity of 1,400 megawatts (MW) and supplies approximately 15% of NSW electricity needs*.' As the application for the proposed modification is intended to redress temporary supply constraints from Springvale Mine should these eventuate, Centennial's Airly Mine will be used to make up the shortfall over the proposed modification period.

EnergyAustralia, which operates MPPS, states that the plant's output has *'the capacity to meet the energy needs of approximately 1.18 million homes in New South Wales every year'*[1]. In addition to this broad social and economic benefit, MPPS directly employs 185 employees and contractors at the plant. The majority of these are resident in the local and regional areas. Data provided by EnergyAustralia indicates that among its direct employees, 90% reside in the Lithgow LGA, with 5% each residing in the adjacent Bathurst Regional and Blue Mountains LGAs[2]. This does not include additional positions employed at the water

[1] https://www.energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station
[2] A similar assessment for contractors could not be provided. However, as reported, anecdotally the majority of contractors also reside in the region.

treatment plant that supports MPPS operations. These employees further contribute to beneficial social and economic outcomes supported by employees and their households.

3.3 Employment effects – Airly Mine

The coal to be transported to Lidsdale Siding as part of the proposed modification is to be sourced from Airly Mine (approximately 35km [linear] north of Lidsdale). Airly Mine is currently approved to employ 155 full-time equivalent (FTE) employees. Although the proposed contingency operations under the modification would not create or support additional employment at the mine, they would support ongoing work for these employees over the duration of such events.

4 Economic assessment of identified project effects

This section of the report provides quantitative and/or qualitative assessments of the economic implications of potential effects identified by Centennial Ivanhoe and its specialist consultants. As identified in preliminary materials, any operations under the proposed modification are contingent on activation of the TARP. Any required operations are likely to be episodic and of brief duration, thereby notionally limiting the potential for material effects. These factors essentially negate the effectiveness of tools such as a full cost-benefit analysis or estimation of net present values for the project in assessing this modification.

In terms of the scale and timing of effects, it is noted that because the modification is proposed as a contingency measure to be implemented only in the circumstances defined in the TARP, it is impractical to assess the modification on these bases. However, in circumstances where the TARP threshold is met and operations are required, these are likely to be relatively brief in duration with the aim of prompt stockpile replenishment at MPPS. Although currently approved rail movements at the site relate to dispatch as part of routine operational consents rather than occasional receival as proposed, it is noted that such operations have not been undertaken since 5 January 2018. Given that the current modification is contingency-based, it is assumed that the need for operations would be even less frequent, and therefore less likely to impose material impacts on third parties.

4.1 Noise

4.1.1 Operational noise – train movements & associated plant operation noise

Noise generated by proposed maximum daily train movements under the modification (one inbound, one outbound) and related operation of plant and equipment consequent to the proposed modification are considered by Centennial Ivanhoe as the highest-order potential effect to be generated by the proposed modification. EMM Consulting (2019) has prepared a noise assessment in relation to the proposed modification. The overall finding based on predictions calculated at 12 assessment locations, is that *'noise emissions from the site will reduce by 2 to 3 dB compared to existing noise levels from currently approved coal loading activities'* (EMM 2019:5).

Noise emissions associated with the proposed modification are expected to remain substantially the same or reduce compared to those associated with the current approved

activities. Train-generated noise effects are proposed to be mitigated by the use of a train-handling method which include:

- keeping the arriving train in a 'stretched' state so as to reduce 'stretch' or 'come together' noise, by using some train crew to configure the track to maintain constant train motion;
- reducing locomotive power to 30% and maintaining constant low unloading speed.

Unloading equipment is similar to existing loading equipment used at the site and is therefore predicted to operate at similar noise levels to existing approved activities. EMM also notes that mobile plant used will be restricted to a single dozer or front-end loader (EMM 2019:5).

4.1.2 Construction/mobilisation-stage noise

There will be some additional noise generated during the construction of fixed infrastructure (reclaim tunnel) and mobilisation and demobilisation of the temporary conveyor system. This will relate to vehicle movements and operation of construction equipment. All works will be undertaken during daylight hours. It is considered that these are likely to be similar to operational noise levels and will occur over a brief duration. In order to account for this element of noise, the construction/mobilisation period is assumed as adding an additional one (1) month of noise generation similar to that for train movements, prior to commencement of operations and a further two (2) weeks for demobilisation of conveyor plant at cessation of operations.

4.1.3 Cumulative effects

The summary of the proposed modification provided by Centennial Ivanhoe (Section 2.1 of this report) states that the proposed unloading operations will not be conducted simultaneously with previously approved loading operations. This statement concludes that, consequently, there will be no cumulative effects.

Operations under the proposed modification are interpreted as being consistent with the parameters approved under DA 08_0223, to the extent that train movements and related site operations will not be additional to existing approved levels as stated above. Rather, as described, the proposed unloading operations will substitute for loading operations on relevant operating days. The operations under the proposed modification are also brief in duration. EMM's assessment also included the following statement in respect of the effects of current operations: '*The site does not have a history of noise complaints. Apart from an isolated complaint in 2016 regarding noise from a train horn, no other noise complaints have been received since the facility was upgraded in 2014. Centennial has self-imposed operating restrictions at the facility and limited rail loading activities to day time hours to minimise noise impacts from operations at the facility. The neighbouring residences are generally very supportive of the site and appreciate the economic input it provides to the local community*'(EMM 2019:4) .

Taking these matters into account, it is concluded that there will be no material cumulative noise effects imposed on any potential receptors.

4.1.4 Economic assessment of noise impacts

Based on the material presented in Sections 4.1.1 to 4.1.3, and considering these in the context of DPE guidelines and technical notes for economic assessment of noise impacts, it is concluded that any noise effects are likely to be within current parameters, and therefore unlikely to impose any additional material impact on third parties. Correspondingly, no material economic impact is likely to eventuate as a consequence of the proposed modification. The economic valuation of noise effects for DA 08_0223, which was prepared by Aigis Group (2012) using a benefit transfer methodology, is included at Annexure 2 for reference.

4.2 Traffic impacts

A Traffic and Rail Impact Assessment (TRIA) prepared by Barnson (2012) formed part of the EIS for the Lidsdale Siding Upgrade Project, which was approved in May 2013. The object of that project was to enable export of coal by train to Port Kembla, rather than delivery to the siding as is currently proposed.

The TRIA addressed impacts associated with road traffic movements, particularly those associated with heavy vehicle movements in the construction stage, and rail movements. The latter remain relevant to the current application, with particular regard to train movements and potential interface with vehicular traffic at the Main Street and Brays Lane level crossings (both public streets). It is noted that other effects associated with train movements, most notably noise, are addressed in separate sections of this report.

