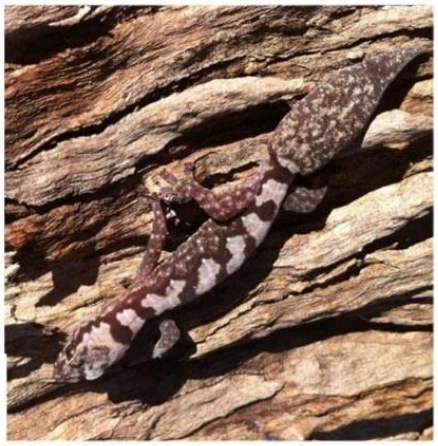

Boggabri Coal Operations Pty Ltd

Water Management Plan

May 2017 Revision No.6

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BOGGABRI COAL

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Abbreviations

Abbreviations	Term
AEMR	Annual Environmental Management Report
ANZECC	Australian and New Zealand Environment Conservation Council
BCM	Boggabri Coal Mine
BCOPL	Boggabri Coal Operations Pty Limited
BTM Complex	Boggabri-Tarrawonga-Maules Creek Complex
CAP	Catchment Action Plan
CCC	Community Consultative Committee
DP&E	NSW Department of Planning and Environment
DPIW	NSW Department of Primary Industry Water
DoEE	Department of Environment and Energy (Formerly - Department of Sustainability, Environment, Water, Population and Communities)
EA	Environmental Assessment
EMPs	Environmental Management Plans
EP&A Act	*Environmental Planning and Assessment Act, 1979*
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act, 1999*
EPL	Environment Protection Licence
EV	Environmental Value
GWMP	Groundwater Management Plan
IAR	Idemitsu Australia Resources Pty Limited
ICMM	International Council of Mining and Metals
MCCM	Maules Creek Coal Mine
MIA	Mine Infrastructure Area
MOP	Mining Operations Plan
Mtpa	Million Tonnes Per Annum
WSP	Water Sharing Plan
NWQMS	National Water Quality Management Strategy
NWLLS	North West Local Land Services
PAC	NSW Planning Assessment Commission
RMP	Rehabilitation Management Plan
ROM	Run of Mine
SWB	Site Water Balance
SWMP	Surface Water Management Plan
TCM	Tarrawonga Coal Mine
WMP	Water Management Plan
WMS	Water Management Strategy
WSP	Water Sharing Plans

1. Introduction

This Water Management Plan (WMP) has been developed for Boggabri Coal Operations Pty Ltd (BCOPL), a wholly owned subsidiary of Idemitsu Australia Resources (IAR) Pty Limited (80%), Chugoku Electric Power Australia Resources Pty. Ltd (10%) and NS Boggabri Pty Limited (10%). Boggabri Coal Mine (BCM) is located 15 km north-east of the township of Boggabri in north-western New South Wales and comprises an open cut coal mine that has been operating since 2006. Truck and excavator operations produce a crushed and screened run of mine (ROM) coal product. Coal is loaded onto trains via a train loading facility, where coal is transported by rail to the Port of Newcastle for dispatched for overseas consumption.

Project Approval number 09_0182 for the Boggabri Coal Mine, granted by the NSW Planning Assessment Commission (PAC) under delegated authority on 18 July 2012 as modified from time to time (**Project Approval**) allows BCOPL to extend its mining operations for a further 21 years, and increase its production rate to 8.6 Million tonnes per annum (Mtpa) of ROM coal from a total resource of 145 Mt.

In 2015, BCOPL lodged an application under Section 75W of the EP&A Act 1997 to modify PA 09_0182 (MOD 5). The modification was supported by an Environmental Assessment (Parsons Brinckerhoff, 2015a) for the conversion of existing test bores to operational production bores for the supply water to BCM and the installation of ancillary infrastructure on adjoining properties. The application was determined by the NSW Department of Planning and Environment, Executive Director under delegation by the Minister for Planning and approval was received on 30 August 2016

The mine is managed by BCOPL, who engages contractors to undertake construction, mining, coal crushing and transportation activities. All contractors working at the Boggabri Coal mine are required to operate in compliance with this Water Management Plan (WMP).

Schedule 3, Condition 38 of the Project Approval requires the preparation of a Water Management Plan (WMP). This plan has been prepared in fulfilment of these requirements. The specific NSW EP&A Act Project approval conditions relating to water management are listed in Table 2.2 of this document.

Conditions of approval under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) were granted by the Federal Government Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) (now the Department of Environment and Energy (DoEE)) on 11 February 2013. Conditions 15 to 19 of the EPBC Approval apply to the WMP. The specific EPBC Approval requirements are listed in Table 2.1.

1.1 Background

BCM is largely contained within the catchment of an unnamed ephemeral drainage line commonly known as ‘Nagero Creek’. The catchment consists predominantly of woodland upstream of the site and cleared farmland downstream. The creek flows approximately 8km to the Namoi River. A small area to the south of the mine infrastructure area (MIA) is

located within the catchment of Bollol Creek. Nagero Creek and Bollol Creek are both small tributaries of the Namoi River, which is part of the Barwon-Darling River system.

The Namoi River is the main watershed for the region, and is part of the Murray Darling Basin system and is managed under the following Water Sharing Plans (WSPs):

- WSP for the Namoi Unregulated and Alluvial Water Sources
- WSP for the Upper Namoi and Lower Namoi Regulated River Water Sources.

Key aquifers in the region include:

- Alluvial aquifers; comprising alluvial deposits associated with the Namoi River and its tributaries
- The Maules Creek Formation aquifer; the major transmissive units are within the coal seams, in particular the Merriown Seam
- Minor colluvium associated with weathered Boggabri Volcanics

This WMP considers the entire life of the mine. To ensure clarity throughout the document, reference is made to two distinct mine plans for which various aspects of the water management system have been devised, specifically the:

1. Revised Draft Mining Operations Plan (MOP): lodged with the NSW Division of Resources and Energy (DRE) in January 2017. The MOP spans a period between 2015 and 2019. Mine plan snapshots and water management systems relevant to mine years existing and 2018, are aligned with the MOP.

2. Environmental Assessment (EA) Mine Plan: lodged in 2009 and conditionally approved by the NSW Minister for Planning and Infrastructure in July 2012, the EA mine plan spans a 21 year period between 2013 and 2034. Mine plan snapshots and water management systems relevant to mine years beyond year 5 reflect the EA mine plan.

1.2 Purpose

The purpose of this WMP is to provide a framework for water management at BCM. As is referred to in the Project Approval (Schedule 3, Condition 38), this WMP is an overarching document that pulls together water management aspects of the following documents:

- BTM Complex Water Management Strategy (WMS)
- Surface Water Management Plan (SWMP)
- Groundwater Management Plan (GMP)
- Site Water Balance (SWB) report

This WMP also satisfies the standard requirements for management plans (outlined in Schedule 5, Condition 3 of the Project Approval).

