

HALING Narelle

From: MENZIES Janet
Sent: Monday, 23 January 2017 5:33 PM
To: LARSEN Daniel
Cc: BENNINK Kate; MESSER Michael
Subject: AWL comments for discussion
Attachments: DRAFT_Carmichael_Mine_New_Dewatering_Schedule_B_conditions_EHP.docx



Hi Daniel,

As discussed, please find attached some comments on the AWL conditions for further discussion- note some comments are still to follow regarding the monitoring and assessment section.

Regards

Janet

Janet Menzies

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Please note I currently work Monday to Thursday.

DRAFT CONDITIONS – FOR INTERNAL REVIEW

1. The Schedule B conditions associated with this licence are attached in Annexure A and are conditions, which the licensee must comply with under authority of this licence.

Annexure A

Recitals

Adani Mining Pty Ltd (hereinafter "the licensee") is the Principal holder of mining leases ML 70441, ML 70505 and ML 70506 for the Carmichael Coal project which proposes to construct and operate an open cut and underground coal mine approximately 150km north-west of the town of Clermont ("the mine") on the mining leases. The licensee will take associated underground water from the Betts Creek Formation with diffuse take also occurring from adjacent formations. The water taken as associated underground water may be used for the consumptive purpose/s authorised under this licence.

The take of associated underground water will impact on the underground water levels in the region of the mine during the life of the mine and for a period after the mines closure.

The licensee prior to the time of making application for a Licence, prepared an EIS that deals with the hydrology of the area and the effects of the proposed extraction on underground water. The EIS included predictions of the impact of the take of associated underground water on the aquifers in the region. These predictions, were referenced in the reports titled:

"Adani Mining Pty Ltd: Carmichael Coal Mine and Rail SEIS Mine Hydrogeology Report Addendum October 2013"

"Adani Mining Pty Ltd Carmichael Coal Mine and Rail Project SEIS: Report for Mine Hydrogeology Report. November 2013"

"Adani Mining Pty Ltd Carmichael Coal Project – Response to Federal Approval Conditions – Groundwater Flow Model, GHD November 2015"

The report *"Environmental Authority EPML01470513 – Carmichael Coal Mine Condition E3 - Baseline Monitoring Program, AECOM 31 May 2016"* outlines the underground water baseline monitoring network.

The conditions set out in Schedule A and Schedule B of this Licence are herewith after referred to as "the Conditions".

DEFINITIONS

In this Licence, unless the context otherwise requires:

"affected area" for the purposes of this associated water licence, means the area identified by the then current groundwater model where the water level is expected to decline more than 0.2m at any time due to the dewatering activities authorised by this associated water licence.

DRAFT CONDITIONS – FOR INTERNAL REVIEW

"**bore owner**" means the registered owner of the land on which a bore ~~exists-is~~ located ~~as approved development under the Sustainable Planning Act 2009 and/or~~ from which water is taken under the authority of the Water Act 2000;

Commented [MJ1]: Propose to delete as condition 1 states what bores this approval applies to therefore bore owner just relates to the land on which the bore is located

"**business day**" means a day on which trading banks are open for normal banking business in Brisbane;

"**chief executive**" means the Chief Executive, Department of Natural Resources and Mines.

"**conditions**" has the meaning ascribed to it in the Recitals;

"**dewatering works**" means works, such as bores, sumps and pumps constructed to extract associated water;

"**existing water bore**" means any water bore in existence before the original issue date of this associated water licence relating to the area where the bore is located takes effect.

"**impact report**", means the reports,

Adani Mining Pty Ltd: Carmichael Coal Mine and Rail SEIS Mine Hydrogeology Report Addendum October 2013

Adani Mining Pty Ltd Carmichael Coal Mine and Rail Project SEIS: Report for Mine Hydrogeology Report. November 2013

Adani Mining Pty Ltd Carmichael Coal Project – Response to Federal Approval Conditions – Groundwater Flow Model, GHD November 2015

or any approved amendment or replacement to the report.

