



Appendix B

Secretary's Environmental Assessment Requirements





Planning & Environment

Planning Services Resource Assessments

Contact: Paul Freeman
Phone: (02) 9228 6587
Email: paul.freeman@planning.nsw.gov.au

Our ref: SSD 7172

Mr Greig Duncan
Hume Coal Pty Ltd
Unit 7-8
9 Clarence Street
MOSS VALE NSW 2577

Dear Mr Duncan

Hume Coal Project (SSD 7172) Environmental Assessment Requirements

I have attached the environmental assessment requirements for the preparation of an Environmental Impact Statement (EIS) for the Hume Coal Project.

These requirements are based on the information you have provided to date, and have been prepared in consultation with the relevant government agencies. The agencies' comments are attached for your information (see Attachment 2).

Please note that the Department may alter these requirements at any time, and that you must consult further with the Department if you do not lodge a development application and EIS for the project within the next two years.

If your proposal contains any actions that could have a significant impact on matters of National Environmental Significance, then it will also require approval under the Commonwealth's *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act). This approval is in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Department of the Environment in Canberra (6274 1111 or www.environment.gov.au).

Please contact the Department at least two weeks before you plan to submit the development application and EIS for the project. This will enable the Department to:

- confirm the applicable fee (see Division 1AA, Part 15 of the *Environmental Planning and Assessment Regulation 2000*); and
- determine the required number of copies of the EIS.

It is important for you to recognise that the Department will review the EIS for the project before putting it on public exhibition. If it fails to adequately address these requirements, you will be required to submit an amended EIS.

Yours sincerely

Mike Young
Director
Resource Assessments
as nominee of the Secretary

20.8.15.

Environmental Assessment Requirements

State Significant Development

Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

Application Number	SSD 7172
Proposal	<p>The Hume Coal Project, which includes:</p> <ul style="list-style-type: none"> • developing a new underground coal mine, to extract up to 3.4 million tonnes of run-of-mine coal a year for up to 22 years; • developing a range of associated infrastructure to handle, process, store and load coal and otherwise support the mining operations; and • progressively rehabilitating the site.
Location	Approximately 3 kilometres west of Moss Vale
Applicant	Hume Coal Pty Ltd
Date of Issue	20 August 2015
General Requirements	<p>The Environmental Impact Statement (EIS) for the development must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none"> • a full description of the development, including: <ul style="list-style-type: none"> – the resource to be extracted, demonstrating efficient resource recovery within environmental constraints; – the mine layout and scheduling; – minerals processing; – surface infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process); – a waste (overburden, tailings, etc.) management strategy; – a water management strategy, having regard to the EPA's, DPI's and Water NSW's requirements and recommendations (see Attachment 2); – a rehabilitation strategy, having regard to DRE's requirements (see Attachment 2); and – the likely interactions between the development and any other existing, approved or proposed mining related development in the vicinity of the site; • a list of any approvals that must be obtained before the development may commence; • an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including: <ul style="list-style-type: none"> – a description of the existing environment likely to be affected by the development, using sufficient baseline data; – an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice; – a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of: <ul style="list-style-type: none"> ○ whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented; ○ the likely effectiveness of these measures, including performance measures where relevant; and ○ whether contingency plans would be necessary to manage any

	<p>residual risks;</p> <ul style="list-style-type: none"> – a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved; • a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; • consideration of the development against all relevant environmental planning instruments (including Part 3 of the <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>); and • the reasons why the development should be approved, having regard to environmental, economic and social considerations, including the principles of ecologically sustainable development. <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by a signed report from a suitably qualified and experienced person that includes an accurate estimate of the capital investment value (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived.</p>
Specific Issues	<p>The EIS must address the following specific issues:</p> <ul style="list-style-type: none"> • Subsidence – including an assessment of the likely conventional and non-conventional subsidence effects and impacts of the development, and the potential consequences of these effects and impacts on the natural and built environment, paying particular attention to those features that are considered to have significant economic, social, cultural or environmental value, and having regard to DRE's and OEH's requirements (see Attachment 2); • Land – including: <ul style="list-style-type: none"> - an Agricultural Impact Statement, prepared in accordance with DPI's <i>Agricultural Impact Statement: Technical Notes</i>, to assess the likely impacts of the development on the soils and land capability of the site and surrounds, paying particular attention to any Biophysical Strategic Agricultural Land (BSAL) and having regard to DPI's requirements (see Attachment 2); - an assessment of the likely agricultural impacts of the development; - an assessment of the likely impact of the development on landforms (topography), including: <ul style="list-style-type: none"> o the potential subsidence impacts on cliffs, rock formations and steep slopes; and o the long term geotechnical stability of any new landforms; - an assessment of the compatibility of the development with other land uses in the vicinity of the development in accordance with the requirements of Clause 12 of <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>, paying particular attention to the agricultural land uses in the region and the Belanglo State Forest; • Water – including: <ul style="list-style-type: none"> - an assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources, having regard to the EPA's, DPI's and Water NSW's requirements and recommendations (see Attachment 2); - an assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users; and - an assessment of the potential flooding impacts of the development;

	<ul style="list-style-type: none"> • Biodiversity – including: <ul style="list-style-type: none"> - an assessment of the likely biodiversity impacts of the development, in accordance with the Framework for Biodiversity Assessment, by a person accredited in accordance with s142(B)(1)(c) of the <i>Threatened Species Conservation Act 1995</i>, and having regard to OEH's and DPI's requirements and recommendations (see Attachment 2); and - a strategy to offset any residual impacts of the development in accordance with the NSW Biodiversity Offsets Policy for Major Projects; • Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to OEH's requirements (see Attachment 2); • Noise – including: <ul style="list-style-type: none"> - an assessment of the likely operational noise impacts of the development (including construction noise) under the <i>NSW Industrial Noise Policy</i>, paying particular attention to the obligations in chapters 8 and 9 of the policy, and the <i>Voluntary Land Acquisition and Mitigation Policy</i> (DP&E); - if a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the <i>Interim Construction Noise Guideline</i>; - an assessment of the likely road noise impacts of the development under the <i>NSW Road Noise Policy</i>; • Air – including: <ul style="list-style-type: none"> - an assessment of the likely air quality impacts of the development in accordance with the <i>Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW</i> and the EPA's additional requirements (see Attachment 2); and - an assessment of the likely greenhouse gas impacts of the development, having regard to the EPA's requirements (see Attachment 2); • Transport – including an assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the local and State road network and the rail network, having regard to Transport for NSW's and RMS's requirements (see Attachment 2); and • Visual – including an assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to the creation of any new landforms and minimising the lighting impacts of the development; • Hazards - including an assessment of the likely risks to public safety, paying particular attention to potential subsidence risks, bushfire risks, and the handling and use of any dangerous goods; and • Social & Economic – including: <ul style="list-style-type: none"> - an assessment of the likely social impacts of the development; and - an assessment of the likely economic impacts of the development, paying particular attention to: <ul style="list-style-type: none"> o the significance of the resource; o economic benefits of the project for the State and region; and o the demand for the provision of local infrastructure and services, having regard to Wingecarribee Shire Council's requirements (see Attachment 2).
Consultation	<p>During the preparation of the EIS, you must consult with relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.</p>

ATTACHMENT 1

Environmental Planning Instruments, Policies, Guidelines & Plans

Land	
	Guideline for Agricultural Impact Statements (DP&E)
	Agricultural Impact Statement: Technical Notes (DPI)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	Interim Protocol for Site Verification & Mapping of Biophysical Strategic Land (OEH)
	Soil and Landscape Issues in Environmental Impact Assessment (NOW)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
Water	
Water Sharing Plans	Greater Metropolitan Region Unregulated River Water Sources
	NSW State Groundwater Policy Framework Document (NOW)
	NSW State Groundwater Quality Protection Policy (NOW)
	NSW State Groundwater Quantity Management Policy (NOW)
	NSW Aquifer Interference Policy 2012 (NOW)
	Australian Groundwater Modelling Guidelines 2012 (Commonwealth)
	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Guidelines for the Assessment & Management of Groundwater Contamination (EPA)
	NSW State Rivers and Estuary Policy (NOW)
	NSW Government Water Quality and River Flow Objectives (EPA)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)
	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
Groundwater	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (DECC)
	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control (EPA)
	Technical Guidelines: Bunding & Spill Management (EPA)
	Environmental Guidelines: Use of Effluent by Irrigation (EPA)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	NSW Guidelines for Controlled Activities (NOW)
	Floodplain Development Manual (OEH)
	Floodplain Risk Management Guideline (OEH)
Flooding	

Biodiversity	<ul style="list-style-type: none"> Framework for Biodiversity Assessment (OEH) NSW Biodiversity Offsets Policy for Major Projects (OEH) Threatened Species Assessment Guidelines (OEH) Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (Fisheries NSW) NSW State Groundwater Dependent Ecosystem Policy (NOW) Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW) State Environmental Planning Policy No. 44 – Koala Habitat Protection
Heritage	<ul style="list-style-type: none"> The Burra Charter (The Australia ICOMOS charter for places of cultural significance) Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DP&E) Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (OEH) Code of Practice for Archaeological Investigations of Objects in NSW (OEH) Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (OEH) NSW Heritage Manual (OEH) Statements of Heritage Impact (OEH)
Noise	<ul style="list-style-type: none"> NSW Industrial Noise Policy (EPA) Interim Construction Noise Guideline (EPA) NSW Road Noise Policy (EPA) Assessing Vibration: a Technical Guideline (EPA) Voluntary Land Acquisition and Mitigation Policy (DP&E)
Air	<ul style="list-style-type: none"> Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW (EPA) Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA) Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline (EPA) Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion in the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA) Voluntary Land Acquisition and Mitigation Policy (DP&E) National Greenhouse Accounts Factors (Commonwealth)
Transport	<ul style="list-style-type: none"> Guide to Traffic Generating Development (RTA) Road Design Guide (RMS) & relevant Austroads Standards
Public Safety	<ul style="list-style-type: none"> State Environmental Planning Policy No. 33 – Hazardous and Offensive Development Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis
Resource	<ul style="list-style-type: none"> Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 (JORC)
Waste	<ul style="list-style-type: none"> Waste Classification Guidelines (EPA)
Rehabilitation	<ul style="list-style-type: none"> Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth) Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)

Environmental Planning Instruments - General

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy No. 44 – Koala Habitat Protection

Wingecarribee Local Environmental Plan 2010

ATTACHMENT 2

AGENCIES' CORRESPONDENCE



Department of Primary Industries

OUT15/18769

Anna Timbrell
Planning Officer
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

29 JUL 2015

Dear Ms Timbrell

Thank you for your email of 23 July 2015 concerning the request for the Secretary's Environmental Assessment Requirements (SEARs) from Hume Coal Pty Ltd.

The Department of Primary Industries (DPI) has reviewed the request for the SEARs from Hume Coal Pty Ltd and requests that the requirement for an Agricultural Impact Statement (AIS) is specifically included in the EIS. Guidance on satisfying the requirements for the AIS should be taken from the Department of Primary Industries' Agricultural Impact Statement Technical Notes which are available at:

<http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment>

This advice is forwarded direct to the Department of Planning & Environment in accordance with agreed arrangements for mining applications that affect agricultural land.

Additional advice from other divisions within DPI may be forwarded by separate letter.

If you wish to discuss the issue further please call Rob Williamson on telephone 02 6391 3166 or by email robert.williamson@dpi.nsw.gov.au

Yours sincerely

Dr Regina Fogarty
Director, Strategy & Policy
Encl

Attachment 1

SEAR's in relation to Agriculture should include:

An Agricultural Impact Assessment given that:

- The project is undertaken over a lengthy period (22 years);
- It is unclear whether disturbance can be fully rehabilitated;
- It is unclear whether there will be permanent impacts; and
- the project has caused in the local farming and general community in the past



OUT15/19993

Anna Timbrell
Planning Officer – Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Email: Anna.Timbrell@planning.nsw.gov.au

Dear Ms Timbrell

HUME COAL PROJECT (SSD 7172)

I refer to your email dated 23 July 2015 regarding Hume Coal Pty Limited's request for Secretary's Environment Assessment Requirements (SEARs) for its Hume Coal Project. NSW Department of Industry, Skills and Regional Development, Division of Resources & Energy (DRE) understands that the development is a State Significant Development under Part 4 of the *Environmental Planning and Assessment Act 1979*.

DRE has reviewed the *Hume Coal Project Preliminary Environmental Assessment* dated July 2015 and provides the following comments which are directed at specific areas of DRE's responsibility for this proposal:

PROJECT DESCRIPTION

To ensure that the project and its environmental interactions can be understood and assessed by DRE, the Environmental Impact Statement (EIS) should provide a comprehensive description of all aspects (including the mineral extraction and mining purposes) of the project. In terms of text, plans or charts, it must also clearly show the proposed extent and sequence of the development.

RESOURCE AND RESERVE STATEMENT

The EIS is to include a resource/reserve statement that has been prepared in accordance with the current version of the Joint Ore Reserve Committee Code (JORC code) and the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves prepared by the Guidelines Review Committee on behalf of the Coalfields Geology Council of New South Wales and the Queensland Resources Council.

LIFE OF MINE PRODUCTION SCHEDULE

The EIS must include a life of mine production schedule for each year of operation of the mine and for the life of the project. The production schedule is to include:

- details of run-of-mine coal and waste rock tonnage planned to be extracted, and an estimate of the saleable product produced;
- an estimate of which market segment that product tonnes would be sold into e.g. export/domestic thermal/metallurgical coal etc.

DRE understands that an estimate of product tonnes split into a particular market segment may be difficult to estimate at a particular point in time and is dependent on market conditions as the life of the mine progresses, however DRE requires the proponent to provide its best estimate of their market mix at the initial stages of the project.

MINING TITLE

As coal is a prescribed mineral under the *Mining Act 1992*, the proponent is required to hold an appropriate mining title(s) from DRE in order to mine the mineral.

