



**Carmichael Coal Mine and Rail Project
Supplementary Environmental Impact Statement**

Volume 4, Appendix C1 – Project Approvals

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Abbreviations and Glossary

Abbreviation	Meaning
Adani	Adani Mining Pty Ltd
CHMP	Cultural Heritage Management Plan
Cth	Commonwealth Government of Australia <i>Note – all legislation cited is Qld Government legislation, unless otherwise indicated</i>
CHPP	Coal Handling Processing Plant
CG's report	A report prepared by the Coordinator-General under section 35(3) of the <i>State Development and Public Works Organisation Act 1971</i> , evaluating an Environmental Impact Statement
DAFF	Department of Agriculture, Fisheries and Forestry
DEHP	Department of Environment and Heritage Protection
DNRM	Department of Natural Resources and Mines
DotE	Department of the Environment (formerly known as Department of Sustainability, Environment, Water, Population and Communities (Cth))
DTMR	Department of Transport and Main Roads
EA	Environmental Authority, as defined in the <i>Environmental Protection Act 1994</i>
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP Act	<i>Environmental Protection Act 1994</i>
EPC	Exploration Permit for Coal , as defined in the <i>Mineral Resources Act 1989</i>
EPP	Environmental Protection Policies
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
ERA	Environmentally Relevant Activity , as defined in the <i>Environmental Protection Act 1994</i>
Fisheries Act	<i>Fisheries Act 1994</i>
GL	Gigalitre
ha	Hectare

Abbreviation	Meaning
IDAS	Integrated Development Assessment System , as defined in the <i>Sustainable Planning Act 2009</i>
IESC	Independent Expert Scientific Committee
ILUA	Indigenous Land Use Agreement
IRC	Isaac Regional Council
NC Act	<i>Nature Conservation Act 1992</i>
ML	Mining Lease , as defined in the <i>Mineral Resources Act 1989</i>
MIA	Mine Infrastructure Area
MLA	Mining Lease application , as defined in the <i>Mineral Resources Act 1989</i>
MNES	Matters of national environmental significance, as defined in the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
MWAV	Mine worker accommodation village, which will also accommodate Project (Rail) and Project (Offsite Infrastructure) workforces
MR Act	<i>Mineral Resources Act 1989</i>
km	kilometre
kV	kilovolt
MW	Megawatt
PVMP	Property Vegetation Management Plan
PMAV	Property Map of Assessable Vegetation
Qld	Queensland
the Project	Carmichael Coal Mine and Rail Project, including the Project (Mine), the Project (Offsite Infrastructure) and the Project (Rail)
the Project (Mine)	A greenfield coal mine over EPC 1690 and the eastern portion of EPC 1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities.

Abbreviation	Meaning
the Project (Offsite Infrastructure)	<p>Project (Offsite Infrastructure) means the following activities off the Project (Mine):</p> <ul style="list-style-type: none"> ▶ workers accommodation village and associated facilities ▶ permanent airport site ▶ industrial area ▶ water supply infrastructure ▶ quarries.
the Project (Rail)	<p>A greenfield rail line connecting the Project (Mine) to the existing Goonyella and Newlands rail systems to provide for the export of coal via the Port of Hay Point (Dudgeon Point expansion) and the Port of Abbot Point, respectively, including:</p> <ul style="list-style-type: none"> ▶ Rail (west): a 120 km dual gauge portion running west from the Mine site east to Diamond Creek ▶ Rail (east): a 69 km narrow gauge portion running east from Diamond Creek connecting to the Goonyella rail system south of Moranbah.
SARA	State Assessment and Referral Agency
SCL	Strategic Cropping Land , as defined in the <i>Strategic Cropping Land Act 2011</i>
SCL Act	<i>Strategic Cropping Land Act 2011</i>
SCR	State Controlled Roads , as defined in the <i>Transport Infrastructure Act 1994</i>
SDA	State Development Area , as defined in the <i>State Development and Public Works Organisation Act 1971</i>
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
SEIS	Supplementary Environmental Impact Statement
SMP	Species Management Program to meet requirements of the <i>Nature Conservation Act 1992</i>
SP Act	<i>Sustainable Planning Act 2009</i>
SP Regulation	<i>Sustainable Planning Regulation 2009</i>
TMP	Threatened Species Management Program
VM Act	<i>Vegetation Management Act 1999</i>
Water Act	<i>Water Act 2000</i>
WSSR Act	<i>Water Supply (Safety and Reliability) Act 2008</i>

1 Introduction

1.1 Project overview

Adani Mining Pty Ltd (Adani) is proposing to develop the Carmichael Coal Mine and Rail Project (the Project), which comprises the following components:

- ▶ the Project (Mine): a greenfield coal mine over the Exploration Permit for Coal (EPC) 1690 and the eastern and northern portions of EPC 1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities
- ▶ the Project (Rail): a greenfield rail line connecting to mine to the existing Goonyella and Newlands rail systems to provide for the export of coal via the Port of Hay Point (Dudgeon Point expansion) and the Port of Abbot Point, respectively including:
 - Rail (west): a 120 kilometre (km) dual gauge portion running west from the Mine site east to Diamond Creek
 - Rail (east): a 69 km narrow gauge portion running east from Diamond Creek connecting to the Goonyella rail system south of Moranbah
- ▶ the Project (Offsite Infrastructure), which consists the following infrastructure off the Project (Mine) site:
 - a workers accommodation village and associated facilities
 - a permanent airport site
 - an industrial area
 - water supply infrastructure
 - the use of five (5) local quarries to extract quarry materials for construction and operational purposes
 - impacts to roads.

The Project is located within the Isaac Regional Council (IRC) area, with the exception of 167 ha of the north-western corner of the EPC 1690, which is located within the local government area of Charters Towers Regional Council.

1.2 Description of this report

This report intends to identify the relevant approvals for all components of the Project and provide a clear understanding of Adani's approval requirements.

Adani is actively working to reduce the complexity and administrative burden associated with the large number of approvals required for the Project. This report is provided in support of this SEIS Volume 1, Chapter 4 (Project approvals) and updates the EIS, Volume 4, Appendix D (Project Approvals and Planning Assessment) from December 2012. This report should be read in conjunction with that document.

The updated information in this report is based on:

- ▶ responding to submissions made about project approvals in the EIS during the public consultation period from December 2012 to February 2013
- ▶ updated information about the project that impacts on approvals
- ▶ requests for information from the Coordinator-General under section 35(2) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act)
- ▶ changes to legislation following submission of the EIS that impact on the project, such as the *Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012*.

This report is supported by the following SEIS appendices:

- ▶ Volume 4, Appendix C2 (Mine approval applications) that includes information about Adani's mine approvals
- ▶ Volume 4, Appendix C3 (Rail approval applications) that includes information about applications to construct and operate a railway and supporting activities
- ▶ Volume 4, Appendix C4 (Offsite Infrastructure approval applications) that includes information about applications for offsite infrastructure activities such as worker accommodation and industrial precincts
- ▶ Volume 4, Appendix C5 (Quarry approval applications) that includes information about applications for the five (5) quarries required to support the Project.

This report does not address tier 3 approvals such as those under the *Building Act 1975* or the *Plumbing and Drainage Act 2004*.

In addition to applications, Adani has drafted suggested conditions in this SEIS, Volume 4, Appendix C6 (Draft proposed conditions). These conditions are based on current best practice environmental management.

In this report, project approvals are described in terms of the following components:

- ▶ overarching legislation – section 2
- ▶ approvals for the Project (Mine) – section 3
- ▶ approvals for the Project (Rail) – section 4
- ▶ approvals for the Project (Offsite Infrastructure) – section 5.

Section 6 of this report summarises project approval requirements and timing of applications for the Project.

1.3 Environmental Impact Assessment process

On 26 November 2010, the Project was gazetted as a “significant project” for which an EIS is required under section 26 of the SDPWO Act¹. Since the commencement of the *Economic Development Act 2012*, the Project is taken to be a “coordinated project”.

The Project also was referred to the Commonwealth Department of the Environment (DotE) (referral No. 2010/5736) and was determined to be a controlled action in January 2011, to be assessed in accordance with the bilateral agreement between the Commonwealth and Qld Governments.

Adani prepared an EIS in accordance with the Terms of Reference issued by the Coordinator-General in May 2011 (Queensland Government, 2011). See Attachment 1 for a table describing how the Terms of Reference have been met.

The EIS was submitted in December 2012 and assessed the environmental, social and economic impacts associated with developing a 60 million tonne (product) per annum (Mtpa) thermal coal mine in the northern Galilee Basin, approximately 160 km north-west of Clermont, Central Qld, Australia. The EIS also addressed the impacts of the coal being transported from the Project (Mine) to the existing Goonyella and Newlands rail systems, operated by Aurizon Operations Limited. The Project (Rail) includes coal being exported via the Port of Hay Point and the Point of Abbot Point over the 60 year mine life.

The EIS was made available for public comment from 15 December 2012 to 11 February 2013. Submissions were made by the public to the Coordinator-General during that period.

1.4 Amendments to the project impacting on project approvals

Since the EIS was released for public consultation in December 2012, parts of the Project have changed as a result of several factors, including:

- ▶ responding to feedback from landholders and other stakeholders
- ▶ working with agencies on various matters, including approvals
- ▶ additional data from exploration or investigation activities.

Broad amendments to the Project that impact on project approvals are outlined in the following table. Further detail about these amendments are located in Volumes 1 and 2, specifically the project description chapters.

¹ On 11 December 2012, the SDPWO Act was amended to change “significant projects” to “coordinated projects”. The Carmichael Coal Mine and Rail Project is a “coordinated project” under that Act.

Table 1: Project changes

Change	Rationale
Project (Mine)	
Updated Mine Plans	Additional data from the exploration programs on EPC 1690 and the eastern and northern portions of EPC 1080. The changes also respond to feedback about the EIS made by the Department of Natural Resources and Mines (DNRM) and other submitters about the Project (Mine) plans included in the EIS.
Reduced Project (Mine) life from 90 years to 60 years	Additional data from the exploration programs on EPC 1690 and the eastern and northern portions of EPC 1080.
The stock route that crosses the northern part of the Project (Mine) site is proposed to be moved, rather than closed.	The Project (Mine) plan changes mean the realignment of the stock route, as opposed to the previously proposed closure.
Project (Rail)	
Change of rail balloon loop location where it intersects with the boundary of the Project (Mine)	Consequential impact from infrastructure layout changes to the Project (Mine) plans.
Relocation of a rail construction depot – approximately 9 km east of previous location	Depot has been moved closer to quarries to reduce traffic impacts. New location is also more flood resilient.
Relocation of two (2) rail laydown areas	Minimise impacts to landholders.
Project (Offsite Infrastructure)	
Increased workforce accommodation requirements	Consequential changes due to the updated Mine Plan for the Project (Mine).
The location of the airport moved from the north of the rail line, to the south of the rail line	Responding to submissions made about traffic and other environmental impacts.
Further detailed design of industrial area	Improved Project (Offsite Infrastructure) design.
Inclusion of five (5) quarries in project approvals and assessment	Improved geotechnical information about the optimum quarry locations to provide material for the Project
Removal of offsite bore fields and associated pipelines and removal of in-stream storages within North and Obungeena creeks	Additional understanding of water requirement and supply strategy

1.5 Submissions about Project Approvals

Submissions about the EIS, Volume 4, Appendix D (Project approvals and planning assessment) were made by a range of submitters including Qld Government, organisations and individuals. Issues raised in submissions and responses are detailed in Attachment 2.

The majority submissions were made by Qld Government departments, such as the Department of Agriculture, Fisheries and Forestry (DAFF), Department of Environment and Heritage Protection (DEHP) and DNRM. Their feedback focussed on particular legislative approval triggers relevant to their administrative responsibilities. Also, the Isaac Regional Council (IRC) submitted feedback about the planning scheme requirements and requested more information be included about quarrying approvals.

One submission included feedback on behalf of the Wangan and Jagalingou Native Title claimants. Some landholders along the proposed rail line also made comments about approvals and land. These have been addressed throughout this report or in other parts of the SEIS.

1.6 Requests for information by the Coordinator-General

The Coordinator-General also considered the EIS and all properly made submissions about the Project. On 26 March 2013, the Coordinator-General requested supplementary information and comments from Adani under section 35(2) of the SDPWO Act. This SEIS responds to the Coordinator-General's requests about project approvals, and responses are outlined in the following table.

Table 2: Further information requested by the Coordinator-General about project approvals

Issue raised:	Response:
Information to be provided for ERA 60 (Waste Landfill) ERA 63 (Sewage Treatment), ERA 16 (extractive activities), ERA 8 (Chemical storage), ERA 43 (Concrete Batching), ERA 64 (Water Treatment)	Information has been included in this report in sections 2, 3 and 6 about the <i>Environmental Protection Act 1994</i> (EP Act) and how it applies to the Project (Mine).
List of approvals under the Water Act for regulated structures on the Project (Mine) conditioning	Information has been included in this report in section 3 about how the <i>Water Act 2000</i> (Water Act) applies to the Project (Mine). Volume 4, Appendix C6 (Draft approval conditions) also addresses this issue.

Issue raised:	Response:
List of approvals under the Water Act for the Project (Offsite Infrastructure) conditioning	Information has been included in this report, sections 2, 4 and 6 about the Water Act and how it applies to the Project (Offsite Infrastructure). Volume 4, Appendix C6 (Draft approval conditions) also addresses this issue.
Listing the ERA approvals required for the Project (Offsite Infrastructure)	Information has been included in this report in section 5 about the EP Act and how it applies to the Project (Offsite Infrastructure). Further information is also included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

1.7 Next steps in the Environmental Impact Statement process

This SEIS has been made available to original submitters for additional comment. The next steps in the EIS process are:

- ▶ the Coordinator-General will evaluate the SEIS, submissions and any other relevant information. The Coordinator-General may ask Adani for further information again
- ▶ The Coordinator-General will then prepare a report evaluating the EIS for the Project. Under the SDPWO Act, section 35(4)(b) the Coordinator-General may state conditions under the following sections:
 - section 39 (Application of Coordinator-General's report to IDAS)
 - section 47C (Application of Coordinator-General's report to environmental authority)
 - section 35(4)(d) and division 8 (Application of Coordinator-General's report if no relevant approval) for other approvals that do not involve a material change of use that is impact assessable, MLs or EAs.

2 Overarching legislation

This section describes the overarching legislation that governs approvals applying to the Project as a whole, which are:

- ▶ approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) for the taking of a controlled action
- ▶ complying with the *Native Title Act 1993* (Cth)
- ▶ negotiating and implementing Cultural Heritage Management Plans (CHMPs) under the *Aboriginal Cultural Heritage Act 2003*
- ▶ assessments and approvals for coordinated projects and State Development Areas (SDA) under the SDPWO Act
- ▶ complying with the general environmental duty and approvals for the Project as a whole under the *Environmental Protection Act 1994* (EP Act)
- ▶ requirements under the Water, VM and NC Acts that will be triggered across the Project.

2.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The EPBC Act is the principal piece of Commonwealth environmental protection legislation. Under the EPBC Act, where actions require assessment under State approval processes, and where the State approval process is accredited by the Commonwealth Government, a single assessment process may be used for both sets of approvals.

The Commonwealth Government has accredited the EIS process, administered by the Coordinator-General under the SDPWO Act and a bilateral agreement is in place relating to EIS coordination between the Commonwealth and Qld Governments. This EIS process (including this SEIS) is designed to meet the impact assessment requirements under both Commonwealth and Qld legislation.

2.1.1 Controlled actions

The EPBC Act provides that an action that has, or is likely to have, a significant impact on defined matters of national environmental significance (MNES) is a controlled action. A person must not carry out a controlled action without approval from the Commonwealth Minister for DotE.

The Project was assessed to be a controlled action on the 6 January 2011 under sections 75 and 87 of the EPBC Act. The controlling provisions for the Project include:

- World Heritage properties
- National Heritage places
- wetlands (Ramsar)

- listed threatened species and communities
- listed migratory species
- the Great Barrier Reef Marine Park
- protection of water resources.

2.1.2 Independent Expert Scientific Committee

In 2012, the Commonwealth Government established the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) as a statutory committee under the EPBC Act. The IESC provides “scientific advice to decision makers on the impact that large coal mining development may have on Australia’s water resources”².

The Project will require approval for the taking of a controlled action from DotE under part 9 of the EPBC Act before it can proceed. See also Volume 1, Chapter 12 (Matters of National Environmental Significance).

2.2 Native Title Act 1993 (Cth)

Under section 3 of the *Native Title Act 1993* (Cth), the main objectives of the legislation are to:

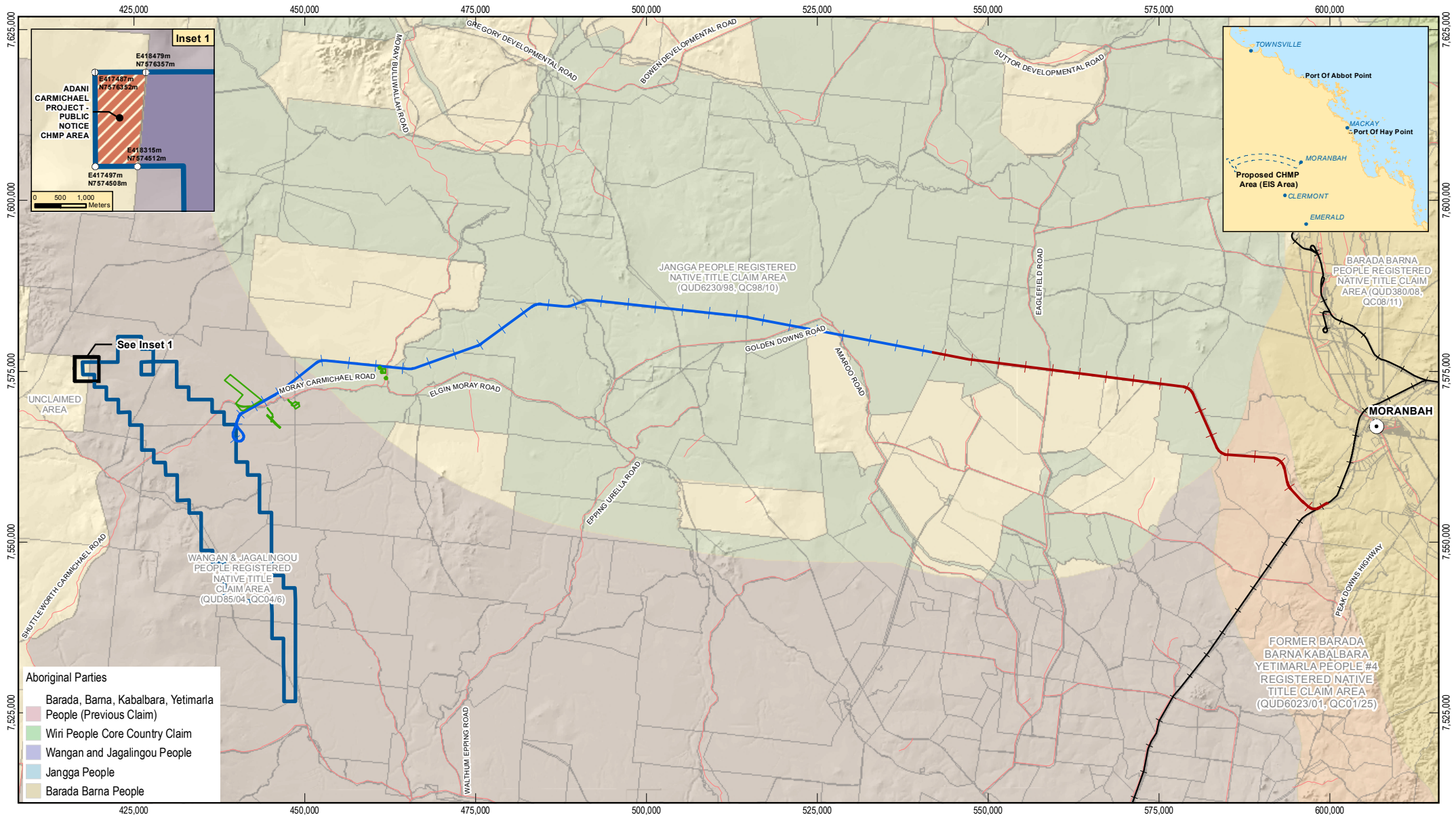
- ▶ provide for the recognition and protection of Native Title
- ▶ establish ways in which future dealings affecting Native Title may proceed and to set standards for those dealings
- ▶ establish a mechanism for determining claims to Native Title
- ▶ provide for, or permit, the validation of past acts, and intermediate period acts, invalidated because of the existence of Native Title.

Native Title is the recognition by Australian law that some Indigenous people have rights and interests in land that come from their traditional laws and customs. Native title rights may include the right of Indigenous people to:

- ▶ live on the area
- ▶ access the area for traditional purposes including camping or ceremonial activities
- ▶ visit and protect important places and sites
- ▶ hunt, fish and gather food or traditional resources including water, wood and ochre
- ▶ teach law and custom on country (National Native Title Tribunal, 2011).