"**impaired capacity**" for an **existing water bore** means

- (a) there is a decline in the water level of the aquifer at the location of the bore and the dewatering activities has, or has likely, caused or materially contributed to the decline; and
- (b) because of the decline, the bore can no longer provide a reasonable quantity or quality of water for its authorised use or purpose; or
- (c) because of the decline, there is a material increase in the cost of maintaining the supply from the bore.

Commented [LD2]: S412(1)

CoG conditions refer to "unduly affected". These reflect the intent of the CoG definition however are worded differently (c) added from CoG to Chpt 3

Commented [MJ3]: tense

"**impaired capacity**" for a **new water bore** means

- (a) there is a decline in the water level of the aquifer at the location of the bore and the dewatering activities has, or has likely, caused or materially contributed to the decline; and
- (b) the decline is more than the decline predicted at the location of the bore in the **impact report**; and
- (c) because of the decline, the bore can no longer provide a reasonable quantity or quality of water for its authorised use or purpose; or
- (d) because of the decline, there is a material increase in the cost of maintaining the supply from the bore.

Commented [MJ4]: note: this is not covered specifically in Chapter 3as it is covered off under requirement (b)

note if make good goes to vary under Ch3 this will not specifically stated but covered under (b)

Commented [LD5]: S412(2)

"**licensee**" has the meaning ascribed to it in the Recitals;

"**make good measure**" for a water bore means any of the following measures—

Commented [MJ6]: Same as comment above

Commented [LD7]: S421

DRAFT CONDITIONS – FOR INTERNAL REVIEW

- (a) ensuring the bore owner has access to a reasonable quantity and quality of water for the bore's authorised use or purpose;
Examples—
 - bore enhancement by deepening the bore or improving its pumping capacity
 - constructing a new bore
 - providing a supply of an equivalent amount of water of a suitable quality by piping it from an alternative source
- (b) carrying out a plan to monitor the bore, including, for example, by undertaking periodic bore assessments;
- (c) giving the bore owner monetary or non-monetary compensation for the bore's impaired capacity.

"monitoring bores" means the initial monitoring bores as identified the report *""Environmental Authority EPML01470513 – Carmichael Coal Mine Condition E3 - Baseline Monitoring Program, AECOM 31 May 2016""*, any monitoring bores identified in a the Groundwater Management and Monitoring Plan, and any subsequent bores drilled for monitoring purposes or to meet requirements under a regional monitoring program;

Commented [D8]: CoG Section 3, Imposed condition 2

"new water bore" means a water bore other than an existing water bore.

INTERPRETATION

In this Licence:

- (a) headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
- (b) a reference to days or months is a reference to business days and calendar months; and
- (c) words in the singular shall include the plural and vice versa.

NOTICES

- (a) Form of Notice

Any notices, consents, document, invoice or other communication ("notice") required or permitted to be given by this Licence:

- (i) must be in writing; and
- (ii) may be given by being delivered or sent by prepaid registered post, by facsimile transmission or by electronic mail.
- (iii) Underground water reports are to be submitted electronically via the online QDEX system.

- (b) Time Service Occurs

A notice is deemed to be served on a party, in the case of post, on the third business day after posting and, in the case of facsimile or electronic mail, on the day of transmission if the transmission is before 5.00pm on a business day and in all other circumstances on the business day following transmission of the facsimile or electronic mail.

DRAFT CONDITIONS – FOR INTERNAL REVIEW

A1 This associated water licence authorises the take and interference of all underground water taken or interfered with, during the course of, or results from, the carrying out of an authorised activity for the tenure.

Commented [LD9]: Do we need this to clarify that this licence authorises take from all beds, not just the Betts Creek Beds.

Or is this just repeating Water Act provisions

A2 The chief executive may amend the conditions of this licence to be consistent with any cumulative management area that is declared over the area to which this licence authorises take.

Commented [LD10]: Do we need this?

MAKE GOOD OBLIGATIONS FOR WATER BORES

1. Make good obligations apply to a water bore if—
 - (a) the taking of, or interference with, water from the bore is authorised under the Water Act 2000; and
 - (b) if the Planning Act or the repealed *Integrated Planning Act 1997* required a development approval under that Act in relation to the bore for operational work for the taking of, or interfering with, water under the Water Act 2000— the approval has been granted.