For proposed mining purposes activities which are to be carried out in connection with and in the immediate vicinity of a mining lease, the proponent is required to hold an appropriate mining title(s).

The proponent must demonstrate that the proposal has sufficient title over the project area to satisfy the requirements of section 380AA of the *Mining Act 1992*.

The EIS for the project should clearly identify existing coal titles, coal title applications and the proposed mining lease area(s) for the project site and areas surrounding the project area and address the environmental impacts and management measures for the mining and mining purpose activities as licensed under the *Mining Act 1992*.

Where a proposal includes Crown Land the proponent is required to comply with the *Commonwealth Native Title Act 1993* and undertake the right to negotiate process for the Crown Lands within the current exploration licence area(s) if proof of extinguishment cannot be determined.

DESCRIPTION OF EXISTING ENVIRONMENT, IDENTIFICATION OF IMPACTS AND CONSTRAINTS

All areas affected by the proposal should be shown in the context of the natural and built environments. This should be in sufficient detail to enable an understanding of the scale of impacts and gauge the effectiveness of proposed control measures.

The EIS should state the interaction between the proposed mining activities and the existing environment and include a comprehensive description of the following activities and their impacts:

- Mine layout and scheduling, including maximising opportunities for progressive final rehabilitation. The final rehabilitation schedule should be mapped against key production milestones (i.e. ROM tonnes) of the mine layout sequence before being translated to indicative timeframes throughout the mine life. The mine plan should maximise opportunities for progressive rehabilitation.
- Mineral processing and handling, washery rejects handling and disposal management activities
- Infrastructure facilities and storage requirements
- Surface and groundwater usage and management
- Mine closure including rehabilitation and decommissioning activities.

Impacts associated with the operational and post closure stages of the project must also be identified in detail and control management strategies outlined. The identification and description of impacts must draw out those aspects of the site that may present barriers or limitations to effective rehabilitation and which may limit the mine closure potential of the land. The following are the key issues to be addressed in the EIS that are likely to have a bearing on rehabilitation and mine closure.

- An evaluation of current rehabilitation techniques and performance against meeting existing rehabilitation objectives and completion criteria
- An assessment and life of mine management strategy of the potential for geochemical constraints to rehabilitation (e.g. acid rock drainage, spontaneous combustion etc.), particularly associated with the management of overburden/interburden and reject material. Based on this assessment, the EIS is to document the processes that will be implemented throughout the mine life to identify and appropriately manage geochemical risks that may affect the ability to achieve sustainable rehabilitation outcomes.
- A life of mine tailings management strategy, which is to detail measures to be implemented to avoid the exposure of potentially environmentally sensitive tailings material as well as promote geotechnical stability of the rehabilitated landform.
- Existing and surrounding landforms (showing contours and slopes) and how similar characteristics can be incorporated into the post-mining final landform design. This should include an evaluation of how the key geomorphological characteristics evident in stable landforms within the natural landscape can be adapted to the materials and other constraints associated with the site.
- Groundwater assessment to determine the likelihood and associated impacts of groundwater accumulating and subsequently discharging (e.g. acid or neutral mine drainage) from the workings post cessation of mining. This is to include a consideration of the likely controls required to either prevent or mitigate against these risks as part of the closure plan for the site.
- An assessment of the biological resources associated with the proposed disturbance area and how they can be practically salvaged for utilisation in rehabilitation (i.e. topsoil, seed banks, tree hollows and logs, native seed etc.). This should include an evaluation of how topsoil/subsoil of suitable quality can be direct-returned for use in rehabilitation.

- The flora, fauna and ecological attributes of the disturbed area should be recorded and placed in a regional context.
- An evaluation of current land capability class and associated condition. The EIS should characterise soils across the proposed area of surface disturbance and assess their value and identify opportunities and constraints for use in rehabilitation.
- Where an agricultural land use is proposed, the EIS should:
 - Demonstrate how Agricultural Suitability Class in the rehabilitated landscape would be returned to the existing Class/es or better.
 - Where the intended land use is likely to be grazing, the existing capacity in terms of Dry Sheep Equivalent or similar must be calculated and a timeframe from vegetation establishment be given for the return to agricultural production to at least the existing stock capacity.
 - Provide information on how soil would be developed in order to achieve the proposed stock capacity.
- Where an ecological land use is proposed, the EIS should demonstrate that the revegetation strategy (e.g. seed mix, habitat features, corridor width etc.) has been developed in consideration of the target vegetation community(s).

REHABILITATION AND MINE CLOSURE

DRE's role focuses on ensuring that land mined in NSW is effectively rehabilitated and returned to beneficial post mining land uses. This is undertaken by requiring mine operators to have strategies in place to ensure the rehabilitation of all mined land, and strategies for an orderly transition from a mining land use to an agreed stable and beneficial post mining use. At the EIS stage, the strategies may be conceptual in nature. Each of the following aspects of rehabilitation planning should be addressed in the strategy:

Post Mining Land Use – the proponent must identify and assess post mining land use options and provide a statement of the preferred post mining land use outcome in the EIS. This should include a discussion of how the final land use(s) are aligned with relevant local and regional strategic land use objectives as well as the benefits of the post mining land to the surrounding environment, a subsequent landowner, the local community and the state of NSW.

Rehabilitation Objectives and Domains – a set of project rehabilitation objectives and completion criteria must be included that clearly define the environmental outcomes required to achieve the final land use for each domain. The completion criteria must be specific, measurable, achievable, realistic and time-bound.

If necessary, objective criteria may be presented as ranges rather than finite indicator levels. Subjective criteria may also apply where a gap in technical knowledge is experienced. Further refinement of these criteria will be undertaken and included in the Rehabilitation Management Plan (RMP).

Final Landform Design – a drawing at an appropriate scale with final landform contours should be provided. This drawing should identify the following attributes of the final landform: vegetation types; habitat features; contaminated areas; drainage infrastructure; access and internal roads; fencing design; and other remaining infrastructure such as sheds, dams, bores and pipelines.

Scope of Rehabilitation and Decommissioning Activities – The EIS is to include a detailed description of the scope of decommissioning and rehabilitation activities required to meet the nominated closure objectives and completion criteria for each domain. The scope of these activities must be developed in consideration of the existing environment, identification of impacts and constraints as listed above.

Monitoring and Research – Outline the proposed monitoring programs that will be implemented to assess how rehabilitation is trending towards the nominated land use objectives and completion criteria. This should include details of the process for triggering intervention and adaptive management measures to address potential adverse results as well as continuously improve rehabilitation practices.

In addition, an outline of proposed rehabilitation research programs and trials, including objectives, are to be included in the EIS. This should include details of how the outcomes of research are considered as part of the ongoing review and improvement of rehabilitation practices.

Post-closure maintenance: Describe how post-rehabilitation areas will be actively managed and maintained in accordance with the intended land use(s) in order to demonstrate progress towards meeting the closure objectives and completion criteria in a timely manner.

SUBSIDENCE

To justify the proposed underground mining projects, the proponent must demonstrate the feasibility of:

- The proposed mining operation (e.g. mining methods, layout and sequences)
- The proposed strategies to manage subsidence risks to surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value.

The justification must be supported by the information provided by the proponent, including, but not limited to:

- A description of the proposed mining operation (e.g. mining methods, layout and sequences)
- Identification and general characteristics of surface and subsurface features that may be affected by subsidence caused by the proposed mining

- General and relevant site conditions including depths of cover, geological, hydrogeological, hydrological, geotechnical, topographic and climatic conditions, as well as any conditions that may cause elevated or abnormal subsidence
- Identification and general characteristics of any previously excavated or abandoned workings that may interact with the proposed or existing mine workings
- Results of preliminary prediction of the nature, magnitude, distribution, timing and duration of subsidence
- Results of a risk assessment in relation to subsidence of surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value, taking into consideration the points above
- Results of feasibility studies in relation to the proposed mining operation and proposed strategies to manage subsidence risks to surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value.

Should you have any enquires regarding this matter please contact Peta Johannessen, Project Officer, Industry Coordination on (02) 4931 6613.

Yours sincerely



Adrian Delany
A/Director Industry Coordination

4.8.15

Anna Timbrell

From: Wayne Jones <wayne.jones@dpi.nsw.gov.au>
Sent: Wednesday, 5 August 2015 3:31 PM
To: Anna Timbrell
Subject: Hume Coal and Berrima Rail Projects SEARs (SSD_7172 and SSD_7171)

Hi Anna

Please see following draft DPI comments on the above projects. Formal letter will follow asap.

Regards
Wayne

Wayne Jones | Land Use Planning Coordinating Officer
Department of Primary Industries
Level 48, MLC Centre, 19 Martin Place Sydney NSW 2000
T:02 9338 6867 | E: wayne.jones@dpi.nsw.gov.au

OUT15/20111

Ms Anna Timbrell
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Anna.Timbrell@planning.nsw.gov.au

Dear Ms Timbrell,

**Hume Coal and Berrima Rail Projects (SSD_7172 and SSD_7171)
Request for input into Secretary's Environmental Assessment Requirements**

I refer to your email dated 23 July 2015 to the Department of Primary Industries in respect to the above matter.

Comment by Agriculture NSW – Rail Project

Agriculture NSW has noted that the following issues were raised by EMGA Mitchell McLennan in their letter to David Kitto, Director, Major Project Assessments-Mining, dated 17 July 2015. Those issues are proposed to be included for investigation as part of the EIS for the project and include:

- Impacts on surrounding visual receptors
- Surface water changes

The impacts of surface water changes should include the potential for flooding adjacent to the railway embankment and its impacts on grazing land usability including mitigation measures. The impacts on existing dam levels should also be assessed to ensure surface water flowing into dams is not impacted.

As the railway traverses paddocks it will be important to ensure that access for livestock is not hindered, particularly for grazing, watering and to move livestock to undertake general farming practices (ie for worming, tagging, branding, yarding for sale etc).

The EIS should assess the above impacts during construction and following construction.

The guideline “Infrastructure Proposals on Rural Land” provides further information on the issues and information to be included in an EIS for infrastructure proposals and can be accessed at: <http://www.dpi.nsw.gov.au/agriculture/resources/lup/development-assessment/infrastructure-proposals>.

For further information please contact Wendy Goodburn, Resource Management Officer (Goulburn Office) on 4828 6635 or at wendy.goodburn@dpi.nsw.gov.au.

Comment by Fisheries NSW – Hume Coal Mine

Fisheries NSW is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, Fisheries NSW ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999)*. In addition, Fisheries NSW is responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture and marine protected areas within NSW.

We note that the proposal site is crossed by Wells Creek, Oldbury Creek, Medway Rivulet, Belangelo Creek, Fire Dam Creek, Knapsack Gully, Planting Spade Creek, Red Arm Creek and Longacre Creek and their associated tributaries and drainage lines. The potential impacts, especially downstream impacts upon water quality and aquatic habitats within the proposal site are of particular interest to this agency in relation to this proposal.

Key Issues

The key issues of concern to Fisheries NSW in relation to this State Significant Development are:

- Direct impacts on aquatic environments and key fish habitat (including riparian vegetation, instream aquatic vegetation and large woody debris) from the surface and underground construction and ongoing operation of the proposed coal mine.
- Impacts on water quality during all surface and underground construction activities and from ongoing operation of the proposed mine, processing plant, and associated infrastructure of the proposed coal mine.

Impacts on water quality and flow from subsidence and groundwater interactions resulting from surface and underground construction and ongoing operation of the coal mine.

Environmental Assessment Requirements

Fisheries NSW advises that the Environmental Impact Statement (EIS) for the proposed development should include information on the following:

- Location of works (including site map and photos).
- Name of adjacent waterway(s).
- Description of works to be undertaken.
- Timing and duration of works.
- Identification of Key Fish Habitat within the proposal area.
- Description of aquatic and riparian environments in the vicinity of the development, particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposal area.

- Analysis of any interactions of the proposed development with water quality and aquatic and riparian environments (including fish and aquatic and riparian vegetation) and predictions of any impacts upon those environments.
- Analysis of impacts of subsidence upon water flow within and downstream of all waterways within the proposal area
- Analysis of impacts of groundwater interference and drawdown on water quality, water flow, and aquatic and riparian environments within and downstream of all waterways within the proposal area
- Plan of proposed underground mine design overlaid with waterways.
- Safeguards to mitigate any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area during construction and ongoing operation of the proposed coal mine. In particular, provide details on proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the project should be designed to achieve no nett increase in pollutant run-off to receiving waters within the proposal site.
- Details of ongoing monitoring programs to assess any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area.

Fisheries NSW recommend the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. The Department also recommends inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.

The design and construction of any watercourse crossings on the site should be undertaken in accordance with the Department's *Policy and Guidelines for Fish Friendly Waterway Crossings* (2004) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (2004). These documents are available on our website www.dpi.nsw.gov.au, under 'Aquatic Habitats' and 'Publications'.

Please ensure a copy of the Secretary's Environmental Assessment Requirements and the subsequent EIS provided by the proponent for this development are provided to Fisheries NSW for review and further comment.

For further detailed advice on Fisheries NSW aquatic habitat requirements, please refer the applicant to the *Department's Policy and Guidelines for Fish Habitat Conservation and Management* (2013) available on our website at www.dpi.nsw.gov.au

Comment by Fisheries NSW – Berrima Rail Project

We note that the proposed rail line crosses Stony Creek along with numerous tributaries and drainage lines. The potential impacts, especially upon downstream water quality and aquatic habitats in Stony Creek are of particular interest to this Department.

Key Issues

Key issues of concern to Fisheries NSW in relation to this State Significant Development are:

- Direct impacts on aquatic environments and key fish habitat (including riparian vegetation, instream aquatic vegetation and large woody debris) from the rail project construction.
- Impacts on water quality during all road construction activities and from stormwater runoff and road drainage during the ongoing use of the rail project.

Environmental Assessment Requirements

It is important that the Environmental Impact Statement (EIS) assesses the full extent of potential impacts to the aquatic environment within the development area. Proposed measures to mitigate, rehabilitate or compensate for such impacts are to be detailed in accordance with the Department's Policy and Guidelines, referenced above to ensure that there is no net loss of aquatic habitats.