4.2.1 Vehicular traffic impacts

There are likely to be a number of light and heavy vehicle movements to and from the site during project civil works and plant establishment/mobilisation. This period is anticipated as being of approximately one month's duration, with subsequent demobilisation over a period of approximately two weeks. Given the relatively brief duration of these effects and the excess capacity on the relevant local roads (Barnson 2012), the practical effects are assessed as unlikely to be material. Consequently, any associated economic effect is also considered as unlikely to be material.

4.2.2 Train & vehicle traffic interface – Main Street level crossing

The Barnson report (2012) predicated on average five to a maximum of seven train movements per day, with potential disruption to Main Street traffic likely only once in peak traffic periods (2012:18). As noted in the summary of the proposed modification (Section 2.1), currently approved loading and proposed unloading operations will not be conducted simultaneously. Consequently, as the proposed operations involve one train per day, the Barnson (2012) findings of minimal impacts with respect to the Main Street crossing remain relevant for the proposed modification. This indicates that there will be no material economic impacts associated with this element of operations.

4.2.3 Train & vehicle traffic interface – Brays Lane level crossing

Barnson (2012) described potential effects as 'expected to be minimal due to the low level of traffic associated with this lane' (2012:19). On the same basis described in Section 4.2.2 for Main Street, such impacts are assessed as being unlikely to impose a material economic effect on users of Brays Lane.

4.2.4 Summary of economic effects relating to traffic

The Barnson TRIA (2012) was predicated on an average five movements per day, with a maximum of seven movements, for outbound coal shipments. The proposed modification excludes simultaneous loading (approved) and unloading (proposed) operations on the same day. Consequently, train movements related to the proposed modification represent a maximum of one movement per operating day, reducing average and maximum movement numbers on these days. Furthermore, these movements are within the operational parameters of the previously approved operations. The Economic Impact Assessment forming part of the EIS for application 08_0223 found that there were 'no net negative impacts anticipated' (Aigis Group 2012:20). The contingent nature of the modification further reduces the likelihood and the therefore the potential for material impacts to occur.

As the operational scale of the proposed modification is limited to brief periods of activity should the TARP be activated, there are unlikely to be material economic effects resulting from this element of the project. There is a predicted one-month period in which there will be vehicle movements relating to project establishment works and a further two-week period during the demobilisation stage. Once again however, given the very short duration of these activities, economic effects are unlikely to be material.

4.3 Summary of other effects considered in development of the proposed modification

Table 2 presents a summary of the potential for other environmental effects to occur as a consequence of the proposed modification and required works and commentary on the potential for resultant economic effects. As is reported in Table 2, the overall conclusion is that there will be no material impacts in relation to these elements. Correspondingly, no associated economic effects are assessed as being likely to result.

Table 2: Summary assessment of environmental effects

Description of effect[3]	EA commentary (project summary)	Economic assessment comment
Biodiversity	The operation of additional infrastructure will be within existing disturbed area. Coal stockpiling will be within the footprint of existing approval coal stockpiles. No additional vegetation clearing will be required.	No additional or cumulative effects predicted, based on described approach. Consequently, no material economic effects assessed for the proposed modification.

[3] Based on the broad effect categories stipulated in *Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals*.

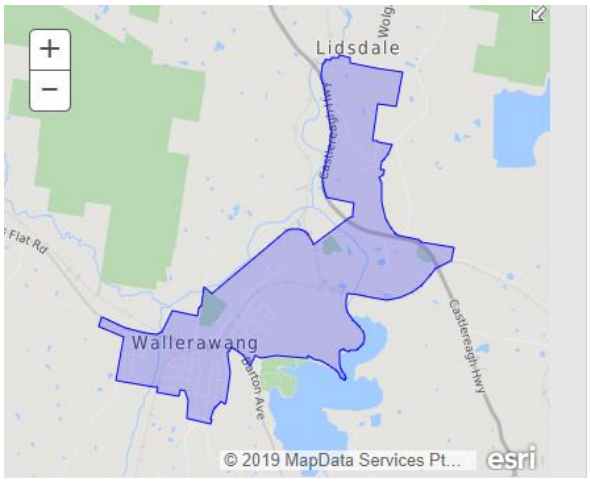
Ground and surface water	No changes to the existing water management system will be required.	No additional or cumulative effects predicted, based on described approach. Consequently, no material economic effects assessed for the proposed modification.
Air quality	It is considered that the proposed modification will not significantly change air quality impacts from those currently generated by the facility (SLR 2012, referenced in EA for this modification [2019:22]).	As the operations (including construction/mobilisation and demobilisation stages) are consistent with those approved under DA 08_0223, no additional or cumulative impacts are considered likely. Consequently, no material economic effects assessed for the proposed modification.
Greenhouse gas emissions	No commentary included in EA. Emissions from trains, plant and vehicle movements will occur.	As the operations (including construction/mobilisation and demobilisation stages) are consistent with those approved under DA 08_0223, no additional or cumulative impacts are considered likely. Consequently, no material economic effects assessed for the proposed modification.

5 Analysis of regional/local economic effects

5.1 Summary demographic profile

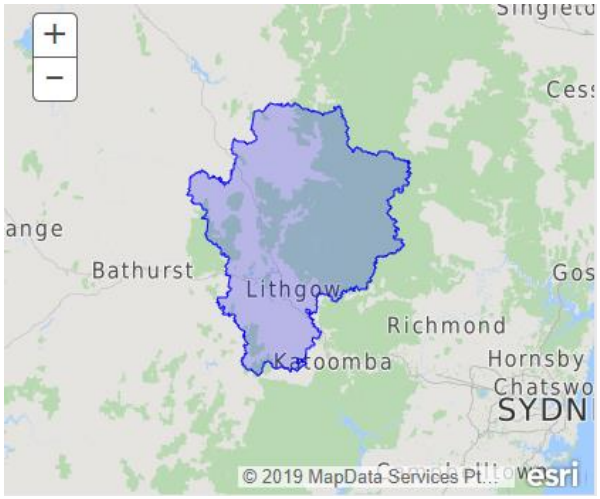
The demographic data presented in this section focuses principally on the Lithgow local government area (LGA) and the Australian Bureau of Statistics (ABS) Wallerawang Urban Centre/Locality (UCL), which are compared with corresponding NSW data in the following sections. As discussed in Section 3.1.2, it is anticipated that a significant proportion of the employment required as part of the proposed modification will originate in the local/regional area, therefore the LGA is considered as an appropriate locality from this perspective. The effects discussed in Section 4 will also principally manifest in the LGA, but more particularly in the UCL, which comprises Wallerawang and Lidsdale, the two settlements immediate to the site. Comparison with NSW is relevant from the perspective of the importance of the proposed modification in ensuring reliable generation of 15% of the State's electricity requirements. The geographic extents of the two areas are identified in Figures 1 and 2.