Commented [LD11]: Wording from s363

Commented [MJ12]: Note Chapter 3 does not apply to monitoring bores

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2. The licensee must enter into make good agreements with bore owners as required under condition 3:
 - (a) at least five years prior to the time a water bore is predicted to have an impaired capacity due to dewatering operations, or
 - (b) where a water bore is predicted have an impaired capacity within the first five years of extraction - prior to extraction of water authorised under this associated water licence.

Commented [LD13]: CoG Condition 6(e)

3. For all water bores located in the affected area, the licensee must -
 - (a) undertake a bore assessment of the bore in accordance with conditions 8-12; and
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 13; and
 - (c) comply with the make good agreement; and
 - (d) if asked to vary the make good agreement under condition 18— negotiate a variation of the make good agreement

Commented [LD14]: S409

Commented [LD15]: Covers CoG condition 6(d)

4. For water bores located in an area other than the affected area, if the chief executive reasonable believes a water bore has an *impaired capacity*, the chief executive may give the licensee a notice stating that the licensee must either—

Commented [MJ16]: Delete- vary process will be under Chapter 3

Commented [MJ17]: Delete conditions 4-6 as bore direction notices are a reactive compliance measure under chapter 3- I think it goes beyond the power of AWL to establish this

Commented [LD18]: Combining parts of 409(2) and 418,

Commented [MJ19]: If this is kept note: DNRM will be restricted to establishing impaired capacity

Does the risk warrant more flexibility that s418 provides? i.e. water bore can no longer supply quantity or quality of water for its authorised use or purpose

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Commented [D20]: This is from section 418 but seems too long.

Commented [MJ21]: Shouldn't this fall in Chapter 3 compliance? If the AWL cannot identify that these bores are at risk, than Ch3 will pick up reactive compliance? Same as it will pick up the make good agreements for variation after they are finalised

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Commented [MJ22]: Condition 12 already requires this

Note s418 specifically requires it because notice of outcomes typically go to OGIA not the CE

- (a) undertake a bore assessment as required under conditions 8-12 within a stated reasonable time; or
 - (b) make a submission within a stated reasonable period of at least 20 business days about why the licensee should not be required to undertake the bore assessment.
5. If the licensee makes a submission with regards to condition 4(b) within the stated period and, after considering the submission, the chief executive still considers the holder should undertake the bore assessment, the chief executive may give the holder a notice stating—
 - (a) that the holder must undertake the bore assessment; and
 - (b) a reasonable period within which the bore assessment must be undertaken; and
 - (c) that a copy of the notice given under condition 12 must be given to the chief executive.

DRAFT CONDITIONS – FOR INTERNAL REVIEW

6. ~~Where the licensee has been given a notice under condition 4 or 5, the licensee must—~~
- ~~(a) undertake a bore assessment of the bore as required under conditions 8-12; and~~
 - ~~(b) enter into a make good agreement with the bore owner of the bore as required under condition 13; and~~
 - ~~(c) complying with the make good agreement; and~~
 - ~~(d) if asked to vary the make good agreement under condition 17—negotiate a variation of the make good agreement~~
7. If the **impact report** is superseded or amended; and the new impact report or amendment to the report changes the area, or location of an **affected area** of an aquifer –
- (a) for each affected area bore that is not already the subject of a make good agreement, the licensee must, unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with conditions 8-12.
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 13 and
 - (c) comply with the make good agreement; and
 - ~~(d) if asked to vary the make good agreement under condition 17—negotiate a variation of the make good agreement~~
 - (e) subsection (a) does not apply if a bore assessment of the bore has already been undertaken.