Fisheries NSW advises that the EIS for the proposed development should include information on the following:

- Description of aquatic and riparian environments in the vicinity of the development, – particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposed rail project.
- Analysis of any interactions of the proposed rail project with aquatic and riparian environments and predictions of any impacts upon aquatic and riparian environments (including fish and aquatic and riparian vegetation) from the rail project (both temporary and permanent). This should include assessment of both direct impacts (removal, disturbance, smothering) and indirect impacts (e.g. shading, permanent loss of habitat).
- Description of proposed environmental compensation measures to offset the permanent loss of riparian habitats in Stony Creek (e.g. funding for aquatic rehabilitation works, such as removal of fish passage barriers, elsewhere in the catchment as outlined in the Departments Policy and Guidelines).
- Description of potential impediments to fish passage as a result of the works (e.g. temporary coffer dams, instream bunds or work platforms) and possible mitigation measures to be employed to negate these impacts.
- Predictions of impacts upon water quality of the proposed rail project, including in Stony Creek, both during the construction and operational phases.
- Safeguards to mitigate any impacts upon aquatic species and environments and water quality during construction and operation of the rail project. In particular, provide details on proposed revegetation of riparian areas, proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the rail project should be designed to achieve no nett increase in pollutant run-off to Stony Creek.

Fisheries NSW recommends the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. The Department also recommends inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.

The design and construction of any watercourse crossings on the site should be undertaken in accordance with the Department's *Policy and Guidelines for Fish Friendly Waterway Crossings* (2004) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (2004). These documents are available on our website www.dpi.nsw.gov.au, under 'Aquatic Habitats' and 'Publications'.

Please ensure a copy of the Secretary's Environmental Assessment Requirements and the subsequent EIS provided by the proponent for this development are provided to Fisheries NSW for review and further comment.

For further detailed advice on Fisheries NSW aquatic habitat requirements, please refer the applicant to the *Department's Policy and Guidelines for Fish Habitat Conservation and Management* (2013) available on our website at www.dpi.nsw.gov.au

For further information please contact Jillian Reynolds, Regional Assessment Officer, [Huskisson office] on 4428 3406 or at jillian.reynolds@dpi.nsw.gov.au.

Comment by DPI Water – Hume Coal Mine

DPI Water has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the comments below, and further detail in **Attachment A**.

It is recommended that the EIS be required to include:

Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.

Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).

The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.

A detailed and consolidated site water balance.

A detailed assessment against the NSW Aquifer Interference Policy (2012) using DPI Water's assessment framework.

Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, wetlands, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.

Full technical details and data of all surface and groundwater modelling, and an independent peer review of the groundwater model.

Proposed surface and groundwater monitoring activities and methodologies.

Proposed management and disposal of produced or incidental water.

Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.

Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.

Consideration of relevant policies and guidelines.

Assessment of whether the activity may have a significant impact on water resources, with reference to the Commonwealth Department of Environment Significant Impact Guidelines.

If the activity may have a significant impact on water resources, then provision of information in accordance with the Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals, including completion of the information requirements checklist.

A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

The proponent's attention is drawn to the 'Key Relevant Legislative Instruments' of Attachment A, as section 4.3.4 of the preliminary environmental assessment incorrectly states that section 89K of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to water access licences and aquifer interference approvals, and this is not the case. No exemptions or restrictions on water access licences or aquifer interference activities are contained in the EP&A Act, although aquifer interference approvals have not yet commenced.

Should you require further information please contact John Galea, Water Regulation Officer on 8838 7520 or at john.galea@dpi.nsw.gov.au.

Comment by DPI Water – Berrima Rail

DPI Water has reviewed the supporting documentation accompanying the request for Secretary's Environmental Assessment Requirements (SEARs) and provides the comments below, and further detail in **Attachment B**.

It is recommended that the EIS be required to include:

Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.

Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).

The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.

A detailed and consolidated site water balance.

Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.

An assessment of impediment to surface or groundwater flow, and potential flood impacts.

Full technical details and data of all surface and groundwater modelling.

Proposed surface and groundwater monitoring activities and methodologies.

Proposed management and disposal of produced or incidental water.

Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures.

Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.

Consideration of relevant policies and guidelines.

A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).

Project specific notes

Protection of Waterways and Riparian Corridors

The proponent is requested to undertake detailed assessment of riparian and watercourse impacts, particularly with respect to watercourse crossings. The project should be designed to minimise impacts on watercourses and riparian land, and must have regard to the Department of Primary Industries' *Guidelines for Controlled Activities on Waterfront Land* – in particular the guideline on watercourse crossings.

For further information please contact Janne Grose, Planning and Assessment Coordinator (Penrith office) on 8838 7505 or at janne.grose@dpi.nsw.gov.au.

Yours sincerely

Kristian Holz
Director Policy, Legislation and Innovation

Attachment A

Hume Coal Project (SSD_7172) Request for Input into Secretary's Environment Assessment Requirements DPI Water General Assessment Requirements for Coal and Petroleum projects

The following detailed assessment requirements are provided to assist in adequately addressing the assessment requirements for this proposal.

For further information visit the DPI Water website, www.water.nsw.gov.au

Key Relevant Legislative Instruments

This section provides a basic summary to aid proponents in the development of an Environmental Impact Statement (EIS), and should not be considered a complete list or comprehensive summary of relevant legislative instruments that may apply to the regulation of water resources for a project.

The EIS should take into account the objects and regulatory requirements of the *Water Act 1912* (WA 1912) and *Water Management Act 2000* (WMA 2000), and associated regulations and instruments, as applicable.

Water Management Act 2000 (WMA 2000)

Key points:

- Volumetric licensing in areas covered by water sharing plans.
- Works within 40m of waterfront land.
- SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the *Environmental Planning & Assessment Act 1979* (EP&A Act).
- No exemptions for volumetric licensing apply as a result of the EP&A Act.
- Basic landholder rights, including harvestable rights dams.
- Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the *Water Act 1912*.
- Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the WMA 2000.

Water Act 1912 (WA 1912)

Key points:

- Volumetric licensing in areas where no water sharing plan applies.
- Monitoring bores.
- Aquifer interference activities that are not regulated as a water supply work under the WMA 2000.
- Flood management works.
- No exemptions apply to licences or permits under the WA 1912 as a result of the EP&A Act.
- Regulation of water bore driller licensing.

Water Management (General) Regulation 2011

Key points:

- Provides various exemptions for volumetric licensing and activity approvals
- Provides further detail on requirements for dealings and applications.

Water Sharing Plans – these are considered regulations under the WMA 2000

Access Licence Dealing Principles Order 2004

Harvestable Rights Orders

Water Sharing Plans

It is important that the proponent understands and describes the ground and surface water sharing plans, water sources, and management zones that apply to the project. The relevant water sharing plans can be

determined spatially at www.ourwater.nsw.gov.au. Multiple water sharing plans may apply and these must all be described.

The *Water Act 1912* applies to all water sources not yet covered by a commenced water sharing plan.

The EIS is required to:

Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.

Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.

Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including:

- Sufficient market depth to acquire the necessary entitlements for each water source.
- Ability to carry out a “dealing” to transfer the water to relevant location under the rules of the WSP.
- Daily and long-term access rules.
- Account management and carryover provisions.

Provide a detailed and consolidated site water balance.

Further detail on licensing requirements is provided below.

Relevant Policies and Guidelines

The EIS should take into account the following policies (as applicable):

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals (IESC, 2014)
- Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments - impacts on water resources (Australian Govt. 2014)
- NSW State Rivers and Estuary Policy (1993)
- NSW Wetlands Policy (2010)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)
- Groundwater Monitoring and Modelling Plans - Information for prospective mining and petroleum exploration activities (NOW, 2014)
- NSW Code of Practice for Coal Seam Gas Well Integrity (DTIRIS 2012)
- NSW Code of Practice for Coal Seam Gas Fracture Stimulation (DTIRIS 2012)

DPI Water policies can be accessed at the following links:

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx>

<http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx>

An assessment framework for the NSW Aquifer Interference Policy can be found online at: <http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/Aquifer-interference>.

Licensing Considerations

The EIS is required to provide:

Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).

Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.

Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).

Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).

Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.

Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages.

Details on the location, purpose, size and capacity of any new proposed dams/storages.

Applicability of any exemptions under the *Water Management (General) Regulation 2011* to the project.

Water allocation account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered.

The Harvestable Right gives landholders the right to capture and use for any purpose 10% of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.

For more information on Harvestable Right dams, including a calculator, visit:

<http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff>

Dam Safety

Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.

See www.damsafety.nsw.gov.au for further information.

Surface Water Assessment

The predictive assessment of the impact of the proposed project on surface water sources should include the following:

Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.

Identification of all surface water sources as described by the relevant water sharing plan.

Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.

Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.

Assessment of predicted impacts on the following:

flow of surface water (including floodwater), sediment movement, channel stability, and hydraulic regime,
water quality,
flood regime,
dependent ecosystems,
existing surface water users, and
planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

Groundwater Assessment

To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including:

The known or predicted highest groundwater table at the site.

Works likely to intercept, connect with or infiltrate the groundwater sources.

Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.

Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.

A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).

Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.

The predicted impacts of any final landform on the groundwater regime.

The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.

An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.

An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).

Measures proposed to protect groundwater quality, both in the short and long term.

Measures for preventing groundwater pollution so that remediation is not required.

Protective measures for any groundwater dependent ecosystems (GDEs).

Proposed methods of the disposal of waste water and approval from the relevant authority.

- The results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

Any proposed monitoring programs, including water levels and quality data.

Reporting procedures for any monitoring program including mechanism for transfer of information.

An assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal.

Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).

Description of the remedial measures or contingency plans proposed.

Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Groundwater Dependent Ecosystems

The EIS must consider the potential impacts on any Groundwater Dependent Ecosystems (GDEs) at the site and in the vicinity of the site and:

Identify any potential impacts on GDEs as a result of the proposal including:

the effect of the proposal on the recharge to groundwater systems;

the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and

the effect on the function of GDEs (habitat, groundwater levels, connectivity).

Provide safeguard measures for any GDEs.

Watercourses, Wetlands and Riparian Land

The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including:

- Scaled plans showing the location of:
 - wetlands/swamps, watercourses and top of bank;
 - riparian corridor widths to be established along the creeks;
 - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed);
 - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and
 - proposed location of any asset protection zones.

Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.

A detailed description of all potential impacts on the watercourses/riparian land.

A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.

A description of the design features and measures to be incorporated to mitigate potential impacts.

Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.

Drill Pad, Well and Access Road Construction

Any construction activity within 40m of a watercourse, should be designed by a suitably qualified person, consistent with the *NSW Guidelines for Controlled Activities on Waterfront Land* (July 2012).

Construction of all wells must be undertaken in accordance with the *Minimum Construction Requirements for Water Bores in Australia* (3rd edition 2012) by a driller holding a bore drillers' licence valid in New South Wales.

The length of time that a core hole is maintained as an open hole should be minimised.

Construction, suspension and abandonment of wells for petroleum projects should be carried out in accordance with the NSW *Code of Practice for Coal Seam Gas Well Integrity* (DTIRIS 2012).

Landform rehabilitation (including final void management)

Where significant modification to landform is proposed, the EIS must include:

- Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;

- A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;

- Outline of proposed construction and restoration of topography and surface drainage features if affected by the project;

- Detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void (where relevant) on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent;

- An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and

- The measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.

Consultation and general enquiries

General licensing enquiries can be made to Advisory Services: water.enquiries@dpi.nsw.gov.au, 1800 353 104.

Assessment or state significant development enquiries, or requests for review or consultation should be directed to the Strategic Stakeholder Liaison Unit, water.referrals@dpi.nsw.gov.au.

A consultation guideline and further information is available online at:
www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment

End Attachment A

Attachment B

Berrima Rail Project (SSD_7171) Request for Input into Secretary's Environment Assessment Requirements DPI Water General Assessment Requirements for linear infrastructure projects

The following detailed assessment requirements are provided to assist in adequately addressing the assessment requirements for this proposal.

For further information visit the DPI Water website, www.water.nsw.gov.au

Key Relevant Legislative Instruments

This section provides a basic summary to aid proponents in the development of an Environmental Impact Statement (EIS), and should not be considered a complete list or comprehensive summary of relevant legislative instruments that may apply to the regulation of water resources for a project.

The EIS should take into account the objects and regulatory requirements of the *Water Act 1912* (WA 1912) and *Water Management Act 2000* (WMA 2000), and associated regulations and instruments, as applicable.

Water Management Act 2000 (WMA 2000)

Key points:

- Volumetric licensing in areas covered by water sharing plans
- Works within 40m of waterfront land
- SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the *Environmental Planning & Assessment Act 1979* (EP&A Act).
- No exemptions for volumetric licensing apply as a result of the EP&A Act.
- Basic landholder rights, including harvestable rights dams
- Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the *Water Act 1912*
- Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the *WMA 2000*

Water Act 1912 (WA 1912)

Key points:

- Volumetric licensing in areas where no water sharing plan applies
- Monitoring bores
- Aquifer interference activities that are not regulated as a water supply work under the *WMA 2000*.
- Flood management works
- No exemptions apply to licences or permits under the *WA 1912* as a result of the EP&A Act.
- Regulation of water bore driller licensing.

Water Management (General) Regulation 2011

Key points:

- Provides various exemptions for volumetric licensing and activity approvals
- Provides further detail on requirements for dealings and applications.

Water Sharing Plans – these are considered regulations under the *WMA 2000*

Access Licence Dealing Principles Order 2004

Harvestable Rights Orders

Water Sharing Plans

It is important that the proponent understands and describes the ground and surface water sharing plans, water sources, and management zones that apply to the project. The relevant water sharing plans can be

determined spatially at www.ourwater.nsw.gov.au. Multiple water sharing plans may apply and these must all be described.

The *Water Act 1912* applies to all water sources not yet covered by a commenced water sharing plan.