Figure 1: Wallerawang Urban Centre/Locality



Source: ABS 2019

Figure 2: Lithgow LGA



Source: ABS 2019

Table 1: Summary demographic profile; personal characteristics

	UCL(%)[4]	LCC (%)	NSW (%)
Population	**2,059**	**21,090**	**7,480,228**
Male	50.1	50.7	49.3
Female	49.9	49.3	50.7
Median Age	**39 years**	**45 years**	**38 years**
< 15 years	22.0	17.0	18.5
15-29 years	16.8	16.5	19.5
30- 44 years	18.6	16.2	20.6
45-64 years	26.6	28.2	25
≥ 65 years	16	22.0	15.9
Average people per household	**2.6**	**2.3**	**2.6**
Employed in coal mining	10.6	11.1	0.9
Employed in electricity supply/generation	3.4	3.6	0.4
Unemployment rate (2016 Census)[5]	7.6	7.7	6.3

The summary data demonstrates that the UCL population profile is relatively similar to that for the broader NSW population. This is most apparent in the figures for median age and household size. The most apparent differences are in the <15 years and the 15-29 years age groups, which are higher and lower respectively for the UCL. The UCL has a significantly younger population than the LGA, based on the same metrics.

The employment profiles for the UCL and LGA compared to NSW emphasise the relative scale and importance of coal mining and the electricity generation it supports in these two areas. It is evident that from the regional perspective, the proposed modification would support existing employment levels and also create a short-term increase in available work in the region, as discussed in detail in Section 3.

As was outlined in Section 3.1.2, businesses either based in Lithgow LGA (e.g. civil contractors, manufacturers/fabricators) or with operations in the region (e.g. rail service provider) will also benefit over the duration of project works and/or operations. Although the downstream effects of these stimuli will be limited by their scale and short duration and the potential for this work to simply be a substitute for alternative work, they represent a net injection of additional activity into the regional economy.

5.2 Other socioeconomic effects

As is the case with the regional effects noted in Section 4 and economic effects discussed in this section, other socioeconomic effects, such as those relating to employee households' ability to engage in the community and economy, will be of brief duration. From this perspective, these effects are also likely to be of little material importance in the longer-run context of ongoing operations at Lidsdale Siding, Centennial's mines in the region and MPPS.

[4] Highlighted data excepted.
[5] There are more recent data for larger areas but not for small areas such as the UCL. Therefore, 2016 data are presented for all areas in order to allow a valid point-in-time comparison.

5.3 Stakeholder consultation matters

As noted in Section 4.1.3, EMM's noise assessment reports that there has been one isolated (and specific) noise complaint in relation to operations at Lidsdale Siding during the term of the current approval. Furthermore, the community is reported as being generally supportive of operations at the site, recognising the economic importance of its role in the area.

The Centennial Group Manager, Stakeholder Engagement (GMSE) conducted direct consultation in relation to the proposed modification with a number of local stakeholders during May 2019. A Social Impact Assessment prepared by the GMSE indicated that generally, stakeholders are supportive of aspects of the proposed modification, from the perspectives of providing activity in the area, which promotes security of properties in the immediate surrounds of the site, and the continuing economic activity the site contributes to, particularly in terms of employment. Other stakeholders were generally ambivalent towards the proposed modification, on the basis that the operations are consistent with the established use of the site.

The major concern raised by stakeholders was trains blocking the level crossing on Main Street, Wallerawang, as discussed in Section 4.2. These stakeholders were advised of the mitigatory effects of the proposed operational approach, in particular that unloading operations will not be conducted on the same days as the approved loading operations. Centennial will also install notification sign advising when trains will be accessing the facility and if delays are expected. Stakeholders who raised this issue were generally satisfied with this aspect of the proposed modification.

6 Conclusion

The proposed modification involves very brief periods of mobilisation/establishment and demobilisation and potential operations contingent on conditions as described in the TARP (Annexure 1). From the perspective of assessing the cost and/or benefit of particular effects likely to result from the proposed modification, these are limited in terms of their likelihood, scale and duration. This is particularly relevant in the context of the existing operational approvals for the site.

All works relating to the proposed modification will be contained on the existing footprint. Operations are to be conducted using specific strategies to reduce impacts, in particular noise, which is considered the greatest possible source of effects on the community. With these mitigation measures deployed, it is considered that the community will not experience any greater effects than may already be generated by the site. As has been identified, the currently approved operations will not be conducted simultaneously (i.e. on the same day) with those proposed. Consequently, effects may be reduced over the duration of the proposed modification.

In summary, as operations under the proposed modification are contingent on activation of the TARP, any required operations are likely to be episodic and of brief duration. The application of existing mitigation measures and the introduction of additional mitigation

initiatives collectively act to reduce the likely effects on the community and other stakeholders. Taking these matters into consideration, on balance it is assessed that local/regional benefits and costs are unlikely to be material. A material broader benefit will be supported by the proposed modification, to the extent that it will secure fuel supply for generation of 15% of the State's electricity requirement.

References

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EMM Consulting (2019a): Lidsdale Rail Siding: Noise assessment. May 2019

EMM Consulting (2019b): Lidsdale Siding; Environmental assessment for modification of development consent 08_0223. May 2019.

Energy Australia website (2019)
< https://www.energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station>

Annexure 1

Trigger action response plan for rail unloading activities

Operations	Trigger	Action and response
Typical (i.e. rail loading)	Coal stockpiles at MPPS are greater than 400,000 t.	No action or response required – continue typical operations.
	Forecast coal stockpiles expected to remain at, or above, 400,000 t.	No action or response required – continue typical operations.
Emergency (i.e. rail unloading required)	Coal stockpiles at MPPS are forecast to fall below 400,000 t for two consecutive months.	Procure temporary rail unloading infrastructure and commence rail unloading activities. Notify DPE of intent to commence temporary rail unloading activities.

Notes: Rail unloading activities will continue until coal stockpiles at MPPS are greater than 400,000 t and the forecast coal stockpile is likely to remain above 400,000 t for a six-month period.

Annexure 2: Excerpt from 2012 economic assessment:- noise effects

Impact	Environmental Assessment Commentary	Benefits	Costs	Mitigation/treatment
Noise and vibration	The proposed development will remove most of the current major noise sources from the site. If the type of train proposed for the additional movements are the same as currently used, the maximum sound levels and nature of the train sound will not change. Reductions in total noise emissions are expected	Reduced noise from plant operations. Conveyor operations will produce less noise relative to present operations. Decrease (benefit) estimated at ≈ -2 to -6dB. Estimate of benefit: ≈$150 - $1,176 per affected property per year.	Construction-related noise: Period of construction ≈+ 16dB Assuming construction period of 1 year, total estimate of cost for project: ≈ $1,200 - $3,136 per affected property. Possible additional noise for individual train movements ≈ 4dB to 10dB.	Operational model sufficient to mitigate impacts; removes use of FELs on train loading Specific design elements and operations protocols to reduce train noise. Vegetation buffers/screens will further reduce operational noise.