Commented [LD23]: Rest of S409(2)

Commented [MJ24]: Repetition of condition 3

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Commented [MJ25]: Variations will be done under chapter 3

Commented [D26]: S417. I have used the term impact report rather than UWIR

Commented [MJ27]: Chapter 3

BORE ASSESSMENTS

8. The bore assessment undertaken by the licensee must establish –
- (a) whether the bore has an impaired capacity; or
 - (b) whether the bore is likely to have an impaired capacity
9. In undertaking a bore assessment of a water bore, the licensee must comply with—
- (a) any guidelines¹ made by the chief executive under section 413 of the Water Act 2000; or
 - (b) if there are no guidelines—best practice industry standards for carrying out work similar in nature to undertaking a bore assessment.
 - ~~(c) not withstanding requirements of 9(a) and (b), the assessment is to also include for each operational bore~~
 - ~~(i) identify natural underground water levels and water quality;~~
 - ~~(ii) identify the condition and supply capacity of the bore;~~
 - ~~(iii) identify the operational requirements and current use of the bore;~~
 - ~~(iv) clearly outline the predicted decrease in water level at the bore due to the proposed mining operations;~~
 - ~~(v) provide an initial assessment of the likely water supply impacts to the affected authorised water users, and timing of those impacts, during and following the project activity;~~
 - ~~(vi) outline of the potential future actions (make good measures) which would ensure bore owners with bores of potential impaired capacity will have access to a reasonable quantity and quality of water for the authorised use and purpose of the bore/s~~

Commented [D28]: S411

Commented [LD29]: S414

Commented [LD30]: CoG Condition 6 (c)(ii)

The EHP Bore Assessment Guidelines cover some of these – but kept all in as complete.

Commented [MJ31]: CG condition is a recommendation. Duplication creates confusion- 9a) meets the intent of the CG condition

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Commented [MJ32]: Duplication of bore assessment guidelines

Commented [MJ33]: This is the requirement of a make good agreement not a bore assessment

¹ Current guidelines 'Bore Assessment Guidelines February 2013'

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10. The licensee must, at least 10 business days before undertaking a bore assessment of a water bore, give the bore owner of the bore a notice stating—
 - (a) when the bore assessment will be undertaken; and
 - (b) who will undertake the bore assessment.
11. The licensee may ask an owner of land for information about the following—
 - (a) the location of any water bores on the owner's land;
 - (b) any other information the holder reasonably requires to undertake a bore assessment of any bores mentioned in paragraph (a).
12. The licensee must give notice of the outcome of a bore assessment to the chief executive and the bore owner for the bore within 60 business days after the issuing of this associated water licence.

MAKE GOOD AGREEMENTS

13. Where a make good agreement is required under conditions 3, 6 or 7, the licensee must use the licensee's best endeavours to enter into a make good agreement for the bore with the bore owner by—
 - (a) the day that is 40 business days after the bore assessment is undertaken; or
 - (b) if the chief executive agrees to a later day—that day.
14. The make good agreement between the licensee and the bore owner must provide for each of the following matters—
 - (a) the outcome of the bore assessment for the bore;
 - (b) whether the bore has or is likely to have an impaired capacity;
 - (c) if the bore has or is likely to have an impaired capacity—the make good measures for the bore to be taken by the responsible tenure holder
15. A make good agreement for a water bore binds the parties to it and each of their successors and assigns, including successors and assigns of the relevant mining lease.
16. The licensee must reimburse the bore owner for any accounting, hydrogeology, legal or valuation costs the bore owner necessarily and reasonably incurs in negotiating or preparing a make good agreement.

16a. A make good agreement made under conditions of this licence, or prior to granting of this licence, is taken to be a make good agreement under Chapter 3 of the Water Act 2000.

DISPUTE RESOLUTION OVER MAKE GOOD AGREEMENTS

- ~~21. The licensee or bore owner may seek a conference or independent ADR if—
 - (a) the licensee and the owner of a water bore can not agree on the terms of a make good agreement for the bore within the period provided for under condition 13, including whether or not the bore has an impaired capacity; or
 - (b) the parties to a make good agreement for a water bore can not agree about—~~

Commented [LD34]: S416 however haven't include section (2) as it compels a third party

Commented [MJ35]: Is this necessary then?

Large part of s416 is outlining bore owners obligations, what extra value does it add than what the tenures holders may already get from their day to day consultation/relationship with landholder?