Table 1–1 lists the relevant plan and strategy documents referred to in this WMP. Given the overarching intent of the WMP, these documents should be read in conjunction with the WMP where appropriate, particularly where detail on the subject matter is sought (e.g. for groundwater monitoring refer to the GWMP). The WMP document hierarchy is shown in Figure 1-1.

Table 1.1 Water management documents

Document	Description
BTM Complex Water Management Strategy	Regional strategy prepared in consultation with Tarrawonga Coal Pty Ltd (TCPL) and Maules Creek Coal Mine (MCCM)
Water Management Plan (WMP)	Overarching document setting out water management framework, statutory requirements and procedural requirements
Surface Water Management Plan	Surface water baseline data, performance criteria, monitoring program, response plan, water management system description, erosion and sediment controls
Groundwater Management Plan	Groundwater baseline data, performance criteria, monitoring program, response plan, groundwater model validation program
Site Water Balance report	Mine water balance modelling methodology, assumptions and results, mine water management system operating philosophy

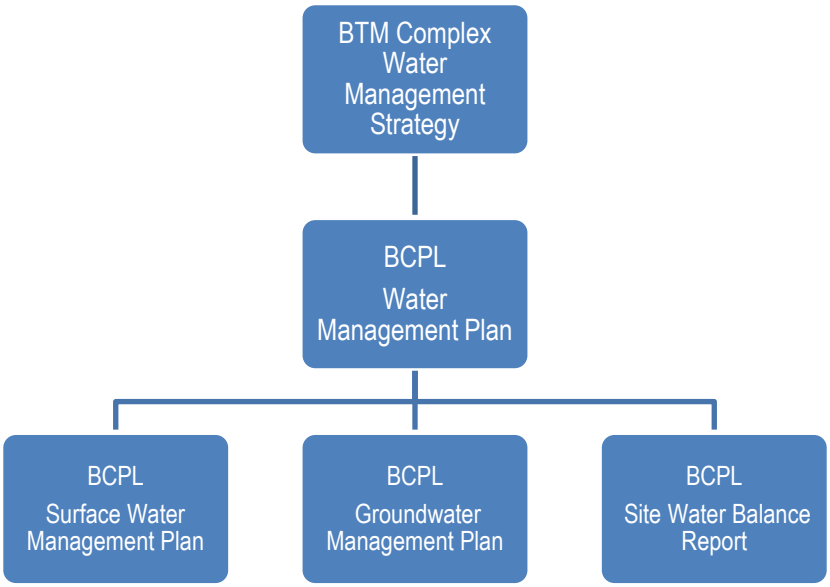


Figure 1-1 Document hierarchy

1.3 Responsibilities

BCOPL is responsible for compliance with the WMP and sub-plans: SWMP, GWMP, SWB report and jointly for the BTM Complex Water Management Strategy (WMS) with Tarrawonga Coal Mine and Maules Creek Coal. Monitoring, reporting and management are undertaken by BCOPL in accordance with the guidance provided in the sub-plans and Environment Protection Licence 12407 (the EPL), MOP and various Project Operational Environmental Management Plans (EMPs).

1.4 Agency consultation

Previous versions of this WMP have been prepared in consultation with representatives from the NSW Environment Protection Authority (EPA) (formerly Office of Environment and Heritage), DPI Water (DPIW), North West Local Land Services (NWLLS) (formerly

Namoi Catchment Management Authority) and the Community Consultative Committee (CCC).

The WMP has been prepared by suitably qualified persons approved by the DP&E to undertake this work. Draft versions of this WMP have been reviewed by DP&E and comments have been addressed.

This plan has been submitted to regulators (EPA and DPIW), NWLLS and the CCC. The final WMP has been updated to incorporate feedback from regulators and the CCC. Evidence of consultation is presented in Appendix A.

2. Planning and statutory requirements

Statutory requirements include any Commonwealth, State or local requirements under any provisions of relevant acts and regulations, environmental planning instruments and any other relevant guidelines relevant to mine water management.

The statutory requirements associated with water management discussed in the following sections have been considered during the development of this WMP. Further details relating to water management statutory requirements, policy and guidelines are provided in the SWMP and GMP.

2.1 Commonwealth

2.1.1 Project approval

Commonwealth approval for the Project was granted on 11 February 2013 pursuant to Sections 130 (1) and 133 of the *Environmental Protection and Biodiversity Conservation Act (1999)* (EPBC Act) (EPBC Act referral 2009/5256). The EPBC Act protects matters of National Environmental Significance. Based on the known and potential impacts on matters of National Environmental Significance, the Project constitutes a controlled action under the EPBC Act, which required approval from the then Commonwealth Minister for the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) (now Department of Environment and Energy (DoEE)). Refer to Section 2.3 for specific EPBC Act Project approval conditions related to WMPs.

2.1.2 National Water Quality Management Strategy

The National Water Quality Management Strategy (NWQMS) is a joint national approach to improving water quality in Australian and New Zealand waterways. The NWQMS aims to protect the nation's water resources, by improving water quality while supporting the businesses, industry, environment and communities that depend on water for their continued development.

The process for water quality management is based on national guidelines that are implemented at State, regional and local levels. The national water quality guidelines are the basis for development of the State and local plans and objectives. The ANZECC water quality guidelines (water quality benchmarks) have been used to assess baseline water quality used in the GWMP and the SWMP.

2.2 NSW Legislation

State statutory requirements associated with mine water management during the operation and rehabilitation phase of the Boggabri Coal Project have been considered during the development of this WMP and are outlined below.

2.2.1 EP&A Act Project approval

Development approval for the Project was granted on 18 July 2012 pursuant to Section 75J of the EP&A Act by the Planning and Assessment Commission of NSW as delegate

of the Minister for Planning. Refer to Section 2.3 for specific project approval conditions related to WMPs.

2.2.2 Mining Lease approval under the Act 1992

The objectives of the Mining Act 1992 as are to encourage and facilitate discovery and development of mineral resources having regard to the need to encourage ecologically sustainable development. In relation to water, the Act requires that BCOPL ensure effective rehabilitation of disturbed land and water and to ensure mineral resources are identified and developed in ways that minimise impact to the environment. BCOPL hold coal lease CL368 under this Act.

2.2.3 Water Management Act 2000 and Water Act 1912

The *Water Management Act 2000* regulates water use and works that affect surface and groundwater covered by a Water Sharing Plan (**WSP**) in NSW and the Water Act 1912 generally regulates the use of water not covered by a water sharing plan.

The objectives of the *Water Management Act 2000* (**WM Act**) are to provide for the sustainable and integrated management of the water sources of NSW for the benefit of present and future generations.

Where an area is covered by a gazetted WSP under the WM Act, an access licence must be obtained under the WM Act to obtain access to a specified share of water, to take water at a specified time, at a specified rate or at a specified area within a specified location. Different types and categories of access licence exist for different purposes.