The EIS is required to:

Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.

Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.

Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including:

- Sufficient market depth to acquire the necessary entitlements for each water source.
- Ability to carry out a “dealing” to transfer the water to relevant location under the rules of the WSP.
- Daily and long-term access rules.
- Account management and carryover provisions.

Provide a detailed and consolidated site water balance.

Further detail on licensing requirements is provided below.

Relevant Policies and Guidelines

The EIS should take into account the following policies (as applicable):

- NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012)
- NSW Aquifer Interference Policy (NOW, 2012)
- Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012)
- Australian Groundwater Modelling Guidelines (NWC, 2012)
- NSW State Rivers and Estuary Policy (1993)
- NSW Wetlands Policy (2010)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- NSW Water Extraction Monitoring Policy (2007)

DPI Water policies can be accessed at the following links:

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/default.aspx>

<http://www.water.nsw.gov.au/Water-licensing/Approvals/Controlled-activities/default.aspx>

An assessment framework for the NSW Aquifer Interference Policy can be found online at: <http://www.water.nsw.gov.au/Water-management/Law-and-policy/Key-policies/Aquifer-interference>.

Licensing Considerations

The EIS is required to provide:

Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).

Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.

Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).

Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).

Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.

Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages

Details on the location, purpose, size and capacity of any new proposed dams/storages.

Applicability of any exemptions under the *Water Management (General) Regulation 2011* to the project.

Water allocation account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered.

The Harvestable Right gives landholders the right to capture and use for any purpose 10% of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.

For more information on Harvestable Right dams, including a calculator, visit:

<http://www.water.nsw.gov.au/Water-licensing/Basic-water-rights/Harvesting-runoff/Harvesting-runoff>

Dam Safety

Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.

See www.damsafety.nsw.gov.au for further information.

Surface Water Assessment

The predictive assessment of the impact of the proposed project on surface water sources should include the following:

- Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.

- Identification of all surface water sources as described by the relevant water sharing plan.

- Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.

- Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.

- Assessment of predicted impacts on the following:

- flow of surface water, sediment movement, channel stability, and hydraulic regime,
- water quality,
- flood regime,
- dependent ecosystems,

existing surface water users, and

planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.

Groundwater Assessment

To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including:

The known or predicted highest groundwater table at the site.

Works likely to intercept, connect with or infiltrate the groundwater sources.

Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.

Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.

A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).

Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.

The predicted impacts of any final landform on the groundwater regime.

The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.

An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality.

An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).

Measures proposed to protect groundwater quality, both in the short and long term.

Measures for preventing groundwater pollution so that remediation is not required.

Protective measures for any groundwater dependent ecosystems (GDEs).

Proposed methods of the disposal of waste water and approval from the relevant authority.

- The results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

Any proposed monitoring programs, including water levels and quality data.

Reporting procedures for any monitoring program including mechanism for transfer of information.

An assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal.

Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).

Description of the remedial measures or contingency plans proposed.

Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

Groundwater Dependent Ecosystems

The EIS must consider the potential impacts on any Groundwater Dependent Ecosystems (GDEs) at the site and in the vicinity of the site and:

Identify any potential impacts on GDEs as a result of the proposal including:

- the effect of the proposal on the recharge to groundwater systems;
- the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and
- the effect on the function of GDEs (habitat, groundwater levels, connectivity).

Provide safeguard measures for any GDEs.

Watercourses, Wetlands and Riparian Land

The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including:

- Scaled plans showing the location of:
 - wetlands/swamps, watercourses and top of bank;
 - riparian corridor widths to be established along the creeks;
 - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed);
 - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and
 - proposed location of any asset protection zones.

Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.

A detailed description of all potential impacts on the watercourses/riparian land.

A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands.

A description of the design features and measures to be incorporated to mitigate potential impacts.

Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.

Landform rehabilitation

Where significant modification to landform is proposed, the EIS must include:

- Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;
- A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape;
- Outline of proposed construction and restoration of topography and surface drainage features if affected by the project; and
- An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation.

Consultation and general enquiries

General licensing enquiries can be made to Advisory Services: water.enquiries@dpi.nsw.gov.au, 1800 353 104.

Assessment or state significant development enquiries, or requests for review or consultation should be directed to the Strategic Stakeholder Liaison Unit, water.referrals@dpi.nsw.gov.au.

A consultation guideline and further information is available online at:
www.water.nsw.gov.au/water-management/law-and-policy/planning-and-assessment

End Attachment B

This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of their organisation.



Office of
Environment
& Heritage

Date: 6 August 2015
Your reference: SSD 7171
Our reference: DOC15/300751
Contact: Calvin Houlison
4224 4179

Anna Timbrell
Planning Officer, Resource Assessments
Department of Planning & Environment
23-33 Bridge Street
SYDNEY NSW 2000
E-mail: Anna.timbrell@planning.nsw.gov.au

Dear Ms Timbrell

RE: Request for SEARs – Hume Coal Project (SSD 7172)

Thank you for your request dated 23 July 2015 inviting input from the Office of Environment & Heritage (OEH) for the Secretary's Environmental Impact Assessment Requirements (SEARs) for the abovementioned proposal.

We note that the project will be assessed as State Significant Development (SSD) under Part 4 Division 4.1 of the *Environmental Planning & Assessment Act 1979*.

We recommend that the Environmental Impact Statement (EIS) appropriately addresses the following:

1. Biodiversity and offsetting
2. Aboriginal Cultural Heritage
3. Historic heritage
4. Water and soils

The EIS should include an appropriate assessment of the potential impact on biodiversity, including threatened species, populations, ecological communities, or their habitats likely to occur within or near the subject site. Please note that the NSW Biodiversity Offsets Policy for Major Projects is now being implemented.

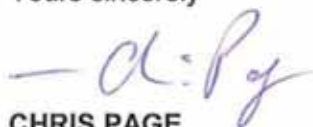
Impacts to biodiversity should be assessed in accordance with the Framework for Biodiversity Assessment (FBA) by a person accredited in accordance with s142B(1)(c) of the Threatened Species Conservation Act 1995. The offset strategy will be required to meet the minimum requirements outlined in the FBA. Given this is a new assessment procedure, the project team is welcome to contact OEH with any questions regarding the methodology.

The footprint of the Hume Coal Project sits outside the boundary of the Wingecarribee River Flood Study prepared by Wingecarribee Shire Council. As such, the Council is best placed to advise the DPE on any local flooding issues.

The full list of standard and project specific OEH requirements to be addressed in the EIS is provided at **Attachments A and B**. In preparing the EIS, the proponent should refer to the relevant guidance material listed in **Attachment C**.

If you have any further queries in relation to this matter, please contact Calvin Houlison, Conservation Planning Officer, on 4224 4179 or calvin.houlison@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Chris Page', is written over a horizontal line.

CHRIS PAGE
Senior Team Leader, Planning (Illawarra)
South Branch

Enclosures:

Attachment A – Standard Environmental Assessment Requirements
Attachment B – Project Specific Requirements
Attachment C – Guidance Material

Attachment A – Standard Environmental Assessment Requirements

Biodiversity
1. Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment , unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the <i>Threatened Species Conservation Act 1995</i> .
Aboriginal cultural heritage
2. The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.
3. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW) . The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.
4. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.
Historic heritage
5. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to <i>State and local heritage</i> including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: <ul style="list-style-type: none"> a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical

archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.
Water and soils
<p>6. The EIS must map the following features relevant to water and soils including:</p> <ul style="list-style-type: none"> a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the Framework for Biodiversity Assessment). c. Groundwater. d. Groundwater dependent ecosystems. e. Proposed intake and discharge locations.
<p>7. The EIS must describe background conditions for any water resource likely to be affected by the development, including:</p> <ul style="list-style-type: none"> a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.
<p>8. The EIS must assess the impacts of the development on water quality, including:</p> <ul style="list-style-type: none"> a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality.
<p>9. The EIS must assess the impact of the development on hydrology, including:</p> <ul style="list-style-type: none"> a. Water balance including quantity, quality and source. b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas. c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems. d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches). e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water. f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods

and re-use options.

- g. Identification of proposed monitoring of hydrological attributes.

Attachment B – Project Specific Requirements

- A. Impacts on the following populations will require further consideration and provision of the information specified in s9.2 of the Framework for Biodiversity Assessment:
 - *Eucalyptus aggregata*
- B. The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.
- C. The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.
- D. The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.

Attachment C – Guidance material

Title	Web address
<u>Relevant Legislation</u>	
<i>Coastal Protection Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+13+1979+cd+0+N
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Threatened Species Conservation Act 1995</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
<u>Biodiversity</u>	
NSW Biodiversity Offsets Policy for Major Projects (OEH, 2013)	http://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf
Framework for Biodiversity Assessment (OEH, 2013)	http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf
Fisheries NSW policies and guidelines	http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies.-guidelines-and-manuals/fish-habitat-conservation
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, recategorisation and road adjustment policy (OEH, 2012)	http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/parks/policyRevocations.pdf
<u>Heritage</u>	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
Statements of Heritage Impact 2002 (HO & DUAP)	http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf

Title	Web address
NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N')	http://www.environment.nsw.gov.au/Heritage/publications/index.htm#M-O
<u>Aboriginal Cultural Heritage</u>	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/comconsultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf
<u>Water and Soils</u>	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via 'The NSW Natural Resource Atlas'	www.nratlas.nsw.gov.au/
Acid Sulfate Soils Manual (Stone et al. 1998)	<p>Manual available for purchase from: http://www.landcom.com.au/whats-new/the-blue-book.aspx Chapters 1 and 2 are on DPI's Guidelines Register at: Chapter 1 Acid Sulfate Soils Planning Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Planning%20Guidelines.pdf Chapter 2 Acid Sulfate Soils Assessment Guidelines: http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Acid%20Sulfate%20Soils%20Assessment%20Guidelines.pdf</p>
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.advancedenvironmentalmanagement.com/Reports/Savannah/Appendix%2015.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
<u>Flooding and Coastal Erosion</u>	
Reforms to coastal erosion management	http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
Guidelines for Preparing Coastal Zone Management Plans	Guidelines for Preparing Coastal Zone Management Plans http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf
NSW Climate Impact Profile	NSW Climate Impact Profile
Climate Change Impacts and Risk	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change

Title	Web address
Management	Adaptation
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf

Anna Timbrell
Planning Officer – Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Timbrell

Notice of Request for Secretary's Environmental Assessment Requirements (SEARs) for Berrima Rail Project (SSD 7171) and Hume Coal Project (SSD 7172), Wingecarribee LGA

Thank you for your email dated 24 July 2015 inviting Transport for NSW (TfNSW) comments on the subject proposals. Roads and Maritime Services will be submitting a separate response.

Transport for NSW has reviewed the proposed developments and recommends that the following requirements be incorporated in the SEARs for each proposal under the relevant Transport and Accessibility section.

Proposed assessment requirements for SSD 7171, Berrima Rail Project are provided in **Attachment A**, while proposed requirements for SSD 7172, Hume Coal project are provided in **Attachment B**.

Transport for NSW further recommends consultation with Roads and Maritime Services (Southern Region) and the Australian Rail Track Corporation (ARTC), in preparation of documentation for the Environmental Impact Statement.

Should you have any questions or require more information, please contact Robert Rutledge on 8202 2203 or email Robert.rutledge@transport.nsw.gov.au.

Yours sincerely



4/8/15
Mark Ozinga
**Manager, Land Use Planning & Development
Planning**

CD15/13445

Attachment A – SSD 7171 Berrima Rail Project proposed SEARs

Transport and Accessibility

- Detailed design and engineering drawings of the proposed rail spur, rail overbridges, rail loop, potential upgrades to Berrima Junction and other associated infrastructure, including staging likely works of construction, operation and decommissioning (of existing Berrima Cement Works rail line);
- Details of train operating plans for existing and new users, including likely rail routes and destinations, train size and configuration, service frequency, anticipated train path requirements, expected ramp up periods and peak demand;
- Demonstrated engagement with and confirmation from all relevant rail network owners and coal terminals regarding train path availability and future network enhancements which may be required to support the proposed operations and maintain sufficient capacity for other rail network users over the life of the project;
- Detailed assessment of the proposed project on the capacity, efficiency and safety of the rail networks, including level crossings. The assessment is to consider the cumulative impacts to network users (including and beyond that of the branch line) and recommend mitigation measures in response;
- Demonstrated engagement with the relevant road authority/ies for the development of interface agreements for proposed road over rail bridges and details of traffic management during construction of the proposed overbridges; and
- Engagement with TfNSW and the relevant rail network owners in the development of methodology for assessing noise impacts associated with the proposed rail operations, in line with relevant NSW noise guidelines and details of noise mitigation strategies.

Attachment B – SSD 7172 Hume Coal Project proposed SEARs

Transport and Accessibility

Traffic Generation and Roads

A traffic impact study prepared in accordance with the methodology set out in Section 2 of the RTA's Guide to Traffic Generating Developments and include the following details:

- Accurate daily and peak traffic forecasts generated by the project during construction and operation, including details of transport routes, types of vehicles likely to be used and expected ramp up periods. Forecasts are to include anticipated service vehicle movements, including vehicle type and arrival and departure times;
- Details of the proposed staging of the project covering construction and operational stages;
- Details of the proposed access to the site from the road network during construction and operation of the project, including hours of operation, days of construction and operation for each stage of the project, intersection location, design and sight distances;
- Detailed assessment of the impact of the proposed project on the capacity, efficiency and safety of the road networks during construction and operation. The assessment should consider the cumulative impacts of the project on current road users and should also include the contribution of mining inputs, having regard to the transportation of dangerous goods (explosives, fuel and chemicals) to be utilised during the construction and operational phases of the project. A risk assessment should be undertaken to identify management measures that will be implemented to ensure that dangerous goods are safely transported;
- Any oversize and over-mass vehicles and loads expected for the construction, operation or decommissioning of the project should be identified, including the shortest and least trafficked route having been given priority for the movement of construction materials and machinery to minimise the risk and impact to other motorists;
- A description of the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network for the construction and over the life of the project; and
- Detailed plans of the proposed layout of the internal access roads and on-site parking in accordance with the relevant Australian standards.