A map of Aboriginal Party Interest Areas is included in the following figure.

² <http://www.environment.gov.au/coal-seam-gas-mining/>



- Aboriginal Parties**
- Barada, Barna, Kabalbara, Yetimarla People (Previous Claim)
 - Wiri People Core Country Claim
 - Wangan and Jagalingou People
 - Jangga People
 - Barada Barna People

1:750,000 (at A4)

0 5 10 15 20 25

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



- LEGEND**
- Town
 - Other Rail Network
 - Cadastral Parcel
 - Mine (Onsite)
 - Mine (Offsite)
 - Project (Rail)
 - State Road
 - Local Road
 - Rail (West)
 - Rail (East)



Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project SEIS
Project Approvals

Job Number 41-26422
Revision B
Date 28-10-2013

Aboriginal Party Interest Areas **Figure 1**

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

The Project is within the Native Title claim areas of the following peoples:

- ▶ the Project (Mine) and western-most 17 km of the Project (Rail) are located within the area of the Wangan and Jagalingou People registered Native Title claim (QUD85/04, QC04/6)
- ▶ approximately 145 km of the Project (Rail) is located within the area of the Jangga People determined Native Title claim (QUD6230/98, QC98/10)
- ▶ approximately 17 km of the Project (Rail) is located within the area of the formerly registered Native Title claim Barada Barna Kabalbara and Yetimarla People #4 (BBKY #4) (QUD6023/01, QC01/25)
- ▶ approximately 3 km of the Project (Rail) is located within the area of the previously registered Barada Barna People, Native Title claim (QUD380/08, QC08/11).

Under the Native Title Act 1993 (Cth), Native Title claimants and those recognised as holding Native Title are entitled to negotiate the manner in which certain actions, such as the grant of a mining lease (ML) and other developments, are carried out within their Native Title claim.

Adani is progressing Native Title negotiations with relevant parties. Adani is in discussions with the Wangan and Jagalingou People about Native Title.

An ILUA with the Jangga People has been agreed for that part of the project within the Jangga Native Title determination area, is expected to be certified by October 2013 and will be lodged with the National Native Title Tribunal for registration.

Further information about indigenous cultural heritage is included in the EIS, Volume 1, Chapter 5 (Indigenous and Non-indigenous Cultural Heritage) and this SEIS, Volume 1, Chapter 7 (Indigenous and Non-Indigenous Cultural Heritage).

2.3 Aboriginal Cultural Heritage Act 2003

The main purpose of the *Aboriginal Cultural Heritage Act 2003* is to provide for effective recognition, protection and conservation of Aboriginal cultural heritage. A person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage (the "cultural heritage duty of care").

For projects requiring an EIS, it is mandatory to prepare a CHMP. Adani has signed CHMPs with the following Aboriginal parties:

- ▶ Wangan and Jagalingou People, registered Native Title claim (QUD85/04, QC04/6)
- ▶ Jangga People, determined Native Title claim (QUD6230/98, QC98/10)
- ▶ Barada Barna Kabalbara and Yetimarla People #4 (BBKY #4) (QUD6023/01, QC01/25)
- ▶ Barada Barna People (QUD380/08, QC08/11).

Adani has also carried out the following cultural heritage assessments for the Project:

- ▶ for the Project (Rail) corridor within the Wangan and Jagalingou Aboriginal party areas – complete
- ▶ for the Project (Mine) corridor within the Wangan and Jagalingou Aboriginal party areas – ongoing
- ▶ for the Project (Rail) corridor within the within the Jangga Aboriginal party area – complete
- ▶ preliminary cultural heritage assessments within the BBKY#4 and Barada Barna Aboriginal party areas – complete.

Full cultural heritage surveys with the BBKY #4 People Aboriginal party will be undertaken at a subsequent stage. Full cultural heritage surveys with the Barada Barna People Aboriginal party will also be undertaken at a subsequent stage.

Ongoing field work programs are now being conducted by teams consisting of Wangan and Jagalingou Traditional Owner Field Officers and their nominated archaeologists within the Wangan and Jagalingou Aboriginal party area.

Adani will comply with the CHMPs, developed with the relevant Aboriginal parties, and approved by DEHP. See also SEIS, Volume 1, Chapter 7 (Indigenous and Non-Indigenous Cultural Heritage).

2.4 State Development and Public Works Organisation Act 1971

The SDPWO Act provides for State planning and development through a coordinated system of public works organisation and also provides for coordinated environmental assessment that benefits the State. The SDPWO Act is administered by the Coordinator-General, who is appointed under that Act.

The Project was declared a 'significant project' under the SDPWO Act in November 2010. In December 2012, the *Economic Development Act 2012* amended the SDPWO Act, changing the name for project subject to the environmental impact statement process. Projects declared as 'significant projects' were renamed as 'coordinated projects', including this Project.

Under section 47C of the SDPWO Act, the CG's report may state conditions for the proposed environmental authority (EA). The SDPWO Act, part 4, division 4 (Relationship with Sustainable Planning Act) describes how the Integrated Development Assessment System (IDAS) process for development approval applications interact with the CG's report.

The SDPWO Act, part 4, division 8 (Application of Coordinator-General's report if no relevant approval) applies to **other** approvals for undertaking the Project that do not involve a material change of use that is impact assessable, MLs or EAs. In these cases, the CG's report evaluating the project may "impose conditions for the undertaking of the project" (section 54B).

This report identifies the approvals framework and where relevant supporting information could assist the Coordinator-General.

The SDPWO Act also provides for the Coordinator-General to declare an area to be an SDA. Where an SDA is declared, the Qld Government prepares a development scheme for the SDA dealing with lawful future uses of the land within the SDA, and takes on an assessment role in development applications in the area.

Adani is in discussions with the Office of the Coordinator-General about the declaration of the area of land relating to the Project as an SDA.

2.5 Environmental Protection Act 1994

The object of the *Environmental Protection Act 1994* (EP Act) is to “protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development)”.

The EP Act is based on an obligation for persons to comply with a “general environmental duty”. The general environmental duty means that a person cannot “carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm”.

Environmental harm is defined as “any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance”.

Under the EP Act, assessment and approval is required for mining activities and activities that may cause actual or potential environmental harm via the generation of emissions or otherwise through carrying out the activity.

The EP Act is administered by the DEHP.

Adani will comply with the general environmental duty and approvals for the Project as a whole, through the implementation of EMPs and supporting systems. Draft EMPs are included in Volume 2, Chapter 13 (Mine Environmental Management Plan), Volume 3, Chapter 14 (Rail Environmental Management Plan) and Volume 4, Appendices Q1, Q2 and W.

Specific approvals and assessment under the EP Act applicable to the Project are outlined in sections 3 to 6.

2.6 Sustainable Planning Act 2009

The aim of the *Sustainable Planning Act 2009* (SP Act) is to achieve sustainable planning outcomes through:

- ▶ managing the process by which development takes place
- ▶ managing the effects of development on the environment
- ▶ continuing the coordination and integration of local, regional and state planning.

The SP Act provides the legislative framework for development assessment, through IDAS. IDAS also includes the assessment under a number of other Acts such as the VM and Water Acts. The SP Act is administered by the Department of State Development, Infrastructure and Planning, with assessment and approval functions delegated to other departments and local governments, depending on the development and its location.

The Project triggers various approvals required under the SP Act, and are described in sections 3 to 6 of this report.

2.7 Water Act 2000

The object of the *Water Act 2000* (Water Act) is to provide for the sustainable management of water and other resources and the establishment and operation of water authorities. The Water Act deals with rights to access surface and groundwater resources, and the control of works with respect to surface and groundwater conservation and protection, and irrigation, some aspects of supply, drainage and flood control. Water licences are required for taking or interfering with water. The Water Act is administered by the DNRM.

The following subordinate legislation under the Water Act applies to the Project:

- ▶ *Water Resource (Burdekin Basin) Plan 2007*
- ▶ *Water Resource (Fitzroy Basin) Plan 2011*
- ▶ *Water Resource (Great Artesian Basin) Plan 2006*
- ▶ *Burdekin Resource Operations Plan 2009*
- ▶ *Fitzroy Resource Operations Plan 2011.*

The Project water supply and demand requirements are outlined in this SEIS, Volume 2, Chapter K2 (Water Balance Report). A summary of water demand and proposed supply from the report is as follows:

- ▶ external raw water demand for the Project is proposed to be in the order of 12 GL per year, with 95% reliability
- ▶ the site water management system proposes to discharge Mine Affected Water from two discharge dams, which are proposed to be located centrally on the Project (Mine) site along the north and south sides of the Carmichael River. Combined discharges from the Project (Mine) for an average year would represent less than 30% of the roughly estimated yearly maximum discharge to the Carmichael River
- ▶ proposed discharges from the overburden sediment basins are relatively frequent, but considering the size of the catchments and the volumes of the dams, the proposed discharges are considered minimal. Water quality of overflows is expected to be relatively good, with total dissolved solids (turbidity / sediments)

being the critical contaminant. Overflows are proposed to be directed into the nearby waterways

- ▶ significant water management infrastructure is required to manage water on the Project (Mine) site. The proposed design is targeted to minimise the number of water management storages on site.

The water management system proposes the maximum re-use of water on the Project (Mine) site, however, it would still be dependent on external water supply. The external water supply is proposed to be linked to the Belyando River, which makes the Project largely dependable on climatic circumstances, as the Belyando River is ephemeral.

Details about specific approvals that are required for the Project, based on the above, are described in sections 3 to 6 for the mine, rail and offsite infrastructure.

2.8 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act), in conjunction with the SP Act, regulates the clearing of native vegetation. Under the SP Act, operational work that is the clearing of native vegetation is to be assessed against the purposes of the VM Act.

DNRM administers the VM Act and will assess any clearing required for the Project against the relevant *Regional Vegetation Management Code for Ongoing Clearing Purposes*. Native vegetation that occurs in a mapped Regional Ecosystem (RE) or that meets the structural and species requirements to be mapped as a RE will be assessed under this process.

Under the VM Act all remnant vegetation are categorised as either “endangered”, “of concern” and “not of concern” REs.

The type of vegetation clearing applications required for the Project is dependent on the type of vegetation present within the Project area. The Project as a whole triggers various aspects of the VM Act, depending on the activity and location. Details about specific approvals for the Project and the VM Act are described in sections 3 to 6.

2.9 Nature Conservation Act 1992

The object of the NC Act is to conserve nature through an integrated and comprehensive conservation strategy for the whole of Qld involving, amongst other things, the following:

- ▶ gathering of information and community education
- ▶ dedication and declaration of protected areas
- ▶ management of protected areas
- ▶ protection of native wildlife and its habitat
- ▶ use of protected wildlife and areas to be ecologically sustainable

- ▶ recognition of interest of Aborigines and Torres Strait Islanders in nature and their cooperative involvement in its conservation
- ▶ cooperative involvement of landholders.

Any activity that may have the potential to impact on wildlife or its values in an area may be seen as a threatening process and will be referred to the administering authority as part of the development approval process. In particular, the effect of the Project on endangered, vulnerable, or rare wildlife, or the habitat on which that wildlife depends, are considered under section 73 of the NC Act. Subject to certain exemptions, the NC Act requires permits to be obtained for taking of protected plants and the moving of protected animals. The NC Act also provides for protected areas, including refuges. The DEHP administers the NC Act for the Project.

The Project as a whole triggers various aspects of the NC Act, depending on the activity and location. Details about specific approvals for the Project and the NC Act are described in sections 3 to 6.

2.10 Land Protection (Pest and Stock Route Management) Act 2002

The purpose of the *Land Protection (Pest and Stock Route Management) Act 2002* is to provide for pest management as well as land and stock route network management. Stock routes do not have a separate title or tenure. Stock routes are managed by the relevant local government – in this case the IRC - and the *Land Protection (Pest and Stock Route Management) Act 2002* is administered by the DNRM.

The Project will impact on four (4) stock routes, one as a result of the Project (Mine) and three (3) due to the Project (Rail). These are described in sections 3, 4 and 6 of this report.

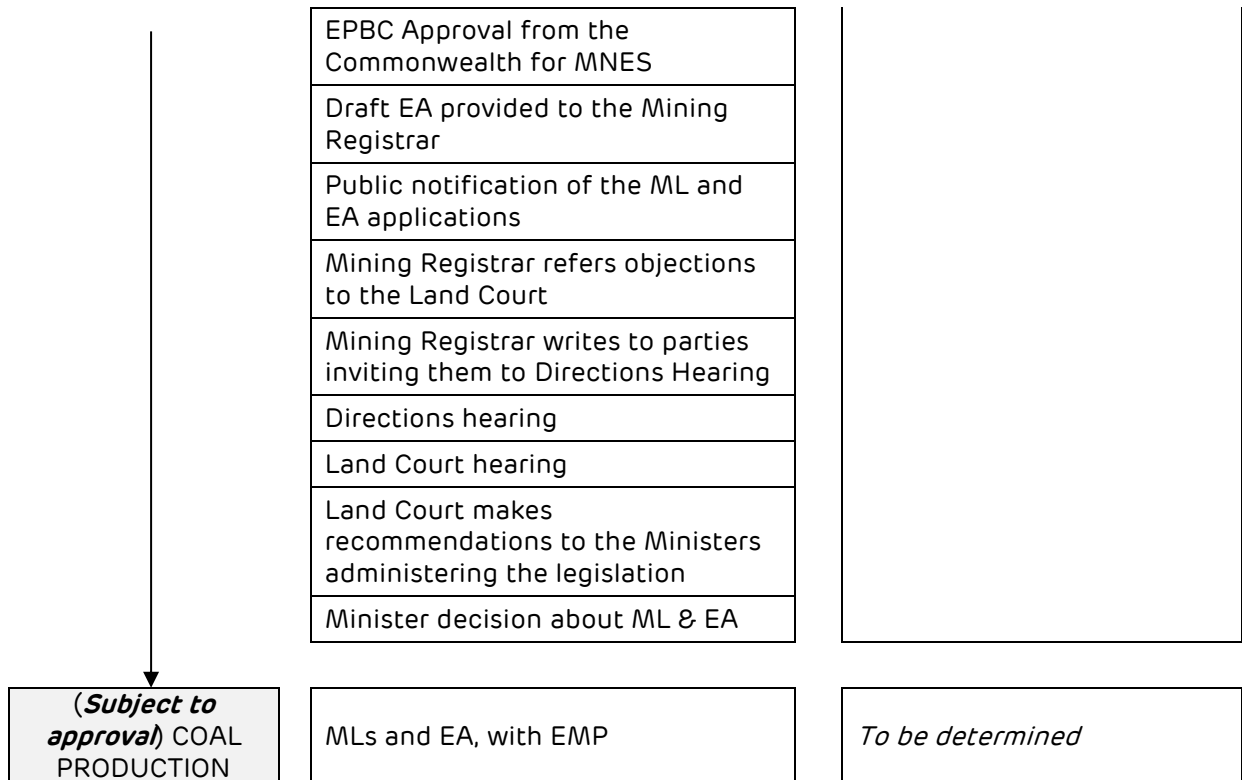
Pests will be managed through the EMPs. See SEIS, Volume 2, Chapter 13 and Volume 3, Chapter 13, and Volume 4, Appendices Q1, Q2 and W for the EMPs for the Project.

3 Project (Mine) approvals

The following figure outlines approvals and assessment processes for the Project (Mine), including coal mining exploration and production.

Figure 2: Authorisation and assessment process for the Project (Mine)

<i>Activity</i>	<i>Authorisation</i>	<i>Status</i>
COAL EXPLORATION	Exploration Permit (Coal) (EPC) 1690 & EA	Held by Adani, exploration activities underway
	Eastern and northern portions of EPC 1080 & code of environmental compliance	Held by Waratah Coal. Adani has an agreement with Waratah Coal and exploration activities are underway.
ASSESSMENT	Submission of the EIS assessing environmental impacts of proposed Project, including mining (coal production)	Reviewed by the Coordinator-General & other Qld Government assessment agencies
	Submission of the EIS assessing impacts of the proposed Project on MNES, including mining (coal production)	Reviewed by Commonwealth Government under EPBC Act (bilateral process)
	Public notification of the EIS Submissions made to the Coordinator-General	15 December 2012 to 11 February 2013
	Coordinator-General request to Adani for further information	Sent 28 March 2013
	SEIS responding to the Coordinator-General's request for further information and responses to comments	Submitted October 2013
	Mining Lease Applications (MLAs)	Submitted July 2013
	EA application lodged with MLAs	Submitted July 2013,
	Public notification of this SEIS Submissions made to the Coordinator-General	Currently open
	Submission of approval applications not lodged in this SEIS	
	CG's report evaluating the SEIS and EIS. CG's report to make recommendations and stated conditions about the Project	<i>To be determined</i>

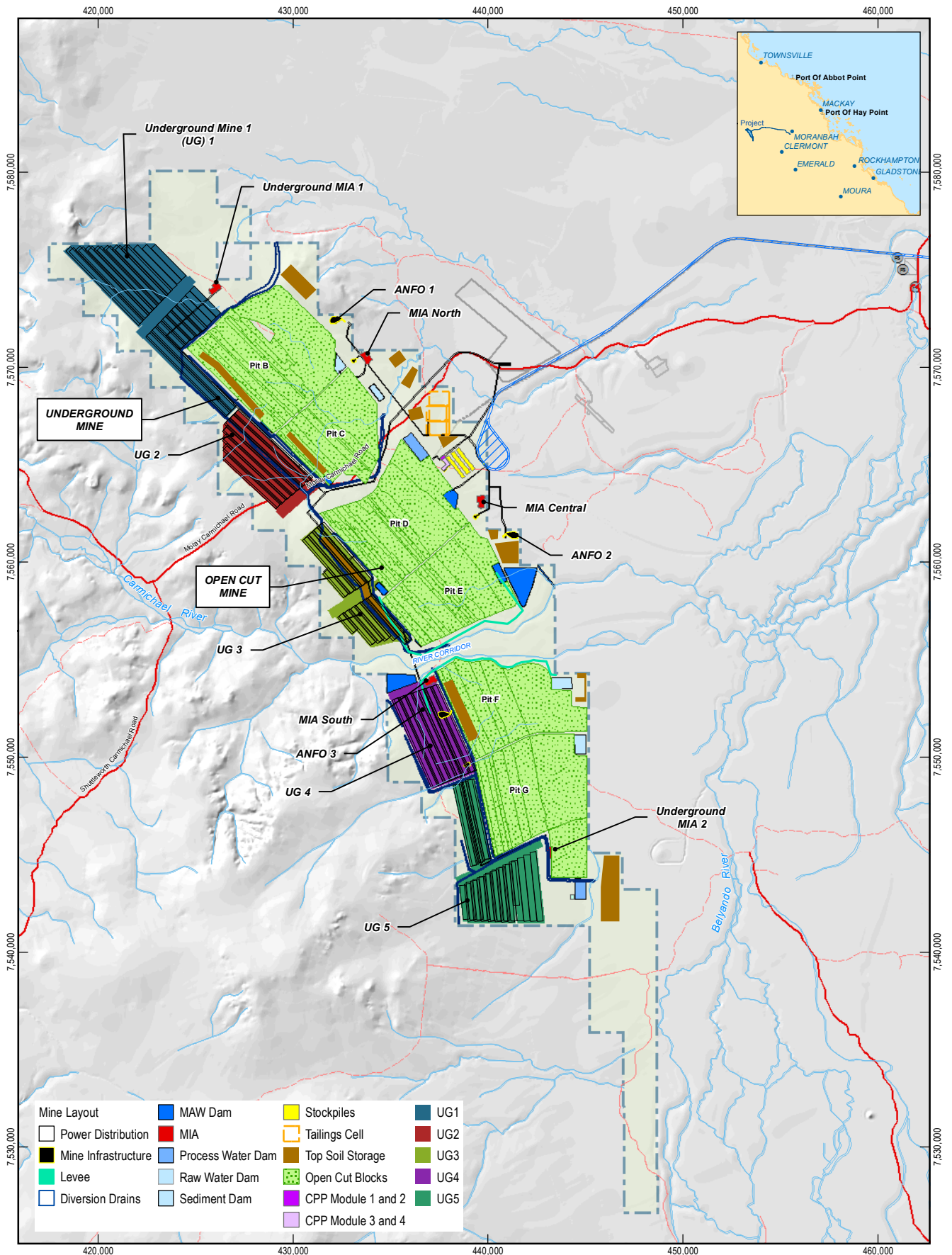


3.1 Activities proposed to be carried out for the Project (Mine)

Activities for the Project (Mine) are proposed for the areas over EPC 1690 and the eastern and northern portions of EPC 1080. This section of the report covers activities proposed to be carried out for the Project (Mine). There are two exceptions, and they are:

- ▶ the section of the rail line that intersects through a small portion of the eastern side of the proposed ML. The rail line, in its entirety, will be dealt with in the Project (Rail) section of this report
- ▶ the realignment of the Elgin-Moray and Moray-Carmichael Roads through the Project (Mine) site is addressed in section 5 (Offsite Infrastructure).