Appendix D

Biodiversity development assessment report waiver request

LIDSDALE SIDING MODIFICATION 1

BDAR Waiver Request

144273
Lidsdale Siding MOD 1
14 June 2019

rpsgroup.com

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
1	Draft for client review	Arne Bishop	Shelomi Doyle	Arne Bishop	12/06/2019

Approval for issue

Arne Bishop  12 June 2019

Prepared by:

RPS

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Prepared for:

Centennial Coal

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Contents

Appendices

1 PROPOSAL OVERVIEW

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services Project (WCS) to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow within the Lithgow Local Government Area (LGA) of New South Wales (NSW).

The facility operates under development consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by the Department of Planning and Environment (DPE). The original consent has since been declared a State Significant Development (SSD) under clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

Ivanhoe Coal is seeking to modify conditions 7 and 8 of Schedule 2 of the consent pursuant to Section 4.55(2) of the EP&A Act to allow for:

- receival and unloading of one coal laden train (nominal net tonnage of up to 3,900 tonnes (t) per train) each day (Monday to Saturday between 7:00 am-6:00 pm, and Sunday between 8:00 am-6:00 pm); and
- transfer of coal received via rail to the overland conveyor for dispatch to the WCS.

This will require modification of the train loading facility to allow for the unloading of coal and also the construction of surface facilities, including a conveyor system between the existing under-rail sump, proposed stockpile area and existing overland conveyer.

This report should be read in conjunction with the Lidsdale Siding - Environmental Assessment for Modification to Development Consent 08_0223.

1.1 Proponent name and contact details

Proponent Name: Ivanhoe Coal Pty Limited

Proponent Contact: James Wearne (Group Manager of Approvals – Centennial Coal)

Proponent Contact Number: +61 (0) 2 4935 8944

Proponent Address: Centennial Coal Company Limited | Fassifern
100 Miller Road, Fassifern NSW 2283

Project ID: Ivanhoe Coal Pty Limited is proposing a modification to Lidsdale Siding development consent (08_0223), under Section 4.55(2) of the EP&A Act

1.2 Persons preparing the application

Arne Bishop of RPS prepared this BDAR Waiver Form, and a field survey was conducted by Shelomi Doyle. Arne and Shelomi are suitably qualified persons to prepare this BDAR Waiver application with Bachelor Degrees in Environmental Science and more than 3 years' experience as further elaborated below.

Arne has over 16 years' experience in the ecology sector, subsequently gaining an extensive knowledge of exotic and endemic NSW flora, fauna, ecological communities and migratory species. He conducts ecological impact assessments and monitoring programs on a daily basis. Arne is accredited under the Biodiversity Assessment Methodology (BAM). He has conducted BioBanking and BAM assessments for State Significant Infrastructure, State Significant Developments, and smaller developments, as well as EPBC offset calculations

Shelomi is an ecologist with a special focus on botany, developed in her previous positions in the horticulture industry over 10 years. This experience with both native and introduced plants has progressed into a strong knowledge of flora and vegetation communities, along with associated legislation. Shelomi's studies and career have centred around plant identification and have expanded to include a variety of flora and fauna assessment techniques, data management and reporting.

1.3 Site Details

Street Address: Wallerawang, NSW 2845

LGA: Lithgow City Council

1.4 Description of existing development site

The proposed development is situated at Lidsdale Siding within a heavily disturbed and cleared Mining Infrastructure Area (MIA).

The proposed modification of the train loading facility will be implemented within existing disturbed areas which include; the existing under-rail sump, proposed stockpile area and existing overland conveyer. The existing infrastructure areas are shown below in **Figure 1**. For the purposes of this report the proposed modification area is hereafter referred to as the 'Lidsdale Siding Assessment Area (LSAA)' which is depicted in **Figure 2**.

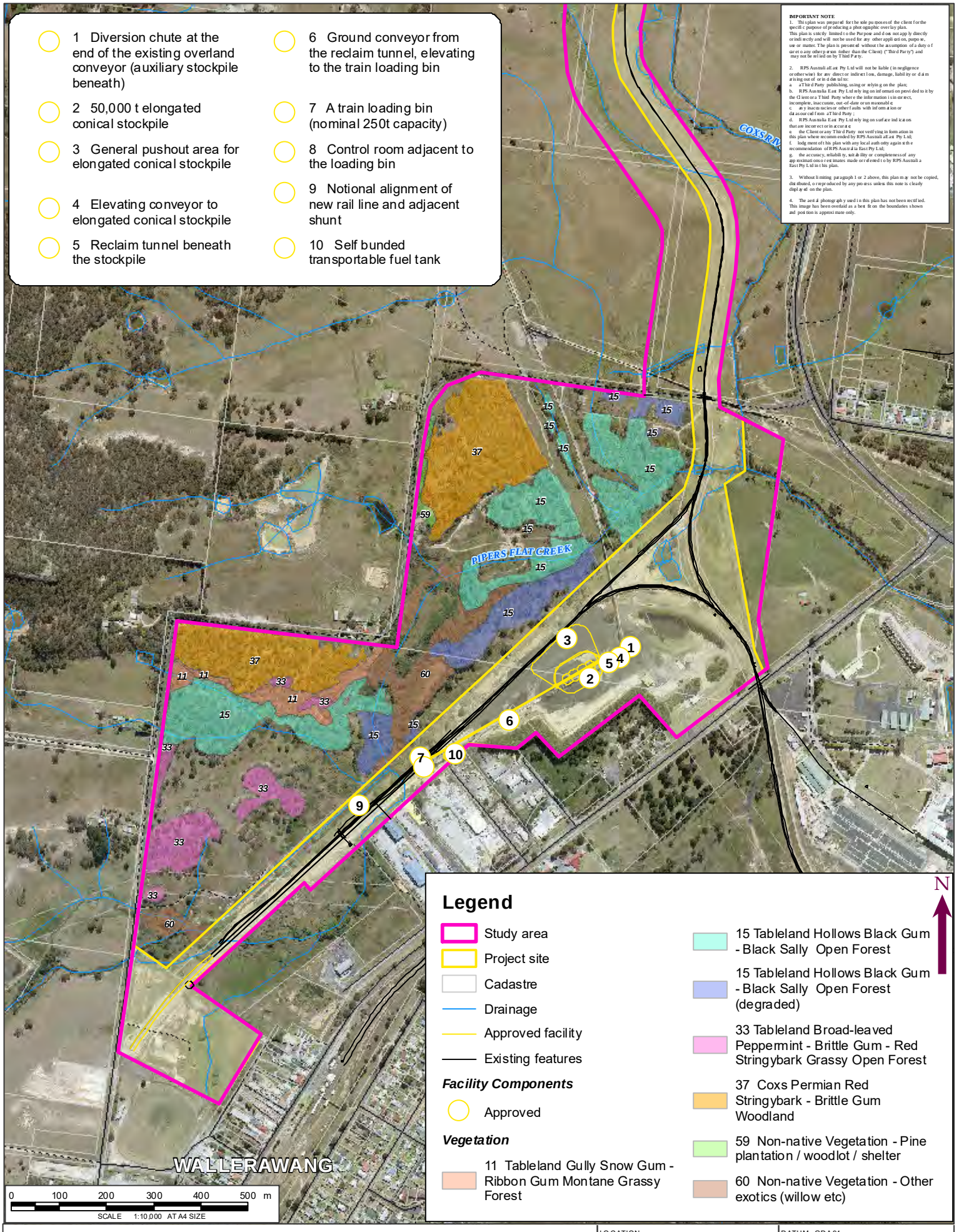

FIGURE 1: APPROVED INFRASTRUCTURE

LOCATION: LIDSDALE	DATUM: GDA94 PROJECTION: MGA Zone 56
JOB NO.: PR 144273 PURPOSE: ECOLOGY Technician: Natalie.Wood Date: 14/06/2019	Data Sources: RPS, EMM and Client