Our reference: EF14/17:DOC15/279794:ATC
Contact: Andrew Couldridge (02) 4224 4100

Ms Anna Timbrell
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Timbrell

REQUEST FOR SEARS
BERRIMA RAIL PROJECT AND HUME COAL PROJECT

I am writing in reply to your request dated 23 July 2015 to provide for input into drafting the Secretary's Environmental Assessment Requirements (SEARs) for the following two development proposals:

1. Berrima Rail Project (SSD 7171); and
2. Hume Coal Project (SSD 7172).

The Environment Protection Authority (EPA) has reviewed the preliminary environmental assessments for the projects submitted by the proponent Hume Coal Pty Ltd.

The EPA recommends that the Department of Planning and Environment base its SEARS on the latest version of the guideline document, "*Standard Secretary's Environmental Assessment Requirements (SEARs) for State Significant Mining Developments*". The guideline has been extensively reviewed by Government agencies including the EPA and provides the current best available summation of potential environmental impacts that should be examined in an Environmental Impact Statement (EIS) for new coal mines.

The EPA has also attached some additional issues specific to the proposal (Attachment A) where the proponent should provide further explanation and assessment in the EIS.

If you have questions regarding the above, please phone the contact officer on (02) 4224 4100.

Yours sincerely

 
PETER BLOEM
Manager Illawarra
Environment Protection Authority

Att:

ATTACHMENT A

Feasibility

The proposal appears to include several innovative elements intended to lower environmental impacts. These include:

- pine feather mining techniques to minimise subsidence and impacts on aquifers
- underground waste reject backfilling to avoid waste emplacement; and
- covering of coal wagons to minimise dust emissions.

Whilst these approaches have the potential to significantly minimise impacts on the environment, some of the methods are still relatively new to mining in NSW. The proponent should give examples of equivalent current use, available expertise for implementation and how they will be specifically adapted for use in the project to demonstrate technical feasibility and long term economic feasibility. The proponent should also include several sources of cost estimates for the techniques in the financial feasibility assessment for the project.

Water Quality Assessment

EPA acknowledges the priority to be given to surface and groundwater in the EIS (table 6.1, page 53). This recognises that the project area drains to natural areas of medium-high quality riparian vegetation in the lower reaches of Medway Rivulet and Oldbury Creek.

It is noted that on page 63, the proposed water quality assessment includes evaluation against neutral and beneficial effect (NOBE) criteria in accordance with State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.

However, water management should also be assessed using approaches outlined in the National Water Quality Management Strategy, ANZECC 2000. These are described in more detail in the standard SEARS, but in summary the EIS should:

- Identify relevant Water Quality Objectives (WQO) for surface and groundwater, including indicators and associated trigger values or criteria, in accordance with National Water Quality Management Strategy Guidelines. Reference the water quality objectives for the Wingecarribee River catchment in the "NSW Healthy Rivers Commission of Inquiry into the Hawkesbury Nepean Catchment". Identify any downstream users and uses of the discharged water classified in accordance with relevant ANZECC 2000.
- Estimate the chemical composition and load of chemical and physical stressors and toxicants in any discharge of mine water. Compare the level of physical and chemical stressors in any discharge with ANZECC 2000 trigger values for the various environmental values for the waterway.
- Investigate options to reduce the levels of pollutants in the discharge of water to protect the environment from harm as a result of that pollution. Identify all practical measures to control or reduce pollutants in the surface or groundwater discharges. Identify preferred measures and their justification.
- If WQO's cannot be met for the project, demonstrate that all practical options to avoid water discharge have been implemented and outline any measures taken to reduce the pollutant loads where a discharge is necessary. Where a discharge is proposed, analyse the expected discharges in terms of impact on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm.

7 August 2015

Anna Timbrell
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARS):
- SSD7171 BERRIMA RAIL PROJECT
- SSD7172 HUME COAL PROJECT

Dear Anna,

Roads and Maritime Services (RMS) refers to your letter dated 23 July 2015 regarding the subject SEAR's.

RMS has reviewed the information provided and considers that the following information should be addressed in the Environmental Assessment (EA):

RMS acknowledges that the information provided states that detailed assessments will be conducted. In addition to and more specifically, RMS requires that the following also be assessed as part of the EA:

The impacts of traffic generated by the subject developments, including:

- A traffic impact study (TIS) is required. As a guide Table 2.1 of the RTA Guide to Traffic Generating Developments outlines the key issues that may be considered in preparing a TIS;
- The effects on traffic volumes and roadway configurations associated with entry to and exit from the mine and rail line during construction and operation from vehicles associated with the mine. RMS will not accept any direct access to the Hume Highway. If significant road works are proposed to accommodate any changes to the traffic regime, then the EA will need to be expanded to address these proposals;
- The movement of overweight and oversize vehicles on the Hume Highway associated with the mine;
- The visual amenity impact of the mine works with regard to driver behaviour;
- The impact of dust pollution on the travelling public;
- The impact of dust pollution or the depositing of fines on the functioning of reflective signs, pavement markers and pavement line marking.

Roads & Maritime Services

The impacts of noise and vibration of the mine, including;

- Undermining or de-stabilisation of the Hume Highway through coal extraction operations or otherwise;
- Vibration impacts on the Hume Highway through mine construction and mine operation.

The impacts of noise and vibration of the rail line, including;

- Effects of renewing and using the train line that passes under the Hume Highway. Impacts such as:
 - Undermining/destabilising of the existing bridge foundation and structure;
 - Vibration effect of train movements;
 - Pollution impacts on road users.

The impacts on the groundwater flows, including;

- Changes in the water table configuration through such things as new dam construction, re-routing of water ways, groundwater behavioural changes, and changes to the catchment areas that feed to or away from the Hume Highway. Any change in the water table has the potential to affect the structural integrity of the Hume Highway.

Should you require any clarification on this matter please call Kendrick Westlake on 02 4221 2771.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Chris Millet', with a stylized flourish at the end.

Chris Millet
Manager Land Use
Southern Region

Ref: D2015/90983

Paul Freeman
Senior Planner - Resource Assessments
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mr Freeman

Hume Coal Project (SSD 15_7172)
Request for Input into Secretary's Environmental Assessment Requirements

I refer to your email received 14 August 2015 seeking WaterNSW's inputs into the Secretary's Environmental Assessment requirements (SEARs) for the Hume Coal Project. WaterNSW appreciates the opportunity and offers the following comments for consideration.

The subject land is located in the Warragamba catchment which forms part of Sydney's water supply. Wells, Belanglo, Longacre, Oldbury Creeks and Medway Rivulet runs through or are adjacent the site and all flow to Wingecarribee River which is located approximately 2km to the north.

The scale, longevity and proximity of the proposed development to Wingecarribee River and any impacts on water quality and quantity from the proposed coal project are of concern to WaterNSW. The Environmental Impact Statement (EIS) will need to demonstrate that the proposed measures to capture and treat water impacted by the proposal will have no impact on water quality within the Wingecarribee River. To address the above issues WaterNSW recommends the following be included in the SEARs:

- As the development is located in the Sydney drinking water catchment clauses 9 (1) and (2) and 10(1) of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 apply. The EIS should specifically address these clauses. In particular the EIS must describe and justify how the development would have a neutral or beneficial effect on water quality.
- The full description of the development should include those aspects which have the potential to impact on the quality and quantity of surface and ground waters at and adjacent to the site. This includes:
 - the mining proposal and mine layout
 - the location, mapping and geomorphology of all creeks and water resources overlying and adjacent to the proposed mining area
 - the hydrogeological fluxes between surface and ground waters, including the filling of pine feather voids
 - the location, management and storage of all hazardous materials
 - the disposal of wastes from the treatment of mine waters in the water treatment plant

- the management of dirty water from the washing and preparation of coal for transport
 - the location, sizing and description of all water quality management measures
 - the location and description of all water monitoring points (surface and ground waters), and
 - on-site domestic (sewage) wastewater management.
- The detailed assessment of the development on water resources should also consider the design, construction, operational and decommissioning phases and have regard for operation during periods of wet weather and include:
 - details of measured and predicted coal mine, preparation area and stockpile area performance with respect to water quality management
 - details of measures proposed to be adopted to offset impacts associated with construction activities e.g. earthworks, vegetation clearing, track construction
 - impacts on overlying and adjacent creeks and water resources within risk management zone associated with subsidence
 - impact of the proposed on-site domestic (sewage) wastewater management and associated effluent disposal area
 - pre-development and post development run off volumes and pollutant loads from the site
 - details of the measures to manage site water associated with processing coal and coal reject, general stormwater runoff and any human activities likely to affect water quality at the site, and how neutral or beneficial effect on water quality (NorBE) principles will be assessed and applied
 - assessment of the impacts of the development on receiving water quality and volume, both surface and groundwater including from the filling of pine feather voids and associated impacts on interaction and baseflows of surface waters
 - details of the structural stability, integrity, ongoing maintenance and monitoring of all site water management measures including dams over the life of the project
 - details of proposed monitoring of groundwater levels, surface water flows, groundwater and surface water quality, along with information as to how the proposed monitoring will be used to monitor and, if necessary, mitigate impacts on surface water and groundwater resources, and
 - the principles outlined in the 'Managing Urban Stormwater – Soils and Construction – Mines and Quarries' Manual prepared by the Department of Environment and Climate Change (2008).
- The EIS should provide concept plans/protocols/procedures for the following:
 - Environmental Management Plan
 - Soil and Water Management Plan – including triggers, actions, responses
 - Procedures for managing spills
 - details of the practices proposed to ensure materials transported to and from the site do not spill or otherwise cause soil or water pollution
 - Rehabilitation Plan
 - vegetation clearing protocols.

It is requested that WaterNSW be included as a stakeholder for the proposal and that a copy of this letter be attached to the SEARs. If a Planning Focus meeting is held WaterNSW would like to be invited. Further, WaterNSW would appreciate being notified when the Department has issued the SEARs.

If you wish to discuss this matter further please contact Neil Cowley on 4886 9417



MALCOLM HUGHES
Senior Manager Planning and Environment

17/8/15

Hume Coal Project EIS

Secretary's Environmental Assessment Requirements

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DP&E	A full description of the development, including:	General	Chapter 2	-
DP&E	- the resource to be extracted, demonstrating efficient resource recovery within environmental constraints;	General	Chapter 2 Chapter 6	-
DP&E	- the mine layout and scheduling;	General	Chapter 2	-
DP&E	- minerals processing;	General	Chapter 2	-
DP&E	- surface infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process);	General	Chapter 2	-
DP&E	- a waste (overburden, tailings etc.) management strategy;	General	Chapter 2	-
DP&E	- a water management strategy, having regard to the EPA's, DPI's and Water NSW's requirements and recommendations;	Water	Chapter 7	Chapter 13 of Appendix E
DP&E	- a rehabilitation strategy, having regard to DRE's requirements; and	Rehabilitation	Chapter 17	Refer to Table 1.2 of Appendix O
DP&E	- the likely interactions between the development and any other existing, approved or proposed mining related development in the vicinity of the site	General	Chapter 5	-
DP&E	A list of any approvals that must be obtained before the development may commence	Legislation	Chapter 3	-
DP&E	An assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including:			
DP&E	- a description of the existing environment likely to be affected by the development, using sufficient baseline data;	General	Chapters 7 to 22	Appendices E to T
DP&E	- an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice;	General	Chapters 7 to 22	Appendices E to T
DP&E	- a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of:	General	Chapters 7 to 22	Appendices E to T
DP&E	- whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented;	General	Chapters 7 to 22	Appendices E to T
DP&E	- the likely effectiveness of these measures, including performance measures where relevant; and	General	Chapters 7 to 22	Appendices E to T
DP&E	- whether contingency plans would be necessary to manage any residual risks.	General	Chapters 7 to 22	Appendices E to T
DP&E	A description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved	General	Chapters 7 to 22	Appendices E to T
DP&E	A consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS	SoC	Chapter 23	-
DP&E	Consideration of the development against all relevant environmental planning instruments (including Part 3 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007)	Legislation	Chapter 3	-
DP&E	The reasons why the development should be approved, having regard to environmental, economic and social considerations, including the principles of ecologically sustainable development.	Justification	Chapter 24	-
DP&E	The development application must be accompanied by a signed report from a suitably qualified and experienced person that includes an accurate estimate of the capital investment value (as defined in Clause 3 of the Environmental Planning and Assessment Regulation 2000) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived.	Provided in a separate quantity surveyor's report directly to DP&E		
DP&E	An assessment of the likely conventional and non-conventional subsidence effects and impacts of the development, and the potential consequences of these effects and impacts on the natural and built environment, paying particular attention to those features that are considered to have significant economic, social, cultural or environmental value, and having regard to DRE's and OEH's requirements.	Subsidence	Chapter 14	Sections 4.2, 5.0, 7.2 and 7.1 of Appendix L
DP&E	An Agricultural Impact Statement, prepared in accordance with DPI's Agricultural Impact Statement: Technical Notes, to assess the likely impacts of the development on the soils and land capability of the site and surrounds, paying particular attention to any biophysical strategic agricultural land (BSAL) and having regard to DPI's requirements.	AIS	Chapter 9	Appendix G (BSAL is addressed in Section 3.5)
DP&E	An assessment of the likely agricultural impacts of the development.	AIS	Chapter 9	Sections 4, 5 and 6 of Appendix G
DP&E	An assessment of the likely impact of the development on landforms (topography), including:			