Commented [D36]: S419

Commented [D37]: A report as per CoG condition 6(b)

CoG Condition 6(b) requires completed within 3years of CoG report (May 2017)

Commented [MJ38]: Is this reasonable? Note unless bore assessments have been completed this may not be achieved.

Suggest condition similar to s419- link timeframe to after completion of bore assessment otherwise it will not link with condition 5

Commented [D39]: Covers Condition 6(d)

Commented [D40]: S423(2)

Commented [D41]: S420

Commented [D42]: Also covers CoG Condition 6(b)

Commented [MJ43]: No cooling off period? See s423A

Commented [D44]: S422 – not sure whether we can do this as the water licence compels the licensee but not the bore owner

Chapter 3 provisions will likely cover this

Commented [MJ45]: ? repetition

Is this required? A make good agreement signed under AWL will automatically become a general make good agreement under Chapter 3.

Commented [D46]: S423(3)

Commented [D47]: s1250U WA

any amendments to a water agreement are then covered by Chapter 3 eg s424

Commented [MJ48]: not suitable for a condition as this is covered in legislation

Commented [MJ49]: head of power unclear. some of these grant powers to the CE which should sit in primary legislation

This seems beyond AWL power to condition dispute resolution- either they meet condition to reach agreement or not. Then they are in non-compliance and will be directed under Chapter 3 therefore allowing access to chapter 3 dispute resolution

Commented [D50]: This is to deal with any disputes for the initial make good agreement. Once an agreement is in place, then any future disputes would be covered by Chapter 3 dispute resolution processes

Commented [D51]: S425

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- (i) ~~whether a matter stated in the agreement is inappropriate for a reason stated in condition 18; or~~
(ii) ~~if the parties agree a matter stated in the agreement is inappropriate the terms of any variation of the agreement; or~~
(e) ~~a party to a make good agreement for a water bore reasonably believes the other party has not complied with the agreement.~~
22. ~~If a dispute about a matter mentioned in condition 21 arises, either party may, by a notice (an election notice) –~~
(a) ~~given to the other party and the chief executive ask the chief executive to direct an departmental officer to call a conference to negotiate a resolution of the dispute; or~~
(b) ~~given to the other party call for the other party to agree to an alternative dispute resolution process (an ADR) to negotiate a resolution of the dispute.~~
23. ~~The election notice mentioned in condition 22 must state –~~
(a) ~~details of the matters the subject of the dispute; and~~
(b) ~~the contact details of the party giving the notice; and~~
(c) ~~where the notice calls for an ADR, it must –~~
(i) ~~identify the ADR; and~~
(ii) ~~state that the party giving the notice agrees to bear the costs of the person who will facilitate the ADR.~~
24. ~~If a conference is requested, the departmental officer directed to conduct the conference must~~
(a) ~~ask the parties to attend a conference to negotiate a resolution of the dispute by a notice stating~~
(i) ~~what the subject of the conference is, and~~
(ii) ~~when and where it will be held~~
(b) ~~endeavour to help those attending to negotiate an early and inexpensive settlement of the dispute~~
(c) ~~take all reasonable steps to ensure it is finished within 30 business days after the election notice is given, unless both parties agree to a longer period.~~
25. ~~The following persons may attend a conference –~~
(a) ~~the departmental officer directed to conduct the conference~~
(b) ~~a party may be represented by an agent only if the authorised officer agrees~~
(c) ~~someone else may be present to help a party attending the conference~~
- ~~However a party can not be represented by a lawyer unless the other party agrees and the departmental officer is satisfied there is no disadvantage to a party~~
26. ~~If an ADR is called for, the parties must use their reasonable endeavours to finish it within 30 business days after the election notice is given, unless both parties agree to a longer period.~~
27. ~~An ADR may be a process of any kind, including, for example, conciliation or mediation; however the person who facilitates the ADR must be independent of both parties.~~
- Commented [MJ52]:** Will need to spell out s424(1)(a)-(c)
- Formatted:** Indent: Left: 2.5 cm
- Commented [MJ53]:** Covered in Chapter 3
- Commented [MJ54]:** Are you drafting an NRM
- Commented [LD55]:** Similar provision in Chapter 3 refer to 'authorised officer'.
- Commented [MJ56]:** Why not an authorised officer?
- Commented [D57]:** 426(3 & 4)
- Commented [MJ58]:** S426 5) and 6) should go here as it builds on ADR
- Commented [MJ59]:** Note: Chapter 3 requires the tenure holder to bear costs
- Commented [LD60]:** S428
- Commented [LD61]:** S431
- Commented [LD62]:** S427
- Commented [LD63]:** S429
- Commented [MJ64]:** Be consistent with terms
- Commented [MJ65]:** With authorised officer approval as per Chapter 3?
- Commented [LD66]:** S427
- Commented [D67]:** 426 (5 & 6)
- Commented [LD68]:** Note that section 430 of the Act then goes on to say if one party does not show up, the other [party can apply to the landcourt to get costs for attending. Not included in this section.