CLIENT: CENTENNIAL COAL

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
Unit 2A, 45 Fitzroy Street, Carrington, NSW, Australia, 2294 PO Box 120, Carrington, NSW, 2294
T: 02 4940 4200 F: 02 4940 4299 www.rpsgroup.com.au

Path: S:\Centennial\All Jobs\144273 Charbon and Airly MOD- BDAR Waivers\10 - Drafting\Arcgis Map Documents\Eco\Lidsdale\144273 Lidsdale Figure 1 Approved A A4 20190614.mxd

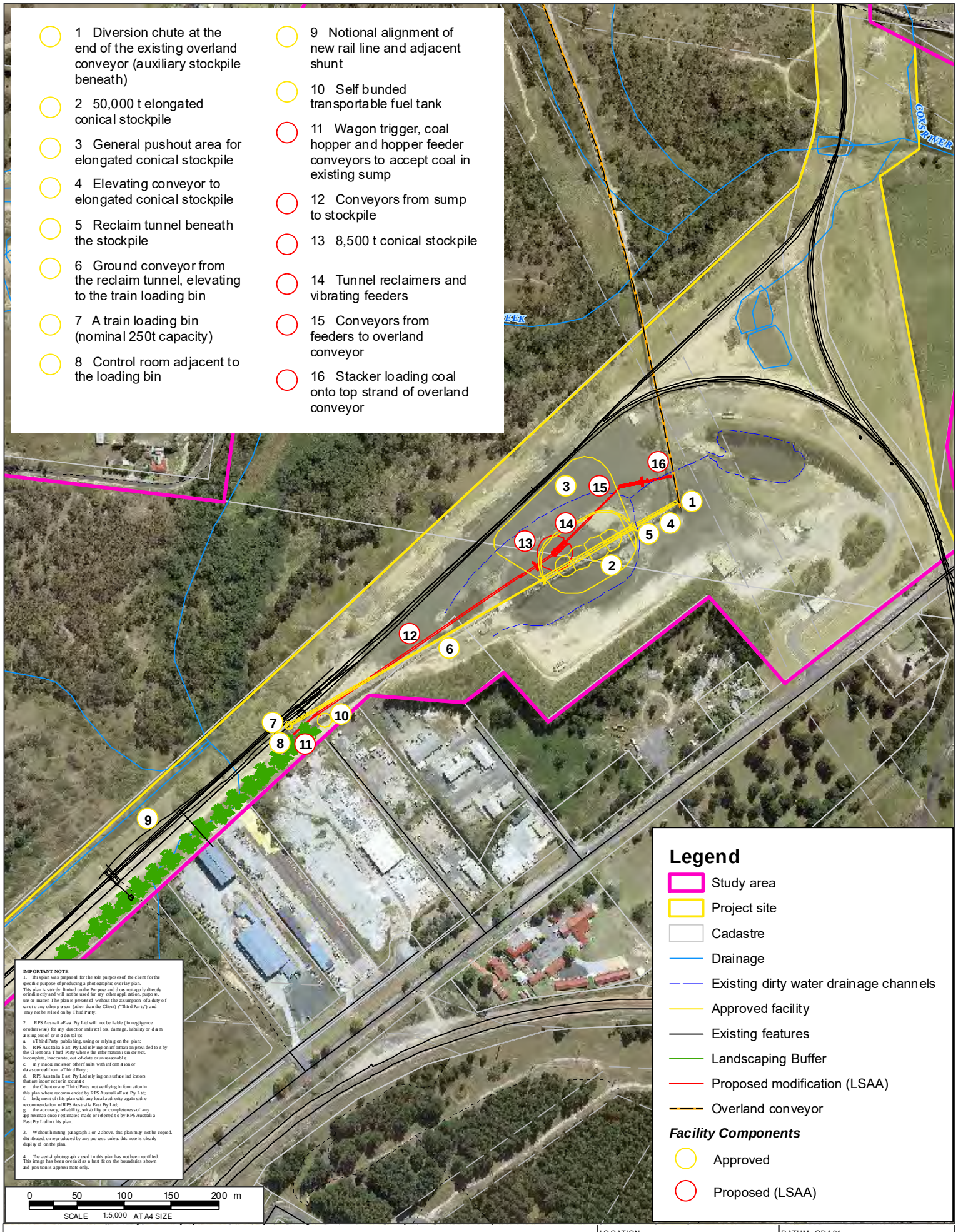

FIGURE 2 : PROPOSED MODIFICATION

LOCATION: LIDSDALE	DATUM: GDA94 PROJECTION: MGA Zone 56
JOB NO.: **PR 144273** PURPOSE: ECOLOGY Technician: Natalie.Wood Date: 14/06/2019	Data Sources: RPS, EMM and Client

CLIENT: CENTENNIAL COAL

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
Unit 2A, 45 Fitzroy Street, Carrington, NSW, Australia, 2294 PO Box 120, Carrington, NSW, 2294
T: 02 4940 4200 F: 02 4940 4299 www.rpsgroup.com.au

Path: S:\Centennial\All Jobs\144273 Charbon and Airly MOD- BDAR Waivers\10 - Drafting\Arcgis Map Documents\Eco\Lidsdale\144273 Lidsdale Figure 2 Proposed Mod A A4 20190614.mxd

2 IMPACTS ON BIODIVERSITY VALUES

Recent native vegetation mapping and field survey data was reviewed in combination with aerial imagery to analyse the extent of vegetation cover. The NSW Vegetation Types database was used as the standard for classifying native vegetation cover (OEH 2019).

Impacts on biodiversity values are addressed in the following section of this report, as detailed in **Table 1** below.

Table 1: Impacts on biodiversity values from the proposed modification

Biodiversity Value	Meaning	Relevance	Section addressed
Vegetation abundance	Occurrence and abundance of vegetation at a particular site	NA	2.1
Vegetation integrity	Degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state	NA	2.2
Habitat suitability	Degree to which the habitat needs of threatened species are present at a particular site	NA	2.3
Threatened species abundance	Occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site	NA	2.3
Habitat connectivity	Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range	NA	2.4
Threatened species movement	Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle	NA	2.4
Flight path integrity	Degree to which the flight paths of protected animals over a particular site are free from interference	NA	2.5
Water sustainability	Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site	NA	2.6

2.1 Occurrence and abundance of vegetation within the Lidsdale Siding Mod 1 Project boundary

The LSAA lies within heavily disturbed and cleared MIA. The proposed modification of the train loading facility will operate within existing approved disturbance areas.