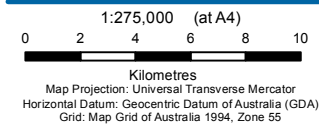
The Project (Mine) is shown in the following Figure 3.



LEGEND

- Minor Road
- Track
- Watercourse
- Rail Corridor
- Mine Site
- Mine (Offsite)
- Pump Station
- Storage Facility
- Accommodation Village
- Airport
- Industrial Area

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.



Adani Mining Pty Ltd
 Carmichael Coal Mine and Rail Project SEIS
 Project Approvals

Job Number: 41-26422
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 Date: 25-10-2013

General Project (Mine) Layout

Figure 3

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Data Source: GA: Road, River / Watercourse (2007); DME:EPC1690 (2010), EPC1080 (2011); Adani: Mine Layout / Infrastructure (2013), Mine (Offsite) (2013). Created by: MS

The following activities are proposed for the Project (Mine):

1. open cut coal mining pits
2. underground mining areas
3. coal handling and processing plant (CHPP)
4. mine infrastructure areas (MIAs) and explosives facilities
5. clearing native vegetation
6. quarrying material from two (2) areas
7. realignment of one stock route.

These activities would be primarily regulated through a ML issued under the MR Act and an EA under the EP Act. The Project (Mine) activities requiring approval are:

- ▶ six (6) open cut coal mining pits, namely pits B to G, running from north to south
- ▶ five (5) underground mining areas, namely underground pits called Underground Mines 1 to 5, running from north to south
- ▶ haul roads and ramps
- ▶ run of Mine stockpile and crushing areas
- ▶ rejects and “dry” tailings dumping
- ▶ spoil dumps.

Adani is seeking a single EA for the Project (Mine) for the activities listed above.

3.2 Mineral Resources Act 1989

The MR Act provides for the assessment, development and utilisation of mineral resources to the maximum extent practicable, consistent with sound economic and land use management.

The objectives of the MR Act are to:

- ▶ encourage and facilitate prospecting and exploring for and mining of minerals
- ▶ enhance knowledge of the mineral resources of the State
- ▶ minimise land use conflict with respect to prospecting, exploring and mining
- ▶ encourage environmental responsibility in prospecting, exploring and mining
- ▶ ensure an appropriate financial return to the State from mining
- ▶ provide an administrative framework to expedite and regulate prospecting and exploring for and mining of minerals
- ▶ encourage responsible land care management in prospecting, exploring and mining.

The MR Act is administered by DNRM. Mining tenements under the MR Act may, among other things, authorise prospecting, exploration, mining, processing or transport of materials, including coal. The types of mining tenements are outlined in the following table.

Table 3: Types of mining tenure relevant to the Project (Mine)

Type of mining tenement	Details
Exploration permit for coal (EPC)	EPC can be issued for the purposes of exploration, allowing the permit holder to determine the existence, quality and quantity of minerals on, in or under land by methods such as prospecting and geophysical surveys.
ML	A lease granted for mining operations that entitle the holder to machine-mine specified minerals and carry out activities associated with mining or promoting the activity of mining.

Adani applied for an ML in July 2013.

3.3 Environmental Authority for Mining Activities

Under section 426 of the EP Act, a person must not carry out an environmentally relevant activity (ERA) unless the person holds, or is acting under, an EA for the activity. Section 18 of the EP Act definition of an ERA includes “(b) a resource activity as defined under section 107”. Section 107 defines a resources activity as “an activity that involves – (c) a mining activity”. Section 110 (What is a mining activity) defines a mining activity as “(a) an activity that is an authorised activity for a mining tenement” under the MR Act.

An EA application was made in July 2013 for a single EA over the areas EPC 1690 and the eastern and northern portions of EPC 1080. The EA application lodged was a “site specific” application, under section 124 of the EP Act, as the proposed ERAs were “ineligible ERAs”. “Ineligible ERAs” are defined under section 112 as “an environmentally relevant activity-.... (c) that is carried out as a part of a coordinated project.” A “coordinated project” is defined in the EP Act, schedule 4 as “a project declared under the [SDPWO Act], section 26 to be a coordinated project”, such as the Project.

Section 125 of the EP Act describes the information required to be submitted with an application for an EA for the Project (Mine).

To assist the Coordinator-General and DEHP the EIS for the EA application, the following table describes the aspects requiring assessment and where these are addressed in the SEIS.

Table 4: Environmental Authority application requirements

Application requirement	EP Act section	SEIS section
All ERAs for the application	125(1)(c)	This report and section Volume 4, Appendix Q1 (Environmental Management Plan - Mine)
The land on which each activity will be carried out	125(1)(d)	Volume 2, Chapter 4 (Land) Volume 4, Appendix J1 (Revised Ecological Assessment Report)
Whether the applicant is a registered suitable operator	125(1)(h)	Adani Mining Pty Ltd is a registered suitable operator, reference number 649121, with DEHP
Environmental values likely to be affected by each relevant activity	125(1)(l)(i)(A)	Volume 2, Chapters 4 (Land), 5 (Nature Conservation), 6a (Water resources – Hydrogeology), 6b (Hydrology), 7 (Air quality) and 9 (Noise and vibration). Volume 4, Appendices J1 (Revised Ecological Assessment Report), K1 (Revised Mine Hydrogeology Report), K3 (Water Quality Report), K5 (Revised Mine Hydrology Impact Assessment), K6 (Addendum to Revised Mine Hydrogeology Report), K6 (Addendum to Revised Mine Hydrogeology Report), L (Air Quality Remodelling Report) and N (Noise and Vibration Remodelling Report).
Details of any emissions or releases likely to be generated by each relevant activity	125(1)(l)(i)(B)	Volume 2, Chapter 8 (Greenhouse gas emissions) Volume 4, Appendix M (Revised Greenhouse Gas Emissions Report)
Description of risk and likely magnitude of impacts on the environmental values	125(1)(l)(i)(C)	Volume 2, Chapter 12 (Hazard and risk)
Details of the management practices proposed to be implemented to prevent or minimise adverse impacts	125(1)(l)(i)(D)	Volume 2, Chapter 13 (Environmental Management Plan) Volume 4, Appendix Q1 (Environmental Management Plan – Mine)

Application requirement	EP Act section	SEIS section
Details of how the land the subject of the application will be rehabilitated after each relevant activity ceases	125(1)(l)(i)(E)	Volume 2, Chapter 13 (Environmental Management Plan) Volume 4, Appendix R1 (Draft Rehabilitation Management Plan – Mine)
Description of proposed measures for minimising and managing waste generated by each relevant activity	125(1)(l)(ii)	Volume 2, Chapters 10 (Waste) and Chapter 13 (Environmental Management Plan) Volume 4, Appendix 01 (Mine Waste Characterisation Report)
Details of any site management plan that relates to the land the subject of the application	125(1)(l)(iii)	Volume 2, Chapter 13 (Environmental Management Plan) Volume 4, Appendix Q1 (Environmental Management Plan – Mine)
if the application is for a prescribed ERA—state whether the applicant wants any EA granted for the application to take effect on a day nominated by the applicant	125(1)(m)	ERAs listed in this report are “prescribed ERAs”.
Include any other document relating to the application prescribed under a regulation	125(1)(n)	None applicable

Transition from EPC to Mining Lease

Adani currently holds EPC 1690 under the MR Act, and an associated EA for exploration activities. The EA (MIN102643011) permits the carrying out of the following ERAs:

- ▶ chemical storage consisting of storing 50 t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 in containers of at least 10 m³
- ▶ sewage treatment consisting of operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 100 to 1500 equivalent persons.

The EA conditions Adani for a number of ancillary and supporting activities. One of these activities is the construction and operation of a 400 bed worker accommodation village on the site.

Condition A9 states “Mining activities undertaken must be consistent with the “*Adani Mining Pty Ltd Environmental Management Plan Exploration Permit for Coal (EPC) 1690, February 2013*” (Adani EMP) unless otherwise stated by a condition of this environmental authority”. The Adani EMP provides for an “exploration camp to accommodate up to 400 people (100 x four single units with en-suites). The supporting infrastructure includes:

- ▶ four (4) kitchen units
- ▶ six (6) office units
- ▶ two (2) ablution facilities with 5 shows and 4 washers / dryers
- ▶ sewage treatment plant to support the number of people on site
- ▶ six (6) laundry units
- ▶ parking spaces
- ▶ one core shed
- ▶ one storage shed
- ▶ one reverse osmosis plant
- ▶ 20 x 46,000L potable water storage tanks
- ▶ water storage dams
- ▶ two (2) wet mess and recreation units
- ▶ two (2) gym units
- ▶ two (2) workshops
- ▶ decked walkways
- ▶ 210,000 L diesel storage
- ▶ 30,000 KVA of three phase generators
- ▶ two (2) wash down facilities for trucks, dozers and light vehicles
- ▶ communication facilities.”

Adani seeks the conditions permitting these activities to be carried over to the any ML and associated EA for the first five (5) years. Draft proposed conditions are included in this SEIS, Volume 4, Appendix C6 (Draft proposed conditions) for consideration.

3.4 ERAs for the Project (Mine)

Schedule 2 of the *Environmental Protection Regulation 2008* lists various activities designated as ERAs, for which approval is needed under either a development approval or EA. The ERAs listed in this section and outlined in *Table 6: Environmentally relevant activities for the Project (Mine) site* are those proposed to be undertaken on the Project (Mine), for which approval is sought and conditioned in the EA.

3.4.1 Coal Handling and Processing Plant

The CHPP will be the facility that washes coal of soil and rock, preparing it for transport. Coal will be stored at various stages of the preparation process, and conveyed around the CHPP.

The CHPP is centrally located and to the eastern boundary of the Project (Mine) site. It is located near the Project (Rail) balloon loop for ease of access and transport the coal off the Project (Mine) site.

The CHPP requires the carrying out of ERAs, as outlined in *Table 6: Environmentally relevant activities for the Project (Mine) site*.

3.4.2 Mine Infrastructure and explosives facilities and compound areas

The Project (Mine) includes the following five (5) MIAs:

- ▶ underground MIA 1 (most northern, near Underground Mine 1)
- ▶ underground MIA 2 (most southern, near Underground Mine 5)
- ▶ above ground MIA North (second most northern MIA on the Project (Mine) site)
- ▶ above ground MIA Central (middle on the Project (Mine) site)
- ▶ above ground MIA South (second most southern MIA on the Project (Mine) site).

The mine infrastructure will involve the construction of buildings and structures within the Project (Mine) area. As this development will be authorised under a ML, development approval under the SP Act is not required for these works. However, Adani will comply with the relevant provisions of the *Building Act 1975* and obtain certificates of classification for buildings as required.

The Project (Mine) also proposes three (3) explosives facilities and compounds. These areas are designed separately from other activities. The ERAs for the MIAs and the explosives facilities and compounds are outlined in *Table 6: Environmentally relevant activities for the Project (Mine) site*.

3.5 Quarrying material on the Project (Mine) site

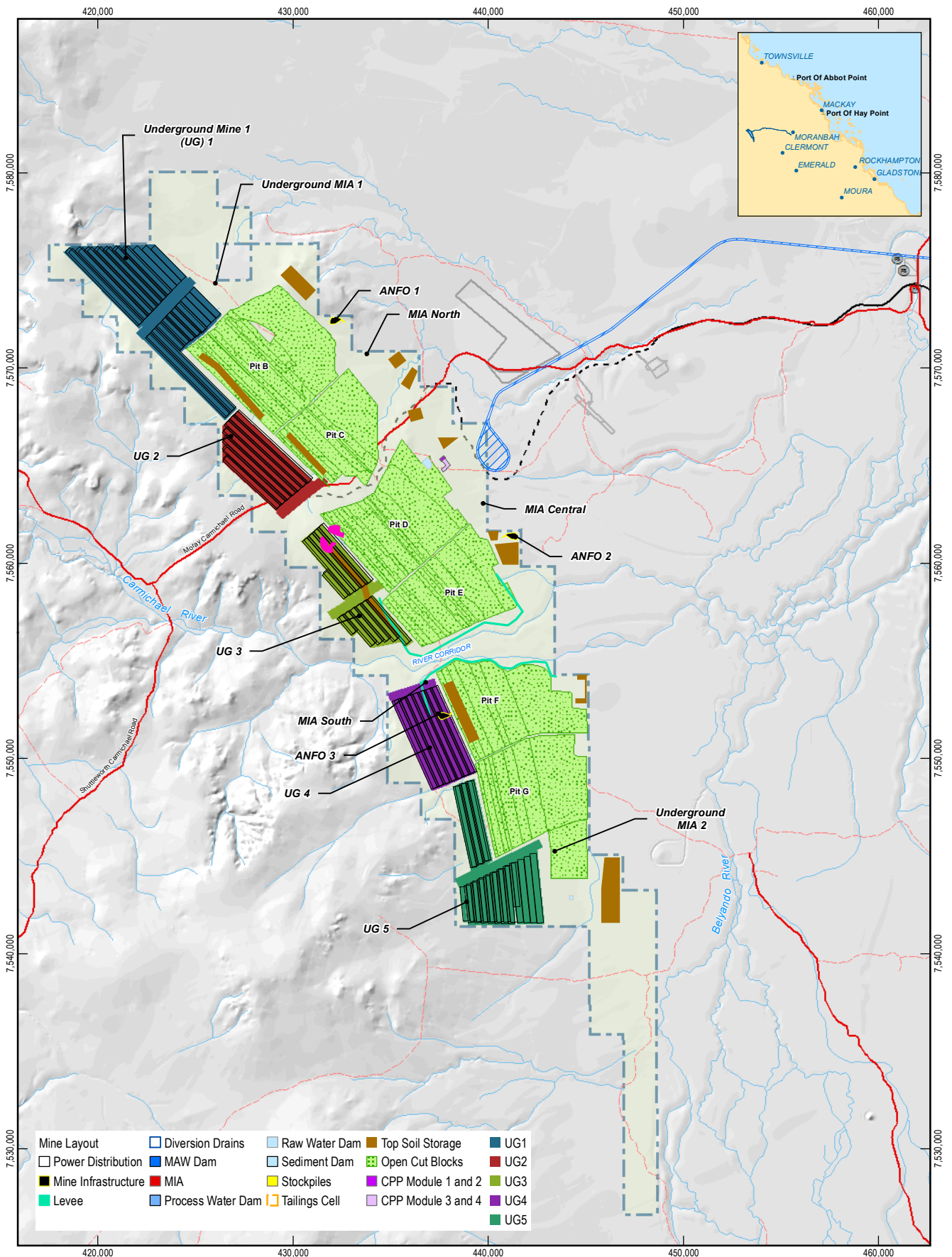
Under section 236 of the MR Act, a holder of a ML is entitled to use sand, rock and gravel for the purposes of constructing infrastructure on the subject ML. This ERA is identified in *Table 6: Environmentally relevant activities on the Project (Mine) site*. A quarry sales permit under the Forestry Act will be applied for if the material is taken from the Project (Mine) site to the Project (Rail) or Project (Offsite Infrastructure) areas.

Table 5: Environmentally relevant activities for the Project (Mine) site

ERA	Details	Quantity
CHPP		
ERA 8 – chemical storage	Magnetite storage	900 t
	Flocculant storage	50 t
Three (3) Mine Infrastructure Areas – above ground	<i>Details and quantities are per MIA</i>	
ERA 8 – chemical storage	Bullet tanks and relocatable double-skin storage tanks including the following chemicals	
	Engine oil	80,000 L
	Hydraulic oil	80,000 L
	Differential oil	80,000 L
	Transmission oil	40,000 L
	Coolant	40,000 L
	Grease container	1,500 kg
	Fuel (diesel in single steel tank)	3.5 ML
ERA 56 – regulated waste storage	Waste oil	80,000 L
	Waste coolant	40,000 L
ERA 57 – regulated waste transport	The wastes as listed above are proposed to be taken off site by an authorised transporter, with the exception of tyres which are proposed to be buried	As per above

ERA	Details	Quantity
ERA 60 – waste disposal	Operating a facility for disposing of general waste only at the rate of 50 tonnes per annum or more	More than 50 tonnes per annum
ERA 63 – sewage treatment	Sewage treatment plant	160 equivalent persons
ERA 64 – water treatment	Potable water treatment plant	1 x 40 kL / day
Two (2) Mine Infrastructure Areas – Underground	<i>Details and quantities are per MIA</i>	
ERA 8 – chemical storage	Bullet tanks and relocatable double-skin storage tanks including the following chemicals	
	Engine oil	80,000 L
	Hydraulic oil	80,000 L
	Differential oil	80,000 L
	Transmission oil	40,000 L
	Waste oil	80,000 L
	Coolant	40,000 L
	Solcenic Concentrate	150,000 L
	Solcenic Mixed Fluid	300,000
	Waste coolant	40,000 L
	Grease container	1,500 kg
	Fuel (diesel in single steel tank)	1 ML
	Stone dust	100 t
ERA 56 – regulated waste storage	Waste oil	80,000 L
	Waste coolant	40,000 L

ERA	Details	Quantity
ERA 57 – regulated waste transport	The wastes as listed above are proposed to be taken off site by an authorised transporter, with the exception of tyres which are proposed to be buried	As per above
ERA 60 – waste disposal	Operating a facility for disposing of general waste only at the rate of 50 tonnes per annum or more	More than 50 tonnes per annum
ERA 63 – sewage treatment	Sewage treatment plant	500 equivalent persons
ERA 64 – water treatment	Potable water treatment plant	1 x 250 kL / day
Three explosives facility and compound areas		
ERA 8 – chemical storage	Ammonium Nitrate Storage capacity	750 t
	Ammonium nitrate emulsion storage	2 x 50 kL bullet tanks
Quarrying activities on the Project (Mine) site		
ERA 16 – extractive and screening activities	See following figure showing location of quarry material extraction.	1 million tonnes per year.



Mine Layout	Diversion Drains	Raw Water Dam	Top Soil Storage	UG1
Power Distribution	MAW Dam	Sediment Dam	Open Cut Blocks	UG2
Mine Infrastructure	MIA	Stockpiles	CPP Module 1 and 2	UG3
Levee	Process Water Dam	Tailings Cell	CPP Module 3 and 4	UG4
				UG5

LEGEND

Minor Road	Quarries	Mine (Offsite)	Accommodation Village
Track	Rail Corridor	Pump Station	Airport
Watercourse	Mine Site	Storage Facility	Industrial Area

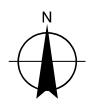
Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:275,000 (at A4)

0 2 4 6 8 10

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project SEIS
Project Approvals
Project (Mine) Environmentally
Relevant Activity Locations

Job Number	41-26422
Revision	B
Date	25-10-2013

Figure 4

3.6 Project (Mine) activities involving water

The Project water supply and demand requirements are outlined in this SEIS, Volume 2, Chapters K2 (Water Balance Report).

Taking of overland flow

The Project (Mine) may require the taking of taking water for the operation of the coal processing and handling plant or diverting overland flow harvesting from within the Project (Mine) area. Investigations are ongoing and, if required, applications will be lodged once detailed design is finalised.

Taking of ground water

The Project (Mine) will require the taking of artesian and sub artesian water to dewater open cut pits and underground mine workings. The northern part of the ML, where Underground Mine 1 is located, is over the recharge area for the Great Artesian Basin and may require assessment under the *Water Resource (Great Artesian Basin) Plan 2006* and associated resource plan. The remaining parts of the ML are outside the Great Artesian Basin.

Formal applications, with forms and compiled supporting information for taking of artesian and sub artesian water to dewater open cut pits and underground mine workings will be made at appropriate stages of the mine development. This will be based on available data and any further investigations and / or studies that may be required for completing the application.

For groundwater assessment, see the SEIS, Volume 2, Chapters 6a (Water Resources – Hydrogeology) and 6b (Water Resources – Hydrology), Volume 4, Appendix K1 (Revised Mine Hydrogeology Report), K2 (Water Balance Report), K3 (Water Quality Report), K5 (Revised Mine Hydrology Impact Assessment) and K6 (Addendum to Revised Mine Hydrogeology Report).

Creek diversions

Eight Mile Creek flows directly through the Project (Mine) site and will be diverted to limit water ingress to the mine. The upper segment of the creek is located off the Project (Mine) area, on the north-west side of the mine. The outlet of the diversion drain discharging back into the creek is in line with the existing drainage path and is located upstream of Pear Gully and North Creek.

Watercourse determination for the Eight Mile Creek on the mine site was finalised in August 2013. These water features were not determined as watercourses. As such, applications for interfering with water under the Water Act are not required for Eight Mile Creek for the Project (Mine).