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28. ~~If, at the conference or ADR, the parties negotiate an agreement about the subject matters, the agreement must be written and signed by or for the parties.~~

Commented [LD69]: S433

29. ~~If, after advice from the parties that an agreement pursuant to 28 cannot be reached, and in the opinion of the chief executive all reasonable attempts have been made to achieve agreement, then the chief executive:~~

Commented [LD70]: This is modified from standard conditions

Under Chapter 3, if no agreement then Land Court.

Here if no agreement, DNRN makes call.

(a) ~~may give a notice to the licensee to require the licensee to provide to the satisfaction of chief executive~~

Commented [MJ71]: Data? What about information?

(i) ~~the outcome of any bore assessment for the bore;~~

(ii) ~~any data necessary to determine whether the bore has or is likely to have an impaired capacity~~

(iii) ~~any data necessary to determine the measures necessary to make good the supply of water from the bore;~~

(b) ~~will, in consultation with the licensee and the bore owner,~~

Commented [MJ72]: If DNRN are making the call why open it to another consultation process?

(i) ~~determine whether the bore has or is likely to have an impaired capacity~~

Or are you trying to reflect that you will allow for some natural justice

(ii) ~~determine the measures to be taken to make good the supply of water from the bore; and~~

(c) ~~will, upon determining the measures to be taken to make good the supply of water from the bore, give the licensee a notice to inform the licensee of the determination.~~

30. ~~The licensee must implement, at the cost of the licensee, all measures determined by the chief executive and notified under condition 29.~~

EMERGENCY DIRECTIONS

Commented [MJ73]: This is Chapter 3

Head of power unclear
power to the CE should sit in primary leg not through AWL conditions

31. ~~The chief executive may, by notice given to a licensee, direct the licensee to take stated reasonable steps within a stated reasonable period if~~

Commented [LD74]: 450 and 451

(a) ~~the chief executive reasonably believes urgent action is necessary—~~

(i) ~~to restore water supply to a water bore with an impaired capacity; or~~

(ii) ~~to prevent or minimise the likelihood of a water bore having an impaired capacity; and~~

(b) ~~the chief executive is satisfied or reasonably believes failure to take the action may result in 1 or more of the following—~~

(i) ~~significant economic loss or damage to any person;~~

(ii) ~~a significant risk to the health of stock;~~

(iii) ~~a loss of supply of water for domestic purposes or essential services, including, for example, the generation of electricity or the distribution of town water.~~

32. ~~If the licensee fails to comply with direction given under conditions 29 or 31, the chief executive may~~

Commented [LD75]: S453

(a) ~~take action to carry out necessary control measures, and~~

(b) ~~give the licensee a cost recovery notice requiring the licensee to pay the stated costs and expenses reasonable incurred by the chief executive in taking the reasonable steps~~

33. ~~Condition 31(b) does not apply if the chief executive is satisfied the licensee had a reasonable excuse for not complying with the direction.~~

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- ~~34. The cost recovery notice mentioned in condition 32(b) must state the following—~~
- ~~(a) the name of the licensee;~~
 - ~~(b) the location of the water bore to which the action related;~~
 - ~~(c) a description of the action taken;~~
 - ~~(d) the amount of the costs and expenses incurred;~~
 - ~~(e) a description of the costs and expenses incurred;~~
 - ~~(f) that if the holder does not pay the amount to the chief executive within 30 days after the day the notice is given, the chief executive may recover the amount and any interest payable on the amount from the holder as a debt;~~
 - ~~(g) the contact details of the chief executive.~~

Commented [LD76]: S453

Commented [LD77]: standard dewatering conditions for reporting with some modifications.