The Project is within water sharing plan areas, and BCOPL holds existing licences under the WM Act for the extraction of both surface water and groundwater. The GWMP and SWMP provides further details of the relevant plans and licence requirements.

The WM Act establishes a regime for the protection and improvement of certain rivers and foreshores and the prevention of erosion of lands by non-tidal and tidal water. A controlled activity approval under the WM Act is required for certain types of developments and activities that are carried out in or near a river, lake or estuary.

As BCM is a transitional Part 3A Project, pursuant to section 75U of the EP&A Act:

- a water use approval under section 89;
- a water management work approval under section 90; or
- an activity approval under section 91,

of the *Water Management Act 2000* are not required and the provisions of any Act that prohibit an activity without these approvals do not apply.

2.2.4 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* aims to protect, restore and enhance the quality of the environment in NSW by rationalising, simplifying and strengthening the regulatory framework for environment protection. The Act and associated Regulations are administered by the NSW EPA.

The *Protection of the Environment Operations Act 1997* regulates emissions to air, water pollution, noise pollution and waste management through a single integrated licence.

BCOPL holds Environment Protection Licences (EPL) No: 12407 under this Act. The conditions of the EPL are further discussed within the SWMP and GMP.

2.3 Project approval conditions

Table 2.1 lists the Commonwealth Government Project approval conditions relating to water management set out in approval EPBC 2009/5256 granted on 11 February 2013.

Table 2.2 outlines the NSW EP&A Act Project approval conditions applicable to water management, as listed in Schedule 3 and Schedule 5 of the Project Approval.

Table 2.3 outlines Mining Lease conditions under the NSW Mining Act, as they relate to water management.

Other approval conditions are associated with:

- *Water Management Act 2000* licence(s) to extract surface water and groundwater. The conditions are specified on the individual licences and in the relevant applicable water sharing plans;
- Controlled activity approvals under the *Water Management Act 2000.* The conditions are specified on the individual approvals.

Table 2.1 Commonwealth Government Project approval conditions under the EPBC Act

Applicable conditions	Requirement	Addressed in following document
15	The person taking the action must provide to the Minister for approval, the surface and groundwater management plans as identified in condition 38 of the NSW state government Project Approval dated 18 July 2012 (application number 09_0182). The surface and groundwater management plans approved by the Minister must be implemented prior to the commencement of new mining operations.	Refer to SWMP and GWMP
16	The surface and groundwater management plans must be consistent with the National Water Quality Management Strategy.	Refer to SWMP and GWMP
17	The person taking the action must within 6 months of this approval, in collaboration with the person taking the action to develop and operate the Maules Creek Coal Project (EPBC 2010/5566) and any other approved mines within 20 km of the mine site provide written advice to the Minister demonstrating how the approved surface and groundwater management plans (specified in condition 15), addresses the cumulative impact of groundwater drawdown as a result of mining and how this may impact on the consequent health of the remnant native vegetation in the Leard State Forest, the Leard State Conservation Area and surrounding areas. In particular the advice must address the following matters: (a) maximum amount of allowable drawdown in the alluvial aquifer (b) drawdown in hard rock aquifer (c) trigger levels pertaining to drawdown in the alluvial aquifer when corrective actions will be required to be undertaken (d) identify the depth of root zone of the native vegetation (e) monitoring to assess the ongoing quality and quantity of both surface and groundwater to identify impacts on the native vegetation.	Refer to WMS
18	The person taking the action must within 6 months of the date of this approval, or such other timeframe specified by the Minister, provide to the Minister a report on: (a) any updated modelling of surface and groundwater impacts that has been undertaken in preparing the surface and groundwater management plans (b) how the surface and groundwater management plans addressed groundwater and surface water impacts on native vegetation	Refer to SWMP and GWMP
19	A risk-based assessment of the disposal of mine water by irrigation on soils must be undertaken. The assessment must include the risk of metal and salinity accumulation in soils.	Refer to SWB*

* Planned increases to mine water storage capacity are considered adequate and there is no current planned mine water disposal via irrigation.

Table 2.2 State Project approval conditions under the EP&A Act

Applicable conditions	Requirement	Addressed in following document
Sch3,33	**Water supply** The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations on site, to match its available water supply to the satisfaction of the Director-General.	Refer to SWB
Sch3, 34	**Compensatory water supply** The Proponent shall provide a compensatory water supply to any landowner of privately-owned land whose water supply is adversely and directly impacted (other than an impact that is negligible) as a result of the project, in consultation with NOW, and to the satisfaction of the Director-General. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified. If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution. If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alterative compensation to the satisfaction of the Director-General.	Refer to GWMP
Sch3, 35	**Surface water discharges** The Proponent shall ensure that any surface water discharges from the site comply with the discharge limits (both volume and quality) set for the project in any EPL.	Refer to SWMP
Sch3, 36	**Operating conditions** The Proponent shall: (c) Ensure that coal reject or any potentially acid forming interburden materials must not be emplaced at elevations within the Boggabri pit shell where they may promote acid or sulphate species generation and migration beyond the pit shell (d) Ensure that any coal barrier between the final void and any future surrounding mining operations must remain intact in order to impede exchange of any contained groundwaters in the Boggabri pit shell	Refer to SWMP and RMP
Sch3, 37	**Flood impacts Boggabri Rail Spur Line and Haul Road** The rail spur line, rail spur bridges and any upgrade to the haul road must be designed and constructed to minimise impacts on flooding. Prior to construction of the rail spur line or any upgrades to the haul road, the Proponent shall undertake a flood assessment of the detailed design to confirm there would be minimal impacts as predicted in the EA. This shall include assessment of impacts of the rail spur line embankment and proposed design of stormwater culverts along the rail spur line to the Namoi River to assess changes to localised flood impacts within the	Refer to SWMP

Applicable conditions	Requirement	Addressed in following document
	Nagero Creek catchment and adjoining Bollol Creek catchment. The assessment must be undertaken in consultation with NOW, Namoi CMA, Council and OEH, to the satisfaction of the Director-General.	
Sch3, 38	**Water Management Plan** The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must be prepared in consultation with OEH, NOW, Namoi CMA, and CCC, by suitably qualified and experienced persons whose appointment has been approved by the Secretary, and be submitted to the Secretary for approval within 6 months of the date of the approval. In addition to the standard requirements for management plans (Condition 3 of Schedule 5), the plan must include: a) a Site Water Balance, that: • includes details of: - sources and security of water supply, including contingency for future reporting periods; - prioritisation strategy for water sources - water use on site; - water management on site; - any off-site water discharges; - reporting procedures, including the preparation of a site water balance for each calendar year; - a program to validate the surface water model, including monitoring discharge volumes from the site and comparison of monitoring results with modelled predictions; - methodologies used in the preparation of the site water balance, including provision of data sources, measurement type (direct sample / mass balance / engineering calculations / factors) and formulas used for all inflows, processes and outflows; • Is supported by an annual improvement program to identify and address deficiencies and improvements within monitoring, measurement and calculation methods; • includes an action plan and schedule to implement annual water efficiency initiatives and the recommendations in the Advisian peer review report titled "*Peer Review of Site Water Use Aspects of Boggabri Coal MOD 5 Project, 22 July 2016*", as set out in Appendix 6A. • describes the measures that would be implemented to minimise clean water use on site; (b) a Surface Water Management Plan, which includes: • detailed baseline data on surface water flows and quality in the water-bodies that could potentially be affected by the project; • detailed baseline data on soils within the irrigation management area; • detailed baseline data on hydrology across the downstream drainage system of the Namoi River floodplain from the mine site to the Namoi River; • a detailed description of the water management system on site, including design objectives and	The SWB, SWMP and GWMP form part of this WMP. Suitability qualified persons have prepared these plans in accordance with this requirement, whose appointment has been approved by the Secretary.