Project (Mine) Dams

The *Water Supply (Safety and Reliability) Act 2008* (WSSR Act) provides a framework for failure impact assessment for referable dams. Referable dams are those that put population at risk in the event of a failure. The WSSR Act *Guidelines for Failure Impact Assessment of Water Dams* were developed to assist with compliance with the Act and dam safety conditions for referable dams. The guidelines provide information

about failure impact ratings, failure impact assessment and certification requirements.

The following dams and supporting water infrastructure on the Project (Mine) site will require assessment:

- ▶ four (4) sediment dams
- ▶ two (2) raw water dams
- ▶ two (2) process water dams (one central, one southern)
- ▶ ten (10) mine affected water dams
- ▶ one (1) tailings dam, with 3 cells.

Applications under the WSSR Act, if required, will be made after the CG's Report.

Table 6: Summary of water approvals required for the Project (Mine)

Activity	Legislation	Approval	Status
Taking of overland flow			
Taking and or diverting overland flow harvesting from within the ML area	Water Act	Water licence, to be authorised and managed under the EA	Applications to be made after the CG's Report.
Taking of artesian or sub artesian water			
Dewatering of open cut pits and underground mine workings	Water Act	Water licence, to be authorised and managed under the EA	See SEIS, Volume 2, Chapters 6a (Water Resources – Hydrogeology) and 6b (Water Resources – Hydrology), Volume 4, Appendix K1 (Revised Mine Hydrogeology Report), K5 (Revised Mine Hydrology Impact Assessment) and K6 (Addendum to Revised Mine Hydrogeology Report).
Project (Mine) Dams			
Construction of Project (Mine) dams	WSSR Act	Failure impact assessment	Applications to be made, if required, after the CG's Report.
Discharge of water to waterways			
Discharge of water to the Carmichael River, and other nearby waterways	Water Act	Water licence, to be authorised and managed under the EA	Applications to be made after the CG's Report.

3.7 Movement of stock route

Stock route U385 crosses the northern part of the Project (Mine) site, and is categorised by DNRM as having a low rate of use. Adani previously proposed in the EIS that this stock route be closed due to the design of the Project (Mine) plan.

Changes to the Project (Mine) plan, where the northern pits are now proposed as underground pits, mean the stock route can remain open. It is proposed to realign the stock route further north through the Project (Mine) site.

Adani is in discussions with DNRM and IRC about the detail of the proposed route realignment. The existing and proposed realigned stock route locations were inspected during a site visit in October 2013. A formal agreement to move the stock route is estimated to be complete by early 2014.

3.8 Nature Conservation Act 1992

3.8.1 Protected Plants and Wildlife

Protected species are listed in the *Nature Conservation (Wildlife) Regulation 2006* and are each categorised as being 'extinct in the wild', 'endangered', 'vulnerable', 'rare', 'near threatened' or 'least concern'. Under section 73 (a) of the NC Act, the administering authority is required to conserve wildlife and its values to:

- ▶ ensure the survival and natural development of the wildlife in the wild
- ▶ conserve the biological diversity of the wildlife to the greatest possible extent
- ▶ identify, reduce or remove, the effects of threatening processes relating to the wildlife
- ▶ identify the wildlife's critical habitat and conserve it to the greatest possible extent

Section 41 of the *Nature Conservation (Protected Plants) Plan 2000* exempts the taking of protected plants under an ML; hence a permit is not required for the Project (Mine).

3.8.2 Bygana West Nature Refuge

The Bygana West Nature Refuge is a type of protected area under the NC Act and occurs over part of the southern extent of the EPC 1690 and south of the Carmichael River. The Project (Mine) area will require approval for direct clearing, including clearing within the Bygana West Nature Refuge of non-remnant and remnant vegetation. Offsetting may be offered as an alternative solution and the EA may include conditions about offsets. See also SEIS, Volume 1, Chapter 10 (Offsets Strategy) and Volume 4, Appendix F (Revised Offset Strategy Report).

3.9 Draft EA Conditions

Under the SDPWO Act, part 4, division 6 (Relationship with Environmental Protection Act), the CG's report may state conditions for the draft EA (section 47B).

A submission from DEHP requested Adani seek the Coordinator-General to focus assessment on the first 20 years of the Project (Mine), acknowledging that the EA would be issued for the life of the Project (Mine). Adani requests the EA include a condition that it is reviewed at 20 year intervals by Adani and the regulator to ensure ongoing relevance of conditions.

Adani requests the Coordinator-General:

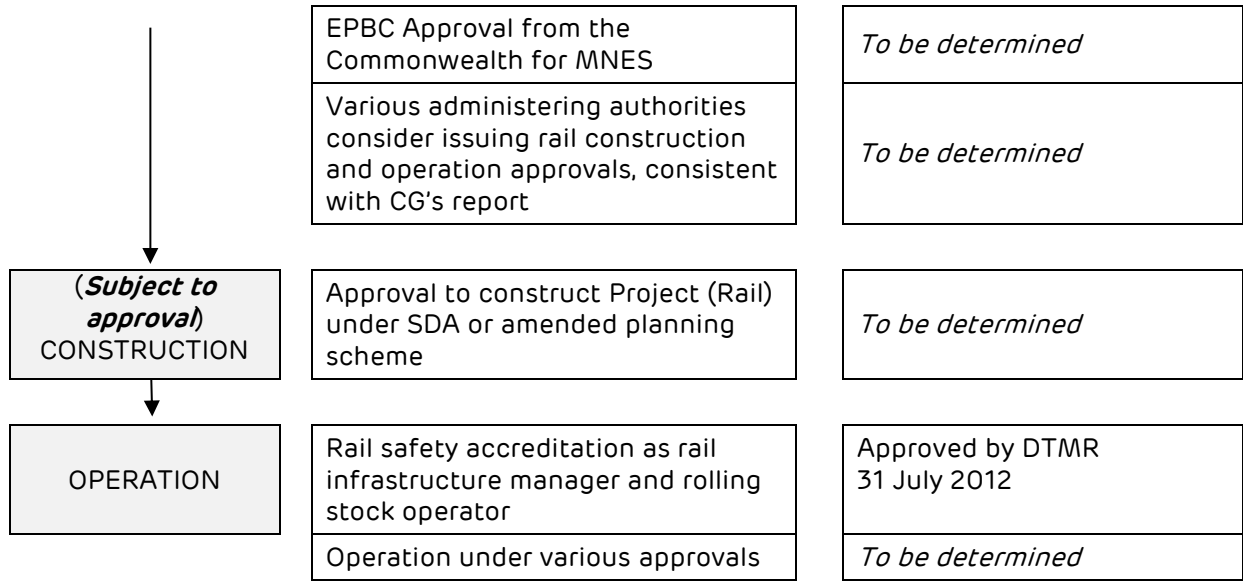
- ▶ consider the application for environmental authority submitted in July 2013
- ▶ under the SDPWO Act, section 47C (Application of the CG's report to environmental authority) state conditions, where possible and where there has been successful negotiations with DEHP within agreed timeframes
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

4 Project (Rail) approvals

The following figure outlines assessment processes for the Project (Rail), including investigation, construction and operation.

Figure 5: Authorisation and assessment process for the Project (Rail)

<i>Activity</i>	<i>Authorisation</i>	<i>Status</i>	
<div style="border: 1px solid black; padding: 5px; text-align: center;">INVESTIGATIONS</div> <div style="text-align: center; margin-top: 10px;">↓</div>	Rail feasibility investigator's authority	Held by Adani, investigations complete	
	Vegetation permits under the VM Act		
	Permits to clear particular protected plants from land under the NC Act		
	Water and development permits for drilling of bores	Held by Adani, investigations ongoing	
	Discussions about potential SDA by Qld Government	<i>Qld Government activity</i>	
	Submission of this EIS assessing environmental impacts of proposed Project, including rail construction and operation	Reviewed by Coordinator-General & other Qld Government assessment agencies	
	Submission of this EIS assessing impacts of the proposed Project on MNES, including rail construction and operation	Reviewed by Commonwealth Government under EPBC Act (bilateral process)	
	Public notification of the EIS Submissions made to the Coordinator-General	Public consultation period: 15 December 2012 to 11 February 2013.	
	Coordinator-General request to Adani for further information	Sent 28 March 2013	
	SEIS responding to the Coordinator-General's request for further information and responses to comments	Submitted October 2013	
	<div style="border: 1px solid black; padding: 5px; text-align: center;">ASSESSMENT</div> <div style="text-align: center; margin-top: 10px;">↓</div>	Public notification of this SEIS Submissions made to the Coordinator-General	Currently open
		Submission of approval applications not lodged in this SEIS	Post CG's report
		CG's report evaluating the SEIS and EIS. CG's report to make recommendations and stated conditions about the Project	<i>To be determined</i>

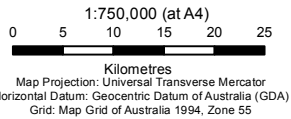
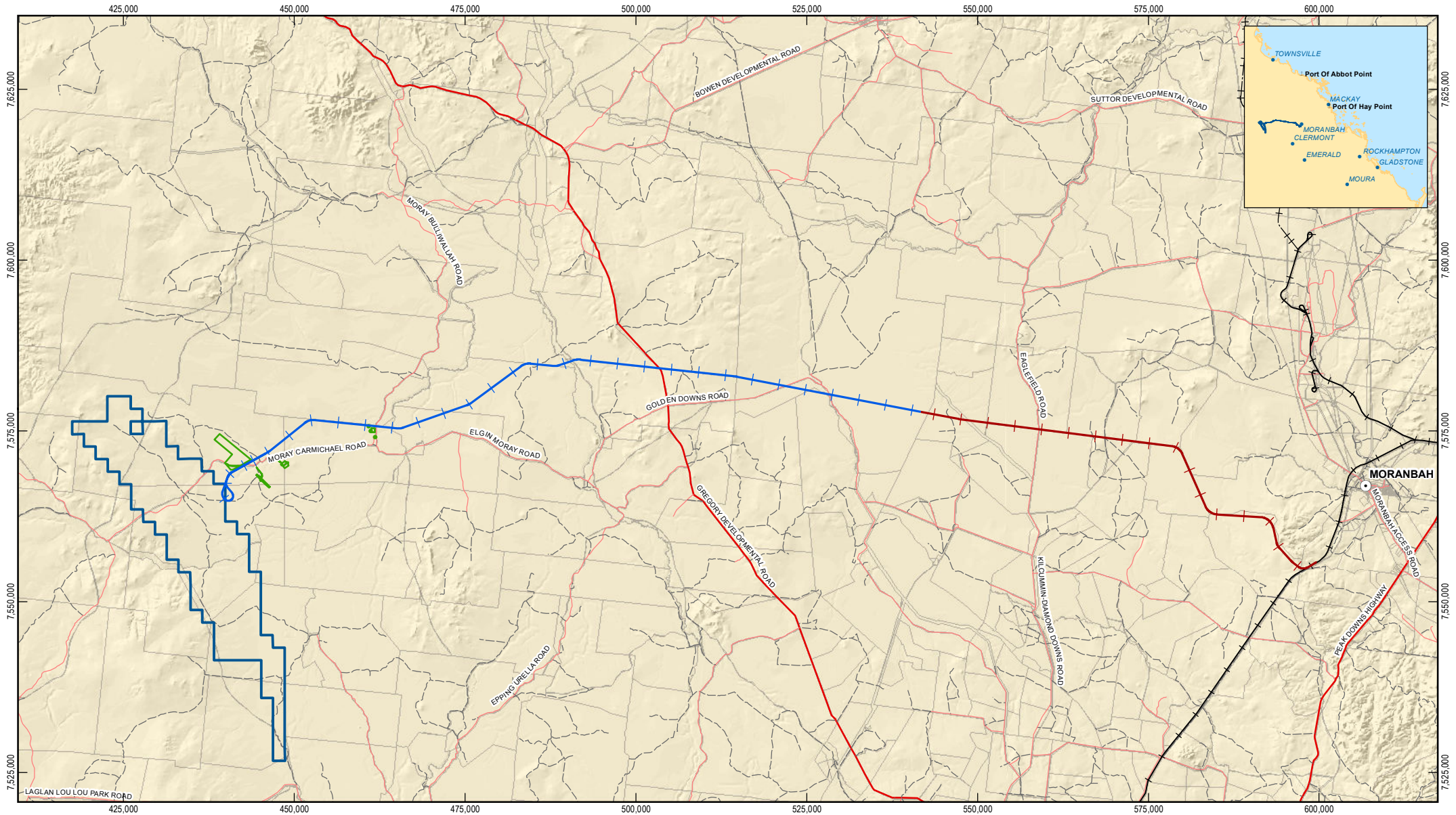


4.1 Activities proposed to be carried out for the Project (Rail)

The following construction and operation activities will require approvals and agreements for the Project (Rail):

1. the rail line itself and 95 m corridor, including:
 - a. excavating and filling for construction of the Project (Rail)
 - b. taking or interfering with surface water under the Water Act
 - c. taking of artesian and sub artesian water under the Water Act
 - d. clearing native vegetation under the VM Act
 - e. constructing waterway barrier works under the Fisheries Act
 - f. impacts to a local government road and State Controlled Roads
 - g. three (3) stock route crossings
2. laydown areas for bridges and tracks
3. maintenance yards
4. construction depots
5. turning circles.

This section addresses the approval requirements required for the above activities, with the exception of the temporary worker construction camps as they are addressed in section 5 (Project (Offsite Infrastructure) approvals). The following Figure 6 shows the Project (Rail) location and activities.



LEGEND

- Town
- Existing Railway
- State Road
- Local Road
- Track
- Rail (West)
- Rail (East)
- Mine (Onsite)
- Mine (Offsite)
- Cadastral Parcel



Adani Mining Pty Ltd
 Carmichael Coal Mine and Rail Project SEIS
 Project Approvals

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Project (Rail) Location

Figure 6

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Data source: DNRM: DEM (2008), DCDB (2010), Physical Road Network (2011); DME: EPC1690 (2010), EPC1080 (2011); © Commonwealth of Australia (Geoscience Australia): Localities, Railways (2007); Adani: Alignment, Offsite (SP1&2) (2013). Created by: MS

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4.2 Assessment against planning scheme

Adani is working with the Office of the Coordinator-General towards the declaration of an SDA encompassing the Project (Rail) area. Should an SDA not be declared over the area, other provisions of the SDPWO Act could be considered, such as those relating to private infrastructure facilities under section 125. Alternatively, a Community Infrastructure designation under the SP Act could be considered. In the interim, Adani has progressed designs and details, particularly for the Project (Rail) west.

To assist the Coordinator-General in making a report evaluating the SEIS and EIS, Adani has included as many rail approval applications for the Project (Rail) west as possible. These applications, as described in the following sections, incorporate information as required by the SP Act, the IRC planning scheme and other relevant Acts, such as the VM Act. In the event that an SDA is declared over the Project (Rail), Adani requests the Coordinator-General assess these applications against any SDA or development scheme that may be developed.

Development, as regulated under SP Act, includes making a material change of use, reconfiguring a lot, carrying out operational work and carrying out building work. The *Sustainable Planning Regulation 2009* prescribes various matters for specific items of development.

The Project (Rail) line itself triggers requirements for the following aspects of development:

- ▶ excavating and filling for construction of the Project (Rail)
- ▶ clearing native vegetation under the VM Act
- ▶ taking or interfering with water under the Water Act
- ▶ taking of artesian and sub artesian water under the Water Act
- ▶ constructing waterway barrier works under the Fisheries Act.

4.3 Excavating and filling for construction of the Project (Rail)

An application for operational works (excavation and filling) under the Belyando Planning Scheme (administered by the IRC) for the Project (Rail) have been included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).

The proposed operational works include bulk earthworks, road works, stormwater and drainage works for the construction of the rail alignment. The application is supported by drawings depicting earthworks, roads and crossings and hydrology.

4.4 Water supply to support the construction of the Project (Rail)

The following approvals are likely to be required to support the supply of water for the construction of the Project (Rail):

- ▶ take subartesian water
- ▶ taking of overland flow water
- ▶ operational works for surface water infrastructure such as pumps
- ▶ approval to interfere with the course of water flow.

Regardless of the water permits or licences triggered by the Water Act, the following guidelines and codes must also be complied with:

- ▶ *Code for self-assessable development – Temporary Waterway barriers*
- ▶ *Code for self-assessable development – Minor waterway barriers Part 3: Culvert Crossings*
- ▶ *Code for Self assessable development – Minor waterway barriers Part 4: bed level crossings*
- ▶ *Code for self-assessable development for taking overland flow water using limited capacity works.*

Taking of artesian or sub-artesian water

Water permits were obtained in 2013 and investigation bore holes for the possible taking of artesian or sub-artesian water are scheduled to be drilled by mid-2014. Depending on the data gathered during the investigative program, Adani will either apply for further water permits or water licences.

Taking of overland flow for the Project (Rail)

To provide an understanding of the framework and further approvals, an application for the taking overland flow from local water courses to support the construction of the Project (Rail) has been included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).

4.4.1 Constructing waterway barrier works under the Fisheries Act

The *Fisheries Act 1994* (Fisheries Act) provides for the use, conservation and enhancement of fisheries resources and fish habitats in a way that seeks to promote, apply and balance the principles of ecologically sustainable development. The Fisheries Act is administered by DAFF.

The Fisheries Act seeks to ensure adequate provision for fish movement and habitat access during development processes that include:

- ▶ building work in a declared fish habitat area
- ▶ carrying out operational work completely or partly within a declared fish habitat area
- ▶ carrying out operational work that is the removal, destruction or damage of marine plants
- ▶ carrying out waterway barrier works.

The construction of waterway barrier works requires development approval under SP Act and the Fisheries Act, unless they comply with one of the codes for self-assessable development. Where proposed waterway barrier works cannot comply with the relevant code for self-assessable development, a development permit under the SP Act will be applied for.

The Project (Rail) includes construction of waterway crossings trigger an operational works permit for constructing or raising waterway barrier works under the SP Act, Schedule 3 and the Fisheries Act. The permanent crossings were reviewed against the definition of waterway barrier works under the legislation and policies.

This SEIS, Volume 4, Appendix C3 (Rail approval applications) includes three (3) waterway barrier works applications and watercourse determinations for the Project (Rail) west.

Applications for construction waterway barrier works under the Fisheries Act for the Project (Rail) west have been included in Appendix C3 (Rail approval applications). Applications for the Project (Rail) east will be undertaken closer to the start date.

Table 8: Waterway barrier works approval applications for the Project (Rail)

Waterway	RPD	Crossing type	Potential impediment
Belyando River	Lot 3 on BL26	Bridge	Piles in low flow channel
Mistake Creek	Lot 1 on SP147546	Bridge	Piles in low flow channel
Logan Creek	Lot 1 on SP118814 Lot 10 on BL49	Bridge	Piles in low flow channel

The following guidelines and codes will also be complied with:

- ▶ *Code for self-assessable development – Temporary Waterway barriers*
- ▶ *Code for self-assessable development – Minor waterway barriers Part 3: Culvert Crossings*
- ▶ *Code for Self assessable development – Minor waterway barriers Part 4: bed level crossings.*

4.4.2 Crossing of stock routes

The Project (Rail) proposes impacts to three (3) stock routes. These are:

Table 9: Stock routes impacted by the Project (Rail)

Intersection	Stock route number	Chainage
Kilcummin Diamond Downs Road	M399BELY03	51.22
Amaroo Road	U402BELY03	82.15
Mistake Creek	Y401BELY02	120.46

These stock route crossings and proposed treatments are being discussed with DNRM and IRC. Options include using reinforced concrete box culverts, realigning the stock route to run aside the rail to bridges with holding yards at crossings and grade separations, where practical.

The stock routes were inspected during a site visit in October 2013. Treatments for these stock routes will be finalised after further discussions with DNRM and IRC. A formal agreement is estimated to be complete by early 2014.

4.5 Clearing native vegetation under the VM Act

A development permit for operational works that is the clearing of native vegetation will be required to facilitate construction of the Project (Rail). The Project (Rail) related activities require an operational works development application for clearing of native vegetation, as triggered under the *Sustainable Planning Regulation 2009*, schedule 1 and the VM Act.

As detailed within the SEIS, Volume 3, Chapter 5 (Nature Conservation), the Project (Rail) will require removal of remnant vegetation within the Brigalow Belt Bioregion and Desert Uplands Bioregion, including endangered REs, of concern REs, and least concern REs.

The application for clearing of native vegetation will be assessed against the set of performance criteria in Part S (Requirements for clearing for significant projects) of the *Regional Vegetation Management Code for Brigalow Belt and New England Bioregions* and the *Regional Vegetation Management Code for Western Bioregions*.

The purpose of performance requirements in the codes is to “regulate the clearing of vegetation in a way that conserves remnant vegetation that are REs, does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes.” The Regional Vegetation Management Codes offer an acceptable

solution for each of the performance criteria listed. Where these acceptable solutions cannot be met, offsetting can be offered as an alternative solution for meeting the performance requirements. Volume 1, Chapter 10 describes the Offsets Strategy for the Project.