Commented [MJ78]: Comments on this section yet to be provided

Commented [LD79]:

EPBC GMMP Requirements:

- Monitoring network
 - Including Gab and MNES
- Baseline monitoring
- Triggers
 - Including Doongmabulla
- Timeframes for review of GMMP
- Incorporating model review, Mellaluka springs research, GAB springs research plan, and Rewan Research Plan
- Data provided 6 monthly to Commonwealth and Qld for cumulative model
- Data publically available on website
- GMMP approved prior to commencement of first box cut

EA GMMP Requirements to meet following objectives

- Validate gw model
- Gw levels monitoring in all identified geological units to confirm flow patterns and monitor drawdown impacts
- Identify dd thresholds for GDEs, including springs and Carmichael river alluvium
- Monitoring aquifer near Mellaluka Springs
- Identify potential impact son GAB
- Estimation of GW flow ino pits nad workings
- Monitor source aquifers for alternative supplies
- Identifying monitoring bores that will need otbe replaced
- Identify gw impacts from mine dewatering and mine water and waste storage facilities
- Monitor impacts to landholder bores
- Monitor impacts to groundwater levels at groundwater discharge zones
- Identify potential groundwater recharge processes

MONITORING AND ASSESSMENT

35. Monitoring will be undertaken in accordance with the Groundwater Management and Monitoring Plan (GMMP) and any subsequent revisions or replacements of that Plan in conjunction with other environmental approvals. Subsequent revisions of the Plan must be approved by the chief executive.
36. The licensee must implement the Groundwater Management and Monitoring Plan and any subsequent revisions of the Plan. The initial groundwater monitoring network is to include the monitoring bores listed in the baseline monitoring program (AECOM May 2016)
37. The Groundwater Management and Monitoring Plan must be reviewed at least every five years in conjunction with environmental authority requirements.
38. The licensee must, if directed by the chief executive, make any amendments considered necessary to the Groundwater Management and Monitoring Plan to ensure that:
- (a) the monitoring program is adequate to assess the effects of the extraction of underground water authorised under this license;
 - (b) the monitoring program takes into account requirements of any regional underground water monitoring and assessment program developed to address potential cumulative impacts.
- 38.a Monitoring data is to be made publically available on the licencsee's website within X days from collection
39. The licensee must, if requested by the chief executive after consultation with the Coordinator General, contribute to the ongoing operation of any regional underground water monitoring and assessment program developed to address potential cumulative impacts
40. The licensee must provide an Annual Monitoring Report to the chief executive during the operational life of the Carmichael Coal Mine. These reports must include:
- (a) the monthly water volume extracted from dewatering works, and
 - (b) the underground water levels on at least a quarterly basis in the monitoring bores
 - (c) monitoring information relating to springs and river baseflow
 - (d) data is also to be provided in a raw data format.

Commented [D80]: EA Condition E5
Linked to condition

Commented [LD81]: In consultation with EHP & Commonwealth?

Commented [D82]: Imposed Condition 2(a)(i)pg 464 CoG report

Commented [LD83]: EPBC condition 3(g) provision to make monitoring results publically available on the approval holders website for the life of the project

Telemetry?

Currently data loggers and manually downloaded

Commented [D84]: Imposed Condition 2(a)(iii) pg 464 CoG report

Commented [LD85]: Note: EPBC required monitoring data to be provided every 6 months (if requested).

Commented [LD86]: Include WQ?

Commented [LD87]: EA frequency is two monthly initially

DRAFT CONDITIONS – FOR INTERNAL REVIEW

An Annual Monitoring Report is not required in years where a Performance Review Report is required.