Applicable conditions	Requirement	Addressed in following document
	performance criteria for the: - clean water diversion systems; - erosion and sediment controls (dirty water system); - mine water management systems including irrigation areas; - discharge limits in accordance with EPL requirements; and - water storages - haul road and Boggabri Rail Spur Line and bridge flood and water diversions; • Detailed plans, including design objectives and performance criteria for: - design and management of final voids; - design and management for the emplacement of reject materials, sodic and dispersive soils and acid or sulphate generating materials; - design and management for the construction and operation of Boggabri Rail Spur Line and bridge across the Namoi River floodplain and upstream adjoining Nagero/Bollol Creek catchments; - reinstatement of drainage lines on the rehabilitated areas of the site; and - control of any water pollution from the rehabilitated areas of the site; • performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project: - the water management system; - soils within the irrigation area; - downstream surface water quality; - downstream flooding impacts, including flood impacts due to the construction and operation of the Boggabri Rail Spur Line and rail bridge; and - stream and riparian vegetation health, including the Namoi River; • a program to monitor: - the effectiveness of the water management system; - soils within the irrigation area; and - surface water flows and quality in the watercourses that could be affected by the project; and • reporting procedures for the results of the monitoring program; • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project; and (c) a Groundwater Management Plan, which includes: • detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores including a detailed survey/schedule of groundwater dependent ecosystems (including stygo-fauna), that could be affected by the project;	

Applicable conditions	Requirement	Addressed in following document
	• the monitoring and testing requirements specified in the PAC recommendations for groundwater management set out in Appendix 6; • detailed plans, including design objectives and performance criteria, for the design and management of the proposed final void; • groundwater assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor and assess: - groundwater inflows to the open cut mining operations; - the seepage/leachate from water storages, backfilled voids and the final void; - interconnectivity between the alluvial and bedrock aquifers; - background changes in groundwater yield/quality against mine-induced changes; - the impacts of the project on - regional and local (including alluvial) aquifers; - groundwater supply of potentially affected landowners; - aquifers potentially affected by the mine irrigation area; - groundwater dependent ecosystems (including potential impacts on stygo-fauna) and riparian vegetation. • a program to validate the groundwater model for the project, including an independent review of the model every 3 years, and comparison of monitoring results with modelled predictions; and • a plan to respond to any exceedances of the performance criteria; and (d) a Leard Forest Mining Precinct Water Management Strategy, that has been prepared in consultation with other mines within the Precinct to: • minimise the cumulative water quality impacts of the mines; • review opportunities for water sharing/water transfers between mines; • co-ordinate water quality monitoring programs as far as practicable; • undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely; and • co-ordinate modelling programs for validation, re-calibration and re-running of the groundwater and surface water models using approved mine operation plans. *Note that the Leard Forest Mining Precinct Water Management Strategy is being developed in stages and will be subject to ongoing review dependent upon the determination and commencement of other mining projects in the area.*	
Sch5, 3	**Preparation of management plans** The Proponent shall ensure that the management plans required under this consent are prepared in	Refer to the SWB, SWMP and GWMP and WMP.

Applicable conditions	Requirement	Addressed in following document
	accordance with any relevant guidelines and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant consent, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria (d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see c above) (e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement way to improve the environmental performance of the project over time: (g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan.	Suitability qualified persons have prepared these plans in accordance with this requirement.
Sch5, 6	**Management of cumulative impacts** In conjunction with the owners of the nearby mines in the Leard Forest Mining Precinct, the Proponent shall use its best endeavours to minimise the cumulative impacts of the project on the surrounding area to the satisfaction of the Director-General.	Refer to WMS

Table 2.3 Water related Mining Lease conditions under the NSW Mining Act

Applicable conditions	Regulating Authority	Requirement	Addressed in following document
11 (b) ii & iii	Department of Industry - Resources and Energy (DRE)	The registered holder shall…submit for the Ministers approval an environmental management plan relating to the operation of the registered holder on the subject area. (b) the plan shall describe the methods to be used to protect the environment, including the methods used to – (ii) minimise air, noise and water pollution; (iii) minimise erosion;	AQGHMP, NMP, WMP, SWMP, SWB, GWMP and RMP
22	DRE	Settling dams or other dams constructed or to be constructed on the subject area shall be constructed, maintained and sealed to the satisfaction of the Minister.	SWMP
23	DRE	The registered holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent contaminated waters discharging or escaping from the subject area onto the surrounding areas and shall comply with any written directions given or which may be given in this regard by the Minister.	SWMP
25	DRE	The registered holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent the contamination, pollution, erosion or saltation of any stream or watercourse or catchment area or any undue interference to fish or their environment and shall observe any instruction which may be given by the Minister with a view to protecting or minimising the contamination, pollution, erosion or saltation of any stream, watercourse or catchment area, or any undue interference to fish or their environment.	SWMP
29	DRE	The registered holder shall conduct operations in such a manner as not to cause or aggravate soil erosion and the registered holder shall observe and perform any instruction which may be given by the Minister or the Director General with a view to minimising or preventing soil erosion.	SWMP and RMP
32	DRE	The registered holder shall ensure that the runoff from any disturbed area including the overflow from any depression or ponded area is discharged in such a manner that it will not cause erosion.	SWMP

2.4 Local

A number of Namoi Catchment Management Authority (CMA) now known as the NWLLS policies and plans have been considered in the development of this WMP and associated sub-plans.

2.4.1 Namoi CMA Catchment Action Plan, 2012

The Namoi CMA Catchment Action Plan (CAP) is a strategic plan on how the Namoi catchment's natural resources should be managed over the next 10 years. The CAP addresses catchment targets for people, native plants and animals, water and landscape and sets thresholds based on a "resilience approach". CAP targets do not have any legislative implications but should be used as a guide when making planning decisions about the catchment. The CAP targets and thresholds that relate to surface water and groundwater are listed below:

- By 2020 there is an improvement in the condition of those riverine ecosystems that have not crossed defined geomorphic thresholds as at the 2010 baseline.
- By 2020 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses.
- By 2020 there is an improvement in the condition of regionally important wetlands and the extent of those wetlands is maintained.