Under the VM Act, section 21, a Property Vegetation Management Plan (PVMP) must be provided by the applicant. For a PVMP to be lodged it will be necessary for a site visit to take place in order to produce a Property Map of Assessable Vegetation (PMAV).

The PVMP and PMAV are submitted for the Project (Rail) as part of the operational works application for clearing of native vegetation. These have been mapped and assessed against the relevant regional vegetation management codes for the Project (Rail) and were included in the EIS in Volume 4, Appendix AA1 (Property Map of Assessable Vegetation for the Project (Rail) west) and AA2 (Property Map of Assessable Vegetation for the Project (Rail) east). Updated versions of the PMAVs are included in this SEIS, Volume 4, Appendix J7 (PMAV).

Associated applications included in this SEIS, Volume 4, Appendix C3 (Rail approval applications) are Regional Vegetation Management Code responses and Vegetation Clearing Permits for the Project (Rail). For the Project (Rail) west, assessment against the Regional Vegetation Management Code were undertaken for the laydown and temporary works areas.

4.6 Nature Conservation Act 1992

Protected Plants

Permits will be required for the removal of rare, threatened, vulnerable and endangered plants under the NC Act. Supporting information to clear 'least concern' plants within a section of the rail corridor Rail (east), being a 69 km narrow gauge portion running east from Diamond Creek connecting to the Goonyella rail system south of Moranbah, were prepared and included in the EIS, Volume 4, Appendix D, Appendix V. Supporting information for vegetation clearing permits was also included for laydown and temporary works areas on the same rail system.

Applications for clearing of protected plants under the NC Act are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications) for the Project (Rail) west laydown areas.

Protected Wildlife

Clearing associated with the Project (Rail) will require disturbance to animal breeding places. A Species Management Program (SMP), under section 88 of the NC Act and section 332 of the *Nature Conservation (Wildlife Management) Regulation 2006*, allows for the tampering of animal breeding places.

Adani is applying to operate under an SMP for 'Least Concern, Special Least Concern and Colonial Breeders'. Adani also has a Threatened Species Management Plan to address potential impacts on threatened species which have been identified within the footprint or are likely to be present within the footprint.

The following applications and SMP for the Project (Rail) is located in this SEIS, Volume 4, Appendix C3 (Rail approval applications):

- ▶ Tampering with Breeding places of least concerned fauna
- ▶ Tampering with Breeding places of iconic and Endangered, Vulnerable and Rare plants
- ▶ Clearing Permit (Protected Plants) under the NC Act – Rail (west)
- ▶ Tampering with Breeding places of least concerned fauna (Nature Conservation Act 1992)
- ▶ Tampering with Breeding places of iconic and Endangered, Vulnerable and Rare plants.

4.7 Strategic Cropping Land Act 2011

The SCL Act objectives are to:

- ▶ protect land that is highly suitable for cropping
- ▶ manage the impacts of development on that land
- ▶ preserve the productive capacity of that land for future generations.

The SCL Act is administered by the DNRM.

A total area of 155 hectares (ha) of triggered SCL is proposed to be intersected by the Project (Rail), 116 ha of which is considered permanent and 40 ha is considered temporary. All proposed Project (Rail) intersections with SCL are located within the western cropping zone management area.

One of the tests under the legislation is to determine if the relevant properties had at least three "cropping events" from 1999 to 2010. The relevant land has been assessed against the History of Cropping (HOC) criteria. Two (2) of the six (6) properties have clear indications of previous cropping history. Those two (2) properties require validation in accordance with *Protecting Queensland's strategic cropping land: Guidelines for applying the proposed strategic cropping land criteria*.

For the western cropping zone, there are eight (8) field criteria. The eight (8) criteria required to validate SCL have been correlated against available information in the form of LiDAR and geotechnical reports.

It is not yet clear whether the potential SCL meets the eight (8) field criteria. Based on relevant information, slope was the only partially assessable SCL criteria. Geotechnical information was indicative of soil wetness. Gilgai microrelief is likely to

exist on impacted land. Consequently, all criteria must be further investigated in a field component.

Further field investigations are required to map soil units based on results from analysed sites, exclusion sites, detailed sites and check sites. A soil survey methodology has been developed and is included in this SEIS, Volume 4, Appendix T1 (SCL Assessment – Rail).

If areas are confirmed as SCL mitigation will be required for infrastructure and activities considered permanent (that is, rail and service road infrastructure, and power line tower footprint). A Deed of Agreement will be established between Adani and the DAFF to facilitate mitigation.

Volume 3, Chapter 3 (Land) addresses the mapped SCL within the vicinity of the Project (Rail) and outlines mitigation measures in detail.

4.8 Laydown areas for bridges and tracks, maintenance yards, construction depot and turning circles

The following applications for the Project (Rail) laydown areas for bridges and tracks, maintenance yards, construction depots and turning circles are included in Appendix C3 (Rail approval applications):

- ▶ for the consideration of the Coordinator-General to potentially provide stated and standard conditions the CG's Report - development approval for material change of use for industry, railway activities and storage for the Project (Rail) west laydown areas including:
 - ERA 8 (Maintenance Facility)
 - ERA 63 (Construction Depot) including MEDLI Modelling
- ▶ for information only –
 - clearing native vegetation permit under the VM Act (PMAV and Regional Vegetation Management Code) – Rail (West) only
 - amend RE mapping under the VM Act (PVMP)
 - clearing permit (protected plants) under the NC Act
 - tampering with breeding places of least concerned fauna (NC Act)
 - tampering with breeding places of iconic and Endangered, Vulnerable and Rare plants (NC Act).

The following applications for the following activities will be made once detailed design is available:

- ▶ approvals to carry out excavation and filling
- ▶ approvals to carry out activities that involve the taking or interfering with water, which may be triggered pending detailed design for the construction depot.

Adani requests the Coordinator-General:

- ▶ consider the applications for laydown areas for bridges and tracks, maintenance yards, construction depots and turning circles are included in Appendix C3 (Rail approval applications)
- ▶ for material change of use applications, under the SDPWO Act, section 39 (Application of the CG's report) – state standard conditions that must attach to approvals
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

4.8.1 Impact on roads due to the Project (Rail)

Transport Infrastructure Act 1994

The object of the *Transport Infrastructure Act 1994* (TI Act) is to provide a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure. The TI Act:

- ▶ regulates the management of the state-controlled road (SCR) network
- ▶ provides for creation of 'common areas', which are defined as areas of land where a relevant road interrupts the route of a future railway land.

The Project (Rail) will:

- ▶ cross dedicated public road reserves (constructed and unconstructed)
- ▶ impact on six (6) public dedicated roads (constructed or unconstructed)
- ▶ impact on four (4) easements.

The DTMR is the administering authority for the TI Act. The Project (Rail) will cross two SCRs, Kilcummin Diamond Downs Road and Gregory Developmental Road. Under section 249(3) of the TI Act, the Minister may declare a "common area" if the following applies:

- ▶ the railway manager for the rail corridor land or future railway land may construct, maintain and operate a railway on the common area in a way not inconsistent with its use as a relevant road
- ▶ the relevant person for the relevant road may construct, maintain and operate the relevant road on the common area in a way not inconsistent with its use as a railway
- ▶ the relevant person for the road does not have any liability for the railway or its use or operation on the common area.

The state controlled Gregory Development Road is proposed to be grade separated (road over rail), at the point where the rail intersects the road between Lot 3235 PH752 and Lot 4 SP116046. All environmental approvals for the Gregory Development Road overpass are required, including:

- ▶ simultaneous road closing / opening approval
- ▶ extending the Carmichael Survey Control Network along the Moray-Elgin Road
- ▶ permits and approvals under the SP Act
- ▶ vegetation clearance permits under the VM Act
- ▶ water licences under the Water Act
- ▶ EAs to carry out ERAs under the EP Act

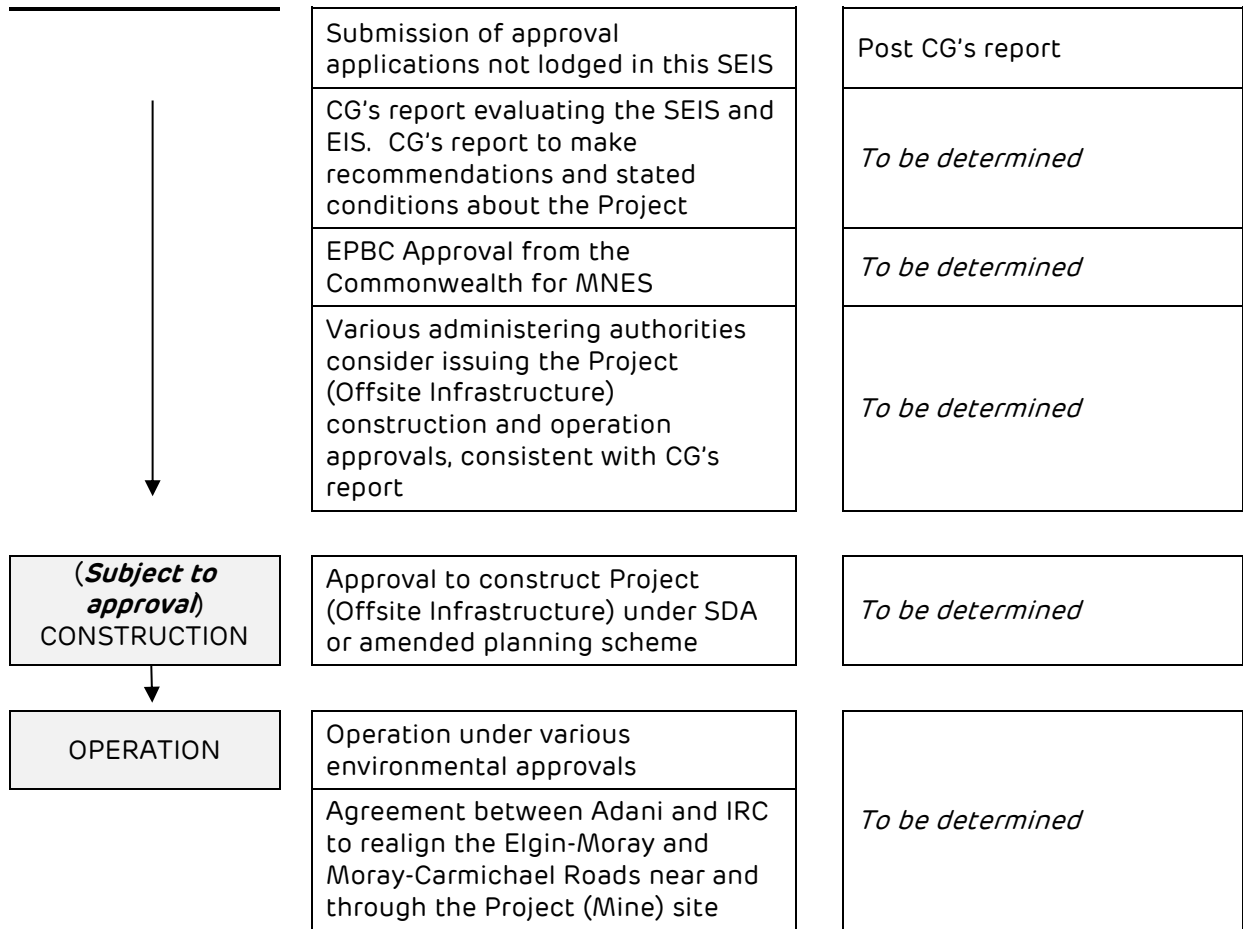
These will be applied for after the CG's Report.

5 Project (Offsite Infrastructure) approvals

The following figure outlines assessment processes for the Project (Offsite Infrastructure), including investigation, construction and operation.

Figure 7: Authorisation and assessment processes for the Project (Offsite Infrastructure)

Activity	Authorisation	Status
<div style="border: 1px solid black; padding: 5px; text-align: center;"> INVESTIGATIONS & ACTIVITIES TO SUPPORT EXPLORATION </div> <div style="text-align: center;">↓</div>	Pastoral Lease under the <i>Land Act 1994</i> for the Moray Downs property	Held by Adani, covers the majority of EPC 1690 and eastern & northern portions of EPC 1080
	Agreement between Adani and IRC to maintain and upgrade sections of the Elgin-Moray and Moray-Carmichael Roads for mine exploration and other investigative activities	Maintenance agreement signed, upgrade agreement being finalised
	Water and development permits for drilling of bores	Underway
	Discussions about potential SDA by Qld Government	<i>Qld Government activity</i>
	Submission of this EIS assessing environmental impacts of proposed Project, including Project (Offsite Infrastructure) construction and operation	Reviewed by Coordinator-General & other Qld Government assessment agencies
	Submission of this EIS assessing impacts of the proposed Project on MNES	Reviewed by Commonwealth Government under EPBC Act (bilateral process)
	Public notification of the EIS Submissions made to the Coordinator-General	Public consultation period: 15 December 2012 to 11 February 2013.
	Coordinator-General request to Adani for further information	Sent 28 March 2013
	SEIS responding to the Coordinator-General's request for further information and responses to comments	Submitted October 2013
	Public notification of this SEIS Submissions made to the Coordinator-General	Currently open
<div style="border: 1px solid black; padding: 5px; text-align: center;"> ASSESSMENT </div>		



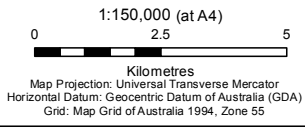
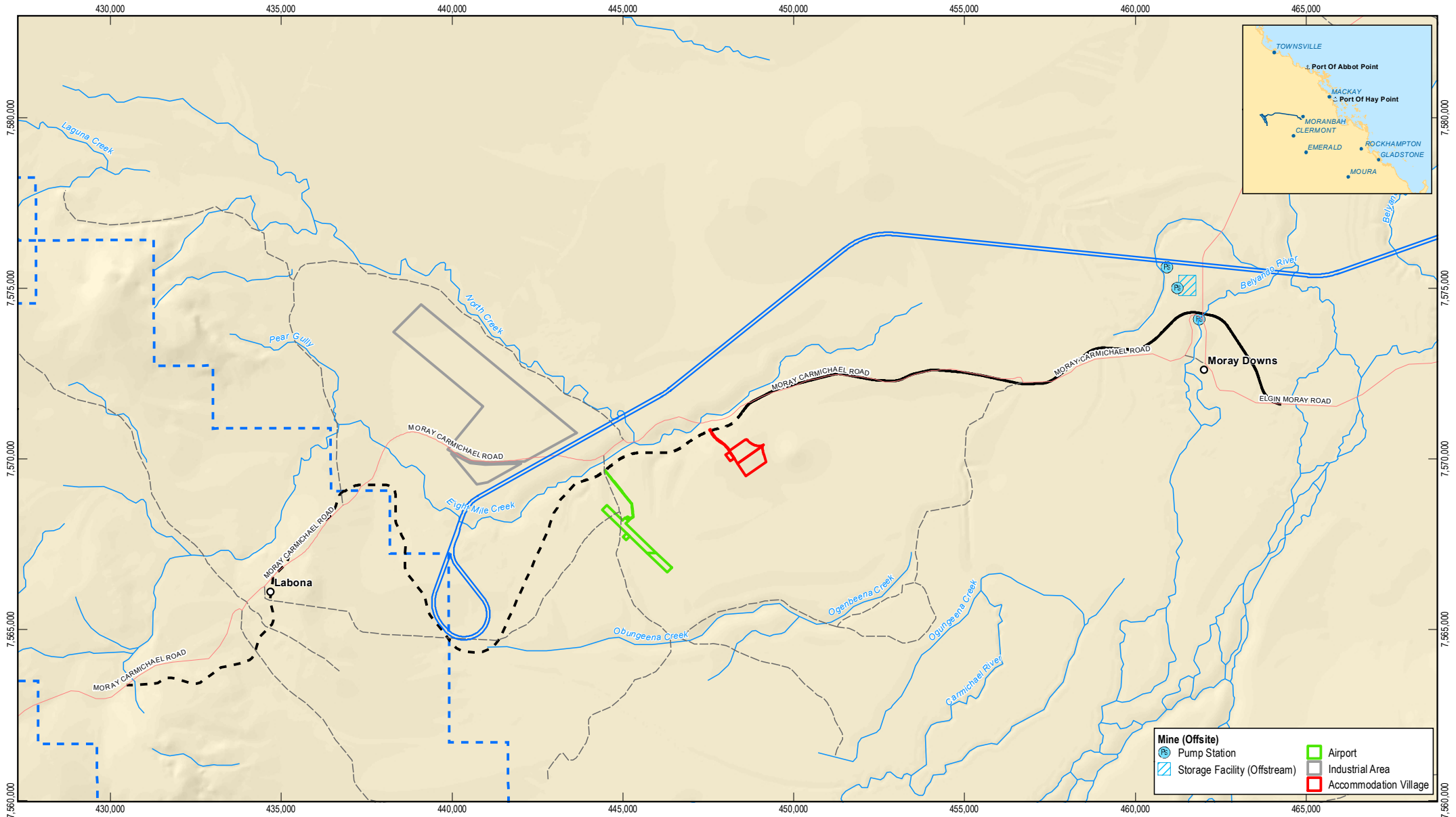
5.1 Activities proposed to be carried out for the Project (Offsite Infrastructure)

The Project (Offsite Infrastructure) is located outside EPC 1690 and EPC 1080, and is not within the proposed Project (Mine) area. The Project (Offsite Infrastructure) consists of the following proposed activities and locations:

1. workforce accommodation precincts, consisting of:
 - a. the M WAV and associated facilities located approximately 12 km east of the Mine and accessed via the upgraded and realigned Moray Carmichael Road. The village is proposed to have a capacity of up to 3,500 persons to accommodate construction and operational workforces for the Project (Mine)
 - b. three (3) temporary rail worker accommodation camps proposed to have a capacity of 400 persons to accommodate workforces for the Project (Rail) and roads
2. a permanent airport precinct positioned approximately 5 km west of the M WAV and will provide access for fly-in-fly-out workers
3. an industrial precinct to the north of the rail alignment and approximately 2 km from the eastern boundary of the Project (Mine) site to support the Project

4. water supply infrastructure precinct to enable the extraction, storage and delivery of water during the construction and operation phases of the Project
5. the use of five (5) local quarries to extract quarry materials for construction and operational purposes
6. impacts to the road network due to the Project.

See the following Figure 8 for a map showing the location of the Project (Offsite Infrastructure).



LEGEND

○ Homestead	— Watercourse	— Road Corridor
- - - Local Road	— Rail Corridor	- - - Road Corridor (proposed)
⋯ Track	- - - Project Area	



Adani Mining Pty Ltd
 Carmichael Coal Mine and Rail Project SEIS
 Project Approvals

Job Number | 41-26422
 Revision | B
 Date | 28-10-2013

Project (Offsite Infrastructure) Location

Figure 8

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 Data source: DME: EPC1690 (2010)/EPC1090 (2011); DNRM: Bioregion Boundary (2011); © Commonwealth of Australia (Geoscience Australia); Watercourse, Tracks (2007); Adani: Alignment Opt11 Rev 2 (SP1 and 2)(2013), Offsite Infrastructure (2013); Gassman/Hyder: Mine (Offsite) Moray Carmichael Road Realignment (Opt 2) (2013). Created by: AJ

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5.1.1 Assessment against planning scheme

Adani is working with the Office of the Coordinator-General towards the declaration of an SDA encompassing the Project (Offsite Infrastructure) area. If an SDA is not declared over the area, other provisions of the SDPWO Act could be considered, such as those relating to private infrastructure facilities under section 125. Alternatively, a Community Infrastructure designation under the SP Act could be considered.

Designs and details for the Project (Offsite Infrastructure), in particular the workforce accommodation, industrial and airstrip precincts, are well progressed. To assist the Coordinator-General in making a report about the SEIS and EIS, Adani has included as many Project (Offsite Infrastructure) approval applications as possible.

These applications include supporting information as required by the SP Act and the IRC planning scheme. In the case that an SDA is declared over the Project (Offsite Infrastructure), Adani has anticipated the information standards would be similar and the requests the Coordinator-General considers these applications against any SDA planning scheme that may be developed.

5.1.2 Application for a preliminary approval to change the planning scheme

Adani has included an application for a Preliminary Approval Affecting a Local Planning Instrument for a material change of use under section 242 of the SP Act. The application seeks to establish a site and operation specific planning framework that to guide future development over the site.

Adani has commissioned extensive analysis to determine the proposed locations for the Project (Offsite Infrastructure), particularly in relation to the MWAV, industrial area and the airport precincts. The sites have been chosen on the basis of physical characteristics, the existing planning context and the projected impacts from the Project. The potential impact of the proposal has been assessed in terms of environmental, social and economic considerations and no reasonable constraint has been identified that could undermine the proposed development.

The application to affect the local planning instrument, if approved, sets the level of assessable codes for other approvals required within the MWAV, industrial area and airport precincts.