Hume Coal Project EIS

Secretary's Environmental Assessment Requirements

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DP&E	- the potential subsidence impacts on cliffs, rock formations and steep slopes; and	Subsidence	Chapter 14	Section 7.2 of Appendix L
DP&E	- the long term geotechnical stability of any new landforms.	There are no new landforms proposed as part of the project		
DP&E	An assessment of the compatibility of the development with other land uses in the vicinity of the development in accordance with the requirements of Clause 12 of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, paying particular attention to the agricultural land uses in the region and the Belanglo State Forest.	AIS	Chapter 9	Sections 3.7.1, 4, 5 and 6 of Appendix G
DP&E	An assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources having regard to the EPA's, DPI's and Water NSW's requirements and recommendations.	Water	Chapter 7	Sections 10 and 11 of Appendix E
DP&E	An assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users.	Water	Chapter 7	Sections 10 and 11 of Appendix E
DP&E	An assessment of the potential flooding impacts of the development.	Water	Chapter 7	Section 10.3 of Appendix E
DP&E	An assessment of the likely biodiversity impacts of the development, in accordance with the Framework for Biodiversity Assessment, by a person accredited in accordance with s142(B)(1)(c) of the <i>Threatened Species Conservation Act 1995</i> , and having regard to OEH's and DPI's requirements and recommendations.	Biodiversity	Chapter 10	Section 1.7, Chapter 6 and Appendix A of Appendix H
DP&E	A strategy to offset any residual impacts of the development in accordance with the NSW Biodiversity Offsets Policy for Major projects.	Biodiversity	Chapter 10	Chapter 9 of Appendix H
DP&E	An assessment of the likely Aboriginal and historic heritage impacts of the development, having regard to OEH's requirements.	Heritage	Chapter 21 Chapter 22	Appendices S and T
DP&E	An assessment of the likely operational noise impacts of the development (including construction noise) under the NSW Industrial Noise Policy, paying particular attention to the obligations in chapters 8 and 9 of the policy, and the Voluntary Land Acquisition and Mitigation Policy (DP&E)	Noise	Chapter 11	Sections 3.1, 4.2, 5.1 and 5.6 of Appendix I
DP&E	If a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the Interim Construction Noise Guideline.	Noise	Chapter 11	Sections 3.3, 4.3, 5.7, 5.8 and 5.9 of Appendix I
DP&E	An assessment of the likely road noise impacts of the development under the <i>NSW Road Noise Policy</i> .	Noise	Chapter 11	Sections 3.4, 4.4 and 5.10 of Appendix I
DP&E	An assessment of the likely air quality impacts of the development in accordance with the <i>Approved Methods and Guidance for the Modelling and Assessment of Air pollutants in NSW</i> and the EPA's additional requirements.	Air	Chapter 12	Sections 3, 4, 5, 6, 7, 8, 9 and 10 of Appendix K
DP&E	An assessment of the likely greenhouse gas impacts of the development, having regard to the EPA's requirements.	Air	Chapter 13	Section 11 of Appendix K
DP&E	An assessment of the likely transport impacts of the development on the capacity, condition, safety and efficiency of the local and State road network and the rail network, having regard to Transport for NSW's and RMS's requirements.	Traffic and transport	Chapter 15	Chapters 4, 5 and 7 of Appendix M
DP&E	An assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to the creation of any new landforms and minimising the lighting impacts of the development.	Visual	Chapter 16	Chapter 5 of Appendix N
DP&E	An assessment of the likely risks to public safety, paying particular attention to potential subsidence risks, bushfire risks, and the handling and use of any dangerous goods	Hazard and risk	Chapter 18	Chapters 2, 3, 4, 5 and 6 of Appendix P
DP&E	An assessment of the likely social impacts of the development.	Social	Chapter 20	Chapter 7 of Appendix R
DP&E	An assessment of the likely economic impacts of the development, paying particular attention to:			
DP&E	- the significance of the resources;	Economics	Chapter 19	Section 2.3.1 of Appendix Q
DP&E	- economic benefits of the project for the State and region; and	Economics	Chapter 19	Sections 3.6 and 4.2 of Appendix Q
DP&E	- the demand for the provision of local infrastructure and services, having regard to Wingecarribee Shire Council's requirements.	Social	Chapter 20	Chapter 7 of Appendix R
DP&E	Consultation with relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.	Consultation	Chapter 5 Chapter 20	Chapter 6 of Appendix R

Hume Coal Project EIS

Agency environmental assessment recommendations

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DPI	An Agricultural Impact Statement prepared in accordance with the DPI's <i>Agricultural Impact Statement Technical Notes</i> .	AIS	Chapter 9	Appendix G
DRE	A comprehensive description of all aspects (including the mineral extraction and mining purposes) of the project.	Project description	Chapter 2	-
DRE	Demonstrate the proposed extent and sequence of the development using text, plans or charts.	Project description	Chapter 2	-
DRE	A resource/reserve statement that has been prepared in accordance with the current version of the Joint Ore Reserve Committee Code (JORC code) and the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves.	Not to be included in EIS		
DRE	A life of mine production schedule for each year of operation of the mine and for the life of the project. The production schedule should include:			
DRE	- details of run-of-mine coal and waste rock tonnage planned to be extracted, and an estimate of the saleable product produced; and	General	Chapter 2	-
DRE	- an estimate of which market segment that product tonnes would be sold into eg export/domestic thermal/metallurgical coal	General	Chapter 2	-
DRE	Identify existing coal titles, coal title applications and the proposed mining lease areas for the project site and areas surrounding the project area.	General	Chapter 1	-
DRE	Address the environmental impacts and management measures for the mining and mining purpose activities as licensed under the <i>Mining Act 1992</i> .	Legislation	Chapter 3	-
DRE	Areas affected by the proposal should be shown in the context of the natural and built environments in sufficient detail to enable an understanding of the scale of impacts and gauge the effectiveness of proposed control measures.	General	Figures within Chapters 1, 2 and 3	-
DRE	The proponent must demonstrate that the proposal has sufficient title over the project area to satisfy the requirements of section 380AA of the <i>Mining Act 1992</i>	Legislation	Section 3.3.1	-
DRE	Where a proposal includes Crown Land the proponent is required to comply with the Commonwealth <i>Native Title Act 1993</i> and undertake the right to negotiate process for the Crowns Land within the current exploration licence area(s) if proof extinguishment cannot be determined	Legislation	Section 3.7.2	-
DRE	A statement on the interaction between the proposed mining activities and the existing environment and inclusion of a comprehensive description of the following and their impacts:			
DRE	- mine layout and scheduling, including maximising opportunities for progressive final rehabilitation. The final rehabilitation schedule should be mapped against key production milestones of the mine layout sequence before being translated to indicative timframes throughout the mine life;	Project description/ Rehabilitation	Chapter 2 and 17	Section 2 of Appendix O
DRE	- mineral processing and handling, washery rejects handling and disposal management activities;	Project description	Chapter 2	-
DRE	- infrastrucutre facilities and storage requirements;	Project description	Chapter 2	-
DRE	- surface and groundwater usage and management; and	Water	Chapter 7	Appendix E
DRE	- mine closure including rehabilitation and decommissioning activities.	Rehabilitation	Chapters 2 and 17	Appendix O
DRE	Identification of impacts associated with the operational and post closure stages of the project and control management measures for these. Identification and decsription of impacts must draw out those aspects of the site that may present barriers or limitations to effective rehabilitation and which may limit the mine closure potential of the land.	Rehabilitation	Chapter 17	Appendix O
DRE	An evaluation of current rehabilitation techniques and performance against meeting existing rehabilitation objectives and completion criteria.	Rehabilitation	Chapter 17	Section 6 of Appendix O
DRE	An assessment and life of mine management strategy of the potential for geochemical constraints to rehabilitation, particularly associated with the management of overburden/interburden and reject material. Based on this, the EIS should document the processes that will be implemented throughout the mine life to identify and appropriately manage geochemical risks that may affect the ability to achieve sustainable rehabilitation outcomes.	Water/ Rehabilitation	Chapter 17	Appendix K of Appendix E
DRE	A life of mine tailings management strategy which details measures to be implemented to avoid the exposure of potentially environmentally sensitive tailings material as well as promote geotechnical stability of the rehabilitated landform.	There will not be any tailings generated by the project. Section 2.8 describes reject disposal Chapter 7 discusses potential impacts to groundwater from reject emplacement		
DRE	Existing and surrounding landforms (showing countours and slopes) and how similar characteristics can be imcorporated into the post-mining final landform design including an evaluation of how the key geomorphological characteristics evident in stable landforms within the natural landscape can be adapted to the materials and other constraints associated with the site.	Rehabilitation	Chapter 17	Section 4.4 and Figure 4.1 of Appendix O
DRE	A groundwater assessment to determine the likelihood and assocaited impacts of groundwater accumulating and subsequently discharging from the workings post cessation of mining, including consideration of the likely controls require to prevent or mitigate against these risks as part of the closure plan for the site.	Groundwater	Chapter 7	Sections 8.6, 11 and 13 of Appendix E

Hume Coal Project EIS

Agency environmental assessment recommendations

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DRE	An assessment of the biological resources associated with the proposed disturbance area and how they can be practically salvaged for utilisation in rehabilitation (ie topsoil, seedbanks, tree hollows and logs, native seed), including an evaluation of how topsoil/subsoil of suitable quality can be direct-returned for use in rehabilitation.	Soil/Rehabilitation	Chapter 8 Chapter 17	Section 8.1 of Appendix F; Section 5.2-5.4 of Appendix O
DRE	Provide a record of the flora, fauna and ecological attributes of the disturbed area and place in a regional context.	Ecology	Chapter 10	Appendix H
DRE	An evaluation of current land capabilities class and associated condition. The EIS should characterise soils across the proposed area of surface disturbance and assess their value and identify opportunities and constraints for use in rehabilitation.	Soil	Chapter 8	Chapter 6 of Appendix F
DRE	Where an agricultural land use is proposed, the EIS should:			
DRE	- demonstrate how Agricultural Suitability Class in the rehabilitated landscape would be returned to the existing Class/es or better	AIS	Chapter 9	Sections 3.1.3 ii, 3.4, 4.1.3 iii, 4.3.4 and 7.6 of Appendix G
DRE	- where the intended land use is likely to be grazing, the existing capacity in terms of Dry Sheep Equivalent or similar must be calculated and a timeframe from vegetation establishment be given for the return to agricultural production to at least the existing stock capacity.	AIS/Economics	Section 9.4.2 Chapter 17	Sections 5.4.1 and 7.6 of Appendix G; and Section 3.4 of Appendix Q
DRE	- provide information on how soils would be developed in order to achieve the proposed stock capacity.	AIS	Chapter 9	Sections 4.1.3 and 7.2.5 of Appendix G
DRE	Where an ecological land use is proposed, the EIS should demonstrate that the revegetation strategy has been developed in consideration of the target vegetation community(s).	An ecological land use is not proposed - therefore not applicable Refer to Chapter 10 and Appendix H of the EIS		
DRE	Identify and assess post mining land use options and provide a statement of the preferred post mining land use outcome in the EIS, including a discussion of how the final land use(s) are aligned with relevant local and regional strategic land use objectives as well as the benefits of the post mining land to the surrounding environment, a subsequent landowner, the local community and the state of NSW.	Rehabilitation	Chapter 17	Section 4 of Appendix O
DRE	Include a set of project rehabilitation objectives and completion criteria that define the environmental outcomes required to achieve the final land use for each domain. The criteria must be specific, measurable, achievable, realistic and time-bound.	Rehabilitation	Chapter 17	Sections 4 and 6 of Appendix O
DRE	A drawing at an appropriate scale with final landform contours should be provided which identifies vegetation types, habitat features, contaminated areas, drainage infrastructure, access and internal roads, fencing design and other remaining infrastructure such as sheds, dams, bored and pipelines.	Rehabilitation	Chapter 17	Figure 4.1 of Appendix O
DRE	Include a detailed description of the scope of decommissioning and rehabilitation activities required to meet the nominated closure objectives and completion criteria for each domain.	Rehabilitation	Chapter 17	Section 4.5 of Appendix O
DRE	Outline the proposed monitoring programs that will be implemented to assess how rehabilitation is trending towards the nominated land use objectives and completion criteria. This should include details of the process for triggering intervention and adaptive management measures to address potential adverse results as well as continuously improve rehabilitation practices.	Rehabilitation	Chapter 17	Section 6.3 of Appendix O
DRE	Outline of proposed rehabilitation research programs and trial, including objectives. This should include details of how the outcomes of research are considered as part of the ongoing review and improvement of rehabilitation practices.	Rehabilitation	Chapter 17	Table 1.2 of Appendix O
DRE	Describe how post-rehabilitation areas will be actively managed and maintained in accordance with the intended land use(s) in order to demonstrate progress towards meeting the closure objectives and completion criteria in a timely manner.	Rehabilitation	Chapter 17	Section 5.7 of Appendix O
DRE	To justify the proposed underground mining projects, the proponent must demonstrate the feasibility of - the proposed mining operation (eg mining methods, layout and sequences); and - the proposed strategies to manage subsidence risks to surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value.	Subsidence	Chapter 2 Section 14.2	Sections 2, 5, 6, 7.1, 7.2 and Appendix A of Appendix L