These targets are designed to avoid crossing the following thresholds identified for water;

- Surface water flow quantity is at 66% of natural (pre-development) condition with a sensitivity to natural frequency and duration.
- Geomorphic condition is good (against benchmark condition).
- Recruitment of riparian vegetation is higher than attrition of individual trees, shrubs or groundcover species.
- Agricultural and urban supply aquifers do not cross into lower levels of beneficial use regarding quality.
- Alluvial aquifers are not drawn down below long term historical maximum drawdown levels.
- Groundwater is within 30m of surface where there are identified groundwater dependent ecosystems.
- Wetland is not drained, dammed or otherwise physically modified.

These targets and thresholds have been considered in the development of the SWMP by:

- undertaking progressive rehabilitation of the site and returning clean runoff back to the environment
- only releasing water from sediment dams when discharge limits are not exceeded
- discharge mine water in accordance with the conditions of the EPL

The above targets have also been considered in the development of the GWMP by:

- re-using captured dirty water on-site as a first priority and only utilising groundwater as a secondary source of water
- taking groundwater from licenced aquifers in line with licence conditions and water access rules
- undertaking a hydrocensus so that potential impacts on registered groundwater users can be identified and minimised

2.4.2 Namoi CMA Extractive Industries Policy, 2011

This Policy recognises that extractive industries in the Namoi catchment compete for a wide range of resources and may impact the environment and other existing uses in a number of ways. The Policy makes recommendations to federal and state governments to ensure that the catchment assets are sustained in the long term. This includes adopting the Precautionary Principle, being involved in risk management assessments with government, seeking to ensure that in-depth baseline databases are in place, and supporting the ten International Council of Mining and Metals (ICMM) Principles.

3. Water management

3.1 Water management overview

The primary objective of this WMP is to provide a framework for water management at BCM. Broadly the aim of water management throughout the BCM is to:

- where feasible, use contaminated and dirty water from runoff and input seepage on site
- where feasible, divert clean water upstream of BCM around the operational footprint
- ensure any discharges to streams are compliant with the conditions of the EPL
- identify, quantify and account for impacts on other water users in the local catchment and groundwater system
- minimise impacts on and changes to flood flows
- minimise impacts on water dependent environments
- establish monitoring regimes to inform the above objectives
- have effective management responses to water and related issues
- provide reporting of water information and management outcomes

3.2 Surface water management overview

The focus of surface water management at Boggabri Coal Mine is to assess, manage, monitor and mitigate impacts to the surface water system The requirements from Condition 38. b. of the Project Approval for a SWMP are as follows:

- detailed baseline data on surface water flows and quality in the water-bodies that could potentially be affected by the project;
- detailed baseline data on soils within the irrigation[1] management area;
- detailed baseline data on hydrology across the downstream drainage system of the Namoi River floodplain from the mine site to the Namoi River;
- a detailed description of the water management system on site, including the:
  - clean water diversion systems
  - erosion and sediment controls (dirty water system)
  - mine water management systems including irrigation areas
  - discharge limits in accordance with EPL requirements
  - water storages
  - haul road and Boggabri Rail Spur Line and bridge flood and water diversions
- detailed plans, including design objectives and performance criteria for:

[1] The approved irrigation area is located in Bollol Creek catchment; however, the approved irrigation system is not planned for operation at this stage by BCM.

- design and management of final voids
- design and management for the emplacement of reject materials, sodic and dispersible soils and acid or sulphate generating materials
- design and management for construction and operation of the Boggabri Rail Spur Line and bridge across the Namoi River floodplain and upstream adjoining 'Nagero'/Bollol creek catchments
- reinstatement of drainage lines on the rehabilitated areas of the site
- control of any potential water pollution from the rehabilitated areas of the site

- performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project:
  - the water management system
  - soils within the irrigation area
  - downstream surface water quality
  - downstream flooding impacts, including flood impacts due to the construction and operation of the Boggabri Rail Spur Line and rail bridge
  - stream and riparian vegetation health, including the Namoi River
- a program to monitor:
  - the effectiveness of the water management system
  - soils within the irrigation area
  - surface water flows and quality in the watercourses that could be affected by the project
  - downstream flooding impacts
- reporting procedures for the results of the monitoring program
- a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project.

The objective of the SWMP is to facilitate compliance with Schedule 3 Condition 38(b) of the Project Approval and relevant conditions of the EPBC Approval and applies to the activities within the 'Project Approval' area as defined in the Project Approval.

Clean water consisting of runoff from undisturbed catchments located upslope of the BCM are where feasible intercepted and diverted around the operations. Dirty water consists of runoff from disturbed areas of the mining site, has a high sediment load and is typically captured in sediment dams prior to reuse or release. Contaminated water consists of runoff generated from coal stockpiles and the pit void, have a moderate to high sediment load and may contain other contaminants and are captured, stored and recycled for site operations such as dust suppression.

Further details of surface water management system are provided within the SWMP and SWB.

3.3 Groundwater management overview

The focus of the GWMP is to assess, monitor and where required manage impacts to the groundwater regime where identified to be a result of BCM activities. The objective of the GWMP is to facilitate compliance with Schedule 3 Condition 38 of the Project Approval and relevant conditions of the EPBC Approval and applies to the activities within the 'Project Approval' area as defined in the Project Approval. Operation of contingency bores (subject of MOD 5) is not covered by the GWMP because it is not intended to utilise them as production bores at this time. If the contingency bore are used as production bores in the future, the GWMP will be updated accordingly.

Further details of the groundwater management system are provided within the GMP and SWB.

3.4 Site Water Balance overview

The objective of the site water balance is to facilitate compliance with Schedule 3 Condition 38(a) of the Project Approval. The requirements from the Project Approval for the SWB are as follows:

- includes details of:
  - sources and security of water supply, including contingency for future reporting periods;
  - prioritisation strategy for water sources;
  - water use on site;
  - water management on site;
  - any off-site water discharges;
  - reporting procedures, including the preparation of a site water balance for each calendar year;
  - a program to validate the surface water model, including monitoring discharge volumes from the site and comparison of monitoring results with modelled predictions;
  - methodologies used in the preparation of the site water balance, including provision of data sources, measurement type (direct sample / mass balance / engineer calculations / factors) and formulas used for all inflows, processes and outflows; and
- is supported by an annual improvement program to identify and address deficiencies and improvements within monitoring, measurement and calculation methods; and
- includes an action plan and schedule to implement annual water efficiency initiatives and the recommendations in the Advisian peer review report titled "Peer Review of Site Water Balance Use Aspects of Boggabri Coal MOD 5 Project, 22 July 2016" as set out in Appendix 6A; and
- describes the measures that would be implemented to minimise clean water use on site.