Volume 4, Appendix 5 (Offsite infrastructure approval applications) includes the application for Preliminary Approval Affecting a Local Planning Instrument for a material change of use under section 242 of the SP Act.

5.1.3 Material change of use and operational works

Regardless of whether an SDA is declared over the Project (Offsite Infrastructure) area, applications for a material change of use will be triggered and lodged with the relevant assessment manager. Operational works approvals will also be required under relevant schemes for numerous activities involved in the Project (Offsite Infrastructure). The aspects of assessable development for the Project (Offsite Infrastructure) are listed below:

- ▶ making a material change of use application, under section 242 (Preliminary Approval) to vary the planning scheme, for the following precincts:
 - the MWAV
 - permanent airport precinct
 - industrial precinct.
- ▶ reconfiguration of a lot to establish new separate titles for various components for the Project (Offsite Infrastructure)
- ▶ operational works for the following activities
 - excavating and filling for construction of the Project (Offsite Infrastructure)
 - clearing native vegetation under the VM Act
- ▶ building works for each structural component required, including such works as retaining walls.

5.1.4 Material change of use and environmentally relevant activities

An overview of the EP Act is located in section 2 of this report. Each of the components of the Project (Offsite Infrastructure) is outlined in the following sections, where the ERAs being conducted and their approval requirements are outlined.

In summary, the ERAs below are triggered by the Project (Offsite Infrastructure) are:

- ▶ ERA 8 – chemical storage
- ▶ ERA 16 – extractive and screening activities
- ▶ ERA 56 – regulated waste storage
- ▶ ERA 57 – regulated waste transport
- ▶ ERA 60 – waste disposal
- ▶ ERA 63 – sewage treatment plants
- ▶ ERA 64 – water treatment.

5.1.5 *Permits under the NC Act*

Permits may be required for the removal of rare, threatened, vulnerable and endangered plants under the NC Act for the Project (Offsite Infrastructure). Clearing associated with the Project (Offsite Infrastructure) is also likely to require disturbance to animal breeding places. Adani is applying to operate under an SMP for 'Least Concern, Special Least Concern and Colonial Breeders'. Adani also has a Threatened Species Management Plan to address potential impacts on threatened species which have been identified within the footprint or are likely to be present within the footprint. These may apply to the Project (Offsite Infrastructure). Permits required under the NC Act for the Project (Offsite Infrastructure) will be applied for after the CG's Report.

5.2 Workforce accommodation precincts

Adani's workforce accommodation needs are currently, and will be, met by the following:

- up to 400 beds conditioned under EPC 1690 and accompanying EA (exploration)³
- application for construction camps will be sought in 2013 to support the maintenance and upgrade of the Elgin-Moray and Moray-Carmichael Roads for mine exploration and other investigations.

The likely level of construction workforce needed for the Project has been benchmarked against similar works on greenfield rail alignments and mine production developments within Australia. The following workforce arrangements are proposed:

- fly-in-fly-out personnel travel to and from the east coast of Australia to the Project (Mine) and transferred to the workforce accommodation precincts via buses
- the workforce is transported from workforce accommodation precincts to work sites by 4WDs or buses and back.

The Project activities are proposed to be supported by the following workforce accommodation precincts:

- the MWAV and associated facilities located approximately 12 km east of the Project (Mine) and accessed via the upgraded and realigned Moray Carmichael Road. The village is proposed to have a capacity of up to 3,500 persons to accommodate construction and operational workforces for the Project

³ See also section 3 of this report about transferring conditions from existing EA for EPC 1690 about the exploration camp to the proposed Project (Mine) mining lease.

- ▶ three (3) temporary rail worker accommodation camps proposed to have a capacity of the 400 persons to primarily accommodate workforces for the Project (Rail), but may be used for other activities in the region such as upgrading the Elgin-Moray and Moray-Carmichael Roads.

The project approval requirements and applications for the above workforce accommodation precincts are outlined in the following section.

5.2.1 Mine Worker Accommodation Village Precinct

The proposed location for the MWAV is within the Moray Downs property (Lot 662 on PH1491). This type of development is defined as 'Impact Assessable Development' under the IRC Planning Scheme and application material has been included in Appendix C4 (Offsite approval applications) to support a development permit.

The development permit proposes a material change of use for a MWAV and associated ERAs and operational works aspects. The location of the MWAV is proposed because it integrates with other Project (Offsite Infrastructure) and ensures there are sufficient buffer distances between these activities.

To provide an understanding of the framework and the further approvals required, application material has been prepared for a development approval for operational works for the MWAV bulk earthworks and vegetation clearing.

Material change of use applications have been included in this SEIS for accommodation buildings, hotel (private tavern, generally referred to as a "wet mess"), and ERA 63 (sewage treatment). These have been included for the consideration of the Coordinator-General to provide stated and standard conditions the CG's Report.

The applications and design of activities are summarised in the following sections.

Operational works for bulk earthworks

As the MWAV is located on a ridgeline and falls towards the south-west and north-east, it must be constructed with in fill. The earthworks will be split so that a portion of the site falls towards the south-west and the remaining towards the south-east. This assists the proposed stormwater catchment strategy, which is also included in the application packages.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP Act for operational works for bulk earthworks to construct the MWAV. The design is also included within the application.

Operational works for vegetation clearing

As part of the broader SEIS submission for the Project, detailed re-categorisation and revised PMAV mapping has been undertaken for vegetation clearing associated with the proposed MWAV. The PMAV confirmed that there were no REs within close proximity to the MWAV. The vegetation clearing application also includes applicable information to facilitate appropriate permits for clearing under the VM and SP Acts.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP and VM Acts for operational works to clear vegetation for the purposes of constructing the MWAV. The chosen location for the MWAV in 2012 was originally based on avoiding mapped REs.

Material Change of Use and for Accommodation Buildings

The MWAV design incorporates modules of 48 bedrooms in a three (3) sided two storey low-set format. It is proposed that accommodation modules wrap around a central “spine” of communal facilities for the use of residents. The MWAV has been designed to be constructed in stages and ensures that key services and facilities are also staged.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP Act for a material change of use for accommodation buildings in the MWAV.

Material Change of Use for Wet Mess

Within the central spine of facilities, a wet mess is proposed, similar to other MWAVs. The proposed wet mess is strategically located such that it adjoins an outdoor dining area and near other multi-purpose fields.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP Act for a material change of use for a wet mess in the MWAV.

Material Change of Use and ERA 63 (Sewage Treatment Plant)

Due to site characteristics, it is proposed that a low pressure sewage system be implemented to convey the effluent to the package treatment system. This approach also results in minimal earthworks fill quantities and has a positive effect on the overall bulk earthworks strategy. The modelling undertaken means the application for the size of the system is to manage a demand of approximately 4,500 equivalent persons.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C45 (Offsite infrastructure approval applications) includes an application under the SP and EP Acts for a material change of use and ERA 63 (sewage treatment) for the MWAV. The proposed sewer strategy involves several waste effluent facilities, low pressure sewer reticulation and conveyance to a package sewage treatment plant on site.

Adani requests the Coordinator-General:

- ▶ consider the applications for the MWAV in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications)
- ▶ for material change of use applications, under the SDPWO Act, section 39 (Application of the CG's report) – state standard conditions that must attach to approvals
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

5.2.2 Rail Camp Precincts 1 to 3

The Project (Rail) requires the establishment of three (3) temporary accommodation camps to accommodate workers involved in the construction of the railway line and associated infrastructure. Each of the three (3) rail camp precincts are intended to accommodate 400 persons and are comprised of single storey temporary accommodation buildings supported by wet mess, office and recreation facilities.

Each of the rail camps are proposed to function independently from a stormwater and sewerage treatment with water being imported, until other water sources are determined. The rail camps are designed to operate for approximately two (2) years and removed once the construction component is complete. The rail camps are critical to the Project (Rail) as they ensure reasonable travel distances for construction workers. There are no other alternative accommodation facilities that can accommodate the number of workers.

The EIS, Volume 4, Appendix D, Appendix IV included applications for three (3) rail camps along the Project (Rail) corridor. Since the EIS, work has been undertaken to

finalise MEDLI modelling for the sewerage treatment processes and included in this SEIS, Volume 4, Appendix C3 (Rail approval applications). Also, the forms for the activities applied for have been updated. The updated rail camp applications include:

- ▶ material change of use against a planning scheme
- ▶ for ERA 8 (Chemical storage) – note, this requirement has been removed from the legislation but has been included for completeness
- ▶ for ERA 63 (Sewage Treatment Plant) – updated to include MEDLI modelling
- ▶ operational works for the clearing native vegetation under the VM Act.

This SEIS, SEIS, Volume 4, Appendix C4 (Offsite Infrastructure approval applications) includes the updated applications for rail camps and be read in place of the applications made in the EIS.

The following works and applications have not been included in this SEIS and will be applied for, post the CG's report about the EIS, and the completion of detailed design work:

- ▶ operational works (excavation and filling)
- ▶ building works
- ▶ review to be undertaken of all other approvals for camps.

Adani requests the Coordinator-General:

- ▶ consider the applications for the rail camps 1 to 3 in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications)
- ▶ for material change of use applications, under the SDPWO Act, section 39 (Application of the CG's report) – state standard conditions that must attach to approvals
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

5.3 Permanent airport precinct

The following approvals are required for a permanent airport precinct, positioned approximately 5 km west of the MWAV, to provide access for fly-in-fly-out workers for the Project:

- ▶ material change of use for an airport
- ▶ material change of use for ERA 63 (sewage treatment)
- ▶ operational works for bulk earthworks and vegetation clearing.

The applications and design of activities are summarised in the following section.

Material Change of Use for an Airport

Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP Act for a material change of use for the airport. The airport has been designed such that it comprises two (2) separate phases to ensure that appropriate facilities are in place to meet the changing demands on the airport. The airport has been strategically located such that the runway is in a north-west orientation to capitalise on local wind patterns. The airport is within close proximity to the MWAV but is also appropriately separated.

The key aspects of the airport are:

- ▶ a 2250m x 30m asphalt runway strip
- ▶ apron of dimension of 100 m by 70 m
- ▶ multi-function terminal building
- ▶ the appropriate visual, navigation and lighting aids
- ▶ car and bus parking, passenger set down and pick up areas
- ▶ fuel storage of up to 500m³
- ▶ Aerodrome Rescue and Fire Fighting Services facilities.

Material Change of Use and ERA 63 (Sewage treatment)

The on-site effluent disposal system is proposed to be located to the east of the terminal area and north of the entrance road to the airport. The system strategy proposed for the airport will involve collection of waste effluent via a gravity sewer reticulation and conveyance to a package sewage treatment plant on site. The modelling indicates that the size of the system will be required to handle a demand of 36 equivalent persons.

Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP and EP Acts for a material change of use and ERA 63 (sewage treatment) for the airport.

Operational works for bulk earthworks

The existing site is currently located on a natural ridge line. The proposed development will be constructed in fill. Earthworks will also be split to accommodate the proposed stormwater catchment strategy.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP Act for operational works for bulk earthworks to construct the airport. The design is also included within the application.

Operational works for vegetation clearing

The chosen location for the airport in 2012 was originally based on avoiding mapped REs. The current vegetation within and around this area did not identify any mapped REs as occurring. As part of the broader SEIS submission for the Project detailed re-categorisation and revised mapping has been undertaken that addresses, amongst other elements, clearing associated with the proposed Airport. The vegetation clearing application also includes information required under the VM and SP Acts.

To provide an understanding of the framework and the further approvals required, Volume 4, Appendix C4 (Offsite infrastructure approval applications) includes an application under the SP and VM Acts for operational works to clear vegetation for the purposes of constructing the airport.

Adani requests the Coordinator-General:

- ▶ consider the applications for the airport in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications)
- ▶ under the SDPWO Act, section 54B (Report may impose conditions) - impose conditions for material change of use applications
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

5.4 Industrial precinct

The Project (Offsite Infrastructure) includes an industrial precinct to the north of the rail alignment and near the eastern boundary of the Project (Mine) site to support the Project. Volume 4, Appendix C4 (Offsite Infrastructure) includes applications for development permit for:

- ▶ reconfiguration of a lot
- ▶ material change of use for ERAs
- ▶ operational works aspects to support the establishment of an industrial area.

The proposed site for the industrial precinct is 978.1 ha in size. The design includes three (3) stages to ensure establishment works meet immediate industrial area requirements. A detailed and targeted design has been undertaken for stage 1 so it can be developed independently of any subsequent future stages.

The application material has been prepared and relates to a development approval for the following:

- ▶ Reconfiguration of a Lot: Community Title Subdivision
- ▶ material change of use for industrial activities including a concrete batching plant
- ▶ the following ERAs:
 - ERA 8 (chemical storage)
 - ERA 63 (sewage treatment).

To provide an understanding of the framework and the further approvals required, applications for operational works for vegetation clearing and bulk earthworks have been included in this SEIS.

Reconfiguration of a Lot: Community Title Subdivision

The reconfiguration of a lot application includes the following characterisations for the precinct:

- ▶ fifteen (15) lots ranging in size from 1.5 ha to 30 ha
- ▶ one (1) large lot to cover the remaining potential future stages of approximately 100 ha
- ▶ using the existing Moray-Carmichael Road to connect the industrial precinct to the road reserve and other parts of the Project

- ▶ most smaller lots on the southern side of the industrial precinct are located close to the existing Moray-Carmichael Road alignment for maximum connectivity to the other parts of the Project.

Material Change of Use and ERA 8 (Chemical storage)

The storage of diesel in the industrial precinct is essential to Project so that sufficient fuel supplies are maintained and readily available. Approximately 200,000 litres of diesel fuel storage will be able to be accommodated in the proposed industrial precinct and triggers the threshold for ERA 8 (chemical storage). The design proposes the following features:

- ▶ workshops with base level containers for administration offices and storages
- ▶ large open areas for vehicle manoeuvring
- ▶ outdoor pad for fuel storage, using tanks
- ▶ car parking bays for staff and visitors.

Material Change of Use and ERA 63 (Sewage Treatment Plant)

The proposed sewer strategy for the industrial precinct involves the collection of waste effluent from lots via low pressure sewer reticulation and conveyance to a package sewage treatment plant on site. Due to site characteristics, it is proposed that a low pressure sewage system will be implemented to convey the effluent to the package treatment system. This will eliminate the need to construct deep sewer systems to convey the effluent as is the case with gravity systems and only requires shallow trenching. This approach therefore results in minimal earthworks fill quantities and has a positive effect on the overall bulk earthworks strategy. Current modelling indicates that the size of the sewage treatment plant will manage demand of 2,180 equivalent persons.

Operational works for vegetation clearing

The required vegetation clearing to facilitate the siting and construction of the entire industrial precinct has also been included within this application material. Current mapped vegetation within this area includes that of least concern REs. As part of the broader SEIS submission, detailed re-categorisation and revised mapping has been undertaken that addresses, amongst other elements, clearing associated with the proposed industrial precinct in the form of a PMAV area.

Operational works for bulk earthworks

The design of preparatory earthworks to support Stage 1 of the industrial area has been undertaken and included within the application material. As stage 1 of the industrial precinct is located on a generally flat area of land with a minor slope falling towards the south-east of the site, it is to be constructed in fill. The earthworks will be split up such that a portion of the site falls towards the south-west and the remaining towards the south-east.

Adani requests the Coordinator-General:

- ▶ consider the applications for the industrial precinct in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications)
- ▶ for material change of use applications, under the SDPWO Act, section 39 (Application of the CG's report) – state standard conditions that must attach to approvals
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

5.5 Project (Offsite Infrastructure) water approvals

The Project water supply and demand requirements are outlined in this SEIS, Volume 2, Chapters K2 (Water Balance Report). A summary of water demand and proposed supply from that report relevant to the Project (Offsite Infrastructure) is as follows:

- ▶ external raw water demand for the Project is in the order of 12 GL per year with 95% reliability
- ▶ the water management system proposes a maximum re-use of water on the Project (Mine) site, however, the mine is still dependent on external water supply.

Water supply infrastructure is proposed to enable the extraction, storage and delivery of water during the construction and operation phases of the Project are:

- ▶ a flood harvesting dam with a capacity of up to 10GL, located on Moray Downs (Lot 662 on PH1491) near the intersection of the Belyando River and the Moray-Carmichael Road
- ▶ the main water pipeline included in the Project (Rail) corridor, that will connect several water supply areas.

5.5.1 *Surface water licence application*

To provide an understanding of the framework and approvals required, applications, an application for a water licence under the Water Act to harvest flood water from the Belyando River has been included in Appendix C3 (Offsite infrastructure approval applications). It is proposed to be a key source of supply to the mine and will include a pump extraction system from the river into an off-site storage then supply water to the mine via a trunk main pipeline. The application is for a mean annual extraction of 10 GL per year, with a maximum of 12.5 GL extraction per year.

All applications required for the construction and operation of the dam under the SP, EP and WSSR Acts will be lodged after the CG's Report.

Corresponding applications for approvals under the SP Act, such as operational works, and assessment under the WSSR Act will be made after the CG's Report.

5.6 Quarries

The Project requires around 10 million tonnes of quarry material in total, for the following purposes (approximate):

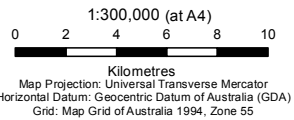
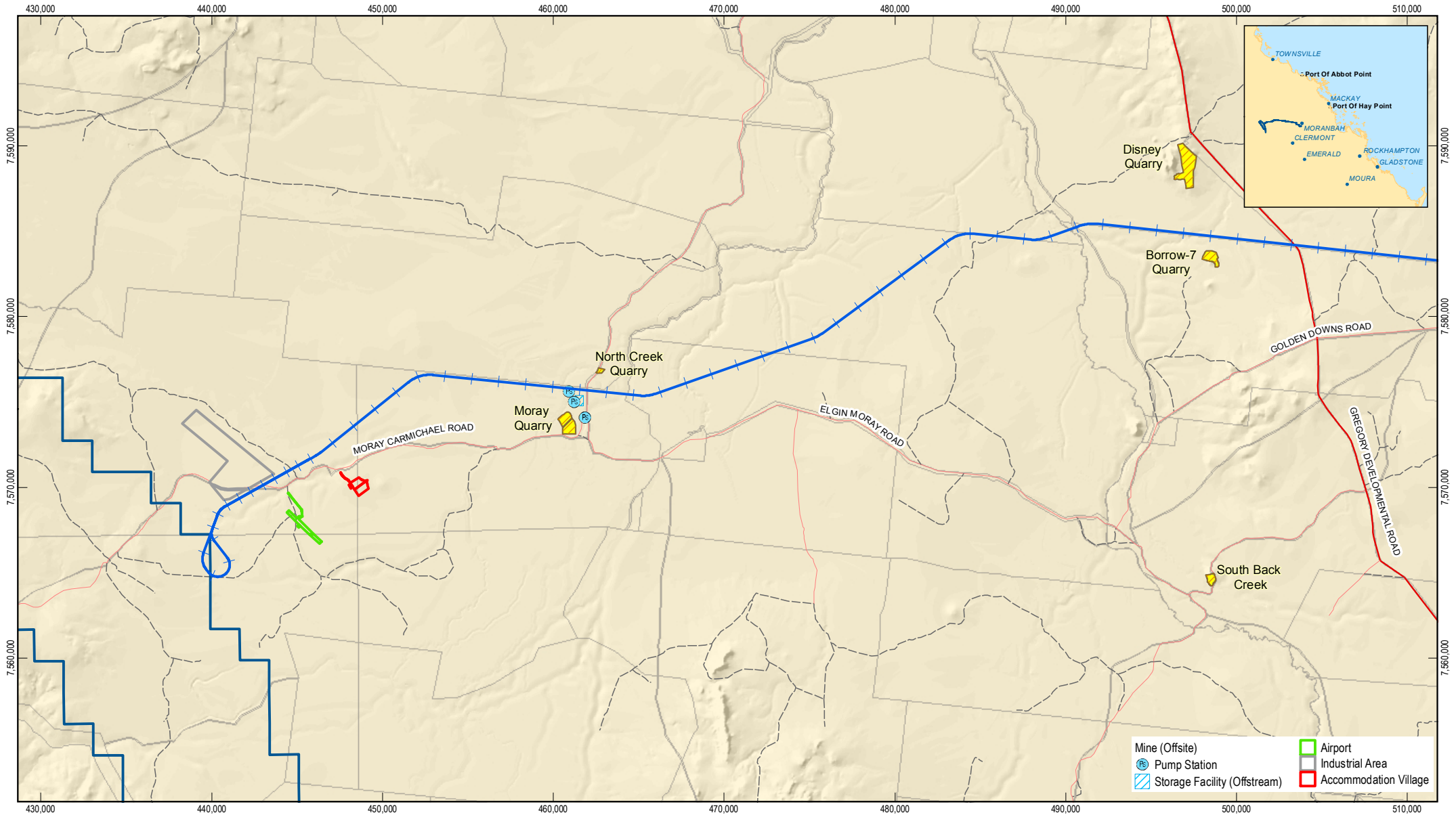
- ▶ 43% for the construction of the Project (Rail)
- ▶ 37% required for the construction of the Project (Mine)
- ▶ 20% required for the upgrade of the Elgin-Moray and Moray-Carmichael Roads.