Field surveys conducted by an RPS Ecologist on the 11 June 2019 identified the area as primarily void of native vegetation. A few scattered areas of sparse groundcover vegetation were found to be dominated by exotic weed species of low ecological value.

2.1.1 Impact avoidance

No clearing of native vegetation is anticipated as a result of the proposed development. The proposed upgrade works in LSAA lies within a heavily disturbed MIA almost entirely void of native vegetation.

The narrow and linear nature of the proposed rail loader development allows the avoidance of native species disturbance.

As such, the likelihood of impacts on native flora and fauna as a result of the proposed modification are considered to be negligible.

2.2 Vegetation Integrity

The composition, structure and function of vegetation within the LSAA and adjacent areas has been subject to a history of disturbance and land clearing greatly altering it from a natural state.

The site has been continually used as a coal storage and rail loading facility since 1974. As such, much of the surrounding area has been subject to land degradation for 35 years. As a result, the vegetation within the LSAA persists in a cleared and highly disturbed state.

2.3 Habitat Suitability and Threatened Species Abundance

The CAA for the modification lies within heavily disturbed and cleared MIA. The proposed train unloading system will operate within existing disturbed areas.

No threatened species or ecological communities are considered likely to occur within the LSAA. The area is void of karsts, cliffs, rocks and other geological features of significance. As such, there are no anticipated potential impacts on these habitat features.

Impacts of the proposed modification will be limited to;

- Minor land disturbance during construction and operation.
- Minor dust emissions during construction and operation.
- Vehicle and plant access to and within the site proximity.

The proposed modification aims to mitigate these impacts by implementing the following controls;

- Construction works to occur during daylight hours to minimise noise disturbance.
- Dust suppression and sediment transport will be managed throughout construction duration.
- Vehicles and plant equipment are to remain on existing roadways and tracks where practicable, a speed limit of 20km/hr will apply during construction to ensure the risk of fauna strike is adequately managed.

2.4 Habitat Connectivity and Threatened Species Movement

The LSAA for the modification lies within an existing rail loading facility which is heavily disturbed and cleared MIA. This area is largely isolated from remnant vegetation and ecological communities.

As aforementioned, field surveys identified the area is primarily void of native vegetation. A few scattered areas of sparse groundcover vegetation were found to be dominated by exotic weed species of low ecological value. during the site visit on 11 June 2019.

Due to the isolated and disturbed nature of the LSAA and lack of significant vegetation, the installation of proposed infrastructure is not considered to contribute to a loss of habitat connectivity of remnant vegetation or fragment the movement of threatened species across their range.

2.5 Fauna Flight Path Integrity

Protected species flight paths are not likely to occur over the LSAA. Due to the site's disturbed nature and isolation from remnant native vegetation and associated foraging habitat, it is not expected that the LSAA constitutes an active flyway or flight path for avifauna or bat species.

Large tracts of connected vegetation occur within the wider region, fauna generally travel and migrate through existing connected vegetation of higher potential foraging and roosting habitat value and minimise predation pressures.

The low-lying nature of the proposed infrastructure is not expected to present a barrier to the movement of native fauna or impact potential flight path integrity. Although impacts upon fauna flight path integrity are not anticipated, the following controls will be implemented;

- Construction works to occur during daylight hours to minimise noise disturbance.
- Dust suppression and sediment transport will be managed throughout construction duration.
- Vehicles and plant equipment are to remain on existing roadways and tracks where practicable, a speed limit of 20km/hr will apply during construction to ensure the risk of fauna strike is adequately managed.

2.6 Water Sustainability

New conveyors and the additional stockpile are within existing operational areas that are serviced by the water management system under an approved Water Management Plan (WMP). The system includes culverts that capture dirty water from the operational area of the site and divert it to a dirty water dam.

The WMP details erosion and sediment control measures undertaken during the construction of the original project. The approved Erosion and Sediment Control Plan will be updated to reflect the construction of the proposed modification.

Surface water impacts associated with construction are limited and are associated with minor works required to construct footings and the assembly of new equipment. As the project area is generally unsealed, erosion and sediment impacts are predicted.

Excavation associated with construction of the proposed modification is negligible, with no groundwater expected to be intersected during construction.

Consequently, the proposed modification is not expected to cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or threatened ecological communities.

3 CONCLUSION

The LSAA for the modification lies within an existing rail loading facility which is heavily disturbed and cleared MIA. A few scattered areas of sparse groundcover vegetation were found to be dominated by exotic weed species of low ecological value. As such, clearing of native vegetation is not expected as a result of the proposed development

No threatened species or ecological communities or their habitat were identified within the LSAA. As such, the likelihood of impacts on native vegetation as a result of the proposed modification is considered negligible.

Due to the isolated and disturbed nature of the site and lack of significant vegetation, the proposed modification is not considered to contribute to a loss of habitat connectivity of remnant vegetation or communities or fragment the movement of threatened species across their range.

The proposed modification is not expected to impact upon the development or movement of threatened species that maintains their lifecycle or cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or threatened ecological communities. The proposed infrastructure is not expected to present a barrier to the movement of native fauna or impact potential flight path integrity.

The LSAA is void of karsts, cliffs, rocks and other geological features of significance. As such, there are no anticipated impacts on these potential habitat features.

4 REFERENCES

DEC (2006) The Vegetation of the Western Blue Mountains. Unpublished report funded by the Hawkesbury-Nepean Catchment Management Authority. Department of Environment and Conservation NSW, Hurstville.

OEH (2019) Threatened Species Wildlife Atlas Database. Office of Environment and Heritage, NSW State Government.

DoEE (2019) Environmental Protection and Biodiversity Conservation Act 1999, protected matters search tool, Department of Environment and Energy, Commonwealth Government of Australia, Accessed online June 2019.

Appendix A

Site Photographs

Appendix E

Stakeholder correspondence

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W: www.centennialcoal.com.au

31 May 2019

Mr Steve O'Donoghue
Acting Director - Resource and Energy Assessments
NSW Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Mr O'Donoghue

Re: Lidsdale Coal Loader (08_0223) Modification

Background

Springvale Mine is the primary source of coal for the EnergyAustralia owned Mount Piper Power Station. In early 2019, due to continued lower yields from the Springvale Mine being experienced since mining commenced in the southern longwall blocks, a forecast shortfall in coal supply to Mount Piper Power Station was identified. As a result, Centennial Coal conceptualised and implemented supplementary coal supply measures to ensure coal demands by Mount Piper the Power Station could be met.