Key climatic and environmental parameters for the BCM include rainfall and evaporation data and runoff potential for different land uses. Water demands for the BCM include potable water needs, dust suppression and water required for any industrial processing such as coal washing. Site generated water supplies refer to water intercepted, stored and recycled within

the BCM such as surface runoff from contaminated areas and surface water or groundwater entering the pit. Off-site water supplies refer to licensed surface water or groundwater supplies that are managed and potentially drawn upon by BCOPL where a water deficit is predicted and where appropriate water allocations are available from the licensing authority.

Further details of the site water balance are provided within the SWB.

3.5 BTM Complex Water Management Strategy overview

The objective of the BTM Complex Water Management Strategy is to facilitate compliance with Schedule 3 Condition 38(d) of the Project Approval to.

- minimise potential cumulative water quality impacts associated with the BTM Complex
- review opportunities for water sharing/water transfers within the BTM Complex
- co-ordinate water monitoring and management strategies between BTM Complex operations as far as practicable
- undertake joint investigations/studies between BTM Complex operations in response to complaints/exceedances of trigger levels where cumulative impacts are considered likely
- co-ordinate modelling programs between BTM Complex operations for validation, re-calibration and re-running of the groundwater and surface water models using approved mine operation plans.

4. Procedural and reporting requirements

4.1 Roles and responsibilities

A definition of the key responsibilities for the site contacts are provided in Table 4.1.

Table 4.1 Roles and responsibilities

Role	Responsibility
BCOPL General Manager	Providing sufficient environment resources to ensure the effective implementation of the requirements, as outlined in this Water Management Plan (WMP)
BCOPL Mining Manager	Mining and water management is to be undertaken in accordance with this WMP
BCOPL CHPP Manager	Mining and water management is to be undertaken in accordance with this WMP
BOCPL Health, Safety, Environment and Community Manager	Providing sufficient environment resources to ensure the effective implementation of the requirements, as outlined in this Water Management Plan (WMP)
BCOPL Environmental Superintendent	Liaising with regulatory authorities regarding surface water management obligations as detailed in this WMP Coordinating reviews and revisions of this WMP Ensuring all employees and contractors are aware of their environment management obligations in accordance with this WMP Engaging specialists to undertake specific monitoring and environmental management activities in accordance with the commitments outlined in this WMP Communicating the surface water and ground water requirements outlined in this WMP to responsible parties at BCM
Mining Contractor's Project Manager	Implementing the surface water management obligations in accordance this WMP Undertaking inspections and monitoring of surface water management measures Developing and implementing specific procedures for the employees and subcontractors under their responsibility as required to ensure compliance with this WMP Ensuring all employees and subcontractors under their responsibility are aware of their environmental management obligations in this WMP Providing relevant environment data to assist BCOPL with environmental reporting

4.2 Periodic reporting

Specific reporting requirements are discussed below. Event reporting requirements in response to an incident or specific requests are detailed in Section 5.

4.2.1 Annual return

The EPL contains conditions that require BCOPL supply the EPA with an annual return. The annual return must be in approved form and comprise the following:

- a Statement of Compliance

- a Monitoring and Complaints Summary
- the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by the licence holder, or by a person approved in writing by the EPA to sign on behalf of the licence holder.

The following delivery and timing conditions are set out in the EPL for the annual return:

- the report must be submitted at the end of each reporting period
- the annual return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period (or in the case of a transferred licence not later than 60 days after the date of transfer was granted)
- BCOPL must retain a copy of the annual return supplied to the EPA for at least a period of four years after it was due to be supplied to the EPA.

The incident and complaint management procedure is discussed in Section 4.4.

4.2.2 Annual Review

BCOPL prepares and submits an Annual Review (formerly referred to as an Annual Environmental Management Report (AEMR) in respect of the environmental performance of the development to relevant agencies.

The Annual Review must be submitted by the end of March each year in accordance with condition 4, schedule 5 of the Project Approval.

Results from the Environmental Monitoring Programme measuring BCOPL's environmental performance and compliance are set out in the Annual Review.

5. Incident and complaint management

BCOPL will manage and report environment incidents, complaints, non-conformances with relevant statutory requirements and exceedances with performance criteria as outlined in the BCOPL Incident Management Standard. All environment incidents will be managed in accordance with this process in this Standard.

6. Revision

Review of the of the WMP will be undertaken by BCOPL in accordance with Project Approval schedule 5 condition 5, within 3 months of submitting the following:

- annual review under Schedule 5, condition 4 of the Project Approval;
- incident report under Schedule 5, condition 8 of the Project Approval;
- independent audit under Schedule 5, condition 10 of the Project Approval; and
- any relevant modification to the Project Approval.

Where this review results in revisions to any such document, then within 4 weeks of the completion of the revision, unless the Secretary agrees otherwise, the revised document will be submitted to the Secretary for approval.

7. Revision Status

This WMP and associated sub-plans relate to Years 1 to 21 of mining (up to the end of December 2033). Previous revisions and updates made to this WMP are summarised in Table 7-1.

Table 7-1 Revision status

Rev No.	Mine plans	Approval reference	Author	Approval	Date	Comment
0	Years 1 to 2 (i.e. calendar years 2012 to 2013)	Boggabri Modification - DA 36/88 as modified on 19 October 2011	L Doeleman	J Rennick	27 Apr 2012	Issue to DP&I, OEH, NOW, DRE, NCMA
1	Years 1 to 21 (i.e. calendar years 2012 to 2033)	Boggabri Coal Project 09-0182 - as approved on 18 July 2012	L Doeleman N Harcombe	J Green	16 Jan 2013	Issue to DP&I, OEH, NOW, NCMA, CCC
2	Years 1 to 21 (i.e. calendar years 2013 to 2033)	Boggabri Coal Mine as per Draft MOP lodged June 2013 and Boggabri Coal Mine Extension (EPBC 2009/5256) – as approved 11 February 2013	C Callipari S Trott	J Green	31 Jul 2013	DP&I comments addressed.
3	Years 1 to 21 (i.e. calendar years 2013 to 2033)	Boggabri Coal Mine as per Revised Draft MOP lodged November 2013 and Boggabri Coal Mine Extension (EPBC 2009/5256) – as approved 11 February 2013	C Callipari S Trott	J Green	09 Oct 2013	BCOPL comments addressed. Issue to DP&I
4	Years 1 to 21 (i.e. calendar years 2013 to 2033)	Boggabri Coal Mine as per Revised Draft MOP lodged November 2013 and Boggabri Coal Mine Extension (EPBC 2009/5256) – as approved 11 February 2013	K Agllias S Trott	J Green	18 Nov 2013	DP&I comments addressed. Issue to EPA and DoEE
5	Years 1 to 21 (i.e. calendar years 2014 to 2034)	Boggabri Coal Mine as per Revised Draft MOP lodged November 2013 and Boggabri Coal Mine Extension (EPBC 2009/5256) – as approved 11 February 2013	K Agllias S Trott	J Green	12 Feb 2014	Relevant agencies comments addressed. Issue to DP&I
6	Years 1 to 21 (i.e. calendar years 2017	Boggabri Coal Mine as per Revised MOP lodged January 2017 and	A. Blakeney & H. Russell	P. Forbes	30 May 2017	Revised MOD5 approval conditions and

Rev No.	Mine plans	Approval reference	Author	Approval	Date	Comment
	to 2033)	Boggabri Coal Mine Extension (EPBC 2009/5256) – as approved 11 February 2013				relevant sections from SWMP and GWMP.