Adani held a permit to search for, and to get samples of, quarry material under the Forestry Act. Adani conducted investigations from May to November 2012 under this permit. Investigation and analysis of over fifteen different possible sites in the region were narrowed down to five (5), which are the subject of this SEIS.

Adani's quarrying approvals and assessment strategy is as follows:

- ▶ continuing a partnership with the IRC for material from current quarries, under existing approvals (processes outside this EIS / SEIS process)
- ▶ purchasing from other existing quarries under private arrangements, if required
- ▶ making applications for approvals under the SP, VM and Forestry Acts SEIS for five (5) new quarries in the region.

The following Figure 9 shows the proposed quarry locations for the Project.



LEGEND

Town	State Road	Rail (West)	Cadastral Parcel
Existing Railway	Local Road	Mine (Onsite)	Quarry
	Track		



Adani Mining Pty Ltd
 Carmichael Coal Mine and Rail Project SEIS
 Project Approvals

Job Number 41-26422
 Revision C
 Date 28-10-2013

Quarry locations

Figure 9

Based on or contains data provided by the State of QLD (DNRM) [2013]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

The following table summarises the approval applications included in this SEIS to provide an understanding of the framework and approvals required in Volume 4, Appendix C5 (Quarry approval applications) for the quarries.

Table 10: Summary of quarry approval applications

Quarry	Legislation	Approval application
Moray Downs	SP Act	Material change of use
	EP Act	ERA 16 (Extractive and screening activities)
	Forestry Act	Quarry sales permit
	VM Act	Vegetation clearing permit
Borrow 7	SP Act	Material change of use
	EP Act	ERA 16 (Extractive and screening activities)
	Forestry Act	Quarry sales permit
	VM Act	Vegetation clearing permit
	NC Act	Clearing Permit (Protected Plants)
North Creek	SP Act	Material change of use
	EP Act	ERA 16 (Extractive and screening activities)
	Forestry Act	Quarry sales permit
	NC Act	Clearing permit (protected plants)
Disney	SP Act	Material change of use
	EP Act	ERA 16 (Extractive and screening activities)
	Forestry Act	Quarry sales permit
	VM Act	Vegetation clearing permit

Quarry	Legislation	Approval application
South Back Creek	SP Act	Material change of use
	EP Act	ERA 16 (Extractive and screening activities)
	Forestry Act	Quarry sales permit
	NC Act	Clearing Permit (Protected Plants)

Adani requests the Coordinator-General:

- ▶ consider the applications for quarries in this SEIS, Volume 4, Appendix C5 (Quarry approval applications)
- ▶ for material change of use applications, under the SDPWO Act - state standard conditions that must attach to approvals
- ▶ consider this SEIS, Volume 4, Appendix C6 (Draft proposed conditions).

5.7 Elgin-Moray and Moray-Carmichael Roads

The Elgin-Moray and Moray-Carmichael Roads are proposed to be the primary access roads for the Project. They are local government controlled roads and the responsibility of the IRC. The roads run in an approximate east-west alignment and are about 85 km in length. The Moray-Carmichael Road traverses through the Project (Mine) site.

5.7.1 *Maintenance of the Elgin-Moray and Moray-Carmichael Roads for mine exploration and other investigation activities*

Adani has entered into an agreement with the IRC about the maintenance of the Elgin-Moray and Moray-Carmichael Roads to support mine exploration and investigative activities for the Project. The extent of the agreement is from the intersection with the Gregory Development Road in the east, to the intersection of the road with the western boundary of EPC 1690. Approvals to enable road construction and maintenance activities to support mine exploration and investigative activities are not included in this EIS / SEIS process.

5.7.2 Upgrade of the Moray-Carmichael Road to support the Project (Mine)

If approval is received for the Project (Mine), it will be necessary to realign the Moray-Carmichael Road to the west of where the road passes the MWAV. The location of the re-aligned and upgraded road is designed to:

- ▶ avoid the rail balloon loop
- ▶ ensure the safest route for the public to continue using the road
- ▶ avoid vegetation and other environmental values.

The upgrade and realignment of the Moray-Carmichael Road is represented by a black dotted line on the Project (Offsite Infrastructure) map (Figure 8).

Once the Moray-Carmichael Road realignment occurs, the former Moray Carmichael Road - where it traverses to the north of the rail line and connects with the Project (Mine) site to the north - is proposed to be kept as a private road and will continue to connect various aspects of the Project.

The Elgin-Moray and Moray-Carmichael Roads are public roads and will remain open throughout the duration of the Project. The alignment of the road may move from time to time to accommodate mining activity, however it will continue to be open to the public and meet required standards.

It is also proposed to fence the road to keep stock and controllers separated so it can safely be used as a stock route corridor.

Approvals will be required for the following activities:

- simultaneous road closing / opening approval
- extending the Carmichael Survey Control Network along the Moray-Elgin Road
- other permits and approvals required under roads and transport legislation
- permits and approvals under the SP Act
- vegetation clearance permits under the VM Act
- water licences under the Water Act
- EAs to carry out ERAs under the EP Act.

Approvals will be applied for in early 2014, once agreement is finalised between Adani and the IRC about the proposed changes to the roads.

6 Summary of Project approval requirements

The relevant approval assessment processes for the various components of the Project are outlined below.

6.1 Overarching legislation

- ▶ The Project is a 'coordinated project' under the SDPWO Act. The EIS from December 2012 and this SEIS responds to the Terms of Reference and a request for further information from the Coordinator-General in March 2013.
- ▶ The Project is a controlled action for matters of MNES under the EPBC Act. This EIS supports an assessment of the Project under the EPBC Act.
- ▶ Other overarching legislative requirements, such as agreements under Native Title legislation, are described in section 2 of this report and the following tables.

6.2 Project (Mine)

- ▶ MLAs under the MR Act over areas under exploration for coal, namely EPC 1690 and the eastern and northern portions of EPC 1080.
- ▶ An EA under the EP Act with conditions for the carrying out of the activities on the Project (Mine) site, such as ERAs and activities involving water.
- ▶ Applying for other permits individually, as triggered and listed in section 3 of this report and the following tables.

6.3 Project (Rail)

- ▶ Adani is in discussions with the Office of the Coordinator-General regarding a declaration of land relating to the Project (Rail) as a SDA under the SDPWO Act. It is proposed the SDA include construction of rail and other facilities such as maintenance areas.
- ▶ Other permits will be required as described in section 4 of this report and the following tables.

6.4 Project (Offsite Infrastructure)

- ▶ It is also proposed that an SDA include the Project (Offsite Infrastructure), such incorporating the MWAV, airport, quarries and an industrial area.
- ▶ Other Project (Offsite Infrastructure) approvals, as triggered, as outlined in section 5 of this report and the following tables.

6.5 Conclusion

Adani is actively working to reduce the complexity associated with the large number of approvals which are relevant to large projects. Adani is seeking recommendations to grant approvals and conditions through the CG's report evaluating this SEIS for individual permits, authorisations and approvals, as summarised in the following tables.

Table 11: Overarching legislation summary

Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Additional information
Whole of project	Approval for taking of a controlled action	EPBC Act	DotE	Yes →	The Project will be assessed in accordance with the bilateral agreement between the Commonwealth and Qld Governments.
Indigenous cultural heritage	Cultural Heritage Management Plans	<i>Aboriginal Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs	No →	Information about indigenous cultural heritage is located in this SEIS, Volume 1, Chapter 5 (Indigenous and non-Indigenous cultural heritage). The Cultural Heritage Management Plans are being pursued outside the EIS process.
Whole of project	Report evaluating the EIS	SDPWO Act	Coordinator-General	Yes →	Information about the coordinated project process under the SDPWO Act is located in this Appendix, section 1.3 (Environmental Impact Statement process). This SEIS has been submitted to the Coordinator-General for evaluation.
Whole of project	Various	EP, SP, Water, VM and NC Acts	Various	N/A	See following tables.

Table 12: Project (Mine) approvals

Project (Mine) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Additional information
Mining activities, including the following ERAs: <ul style="list-style-type: none"> • Chemical storage • Sewage treatment • Water treatment. 	Mining Lease	MR Act	DNRM	No →	Applications for MLs were made to DNRM in July 2013.
	EA	EP Act	DEHP	Yes →	EA application made July 2013. Adani requests the Coordinator-General consider using the SDPWO Act, section 47C (Application of the CG's report to environmental authority) and include stated conditions, where possible, and where there has been successful negotiations with DEHP within agreed timeframes.
Taking of overland flow for the operation of the mine	Water licence	Water Act	DNRM	No →	Information about water and the mine is located in this SEIS, Volume 2, Chapter 6 (Water resources) and Volume 4, Appendices K1 (Updated Mine Hydrogeology Report), K2 (Water Balance Report), K3 (Water Quality Report), K5 (Revised Mine Hydrology Impact Assessment Report) and K6 (Addendum to Revised Mine Hydrogeology Report). Formal applications, with forms and supporting information to take water for the operation of the processing and handling plant will be made after further investigations and studies have been undertaken. These are expected to be completed by early 2014.

Section 6 – Summary of Project approval requirements

Project (Mine) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Additional information
Taking and / or diverting overland flow for harvesting from within the ML	Water licences, to be authorised and managed under the EA	Water Act	DNRM	No →	<p>Information about water and taking and / or diverting overland flow for harvesting from within the ML is located in this SEIS, Volume 2, Chapter 6 (Water resources) and Volume 4, Appendices K1 (Updated Mine Hydrogeology Report), K2 (Water Balance Report), K3 (Water Quality Report), K5 (Revised Mine Hydrology Impact Assessment Report) and K6 (Addendum to Revised Mine Hydrogeology Report).</p> <p>Formal applications, with forms and supporting information for taking and / or diverting overland flow harvesting within the ML will be made at appropriate stages of the mine development. This will be based on available data and any further investigations and / or studies that may be required for completing the application.</p>
Construction of Project (Mine) dams	Failure impact assessment, to be authorised and managed under the EA	WSSR Act	DNRM	No →	<p>Information about Project (Mine) dams are located in this SEIS, Volume 4, Appendices K5 (Revised Mine Hydrology Impact Assessment Report) and C6 (Draft approval conditions). However, failure impact assessments are to be undertaken for proposed dams, and are required to finalise applications. Formal applications will be lodged once these assessments are complete, estimated by early 2014.</p>

Section 6 – Summary of Project approval requirements

Project (Mine) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Additional information
Dewatering of open cut pits and underground mine workings	Water licences, to be authorised and managed under the EA	Water Act	DNRM	No →	<p>Information about the water, including dewatering open cut pits and underground mine workings, for the Project (Mine) are located in this SEIS, Volume 2, Chapter 6 (Water resources), Volume 4, Appendices K1 (Updated Mine Hydrogeology Report), K5 (Revised Mine Hydrology Impact Assessment) and K6 (Addendum to Revised Mine Hydrogeology Report). These sections contain some information to support a water licence applications.</p> <p>Formal applications, with forms and compiled supporting information for taking of artesian and sub artesian water to dewater open cut pits and underground mine workings will be made at appropriate stages of the mine development. This will be based on available data and any further investigations and / or studies that may be required for completing the application.</p>
Changing the stock route on the northern part of the Project (Mine) site	Agreement from DNRM and IRC for changes to stock routes	<i>Land Protection (Pest and Stock Route Management) Act 2002</i>	DNRM and IRC	No →	Adani is in discussions with DNRM and IRC about the detail of the proposed route realignment. The existing and proposed realigned stock route locations were inspected during a site visit in October 2013. A formal agreement to move the stock route is estimated to be complete by early 2014.
Clearing in the Bygana West Nature Refuge	Agreement with DNPRSR	NC Act	DEHP	No →	Discussions will be held with DEHP in late 2013 about the impacts to the nature refuge. Offsets are proposed in this SEIS, Volume 4, Appendix F (Revised Offset Strategy) as a mitigation strategy.

Table 13: Project (Rail) approvals

Project (Rail) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Planning approval for the Project (Rail)	Possible SDA, or change to IRC planning scheme	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	No →	Adani is in discussions with the Coordinator-General about the possible declaration of an SDA over the Project (Offsite Infrastructure) and associated facilities. Another planning approval mechanism for the Project (Rail) is amendment to the local government planning scheme.
Construction of the Project (Rail) itself	Operational works (excavation and fill)	SP Act or SDPWO Act, depending if SDA is declared	IRC or DSDIP, depending if SDA is declared	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
Mapping of assessable remnant vegetation for the Project (Rail)	Property Map of Assessable Vegetation (PMAV)	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, PMAVs were included in the EIS, Volume 4, Appendices AI and AJ.
Clearing native vegetation for the Project (Rail)	Clearing native vegetation	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).

Section 6 – Summary of Project approval requirements

Project (Rail) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Sourcing water for the Project (Rail) construction	Water licence for the taking or interfering with water	Water Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
Sourcing water for the Project (Rail) construction	Water licence for the taking of artesian and sub artesian water	Water Act	DNRM	No →	Information about sourcing artesian and sub-artesian water for the Project (Rail) are located in this SEIS, Volume 3, Chapter 6 (Water resources), Volume 4, Appendices K2 (Water balance), K3 (Water Quality Report) and K4 (Flood report). These sections contain some information to support a water licence application. However, further information is required for a full application, plus forms. Depending on the data gathered in 2013 under water permits, Adani will either apply for further water permits or water licences by early 2014.
Construction of bridge works across creeks	Constructing waterway barrier works	Fisheries Act	DAFF	No →	A number of the waterway crossings required for the Project (Rail) as the proposed construction are not compatible with the self-assessable development guidelines. To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).

Section 6 – Summary of Project approval requirements

Project (Rail) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Changes to three (3) stock routes due to the Project (Rail)	Agreement from DNRM and IRC for changes to stock routes	<i>Land Protection (Pest and Stock Route Management) Act 2002</i>	DNRM & IRC	No →	Three (3) stock routes were inspected during a site visit in October 2013. Treatments for these stock routes will be finalised after further discussions with DNRM and IRC. A formal agreement is estimated to be complete by early 2014.
Storage of chemicals under ERA 8 for the maintenance facility and construction depot	EA Material change of use	EP Act SP Act	DEHP	Yes →	An application, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
Sewage Treatment Plant under ERA 63 for the construction depot	EA Material change of use	EP Act SP Act	DEHP	Yes →	An application, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
Impacts to protected plants and animals	Permit to take protected plants	NC Act	DEHP	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
Possible damage to protected wildlife habitat	Species Management Plan / Threatened Species Management Plan	NC Act	DEHP	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Appendix C3 (Rail approval applications).

Section 6 – Summary of Project approval requirements

Project (Rail) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Activities in strategic cropping land area	Impacts to strategic cropping land	SCL Act	DNRM	No →	The history assessment will be completed by late 2013. A deed of agreement will then be negotiated with the administering authority.

Table 14: Project (Offsite Infrastructure) approvals

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Planning scheme allowing: <ul style="list-style-type: none"> MWAV Industrial area Airport 	Possible SDA, or change to IRC planning scheme	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	No →	Adani is in discussions with the Coordinator-General about the possible declaration of an SDA over the Project (Offsite Infrastructure) and associated facilities. Another mechanism for infrastructure or the local government planning scheme. Volume 4, Appendix 5 (Offsite infrastructure approval applications) includes the application for Preliminary Approval Affecting a Local Planning Instrument for a material change of use under section 242 of the SP Act.
Mapping of assessable remnant vegetation on Lot 662 on PH1491 (Moray Downs pastoral lease)	PMAV and Property Vegetation Management Plan (PVMP)	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications for PMAV and PVMP over Lot 662 on PH1491 are included in this SEIS, Volume 4, Appendices J7a (Offsite Infrastructure PMAV Report) and J7b (Offsite Infrastructure PVMP Report).

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Clearing native vegetation for the Project (Offsite Infrastructure)	Clearing native vegetation	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications for PMAV and PVMP over Lot 662 on PH1491 are included in this SEIS, Volume 4, Appendices J7a (Offsite Infrastructure PMAV Report) and J7b (Offsite Infrastructure PVMP Report). Applications will be lodged after further investigations and studies have been undertaken, expected to be completed by the end of 2013.
Impacts to protected plants and animals	Permit to take protected plants	NC Act	DEHP	No →	Applications will be lodged after further investigations and studies have been undertaken, which are expected to be completed by the end of 2013.
Possible damage to protected wildlife habitat	Species Management Plan / Threatened Species Management Plan	NC Act	DEHP	No →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C3 (Rail approval applications).
MWAV					
Bulk earthworks for the construction of the MWAV	Operational works for bulk earthworks	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Construction of the MWAV involving vegetation clearing	Operational works for vegetation clearing	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Material change of use for <ul style="list-style-type: none"> accommodation buildings MWAV wet mess ERA 63 (sewage treatment). 	Development approval and EA	SP and EP Acts	DEHP and IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
RAIL CAMPS 1 to 3					
Construction of Rail Camps 1 to 3 involving vegetation clearing	Operational works for vegetation clearing	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Material change of use for <ul style="list-style-type: none"> ERA 8 (Chemical storage) ERA 63 (sewage treatment). 	Development approval and EA	SP and EP Acts	IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Industrial Precinct					
Subdivision of Industrial Precinct	Reconfiguration of a Lot: Community Title Subdivision	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Material change of use for <ul style="list-style-type: none"> industrial activities ERA 8 (chemical storage) ERA 63 (sewage treatment) 	Development approval and EA	SP and EP Acts	IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Bulk earthworks for the construction of the industrial precinct	Operational works for bulk earthworks	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Construction of the industrial precinct involving vegetation clearing	Operational works for vegetation clearing	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Airport					
Airport	Aerodrome certification	<i>Civil Aviation Safety Regulations 1998</i>	Cwth	No →	Applications for certification will be lodged after the airport construction is finalised (approximately mid 2015).
Bulk earthworks for the construction of the airport	Operational works for bulk earthworks	SDPWO Act or SP Act	Coordinator-General and DSDIP or IRC	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Construction of the airport involving vegetation clearing	Operational works for vegetation clearing	VM Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Material change of use for: <ul style="list-style-type: none"> an airport ERA 63 (sewage treatment) 	Development approval and EA	SDPWO Act, SP Act and EP Act	IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Water infrastructure					
Taking flood water from the Belyando River	Water licence	Water Act	DNRM	No →	To provide an understanding of the framework and approvals required, applications (including forms and supporting information) are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Construction works to develop the dam	Operational works, failure impact assessment	SP Act, WSSR Act	IRC, DEHP	No →	Further design work for the dam will be finalised by early 2014. Applications involving works will be made by the end of 2013.
Roads					
Open / Close Local Government Roads	Upgrade, and realign parts of, the Moray-Carmichael Road to support the Project (Mine) production	SP and TI Acts	DTMR	No →	Information about roads is located in this SEIS, Volume 4, Appendix P (Road Impact Assessment Report). Applications will be lodged after a survey is completed of the current road alignments, anticipated by early 2014.
Roadworks – State Controlled Roads	Approval to undertake works and ancillary works to a state-controlled road	TI Act	DTMR	No →	Information about roads is located in this SEIS, Volume 4, Appendix P (Road Impact Assessment Report). Applications will be lodged after a survey is completed of the current road alignments, anticipated by early 2014.

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
Roadworks – Local Roads	Approval to make an alternative or improvement to a local government road	<i>Local Government Act 2009</i>	DTMR & IRC	No →	Information about roads is located in this SEIS, Volume 4, Appendix P (Road Impact Assessment Report). Applications will be lodged after a survey is completed of the current road alignments, anticipated by early 2014.
Operational work that is undertaking road works on a local government road	Road crossings will be required for the Project (Rail)	<i>SP Act & Local Government Act 2009</i>	DTMR & IRC	No →	Applications will be lodged after a survey is completed of the current road alignment, and is anticipated by early 2014.
Construction of Project (Rail) involving works with SCRs	Ancillary works and encroachment	TI Act	DTMR	No →	Further design work for the Project (Rail) will be finalised by early 2014. Applications involving works and SCRs will be made by early 2014.
	Declaration of common areas	TI Act	DTMR	No →	
	Approval for construction and maintenance access to SCRs	TI Act	DTMR	No →	

Section 6 – Summary of Project approval requirements

Project (Offsite Infrastructure) Activity	Approval	Legislation	Authority	Approval conditions sought in CG's Report?	Status
	Approval for alteration or improvement to local government controlled roads and approval for carrying out works on a road	<i>Local Government Act 2009</i>	IRC	No →	
Moray Downs, Borrow 7, North Creek, Disney and South Back Creek Quarries					
Use of quarry materials belonging to the State	Quarry sales permit	Forestry Act	DAFF	No →	Applications, including forms and supporting information, will be made in early 2014.
Use of forest products and quarry materials	Interfering or use of quarry materials on State lands	Forestry Act	DAFF	No →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C5 (Quarry approval applications).
Quarrying activities	Development approval for a material change of use and ERA 16	SP Act and EP Act	IRC	Yes →	Applications, including forms and supporting information, have been included in this SEIS, Volume 4, Appendix C5 (Quarry approval applications).