In implementing an immediate and short-term measure, Centennial Coal sought a modification to the Clarence Colliery development consent to:

- increase total allowable coal haulage off-site from the Clarence Colliery by road from 200,000 tonnes (t) to 300,000 t for a limited period of time up to 31 December 2020; and
- increase total allowable coal haulage off-site from the Clarence Colliery to the west by road from 100,000 t to 200,000 t for a limited period of time up to 31 December 2020.

This supplementary coal supply measure is a short term temporary solution only and is not considered a suitable long term option to provide additional coal supplies to the Mount Piper Power Station, in the event coal supply shortfalls are experienced again in the future.

As a result, Centennial Coal has investigated other opportunities to provide supplementary coal supplies to the Mount Piper Power Station, should these shortfalls be experienced again.

The most viable opportunity identified is to modify/upgrade Centennial Coal's Lidsdale Coal Loading facility to allow coal to be received via rail from other Centennial Coal mining operations. The proposed upgrade / modifications would allow coal to be unloaded, handled and transported offsite to the Mount Piper Power Station using the exiting overland conveyor system via the Springvale Coal Services Site.

A modification to the Lidsdale Coal Loader development consent (SSD 08_0223) would be required to facilitate this activity. Details on the modification elements proposed by Centennial to the Lidsdale Coal Loader development consent to enable this activity are outlined below.

Lidsdale Coal Loader Facility

Centennial Ivanhoe Pty Limited (Centennial Ivanhoe), a subsidiary of Centennial Coal, own and operate the Lidsdale Coal Loader Facility located adjacent to the Wallerawang Power Station, approximately 12 kilometres north-west of Lithgow in the Lithgow Local Government Area (LGA). Development consent for the Lidsdale Coal Loader Facility was issued on 3 May 2013 by the Planning Assessment Commission. The development consent was granted as a transitional Part 3A project under Part 4 of the EP&A Act. The consent has since been transitioned to a State Significant Development.

The Lidsdale Coal Loader development consent authorises:

- The construction and operation of additional infrastructure to support the coal loading operations,
- The receipt of up to 6.3 Mtpa of coal from the Springvale Coal Services Site via overland conveyor; and
- The transport of coal from site by rail.

Proposed Modification

Centennial Ivanhoe is seeking to modify the Lidsdale Coal Loader development consent to allow the delivery of coal to the facility by train (one train per day); coal unloading, handling and stockpiling; and coal dispatch.

Coal dispatched from the Lidsdale Coal Loader Facility will be conveyed to the Springvale Coal Services Site utilising the existing overland conveyor system, where it will be handled and transported on to the Mount Piper Power Station in accordance with the activities approved by the Western Coal Services Project development consent (SSD 5579).

Activities authorised under the Western Coal Services Project development consent (SSD 5579) will remain unchanged.

Additional temporary infrastructure will be required to be installed and operated at the Lidsdale Coal Loader site to facilitate the proposed train unloading and coal handling activities however it is noted that:

- The operation of additional infrastructure will be within existing disturbed areas.
- The coal stockpiling will be within the footprint of existing approval coal stockpiles.
- No additional vegetation clearing will be required.
- No changes to the existing water management system will be required.
- Proposed coal unloading operations and train loading operations (approved) will not be undertaken simultaneously so there will be no cumulative impacts from these combined activities.

The train unloading activities would only be implemented in an emergency event, where on site coal stockpiles at the Mount Piper Power Station are reduced to a point where continued electricity generation supplies are threatened. The activities at Lidsdale Coal Loader Facility would only be undertaken until a suitable margin of coal stockpile at Mount Piper is re-established and maintained.

Environmental Assessment

A Statement of Environmental Effects (SEE) will be prepared to support the modification application to the Lidsdale Coal Loader development consent. The key issues to be assessed as part of the proposed modification will be noise and, to a lesser degree, dust.

Preliminary noise modelling of the proposed activities has been undertaken, which indicates that the proposed rail unloading and associated coal handing activities can be undertaken with negligible change to the existing noise environment. A range of management and mitigation measures have been identified to reduce noise below current assessed operational levels. These mitigation measures include:

- Only undertaking rail unloading and coal handling during daytime hours (Monday to Saturday between 7am and 6pm, and Sunday between 8am to 6pm).
- Restricting mobile equipment to a single dozer or front end loader.
- Conducting specialised train operations with the aim to reduce noise emissions from wagon noise and eliminate noise from wagon stretch or come together/bunching.

As such, a limited noise assessment is proposed to be prepared as part of the SEE to present the outcomes of noise investigations and demonstrate that noise levels from the proposed modified operations are equal to or less than current approved operational noise levels for the site.

In addition to the noise assessment, a semi-quantitative qualitative review of potential changes to air quality impacts as a result of unloading the coal and handling will also be provided in the body of the SEE along with a socio-economic effects analysis of the proposed modification.

The SEE will also define through a Trigger Action Response Plan the events where the temporary rail unloading infrastructure will be installed and operated and when these activities would subsequently cease.

Consultation

Consultation with key surrounding sensitive receptors, the Wallerawang Progress Association, the Western Region Community Consultative Committee and the Lithgow City Council has commenced and will be finalised as part of the preparation of the SEE.

Approval Pathway

Development consents may be modified under Section 4.55 of the EP&A Act provided that the development as modified will be substantially the same development as the development for which consent was originally granted.

The proposed modification, of unloading a single coal laden train, would be within the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries, and thus is substantially the same development as the original project.

As the proposed modification; will not require any additional surface disturbance or vegetation clearing; will operate within the existing operational footprint of the Lidsdale Coal Loader site, will comply with existing air quality criteria; have a negligible change to the noise environment, and will only be operational for limited periods of time during emergency coal supply shortfall events. Centennial Coal considers that the modification will have a minimal environmental impact.

Regardless, Centennial Coal considers an appropriate approval pathway would be a modification to the Lidsdale Coal Loader development consent pursuant to Section 4.55(2) of the Environmental EP&A Act.

Conclusion

Centennial Coal is seeking to modify the Lidsdale Coal Loader development consent to facilitate the supply of supplementary coal to the Mount Piper Power Station during emergency coal supply shortfall events. These events are proposed to be clearly defined within a Trigger Action Response Plan as part of the SEE. It is proposed to modify the Lidsdale Coal Loader development consent pursuant to Section 4.55(2) of the EP&A Act to enable to proposed coal unloading and handling activities. The proposed scope of assessments to support the Statement of Environmental Effects has been detailed above. Centennial Coal is seeking confirmation from the Department of Planning & Environment on the proposed approval pathway for the modification and level of assessment proposed to support the SEE.

Please contact me on my mobile 0407 207 530 if you have any questions or require any further information in regards to this matter.

Yours sincerely

James Wearne
Group Approvals Manager

Mr James Wearne
Group Approvals Manager
Centennial Coal Company Limited
PO BOX 1000
TORONTO NSW 2283

06/06/2019

Dear Mr Wearne

Lidsdale Coal Loader Modification 1 (08_0223 MOD 1)

I refer to your letter, dated 31 May 2019, regarding a proposed modification to the Lidsdale Coal Loader Project.