8. References

Internal

BCOPL Incident Management Standard

External

Aurecon (2013) Boggabri Maules Creek Rail – P5060 Drainage Hydrology and Hydraulic Assessment – Common and Boggabri, prepared for Leighton Contractors, May 2013

Hansen Bailey (2011) Environmental Assessment – Modification to Development Consent for Boggabri Coal Mine, dated August 2011.

Appendix A

Record of consultation

Department of Primary Industries
Office of Water

Contact Christie Jackson
Phone 02 6701 9652
Fax 02 6701 9682
Email christie.jackson@water.nsw.gov.au
Our ref ER20785

Idemitsu
GPO Box 1127
Brisbane QLD 4001

Attention: Jan Green

Dear Ms Green

Boggabri Coal Mine Water Management Plans

I refer to your letter email dated the 27 November 2013 seeking the NSW Office of Water's (Office of Water) comments on the Water Management Plans (WMP) and Site Water Balance (SWB) for Boggabri Coal Mine. The Office of Water has reviewed the WMP and our comments are as follows.

Groundwater Management

The parent Water Management Strategy report for the greater BTM Complex was not included in the original material submitted to the Office of Water. A copy was subsequently provided upon request, however it is incomplete and not current (March 2013) and it is understood that internal reviews are still underway. It would be preferable to review a final version to allow a complete assessment of the entire body of work.

It is understood that Boggabri Coal is currently investigating additional bore sites for WAL 15037, as the Daisymede Bore (GW969665) is not providing sufficient water. This discussion has been omitted from the documentation.

Water Licensing

Table 2.1 of the GWMP and Table 4.3 of the SWB omit WAL12767 (3ML) which according to Office of Water records is also held by Boggabri Coal Pty Ltd.

The GWMP does not contain a map showing the locations of the extraction bores and their proximity to the mine site or description of how the groundwater is conveyed to the mine site, although conveyance is discussed in the Site Water Balance report.

Groundwater Monitoring Bores

The information given for the monitoring bores listed in table 4.1 should be expanded to include the licence numbers, GW numbers, type of monitoring bore (i.e. open standpipe or a grouted bore with vibrating wire piezometers), and the screen intervals or level of each vibrating wire piezometer of each monitoring bore, as per the example given in the attached Table.

As well as the monitoring results being made publically available in these reports and at the Boggabri Coal Mine website, it is **recommended** that an electronic copy in excel format of all monitoring data be made available to the NSW Office of Water (via referrals@water.nsw.gov.au).

Overall, the number, location, depth of bores and the design of the monitoring regime is considered adequate for the project.

Pit Seepage

If the pit is to be used as a sump for extra wash off water or other water, detailed records have to be kept of any water that is pumped back into the pit so that double accounting of groundwater inflows does not occur. This is not discussed in the report.

Site Water Balance

The report should provide a succinct, easy to follow collation (table) of water volumes actually required for the whole project. It should link usage requirements, existing licensed water availability, and sources of onsite mine water availability such as groundwater seepages to the mine void, such that it clearly demonstrates the adequacy of licences held.

The NSW Aquifer Interference Policy states on p7 Section 2.1 "*It is the proponent's responsibility to ensure that the necessary licences are held with sufficient share component and water allocations to account for all take from a groundwater or surface water source as a result of an aquifer interference activity, both for a the life of the activity and after the activity has ceased.*"

Groundwater policies

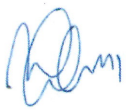
The NSW Groundwater Quantity Management Policy (draft) (DLWC, 2001) is not an endorsed policy of the NSW Government, and the GWMP should instead refer to the more recent NSW Aquifer Interference Policy and the relevant water sharing plans.

Recommendations

1. The parent BTM Complex Water Management Strategy be submitted to the Office of Water for review once final.
2. A map is added showing the location of the production bores and their proximity to the mine.
3. All information relating to monitoring bores be presented as per the example shown in attached Table.
4. A single concise table of the total site water balance, reflecting the volume of groundwater take, be included in the report.
5. An electronic copy in excel format of all monitoring data be made available to the NSW Office of Water (via referrals@water.nsw.gov.au).
6. Surface water monitoring is accordance with monitoring outlined on the Environmental Protection Licence administered by the Office of Environment and Heritage.

If you require clarification on any of the above please contact Christie Jackson on (02) 6701 9652 at the Tamworth office.

Yours sincerely,



Mitchell Isaacs
Manager Strategic Stakeholder Liaison
20 December 2013

Encl.

Table: Details of Monitoring Bores

Licence	GW Number	Mine Bore ID	Easting	Northing	Screen Interval / VWP level (mBGL)	Screened Geology	Monitoring Frequency	Monitoring Parameters	Comment
90BL253843	GW967862	IBC2102	226891	6611780	***Note report= 85m. This is the TD not the screen interval***	Merriown Coal Seam	Quarterly Half yearly	Water levels, field parameters Major ions, dissolved metals nutrients	Standpipe, Up gradient
Etc	Etc	Etc	Etc	Etc	Etc	Etc	Etc	Etc	Etc

NSW GOVERNMENT | Local Land Services North West

Our ref: NAM00614

6 Feb 2014

Dr Jan Green
Manager Corporate Sustainability and Environment
Idemitsu Australia
GPO Box 1127
Brisbane 4001

Dear Dr Green,

Re: Boggabri Coal Project Water Management Plans

Thank you for the opportunity to review and comment on Boggabri Coal's water management plans. Please note the Namoi CMA ceased to exist as of the 1 January 2014. The Namoi CMA's functions continue with the North West Local Land Services. I have the environmental review role in this organisation and all requests to review documents should be forwarded to me.

The North West Local Land Services has reviewed the water management plans and has no comment.

If you have any questions please do not hesitate to contact me on (02) 6764 5950 or email dennis.boschma@lls.nsw.gov.au.