Attachment 1 – Terms of Reference

Extract from Terms of Reference	Where ToR addressed
Section 1.9 Project Approvals	
Describe and list Commonwealth, state and local legislation and policies relevant to the planning, approval, construction and operation of the project. Identify all approvals, permits, licences and authorities that will need to be obtained for the proposed project. Outline the triggers for the application of each of these and identify relevant approval requirements.	Sections 2 to 6 of this report.
Relevant Commonwealth Government legislation may include, but is not limited to: <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1994</i> <i>Environment Protection and Biodiversity Conservation Act 1999</i> <i>Native Title Act 1993</i>	Section 2 of this report.
Outline and identify relevant Commonwealth obligations such as:	
<ul style="list-style-type: none"> ▶ protection of World Heritage Values ▶ migratory animals (China-Australia Migratory Bird Agreement (CAMBA), Japan-Australia Migratory Bird Agreement (JAMBA), Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA) and Bonn Convention) ▶ biodiversity, climate and wetlands of international importance (Ramsar) 	EIS Volume 1, Section 11 and the SEIS Volume 1, Chapter 12.
Where relevant, refer to applicable Qld legislation, which may include but is not limited to:	
<i>Aboriginal Cultural Heritage Act 2003</i>	Section 2 of this report.
<i>Environmental Protection Act 1994</i>	Sections 2 to 6 of this report.
<i>Fisheries Act 1994</i>	Sections 3 to 6 of this report.
<i>Forestry Act 1959</i>	Sections 4 to 6 of this report.
<i>Land Act 1994</i>	Sections 5 and 6 of this report.
<i>Land Protection (Pest and Stock Route Management) Act 2002</i>	Sections 2 to 6 of this report.
<i>Mineral Resources Act 1989</i>	Sections 3 and 6 of this report.
<i>Nature Conservation Act 1992</i>	Sections 3 to 6 of this report.

Extract from Terms of Reference	Where ToR addressed
<i>Queensland Heritage Act 1992</i>	EIS, Volume 4, Appendix D (Project approvals and planning assessment).
<i>State Development and Public Works Organisation Act 1971</i>	Sections 2 to 6 of this report.
<i>Sustainable Planning Act 2009</i>	Sections 2 to 6 of this report.
<i>Torres Strait Islander Cultural Heritage Act 2003</i>	EIS, Volume 4, Appendix D (Project approvals and planning assessment).
<i>Transport Infrastructure Act 1994</i> <i>Transport Operations (Road Use Management) Act 1995</i> <i>Transport Planning and Coordination Act 1994</i>	Sections 4 and 6 of this report.
<i>Vegetation Management Act 1999</i>	Sections 2 to 6 of this report.
<i>Water Act 2000</i>	Sections 2 to 6 of this report.
<p>Note that the Government intends to introduce and enact legislation in 2011 for regulating development on land determined to be strategic cropping land. If this EIS process is not finalised by the time the legislation comes into force, further requirements may be placed on the EIS process relating to land determined to be strategic cropping land prior to a decision being made.</p> <p>“Protecting Queensland’s strategic cropping land: a policy framework” is available on the DEHP website and provides details of the Government’s current policy about strategic cropping land.</p> <p>Legislation on dealing with offsets in development assessment and conditions has recently been passed</p>	Noted. Section 4 of this report addresses the <i>Strategic Cropping Land Act 2011</i>
Section 1.10 Relevant Plans	
Outline the project's consistency with the existing national, state, regional and local planning frameworks that apply to the project location. Refer to all relevant statutory and non-statutory plans, including water resource plans under the <i>Water Act 2000</i> , planning policies, guidelines, strategies and agreements.	See EIS, Volume 4, Appendix D (Project Approvals and Planning Assessment), and various parts of this report where assessment has been undertaken against the relevant planning schemes. For water resource plans, see this report, section 2.

Extract from Terms of Reference	Where ToR addressed
<p>This project is located within the Whitsunday, Hinterland and Mackay (WHAM) planning region. On 5 March 2011, the Qld Government announced that a statutory regional plan will be prepared for the WHAM region, a draft of which is expected to be released for public comment in the first half of 2011. This plan is in an advanced state of finalisation, and will be recognised as a state interest under the <i>Sustainable Planning Act 2009</i>. An assessment of this project against relevant policies and provisions of the draft WHAM regional plan, once released, must be provided.</p>	<p>See EIS, Volume 4, Appendix D (Project Approvals and Planning Assessment), and various parts of this report where assessment has been undertaken against the relevant planning schemes.</p>
<p>Similarly, the project may potentially impact on the Central West and Central Qld planning regions. An assessment of this project against the Central West Regional Plan (2009) must be provided.</p>	<p>This Regional Plan does not apply to the Project and has not been referenced in this report.</p>
<p>The proposed mine site for this project lies within the <i>Water Resource (Burdekin) Plan 2007</i> and the <i>Water Resource (Great Artesian Basin) Plan 2006</i> areas. Any relevance of these plans, the <i>Water Act 2000</i> and the <i>Water Regulation 2002</i> to the project must be addressed as part of the EIS.</p>	<p>Sections 2 to 6 of this report.</p>
<p>Section 1.11 Environmentally relevant activities</p>	
<p>Briefly describe each environmentally relevant activity (ERA) and associated activities that are to be carried out in connection with the project. Present a detailed description of each ERA in Section 3, Environmental values and management of impacts and provide details of the impact on land, water, air, noise and any other relevant environmental values.</p>	<p>Sections 3 to 6 of this report.</p>
<p>Permitting requirements for environmentally relevant activity 14 - electricity generation differs depending on connection to the grid. Should ERA 14- electricity generation be undertaken on the mining tenure, the EIS must identify if the plant will or intends to be connected to the State power network grid. Electricity generation undertaken on a mining tenure that is, or intends to be, connected to the State power network grid will require a separate development permit. Electricity generation undertaken on a mining tenure and utilized solely for mining activities contained within the mining tenure can be permitted under a mining environmental authority. If any electricity generated on the mining tenure is used for anything outside of the mining tenure, a separate development approval under the <i>Sustainable Planning Act 2009</i> will be required.</p>	<p>EIS, Volume 4, Appendix D (Project approvals and planning assessment).</p>

Extract from Terms of Reference	Where ToR addressed
<p>.The EIS must identify if construction/operation camps and extractive industries located off the mining tenure will be conducting an ERA, such as sewage treatment, motor vehicle workshops, abrasive blasting, and boiler making.</p> <p>If an ERA is to be undertaken, sufficient detail must be provided about the activity, potential environmental impacts and strategies to mitigate the environmental impacts. The permitting of ERA's under a development permit will require the submission of a Site Based Management Plan and should be a separate document from a mining Environmental Management Plan. The above information will allow for informed decisions to be made with respect to the project, consistent with the provisions of the EP Act.</p>	Section 5 of this report.
<p>Outline the project's consistency with existing national, state, regional and local planning frameworks, their policies and provisions:</p>	
Central West Regional Plan	This Regional Plan has been assessed and it is considered not to apply to the Project.
<p><i>Mackay, Isaac and Whitsunday Regional Plan 2011</i></p> <p><i>Whitsunday, Hinterland and Mackay Regional Plan 2006</i></p>	See EIS, Volume 4, Appendix D (Project Approvals and Planning Assessment), and various parts of this report where assessment has been undertaken against the relevant planning schemes.
<i>Water Resource (Burdekin Basin) Plan 2007</i>	Sections 2 to 6 of this report
<i>Burdekin Resource Operations Plan 2009</i>	Sections 2 to 6 this report
<i>Water Resource (Great Artesian Basin) Plan 2006</i>	Sections 2 to 6 of this report
<i>Nature Conservation (Protected Plants) Conservation Plan 2000</i>	Sections 3 to 5 of this report

Attachment 2 - Issues in submissions about project approvals

Issue raised:	Made by:	Response:
Overarching issue		
Not all project requirements for development approvals and licences in accordance with the <i>Water Act 2000</i> (Water Act) considered. Further clarification about project requirements for development approvals and licences in accordance with the Water Act.	DNRM	Further information about the Project and approvals required under the Water Act are discussed in sections 2 to 6 of this report. Also, applications for approvals under the Water Act are included in Appendices C3 (Rail approval applications) and C4 (Offsite Infrastructure approval applications).
The department implemented the <i>Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012</i> and associated regulatory strategy will impact on the Project and requirements will change.	DEHP	Noted. The impacts of this legislative framework on the Project have been addressed throughout the report and Attachment 3 of this report.
Native title issues relating to Moray Downs property.	Wangan and Jagalingou Native Title claimants	These issues and responses are culturally sensitive and therefore confidential. Issues are being managed through discussions between Adani and relevant indigenous parties.
Environmental offsets over the Moray Downs property and processes under the <i>Land Act 1994</i> .	Wangan and Jagalingou Native Title claimants	Environmental offsets required for the project will be implemented in accordance with Commonwealth and Qld Government policy and requirements, including those relating to tenure. The implementation of environmental offsets will commence post the CG's report evaluating the EIS.
Insufficient identification of all relevant approvals, permits, licences and authorities required for the Project.	DTMR	Feedback referenced several EIS sections, but not Volume 4, Appendix D (Project approvals and planning assessment) where the relevant information was presented. The SEIS is also structured so this information is located upfront in Chapter 4 (Project approvals).
EIS does not provide information on whether commercial quantities privately owned (freehold) forests will be interfered with and how timber salvage will be facilitated.	DAFF	There are no commercial quantities of privately owned (freehold) forests interfered with due to the Project.

Issue raised:	Made by:	Response:
Insufficient information on interference with state owned forestry products administered under the <i>Forestry Act 1959</i> (Forestry Act).	DAFF	No state owned forestry products, administered under the Forestry Act, will be interfered with due to the Project.
Suggest there may be scope under the <i>Vegetation Management Act 1999</i> (VM Act) for Adani to seek a determination as to whether a project can be determined to be a 'Significant Community Project'.	DNRM	Adani has considered the benefits of seeking a determination as to whether the Project is a "Significant Community Project" and determined the provisions under the SDPWO Act are sufficient.
Preference for mine accommodation (including design and construction) to be applied for under the SP Act to the IRC and not be declared a SDA.	IRC	Adani is in discussions with the Office of the Coordinator-General about the declaration of the area of land relating to the Project (Rail) and the Project (Offsite Infrastructure) as an SDA. Adani has also included applications under the <i>Sustainable Planning Act 2009</i> (SP Act) in the SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).
Project (Mine)		
Within ML areas, fish passage must be provided for within any waterway works, stream crossings or waterway diversions, and that Project will minimise and mitigate any impacts upon waterway habitats.	DAFF	Adani will consult with DAFF during the detailed design stage for all waterway diversions, levee designs, culvert or bed level crossings, rock armouring, and for all and any other works within a waterway as defined under the Fisheries Act for both permanent and temporary works.
Information about water licence requirements, water storages, mine affected water storages, capture of mine affected overland flow. Clarification that conditions under the Water Act will be included in the EA.	DNRM	See sections 2, 3 and 6 of this report about water and approvals.

Issue raised:	Made by:	Response:
Correction of EIS, Volume 4, Appendix D (Project approvals and planning assessment), figure 4 about water permits held by Adani.	DNRM	The water permits are currently held by Adani and reflected in amended figures of this report.
Project (Rail)		
Discuss approvals under the <i>Fisheries Act 1959</i> (Fisheries Act), including operational works approvals for the construction and / or raising of waterway barrier works.	DAFF	The Fisheries Act approvals are discussed in sections 2 to 6 of this report. Also, applications for approvals under the Fisheries Act are included in Appendices C3 (Rail approval applications) and C4 (Offsite infrastructure approval applications).
Study regarding the resource potential of the area crossed by rail in based on insufficient information. Consultation with current ten (10) Exploration Permit holders must be undertaken.	DNRM	Adani will undertake further consultation in 2013 with the tenure holders along the Project (Rail) corridor to understand the resource potential further.
Rail corridor transverses land subject to ML or Mineral Development Licence (MDL). Proponent must consult with owner of MDL 391.	DNRM	Adani will undertake further consultation in 2013 with the tenure holders along the Project (Rail) corridor to understand the resource potential further.
Off-site infrastructure		
No acknowledgement of approvals required to clear vegetation for the offsite infrastructure area.	DNRM	The EIS acknowledged clearing approvals would be required for the Project (Offsite Infrastructure). In particular, the EIS, Volume 2, Chapter 5, section 5.3.2 discussed anticipated clearing required for the offsite infrastructure area, and Volume 4, Appendix D, sections 5.6 and 5.7 discussed approval requirements. Further information about approvals required about vegetation for the Project (Offsite Infrastructure) is also included in section 5 of this report. Applications required under the VM and NC Acts about vegetation impacts are included in this SEIS, Volume 4, Appendix C4 (Offsite infrastructure approval applications).

Issue raised:	Made by:	Response:
<p>Approvals required for use of forest products and quarry materials under the Forestry Act.</p> <p>Insufficient information regarding quarry resources.</p>	<p>DAFF, IRC, DNRM and some land holders</p>	<p>Quarry materials required due to the Project and approval requirements are outlined in sections 5 and 6 of this report. Applications for five (5) quarries are included in this SEIS, Volume 4, Appendix C5 (Quarry approval applications).</p>
<p>The Terms of Reference require the proponent to outline whether there will be a requirements for a Quarry Material Allocation Notice under the Water Act.</p>	<p>DNRM</p>	<p>Adani does not propose to take quarry material from watercourses in the location of the five (5) quarries. Hence the requirement for a Quarry Material Allocation Notice under the Water Act is not triggered.</p>

Attachment 3 – Relevant legislative amendments between December 2012 and September 2013

Commonwealth Government legislative amendments

Clean Energy Amendment Acts 2012 (Cth)

The Minister for Climate Change and Energy Efficiency introduced seven (7) pieces of legislation (Amendment Bills) in September 2012 that proposed to establish a link between Australia's carbon pricing mechanism and the European Union Emissions Trading System from 1 July 2015. The Amendment Bills create a mechanism that will frame the carbon price under the fuel tax credit regime beyond 1 July 2015 based on the equivalent price paid by other liable entities. Adani is not yet subject to clean energy requirements because the Project remains in the planning and assessment phase.

Environment Protection and Biodiversity Conservation Amendment Act 2013 (Cth)

A number of amendments to the regime under the EPBC Act have been made since the EIS was finalised.

IESC for large coal mining developments

The *Environmental Protection and Biodiversity Conservation Amendments (Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development) Act 2012 (Cth)* (Independent Committee Act), was passed on 10 October 2012 and received assent on 24 October 2012.

The Independent Committee Act amended the EPBC Act to replace the Interim Independent Expert Scientific Committee with the Independent Expert Scientific Committee (IESC), which commenced on 9 November 2012. The Minister is now required to obtain advice from the IESC before taking action involving coal seam gas and large coal mining developments that are likely to have a significant impact on water resources, which includes the Project.

This SEIS has been prepared in accordance with the recommendations of the interim committee.

In March, then Federal Minister proposed that 'water resources' become an MNES through the introduction of an EPBC Amendment Bill. The Bill was passed on 19 June 2013. The EIS and the SEIS have assessed the impacts of the Project on water resources, in accordance with the interim committee's recommendations.

See also SEIS, Volume 4, Appendices K1 (Revised Mine Hydrogeology Report), K5 (Revised Mine Hydrology Impact Assessment) and K6 (Addendum to Revised Mine Hydrogeology Report).

Environmental offsets

In October 2012, the DotE released its new Environmental Offsets Policy under the EPBC Act, replacing the draft policy statement *Use of environmental offsets under the EPBC Act* published in 2007. The policy applies to the Project, and has been taken into account in the revised offsets appendices in this SEIS. See also SEIS, Volume 4, Appendix F (Revised Offset Strategy Report).

Qld Government legislative amendments

Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012

The *Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012* (Greentape Reduction Act) commenced on 31 March 2013 and changed some requirements for the project under the EP Act. For example, the previous version of Volume 4, Appendix D (Project Approvals and Planning Assessment) cited a requirement to seek approval to carry out concrete batching. This requirement was removed under the legislation, hence approval for the activity is not required. However, Adani must comply with the general environmental duty for the activity, and will manage and monitor environmental impacts of these activities through the EMP.

Chapters 4, 5, 5A and 6 were replaced with the new Chapter 5 to create a single approval process for EAs. The Greentape Reduction Act also included changes to supporting subordinate legislation, such as removing some ERAs previously applicable to the Project, including former ERA 21 – motor vehicle workshop operation.

The following legislation also amended the *Environmental Protection Act 1994* between November 2012 and July 2013:

- *Waste Reduction and Recycling and Other Legislation Amendment Act 2013*
- *Mining and Other Legislation Amendment Act 2013*
- *Aboriginal and Torres Strait Islander Land Holding Act 2013*
- *Queensland Rail Transit Authority Act 2013*
- *TAFE Queensland Act 2013.*

These amendments do not impact on the Project.

Changes to EA requirements

The Greentape amendments have made some significant amendments to the terminology and processes relevant to EAs since the EIS was prepared. Volume 4, Appendix D of the EIS noted that the Project (Mine) required a level 1 mining project EA. Under the Greentape amendments, all EA applications (including for resource activities and prescribed ERAs) are classed as either standard, variation or site-specific. This SEIS has been prepared in accordance with the Greentape Reduction Act amendments to the EP Act.

Land, Water and Other Legislation Amendment Act 2013

The *Land Water and Other Legislation Amendment Act 2013*, which received assent on 14 May 2013, introduced significant changes to the Water Act. The Act removes the requirement for proponents to obtain a water licence (under the Water Act) in situations where the impact relates to diversion of a watercourse and is associated with a resource activity, and the EA contains a condition about the watercourse diversion. Changes to the regulation of levees under the Water Act, including the insertion of a definition of 'levee' and the categorisation of levees based on risk assessment criteria, were introduced by the Act.

Mining and Other Legislation Amendment Act 2013

The *Mining and Other Legislation Amendment Act 2013* received assent on 22 March 2013. It amended several pieces of legislation, including the MR Act and the *Petroleum and Gas (Production and Safety) Act 2004*. The amendments included:

- ▶ clarification of the definition of 'occupier' under various resources Acts (including the MR Act)
- ▶ the introduction to the MR Act of a tendering process for exploration permits for coal (EPCs) and a cash bidding component for highly prospective areas, to replace the previous EPC application process.

Adani will continue to meet the requirements of the MR Act, including land access requirements with respect to activities carried out on its EPCs. This SEIS has been prepared in accordance with the amendments to the MR Act.

Sustainable Planning and Other Legislation Amendment Act (No. 2) 2012

On 13 November 2012, the *Sustainable Planning and Other Legislation Amendment Bill 2012* (Bill) was passed by Parliament giving effect to the recommendations of the State Development, Infrastructure and Industry Committee (Committee). The Bill received royal assent on 22 November 2012 as an Act. Most provisions commenced on assent.

The Act removed a requirement for development applications involving a state resource to contain evidence of a state resource entitlement. This means that development applications for the Project which involve a state resource will no longer need to include this evidence and is called "Owner's consent". Owner's consent is required for the following development applications:

- ▶ application for a material change of use of premises
- ▶ application for reconfiguring a lot
- ▶ application for work on land below high-water and outside a canal as defined under the *Coastal Protection and Management Act 1995*, or
- ▶ application for work on rail corridor land as defined under the *Transport Infrastructure Act 1994*.

In addition, the Act created a single State Assessment and Referral Agency (SARA), to streamline the process for assessing development application which matters of interest to the State. These provisions, and supporting subordinate policy documents, took effect from 1 July 2013.

Waste Reduction and Recycling and Other Legislation Amendment Act 2013

The *Waste Reduction and Recycling and Other Legislation Amendment Act 2013* received assent on 14 March 2013 although a number of its provisions are yet to take effect. As part of the Project, an 'onsite' landfill is proposed to be operated, catering for waste disposal for the Project (Mine) and Project (Offsite Infrastructure). Waste generated in association with the Project (as discussed in the EIS) would trigger a requirement to hold an EA for operating any landfill.

Vegetation Management Framework Amendment Act 2013

The *Vegetation Management Framework Amendment Act 2013* received assent on 23 May 2013. The majority of its provisions are yet to commence. When in effect, the Act will amend the objectives of the VM Act to allow for sustainable land use. The amendments remove regulation on the clearing of regrowth vegetation for freehold and indigenous land. Depending on timing of commencement of these provisions, some requirements relating to clearing of regrowth vegetation may no longer apply in respect of the Project.