The Department has reviewed the information provided, and I can confirm that the appropriate approval pathway for the modification application would be section 4.55(2) of the *Environmental Planning and Assessment Act 1979*.

The Department considers that in addition to the issues identified in your letter to be assessed in the Modification Report, the following matters should also be included:

- **Biodiversity impacts** - evidence that there would not be any increase in impacts to biodiversity values using Table 2 of the attached BDAR Waiver Fact Sheet for reference;
- **Social and economic impacts** – describe any social and economic consequences (and environmental impacts, if applicable) of the proposal not going ahead, including any power generation related impacts;
- **Alternatives** – advise what alternatives have been considered for providing coal to Mount Piper Power Station during 'emergency coal supply' situations and why the proposed modification is the preferred option;
- **Traffic and transport impacts** – describe the traffic and transport impacts associated with the proposed rail operation, in comparison to the existing (approved) train loading operations; and
- **Consultation outcomes** – outline how the outcomes of proposed stakeholder consultation have been incorporated into the proposed modification.

If your proposal is likely to have a significant impact on matters of National Environmental Significance, it will require an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Commonwealth Department of the Environment to determine if an approval under the EPBC Act is required (http://www.environment.gov.au or 6274 1111).

If you have any questions, please contact Andrew Rode, who can be contacted on 02 8289 6744 or at andrew.rode@planning.nsw.gov.au.

Yours sincerely
APPROVERSIGNATUREANDDETAILSWILLBEINSERTEDHERE

Enclosed: Fact sheet – Biodiversity development assessment report waiver

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8 May 2019

Email: andrew.muir@lithgow.nsw.gov.au

Mr Andrew Muir
Director Economic Development and Environment
Lithgow City Council
PO Box 19
180 Mort Street
Lithgow NSW 2790

Dear Mr Muir

Re: Lidsdale Siding DA 08_0223 Proposed Modification

Background

Springvale Mine is the primary source of coal for the EnergyAustralia owned Mount Piper Power Station. Due to continued lower yields from the Springvale Mine being experienced since mining commenced in the southern longwall blocks, a shortfall in coal supply to Mount Piper Power Station is predicted over the next 12 months. To compensate for the predicted shortfall in coal supply from the Springvale Mine, temporary supplementary coal supply arrangements are required. Centennial Coal (Centennial) has identified two feasible options to supplement the shortfall in coal supply over the next 12 months being:

- Option 1 - An increase in coal supplied to the Mount Piper Power Station by truck from the Clarence Colliery; and
- Option 2 - Utilisation of the Lidsdale Coal Loader Facility to unload coal from trains with the coal supplied to the Mount Piper Power Station via the Springvale Coal Services Site.

Centennial has already submitted an application to the Department of Planning and Environment for Option 1 however this option alone is not sufficient to meet the projected coal supply shortfall. As such, Centennial are proposing to also modify the Lidsdale Coal Loader development consent (DA 08_0223) to enable the implementation of Option 2 as another alternative coal supply option. Details on this proposed modification are provided below.

Lidsdale Coal Loader Facility

Centennial Ivanhoe Pty Limited (Centennial Ivanhoe), a subsidiary of Centennial Coal, own and operate the Lidsdale Coal Loader Facility located adjacent to the Wallerawang Power Station, approximately 12 kilometres north-west of Lithgow in the Lithgow Local Government Area (LGA). Development consent for the Lidsdale Coal Loader Facility was issued on 3 May 2013 by the Planning Assessment Commission. The development consent was granted as a transitional Part 3A project under Part 4 of the EP&A Act. The consent has since been transitioned to a State Significant Development (SSD 2709).

The Lidsdale Coal Loader development consent authorises:

- The construction and operation of additional infrastructure to support the coal loading operations,

Centennial Coal Company Limited ABN 30 003 714 538

- The receipt of up to 6.3 Mtpa of coal from the Springvale Coal Services Site via overland conveyor; and
- The transport of coal from site by rail.

Proposed Modification

Centennial Ivanhoe is seeking to modify the Lidsdale Coal Loader development consent to allow the delivery of coal to the facility by train (one train per day); coal unloading, handling and stockpiling; and coal dispatch. Coal dispatched from the Lidsdale Coal Loader Facility will be conveyed to the Springvale Coal Services Site utilising the existing overland conveyor system, where it will be handled and transported on to the Mount Piper Power Station in accordance with the activities approved by the Western Coal Services Project development consent (SSD 5579). Activities authorised under the Western Coal Services Project development consent (SSD 5579) and will remain unchanged.

Additional temporary infrastructure will be required to be installed and operated at the Lidsdale Coal Loader site to facilitate the proposed train unloading and coal handling activities however it is noted that:

- The operation of additional infrastructure will be within existing disturbed areas.
- The coal stockpiling will be within the footprint of existing approval coal stockpiles.
- No additional vegetation clearing will be required.
- No changes to the existing water management system will be required.
- Proposed coal unloading operations and train loading operations (approved) will not be undertaken simultaneously so there will be no cumulative impacts from these combined activities.

The train unloading and associated operation of temporary infrastructure is proposed to be carried out for a period of approximately 12 months (up to 30 June 2020).

The proposed modification does not require changes to the amount of coal handled by the Lidsdale Coal Loader Facility, an expansion of the developed or increase in the cleared portion of the project site.

Environmental Assessment

A Statement of Environmental Effects (SEE) will be prepared to support the modification application to the Lidsdale Coal Loader development consent. The key issues to be assessed as part of the proposed modification will be noise and, to a lesser degree, dust.

Preliminary noise modelling of the proposed activities has been undertaken which indicates that the proposed rail unloading and associated coal handing activities can be undertaken within negligible change to the existing noise environment. A range of management and mitigation measures have been identified for implementation which will reduce noise below current assessed operational levels. These mitigation measures include:

- Only undertaking rail unloading and coal handling during daytime hours (Monday to Saturday between 7am and 6pm, and Sunday between 8am to 6pm).
- Restricting mobile equipment to a single dozer or front end loader.
- Implementing specialised train operations with the aim to reduce noise emissions from wagon noise and eliminate noise from wagon stretch or come together/bunching.

Once the SEE has been finalised, it will be submitted to the Department of Planning and Environment for assessment and determination. Centennial is targeting to submit the SEE to the Department of Planning and Environment before the end of May 2019.

Conclusion

Centennial Coal is seeking to modify the Lidsdale Coal Loader development consent to facilitate the supply of supplementary coal to the Mount Piper Power Station. A SEE will be prepared to support the modification application and be submitted to the Department of Planning and Environment for assessment and determination. If Lithgow City Council have any questions or concerns in regards to the proposed modification application, please feel free to contact me directly on 0407 207 530 or email james.wearne@centennialcoal.com.au.

Yours sincerely

James Wearne
Group Approvals Manager