Yours sincerely

Dennis Boschma
Team Leader, Land Services (Native Vegetation)
North West Local Land Services

From: Collins, Lynda [mailto:Lynda.Collins@environment.gov.au]
Sent: Thursday, 30 January 2014 10:36 AM
To: Jan Green
Cc: Keast, Justin; Taylor, Alex
Subject: review of draft water plans - Boggarbri EPBC 2009-5256 [SEC=UNCLASSIFIED]

Hi Jan, we have reviewed the draft water plans you submitted for consideration. See attached table for comments – overall plans are good but there are some minor points raised in the attached table that require addressing in the final documents in order to meet the conditions of your approval – if you think this information is included in a plan could you please advise Justin ASAP. Thank you

Lynda Collins
Assistant Director
Queensland 3 and Sea Dumping
Queensland and Sea Dumping Assessments Branch
Environment Assessment and Compliance Division
Department of the Environment
GPO Box 787 Canberra ACT 2601
☎. (02) 6274 1870
.lynda.collins@environment.gov.au
www.environment.gov.au

From: Keast, Justin [mailto:Justin.Keast@environment.gov.au]
Sent: Wednesday, 5 February 2014 4:20 PM
To: Jan Green
Cc: Collins, Lynda; McLachlan, Karina
Subject: RE: Boggabri EPBC 2009/5256 handover of project to Approvals Monitoring [SEC=UNCLASSIFIED]

Hi Jan

As per our discussion regarding condition 19. The department notes that the *Boggabri Coal Pty Ltd Groundwater Management Plan* (November 2013) provides on page 10 that *"An irrigation management area is not currently planned for the Boggabri Coal Mine"*. Based on this information, it would appear reasonable that you would not conduct a risk based assessment for the disposal of mine water by irrigation on soils. However, please note in the plan that in the event that irrigation management is to be conducted then you will vary the plan to include risk based analysis as per condition 19 of the EPBC Approval.

Regards
Justin Keast | Assessment Officer | Queensland 3 and Sea Dumping
Environment Assessment and Compliance Division | Department of the Environment
(02) 6275 9953 | justin.keast@environment.gov.au

Documents reviewed in regard to Boggabri Coal Pty Limited approval conditions for Boggabri Coal Mine Extension (EPBC 2009/5256)

Plans submitted by proponent December 2013:

Surface Water Management Plan (SWMP)

Groundwater Management Plan (GMP)

Water Management Plan (WMP)

BTM Complex Water Management Strategy (WMS)

Condition	Review
15 The person taking the action must provide to the **Minister** for approval, the *surface and groundwater management plans* as identified in condition 38 of the NSW state government Project Approval dated 18 July 2012 (application number 09_0182). The *surface and groundwater management plans* approved by the **Minister** must be implemented prior to the **commencement of new mining operations**.	Documents were provided 2 December 2013.
16 The *surface and groundwater management plans* must be consistent with the **National Water Quality Management Strategy**.	***See comment on 17e below***
17 The person taking the action must within 6 months of this approval, in collaboration with the person taking the action to develop and operate the Maules Creek Coal Project (EPBC 2010/5566) and any other approved mines within 20 km of the mine site provide written advice to the **Minister** demonstrating how the approved *surface and groundwater management plans* (specified in condition 15), addresses the cumulative impact of groundwater drawdown as a result of mining and how this may impact on the consequent health of the remnant native vegetation in the Leard State Forest, the Leard State Conservation Area and surrounding areas. In particular the advice must address the following matters:	
a. maximum amount of allowable drawdown in the alluvial aquifer	Although discussed in section 5 of the GMP the **limits for drawdown are not provided.**
b. drawdown in hard rock aquifer	Although discussed in section 4 of the GMP the **limits for drawdown are not provided.**

Condition	Review
c. trigger levels pertaining to drawdown in the alluvial aquifer when corrective actions will be required to be undertaken	Appropriate trigger levels are provided. These are based on recognised standards, except where monitoring data fall outside these; in these cases, thresholds of the 80th percentile of monitoring records have been used (in accordance with the ANZECC guidelines).
d. identify the depth of root zone of the native vegetation	The SWMP provides a brief discussion of likely areas and types of groundwater-dependent ecosystems and provide literature values for root depth of sclerophyllous shrubland and forest, and for temperate grassland. **Detailed information on groundwater-dependence and measurement of root depth has not been provided; however, the GMP does propose a methodology for this to be studied.** It states that the root depth study will be undertaken as part of a wider groundwater-dependent ecosystem study, "as soon as practicable within Year 1 of mining."
e. monitoring to assess the ongoing quality and quantity of both surface and groundwater to identify impacts on the native vegetation.	Quarterly to half-yearly monitoring of groundwater quality and standing water levels have been undertaken since 2006. Two bores will have data loggers installed, to allow for quasi-continuous monitoring of water levels. Surface water monitoring will be undertaken following commencement of discharge; reference site/baseline monitoring in Nagero Creek will be undertaken as soon as possible after the start of a flow event. Monitoring in Nagero Creek will be for a minimum of six months and a maximum of two years. The **ANZECC Guidelines** (section 7.4.4 (1)) require "a minimum of two years of contiguous monthly data" before it is considered that sufficient data are available to set trigger levels. The Guidelines further state that monitoring should be ongoing, with trigger levels based on the most recent two years of data. Given the ephemeral nature of Nagero Creek, monitoring after rainfall events, as proposed, is a sensible alternative to monthly monitoring; however, **this monitoring should be conducted on an ongoing basis.**
18. The person taking the action must within 6 months of the date of this approval, or such other timeframe specified by the **Minister**, provide to the **Minister** a report on:	
a. any updated modelling of surface and groundwater impacts that has been undertaken in preparing the *surface and groundwater management plans*	Please provide an explanation to identify if modelling has been updated during the drafting process.

Condition	Review
b. how the *surface and groundwater management plans* addressed groundwater and surface water impacts on **native vegetation**	The SWMP addresses management of impacts to riparian vegetation. The GMP outlines plans for investigation of groundwater-dependent ecosystems. "If potentially impacted GDEs are identified, the groundwater monitoring plan will be revised accordingly, to record changes in the local groundwater system". **Management responses have not been outlined.**
19 A risk-based assessment of the disposal of mine water by irrigation on soils must be undertaken. The assessment must include the risk of metal and salinity accumulation in soils.	The proponent states (GMP p10) that, "An irrigation management area is not currently planned for the Boggabri Coal Mine." Please provide advice on the risk based assessment

AGENDA			
Meeting:	Community Consultative Committee		
Date:	30/04/2013	Start time	2.30pm
		Finish time	Approx. 6:00pm
Venue:	Boggabri Coal Board Room		
Chairperson:	TBA		
Recurrence:	Quarterly		
Meeting status:			
Required attendees:	CCC Committee Members		
Next Meeting			

MEETING AGENDA	
1	Apologies, previous minutes and business arising
2	BCCC nominations and chair – Chase Dingle
3	Boggabri Coal Environmental Management Plans – Jan Green & Belinda Bird
4	Boggabri Coal Expansion Project Overview – Wayne Jones & Tony Simpson
5	Presentation update on monitoring results – Joe Rennick
6	Community complaints – Chase Dingle
7	Dust management during the winter months
8	2013 tree clearing program – Joe Rennick
9	MOP update – Chase Dingle & Joe Rennick
10	General business/questions