Hume Coal Project EIS

Agency environmental assessment recommendations

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DRE	The justification must be supported by the information provided by the proponent, including, but not limited to - a description of the proposed mining operation; - identification and general characteristics of surface and subsurface features that may be affected by subsidence caused by the proposed mining; - general and relevant site conditions including depths of cover, geological, hydrogeological, hydrological, geotechnical, topographic and climate conditions, as well as any conditions that may cause elevated or abnormal subsidence; - identification and general characteristics of any previously excavated or abandoned workings that may interact with the proposed or existing mine workings; - results of preliminary prediction of the nature, magnitude, distribution, timing and duration of subsidence; - results of a risk assessment in relation to subsidence of surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value, taking into consideration the points above; and - results of feasibility studies in relation to the proposed mining operation and proposed strategies to manage subsidence risks to surface or sub-surface features that are considered to have significant economic, social, cultural or environmental value.	Subsidence	Chapter 2 Chapter 5 Chapter 14	Sections 2, 5, 6, 7.1, 7.2 and Appendix A of Appendix L
Fisheries NSW	Location of works (including site map and photos).	General	Chapters 1 and 2	-
Fisheries NSW	Name of adjacent waterways.	Water	Chapter 7	Chapters 2, 5 and 6 of Appendix E
Fisheries NSW	Description of works to be undertaken.	Project description	Chapter 2	-
Fisheries NSW	Timing and duration of works.	Project description	Chapter 2	-
Fisheries NSW	Identification of Key Fish Habitat within the proposal area.	Aquatic ecology	Chapter 10	Section 3.3.2 and 4.6.6 of Appendix H
Fisheries NSW	Description of aquatic and riparian environments in the vicinity of the development, particularly extent and condition of riparian vegetation and instream aquatic vegetation, water depth, and permanence of water flow and snags (large woody debris) within the footprint of the proposal area.	Aquatic ecology	Chapter 10	Section 4.6 and Appendix J of Appendix H
Fisheries NSW	Analysis of any interactions of the proposed development with water quality and aquatic and riparian environments (including fish and aquatic and riparian vegetation) and predictions of any impacts upon those environments.	Aquatic ecology	Chapter 10	Section 7.14.1 vi and Section 7.2.1 iv of Appendix H
Fisheries NSW	Analysis of impacts of subsidence upon water flow within and downstream of all waterways within the proposal area	Surface water	Chapter 7	Section 10.1.2 of Appendix E
Fisheries NSW	Analysis of impacts of groundwater interference and drawdown on water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area.	Groundwater/ Aquatic ecology	Chapter 10	Section 7.2.1 of Appendix H
Fisheries NSW	Plan of proposed underground mine design overlaid with waterways.	Aquatic ecology	Chapter 10	Figure 2.3 of Appendix H
Fisheries NSW	Safeguards to mitigate any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area during construction and ongoing operation of the proposed coal mine. In particular, provide details on proposals for erosion and sediment control (to be incorporated into a Construction Environmental Management Plan - CEMP) and proposed stormwater and ongoing drainage management measures. Water quality management for the project should be designed to achieve no net increase in pollutant run-off to receiving waters within the proposal site.	Aquatic ecology	Chapter 10	Table 6.1 and Sections 6.1.5 and 6.1.6 of Appendix H
Fisheries NSW	Details of ongoing monitoring programs to assess any impacts upon water quality, water flow and aquatic and riparian environments within and downstream of all waterways within the proposal area.	Aquatic ecology	Chapter 7 Chapter 10	Section 13 of Appendix E; and Table 6.1 of Appendix H
Fisheries NSW	Fisheries NSW recommend the use of best practice sediment and erosion control, and water quality and stormwater management provisions to safeguard and mitigate impacts on water quality at the site and downstream. They also recommend inclusion of appropriate riparian corridors to provide a buffer between the development areas and adjacent waterways or natural drainage lines to provide protection to riparian and aquatic habitats.	Surface water/ Aquatic ecology	Chapter 7 Chapter 10	Section 13 of Appendix E; Table 6.1 and Sections 6.1.5 and 6.1.6 of Appendix H
Fisheries NSW	Design and construction of any watercourse crossings on the site should be undertaken in accordance with the Departments Policy and Guidelines for Fish Friendly Waterway Crossings (2004) and Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (2004)	Aquatic ecology	Chapter 10	Table 6.1 and Sections 6.1.5 and 6.1.6 of Appendix H
DPI Water	Annual volumes of surface water and groundwater proposed to be taken by the activity (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan.	Water	Chapter 7	Section 12 of Appendix E
DPI Water	Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project).	Water	Chapter 7	Section 12 of Appendix E
DPI Water	The identification of an adequate and secure water supply for the life of the project.	Water	Chapter 7	Section 12 of Appendix E
DPI Water	Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.	Water	Chapter 7	Section 12 of Appendix E
DPI Water	A detailed and consolidated site water balance.	Surface water	Chapter 7	Section 8.2 of Appendix E
DPI Water	A detailed assessment against the NSW Aquifer Interference Policy (2012) using DPI Water's assessment framework.	Water	Chapter 7	Sections 9.3.2 and 11 of Appendix E

Hume Coal Project EIS

Agency environmental assessment recommendations

Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DPI Water	Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, wetlands, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.	Water/aquatic ecology	Chapter 7	Sections 10 and 11 of Appendix E; and Table 6.1 and Section 7 of Appendix H
DPI Water	Full technical details and data of all surface and groundwater modelling, and an independent peer review of the groundwater model.	Water	Chapter 7	Section 8 and Appendices D, E, F, G, I and J of Appendix E
DPI Water	Proposed surface and groundwater monitoring activities and methodologies.	Water	Chapter 7	Section 13 of Appendix E
DPI Water	Proposed management and disposal of produced or incidental water.	Water	Chapter 7	Section 2.3 of Appendix E
DPI Water	Details of the final landform of the site, including final void management (where relevant) and rehabilitation measures	Rehabilitation	Chapter 17	Chapter 4 of Appendix O
DPI Water	Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts.	Water	Chapter 7	Sections 10.4 and 11.3 of Appendix E
DPI Water	Consideration of relevant policies and guidelines.	Water	Chapter 7	Section 3 of Appendix E
DPI Water	Assessment of whether the activity may have a significant impact on water resources, with reference to the Commonwealth Department of Environment Significant Impact Guidelines.	Water	Chapter 7	Sections 10 and 11 of Appendix E
DPI Water	If the activity may have a significant impact on water resources, then provision of information in accordance with the Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals, including completion of the information requirements checklist.	Water	Chapter 7	Sections 10 and 11 and Appendix B of Appendix E
DPI Water	A statement of where each element of the SEARs is addressed in the EIS (i.e. in the form of a table).	General	-	Appendix B
DPI Water	A detailed assessment of riparian and watercourse impacts, particularly with respect to watercourse crossings. The project should be designed to minimise impacts on watercourses and riparian land, and must have regard to the Department of Primary Industries' Guidelines for Controlled Activities on Waterfront Land – in particular the guideline on watercourse crossings.	Water/aquatic ecology	Chapter 7	Section 10 of Appendix E
DPI Water	The EIS should take into account the objects and regulatory requirements of the Water Act 1912 (WA 1912) and Water Management Act 2000 (WMA 2000), and associated regulations and instruments, as applicable.	Water/ Legislation	Chapter 3 Chapter 7	Section 3 of Appendix E
DPI Water	Describe the ground and surface water sharing plans, water sources, and management zones that apply to the project. Multiple water sharing plans may apply and these must all be described.	Water	Chapter 7	Section 3.2.1 of Appendix E
DPI Water	Demonstrate how the proposal is consistent with the relevant rules of the Water Sharing Plan including rules for access licences, distance restrictions for water supply works and rules for the management of local impacts in respect of surface water and groundwater sources, ecosystem protection (including groundwater dependent ecosystems), water quality and surface-groundwater connectivity.	Water	Chapter 7	Sections 3 and 12 of Appendix E
DPI Water	Provide a description of any site water use (amount of water to be taken from each water source) and management including all sediment dams, clear water diversion structures with detail on the location, design specifications and storage capacities for all the existing and proposed water management structures.	Water	Chapter 7	Sections 2.3 and 8.2 of Appendix E
DPI Water	Provide an analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant WSP, including: - Sufficient market depth to acquire the necessary entitlements for each water source. - Ability to carry out a "dealing" to transfer the water to relevant location under the rules of the WSP. - Daily and long-term access rules. - Account management and carryover provisions.	Water	Chapter 7	Sections 3 and 12 of Appendix E
DPI Water	Provide a detailed and consolidated site water balance.	Water	Chapter 7	Section 8.2 of Appendix E

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DPI Water	<p>The EIS should take into account the following policies (as applicable):</p> <ul style="list-style-type: none"> · NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012) · NSW Aquifer Interference Policy (NOW, 2012) · Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW, 2012) · Australian Groundwater Modelling Guidelines (NWC, 2012) · Information Guidelines for Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals (IESC, 2014) · Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments - impacts on water resources (Australian Govt. 2014) · NSW State Rivers and Estuary Policy (1993) · NSW Wetlands Policy (2010) · NSW State Groundwater Policy Framework Document (1997) · NSW State Groundwater Quality Protection Policy (1998) · NSW State Groundwater Dependent Ecosystems Policy (2002) · NSW Water Extraction Monitoring Policy (2007) · Groundwater Monitoring and Modelling Plans - Information for prospective mining and petroleum exploration activities (NOW, 2014) · NSW Code of Practice for Coal Seam Gas Well Integrity (DTIRIS 2012) · NSW Code of Practice for Coal Seam Gas Fracture Stimulation (DTIRIS 2012) 	Water	Chapters 7	Sections 3, 10 and 11 of Appendix E
DPI Water	Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site – such as evaporative loss from open voids or inflows).	Water	Chapter 7	Section 8.2 of Appendix E
DPI Water	Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water.	Water	Chapter 7	Section 12 of Appendix E
DPI Water	Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc).	Water	Chapter 7	Section 12 of Appendix E
DPI Water	Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc).	Water	Chapter 7	Section 2.3.2 of Appendix E
DPI Water	Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing.	Water	Chapter 7	Sections 2.3.2, 4.2.2iii and 12 of Appendix E
DPI Water	Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages.	Water	Chapter 7	Sections 2.3.2 and 5.5 of Appendix E
DPI Water	Details on the location, purpose, size and capacity of any new proposed dams/storages.	Water	Chapter 7	Section 2.3.2 of Appendix E
DPI Water	Applicability of any exemptions under the Water Management (General) Regulation 2011 to the project	Water	Chapter 7	Section 3.5.17 of Appendix E
DPI Water	Consideration of water allocation account mangement rules, total daily extraction limits and rules governing environmental protection and access license dealings.	Water	Chapter 7	Section 12 of Appendix E
DPI Water	Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project.	Surface water	Chapter 7	Section 5.1 of Appendix E
DPI Water	Identification of all surface water sources as described by the relevant water sharing plan.	Surface water	Chapter 7	Sections 3.2.1 and 5.1 of Appendix E
DPI Water	Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users.	Surface water/ Aquatic ecology	Chapter 7	Sections 5.5 and 6.10.2 of Appendix E; and Sections 4.5 and 7.2.1 of Appendix H
DPI Water	Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources.	Surface water	Chapter 7	Sections 2.3 and 8.2 of Appendix E

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DPI Water	Assessment of predicted impacts on the following: - flow of surface water (including floodwater), sediment movement, channel stability, and hydraulic regime, - water quality, - flood regime, - dependent ecosystems, - existing surface water users, and - planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.	Surface water/ aquatic ecology	Chapter 7	Sections 10 and 11 of Appendix E; and Sections 7.1.1 and 7.2.1 of Appendix H
DPI Water	The known or predicted highest groundwater table at the site.	Groundwater	Chapter 7	Section 6.3 of Appendix E
DPI Water	Works likely to intercept, connect with or infiltrate the groundwater sources.	Groundwater	Chapter 7	Section 2.3 of Appendix E
DPI Water	Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.	Groundwater	Chapter 7	Sections 2.3 and 12 of Appendix E
DPI Water	Bore construction information is to be supplied to DPI Water by submitting a "Form A" template. DPI Water will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting.	Groundwater	Chapter 7	Section 4.2.2 of Appendix E
DPI Water	A description of the watertable and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water sources).	Groundwater	Chapter 7	Section 6 of Appendix E
DPI Water	Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and GDEs to establish a baseline incorporating typical temporal and spatial variations.	Groundwater	Chapter 7	Section 4 of Appendix E
DPI Water	The predicted impacts of any final landform on the groundwater regime.	Groundwater	Chapter 7	Section 11 of Appendix E
DPI Water	The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts.	Groundwater	Chapter 7	Sections 6.10, 11.4 and 13 and Appendices M, N and O of Appendix E
DPI Water	An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality	Groundwater	Chapter 7	Sections 6.8 and 11.2 of Appendix E
DPI Water	An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal).	Groundwater	Chapter 7	Section 11.2 of Appendix E
DPI Water	Measures proposed to protect groundwater quality, both in the short and long term	Groundwater	Chapter 7	Section 13 of Appendix E
DPI Water	Measures for preventing groundwater pollution so that remediation is not required	Groundwater	Chapter 7	Section 13 of Appendix E
DPI Water	Protective measures for any groundwater dependent ecosystems (GDEs).	Groundwater	Chapter 7	Section 13 of Appendix E
DPI Water	Proposed methods of the disposal of waste water and approval from the relevant authority.	Groundwater	Chapter 7	Sections 2.3, 8.2 and 13 of Appendix E
DPI Water	The results of any models or predictive tools used.	Groundwater	Chapter 7	Sections 8, 10 and 11 and Appendices D, E, F, G, I and J of Appendix E
DPI Water	Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on: - Any proposed monitoring programs, including water levels and quality data. - Reporting procedures for any monitoring program including mechanism for transfer of information. - An assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal. - Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category). - Description of the remedial measures or contingency plans proposed. - Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.	Groundwater	Chapter 7	Sections 10, 11 and 13 of Appendix E
DPI Water	Identify any potential impacts on GDEs as a result of the proposal including: - the effect of the proposal on the recharge to groundwater systems; - the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and - the effect on the function of GDEs (habitat, groundwater levels, connectivity).	Aquatic ecology	Chapter 7 Chapter 10	Appendices H and I of Appendix E; and Sections 4.5 and 7.2.1 of Appendix H
DPI Water	Provide safeguard measures for any GDEs.	Aquatic ecology	Chapter 10	Sections 6.1.4 and 6.2.2 of Appendix H

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
DPI Water	Scaled plans showing the location of: - wetlands/swamps, watercourses and top of bank; - riparian corridor widths to be established along the creeks; - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed); - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas; and - proposed location of any asset protection zones.	Surface water/ Aquatic ecology	Chapter 7	Section 5 of Appendix E; and Figures 1.6, 1.7, 4.1, 7.1 and 7.2 of Appendix H
DPI Water	Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken.	Surface water	Chapter 7	Section 5 and Appendix F of Appendix E
DPI Water	A detailed description of all potential impacts on the watercourses/riparian land.	Surface water	Chapter 7	Section 10 of Appendix E
DPI Water	A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime: groundwater recharge; habitat and any species that depend on the wetlands.	Surface water/aquatic ecology	Chapter 7	Section 10 of Appendix E; and Section 7.8.3 of Appendix H
DPI Water	A description of the design features and measures to be incorporated to mitigate potential impacts.	Surface water	Chapter 7	Section 13 of Appendix E
DPI Water	Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.	Surface water	Chapter 7	Section 5.2 and Appendix F of Appendix E
DPI Water	Any construction activity within 40 m of a watercourse, should be designed by a suitably qualified person, consistent with the <i>NSW Guidelines for Controlled Activities on Waterfront Land</i> ;	Chapter 7		
DPI Water	Construction of all wells must be undertaken in accordance with the <i>Minimum Construction Requirements for Water Bores in Australia</i> (3rd edition 2012) by a driller holding a bore drillers' licence valid in NSW;	N/A - new wells not proposed		
DPI Water	The length of time that a core hole is maintained as an open hole should be minimised;	N/A - new wells not proposed		
DPI Water	Construction, suspension and abandonment of wells for petroleum projects should be carried out in accordance with the NSW Code of Practice for Coal Seam Gas Well Integrity;	N/A - new wells not proposed		
DPI Water	Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems;	Rehabilitation	Chapter 7 Chapter 17	Section 11 of Appendix E; and Section 4 of Appendix O
DPI Water	A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape	Rehabilitation	Chapter 17	Section 4.4 of Appendix O
DPI Water	an outline of proposed construction and restoration of topography and surface drainage features if affected by the project;	Rehabilitation	Chapter 2 Chapter 17	Section 4.4 and 4.5 of Appendix O
DPI Water	Detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void (where relevant) on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent;	Water	Chapter 7	Sections 8.6 and 11 and Appendix I of Appendix E
DPI Water	An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and	Rehabilitation	Chapter 17	Section 5.7.5 of Appendix O
DPI Water	The measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.	Rehabilitation/ Water	Chapter 7	Section 13 of Appendix E
OEH	Assessment of the potential impact on biodiversity, including threatened species, populations, ecological communities, or their habitats likely to occur within or near the subject site.	Ecology	Chapter 10	Chapter 7 of Appendix H
OEH	Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the Threatened Species Conservation Act 1995.	Ecology	Chapter 10	Section 1.7 and Appendix A of Appendix H
OEH	The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.	Aboriginal heritage	Chapter 21	Chapters 3 to 9; and Appendix H of Appendix S
OEH	Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.	Aboriginal heritage	Chapter 21	Chapters 2 and 9; and Appendix A of Appendix S

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
OEH	Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Aboriginal heritage	Chapter 21	Chapters 10 and 11 of Appendix S
OEH	The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), c. include a statement of heritage impact for all heritage items (including significance assessment), d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test	Historic heritage	Chapter 22	Appendix T
OEH	The EIS must map the following features relevant to water and soils including: a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in Appendix 2 of the Framework for Biodiversity Assessment). c. Groundwater. d. Groundwater dependent ecosystems. e. Proposed intake and discharge locations.	Water and soils	Chapter 7 Chapter 8	Sections 5 and 6 of Appendix E; and Section 3.6 of Appendix F
OEH	The EIS must describe background conditions for any water resource likely to be affected by the development, including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.	Water	Chapter 7	Sections 5, 6 and 10 and Appendix E of Appendix E
OEH	The EIS must assess the impacts of the development on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality.	Water	Chapter 7	Sections 4, 10, 11 and 13 of Appendix E
OEH	The EIS must assess the impact of the development on hydrology, including: a. Water balance including quantity, quality and source. b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas. c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems. d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches). e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water. f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options. g. Identification of proposed monitoring of hydrological attributes.	Water/aquatic ecology	Chapter 7 Chapter 10	Sections 4, 10 and 13 of Appendix E; and Table 6.1 and Section 7.1.1 of Appendix H
OEH	Impacts on the following populations will require further consideration and provision of the information specified in s9.2 of the Framework for Biodiversity Assessment: • <i>Eucalyptus aggregata</i>	Ecology	Chapter 10	Section 7.3 of Appendix H

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
OEH	The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.	Aboriginal heritage	Chapter 21	Chapter 6 and 7 of Appendix S
OEH	The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.	Aboriginal heritage	Chapter 21	Chapter 11 of Appendix S
OEH	The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.	Aboriginal heritage	Chapter 21	Chapter 11 of Appendix S
Transport for NSW	A traffic impact study prepared in accordance with the methodology set out in Section 2 of the RTA's Guide to Traffic Generating Development and include:	Traffic	Chapter 15	Appendix M
Transport for NSW	Accurate daily and peak traffic forecasts generated by the project during construction and operation, including details of transport routes, types of vehicles like to be used and expected ramp up periods. forecasts are to include anticipated service vehicle movements, including vehicle types and arrival and departure times;	Traffic	Chapter 15	Chapter 3 of Appendix M
Transport for NSW	Details of the proposed staging of the project covering construction and operational stages;	General	Chapter 2	-
Transport for NSW	Details of the proposed access to the site from the road network during construction and operation of the project, including hours of operation, days of construction and operation for each stage of the project, intersection location, design and sight distances;	General	Chapter 2 Chapter 15	Appendix M
Transport for NSW	Detailed assessment of the impact of the proposed project on the capacity, efficiency and safety of the road networks during construction and operation. The assessment should consider the cumulative impacts of the project on current road users and should also include the contribution of mining inputs, having regard to the transportation of dangerous goods (explosives, fuel and chemicals) to be utilised during the construction and operational phases of the project. A risk assessment should be undertaken to identify management measures that will be implemented to ensure that dangerous goods are safely transported;	Traffic	Chapter 15	Chapters 4 and 5 of Appendix M; and Chapter 6 of Appendix P
Transport for NSW	Any oversize and over-mass vehicles and loads expected for the construction, operation or decommissioning of the project should be identified, including the shortest and least trafficked route having been given priority for the movement of construction materials and machinery to minimise the risk and impact to other motorists;	Traffic	Chapter 15	Chapter 6 of Appendix M
Transport for NSW	A description of the measure that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network for the construction and over the life of the project; and	Traffic	Chapter 15	Chapter 6 of Appendix M
Transport for NSW	Detailed plans of the proposed layout of the internal access roads and on-site parking in accordance with the relevant Australian standards.	General	Chapter 2 Chapter 15	Chapter 3 of Appendix M
Transport for NSW	Consultation with RMS (Southern Region) and the ARTC, in preparation of documentation for the EIS	General	Chapter 4	ARTC - Table 9.2 of Appendix D
EPA	Give examples of equivalent current use of the innovative elements of the project, including pine feather mining techniques, underground waste reject backfilling and covering of coal wagons, available expertise for implementation and how they will be specifically adapted for use in the project to demonstrate technical feasibility and long term economic feasibility.	Project description	Chapter 2 (Section 2.3.1)	Mine Design Justification Report, included as Appendix A to the Subsidence report (refer to Appendix L of EIS)
EPA	Include several sources of cost estimates for the innovative techniques in the financial feasibility assessment for the project.	Economics	Chapter 19	Appendix Q
EPA	Identify relevant water quality objectives for surface and groundwater, including indicators and associated trigger values or criteria, in accordance with National Water Quality Management Strategy Guidelines. Reference the water quality objectives for the Wingecarribee River catchment in the "NSW Healthy Rivers Commission of Inquiry into the Hawkesbury Nepean Catchment". Identify any downstream users and uses of the discharged water classified in accordance with relevant ANZECC 2000.	Water	Chapter 7	Sections 5 and 6 of Appendix E
EPA	Estimate the chemical composition and load of chemical and physical stressors and toxicants in any discharge with ANZECC 2000 trigger values for the various environmental values of the waterway.	Water	Chapter 7	Sections 10.2 and 11.2 of Appendix E
EPA	Investigate options to reduce the levels of pollutants in the discharge of water to protect the environment from harm as a result of that pollution. Identify all practical measures to control or reduce pollutants in the surface or groundwater discharges. Identify preferred measures and their justification.	Water	Chapter 7	Section 13 of Appendix E
EPA	If WQO's cannot be met for the project, demonstrate that all practical options to avoid water discharge have been implemented and outline any measures taken to reduce the pollutant loads where a discharge is necessary. Where a discharge is proposed, analyse the expected discharges in terms of impact on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm.	Water	Chapter 7	Sections 10, 11 and 13 of Appendix E
RMS	A traffic impact study prepared in accordance with the RTA Guide to Traffic Generating Development.	Traffic	Chapter 15	Appendix M

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
RMS	The effects on traffic volumes and roadway configurations associated with entry to and exit from the mine and rail line during construction and operation from vehicles associated with the mine. RMS will not accept any direct access to the Hume Highway. If significant road works are proposed to accommodate any changes to the traffic regime, then the EIS will need to be expanded to address these proposals.	Traffic	Chapter 15	Chapter 4 and 5 of Appendix M
RMS	The movement of overweight and oversize vehicles on the Hume Highway associated with the mine	Traffic	Chapter 15	Chapter 6 of Appendix M
RMS	The visual amenity impact of the mine works with regard to driver behaviour	Visual	Chapter 16	Chapter 5 of Appendix M
RMS	The impact of dust pollution on the travelling public.	Air	Chapter 12	Section 9 of Appendix K
RMS	The impact of dust pollution or the depositing of fines on the functioning of reflective signs, pavement markers and pavement line marking.	Air	Chapter 12	Section 9 of Appendix K
RMS	The impacts of noise and vibration of the mine, including: - undermining or de-stabilisation of the Hume Highway through coal extraction operations or otherwise; and - vibration impacts on the Hume Highway through mine construction and operation.	Noise	Chapter 11 Chapter 14	Section 3.6 and Section 5.8 of Appendix I
RMS	The impacts of groundwater flows, including changes in the water table configuration through such things as new dam construction, re-routing of waterways, groundwater behavioural changes, and changes to the catchment areas that feed to or away from the Hume Highway. Any change in the water table has the potential to affect the structural integrity of the Hume Highway.	Groundwater	Chapter 7	Section 11.4 of Appendix E
WaterNSW	Demonstrate that the proposed measures to capture and treat water impacted by the proposal will have no impact on water quality within the Wingecarribee River.	Water	Chapter 7	Section 10.2 of Appendix E
WaterNSW	Specifically address clauses 9(1) and (2) and 10(1) of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011. In particular, the EIS must describe and justify how the development would have a neutral or beneficial effect on water quality.	Water	Chapter 7	Sections 3.5.12 and 10.2 of Appendix E
WaterNSW	A full description of the development including those aspects which have the potential to impact on the quality and quantity of surface and groundwaters at and adjacent to the site, including: - the mining proposal and mine layout - the location, mapping and geomorphology of all creeks and water resources overlying and adjacent to the proposed mining area - the hydrogeological fluxes between surface and groundwaters, including the filling of pine feather voids - the location, management and storage of all hazardous materials - the disposal of wastes from the treatment of mine waters in the mine water treatment plant - the management of dirty water from the washing and preparation of coal for transport - the location, sizing and description of all water quality management measures - the location and description of all water monitoring points (surface and ground waters) - on-site domestic (sewage) wastewater management	Water	Chapter 7 Chapter 18	Sections 2, 4, 5, 7, 8, 10 and 11 of Appendix E; and Appendix P
WaterNSW	A detailed assessment of the development on water resources which considers the design, construction, operational and decommissioning phases and have regard for operation during periods of wet weather and include:			
WaterNSW	-details of measured and predicted coal mine, preparation area and stockpile area performance with respect to water quality management	Water	Chapter 7	Sections 10 and 11 of Appendix E
WaterNSW	-details of measures proposed to be adopted to offset impacts associated with construction activities eg earthworks, vegetation clearing and track construction	Water	Chapter 7 Chapter 10	Sections 10 and 11 of Appendix E; and Appendix H
WaterNSW	-impacts on overlying and adjacent creeks and water resources within risk management zone associated with subsidence	Water	Chapter 7	Section 10 of Appendix E
WaterNSW	-impact of the proposed on-site domestic (sewage) wastewater management and associated effluent disposal area	Water	Chapter 7	Section 2.3 of Appendix E
WaterNSW	-pre-development and post development run off volumes and pollutant loads from the site	Water	Chapter 7	Sections 5, 10 and 13 and Appendices E and F of Appendix E
WaterNSW	-details of the measures to manage site water associated with processing coal and coal reject, general stormwater runoff and any human activities likely to affect water quality at the site, and how neutral or beneficial effect on water quality (NorBE) principles will be assessed and applied	Water	Chapter 7	Sections 10 and 11 of Appendix E
WaterNSW	-assessment of the impacts of the development on receiving water quality and volume, both surface and groundwater including from the filling of pine feather voids and associated impact on interaction and baseflows of surface waters	Water	Chapter 7	Sections 2.3 and 13 of Appendix E
WaterNSW	-details of the structural stability, integrity, ongoing maintenance and monitoring of all site water management measures including dams over the life of the project	Water	Chapter 7	Sections 4 and 13 of Appendix E

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Agency	Requirement	Technical team	Addressed in EIS	Addressed in technical study
WaterNSW	-details of proposed monitoring of groundwater levels, surface water flows, groundwater and surface water quality, along with information as to how the proposed monitoring will be used to monitor, and, if necessary, mitigate impacts on surface water and groundwater resources	Water	Chapter 7	Sections 2.3, 10 and 13 of Appendix E
WaterNSW	-the principles outlined in the 'Managing Urban Stormwater - Soils and Construction - Mines and Quarries' Manual prepared by the Department of Environment and Climate Change (2008).	Water	Chapter 7	Sections 2.3, 10 and 13 of Appendix E
WaterNSW	The EIS should provide concept plans/protocols/procedures for the following:			