41. The licensee must provide to the chief executive a Performance Review Report in respect of the performance of the Carmichael Coal Mine project dewatering works and those monitoring bores as identified in the "Definitions" at the times stated in condition 45 to 49. Topics addressed in any Performance Review Report must include:

- (a) the monthly volume of underground water extracted under the authority of this associated water licence;
- (b) any changes in water quality in the dewatering works and monitoring bores;
- (c) the water levels on at least a quarterly basis in the monitoring bores;
- (d) monitoring information relating to springs and river baseflow
- (e) an assessment of the need for recalibration of the model used to assess water level impact;
- (f) plans showing the water level impact caused by the extraction of associated underground water,
- (g) details of any recalibration since the previous Performance Review Report to the model used in the impact report to predict water level impact, and if recalibrations have been made to the model, plans are to be provided showing:
 - (i) the revised prediction of the total water level impact from the commencement of underground extraction to at least 190 years after the commencement of underground extraction or such other period as the chief executive may determine, made using the recalibrated model; and
 - (ii) the difference between these predicted water level impacts and the water level impacts as predicted at the time of application for licences by the licence holder.
- (h) an assessment of any material departure of the actual water level impact from the impact predicted for the extraction volumes predicted in the **impact report**.
- (i) details of any bores which are predicted by the then current model to have an impaired capacity due to the extraction of underground water under this licence; and
- (j) details of any make good measures carried out since the commencement of underground water extraction if it is the first Performance Review Report or since the previous Performance Review Report, in respect of bores with an impaired capacity due to the underground water extraction including details of water level decline, bore description and licence number
- (k) the outcome of any review of the Groundwater Management and Monitoring Plan pursuant to condition 37.
- (l) data is also to be provided in a raw data format.

- 41a The first Performance Review Report must also contain any water level or water quality data collected through the baseline monitoring program required under the environmental authority, or through other pre-mining monitoring.

42. In conjunction with the second Performance Review Report, the licensee must, in regards to the numerical underground water model referred to in the **impact report**:

Commented [LD88]:
EA frequency is 2 monthly initially

Commented [LD89]: Current model runs to 2209

Commented [LD90]: CoG condition 6a, and EA E3

Commented [LD91]: Note: CoG /EA conditions E6 requires within 2 years from box cut so this will line up ok

DRAFT CONDITIONS – FOR INTERNAL REVIEW

- (a) review, revise and undertake a transient recalibration of the model to incorporate
 - (i) underground water monitoring data and measured mine dewatering volumes;
 - (ii) any revised hydrogeological conceptualisation and assumptions of the model, including from any revised geological interpretation, any outcomes from the Rewan Connectivity Research Plan or GAB Springs Research Plan; any assumptions of outflows from springs and other water users; and
 - (iii) any recommendations of the independent review undertaken by Hydrogeologic in 2014;
- (b) provide to the chief executive a report on the revised model which is to include
 - (i) a review of work undertaken under condition 42(a)
 - (ii) revised predicted impacts using the revised model for a range of scenarios, including any changes to the **affected area**;
 - (iii) an evaluation of the accuracy of the model, and
 - (iv) a peer review of the model

43. The licensee must review and recalibrate the underground water model at a minimum of 5 yearly intervals after the second Performance Review Report and provide a report on the recalibration to the chief executive which is to review the hydrogeological conceptualisation and assumptions of the model and include requirements as given in condition 42 (b)(ii) and (iii). The report is to be provided to the chief executive within 3 months of completion of the review and recalibration.

Commented [LD92]: EA condition E6 gives 5 years

44. The chief executive may request the licensee to review and or adjust the groundwater model by a period stated by the chief executive if;
- (a) an assessment made under 41(e) indicates a need to adjust the model, or
 - (b) the chief executive is of the reasonable opinion that the groundwater model predictions are not representative of actual monitoring data or impacts.

FREQUENCY OF REPORTING

Commented [LD93]: Retained standard conditions

45. The first water year shall be defined as the period covering the period from the commencement of extraction of underground water under the authority of this licence to the end of the next following June.

Thereafter the water year shall commence on 1 July of any year and end on 30 June the year following. The first Performance Review Report shall cover the period as defined by the first water year.

Thereafter scheduled Performance Review Reports shall then be provided in respect of the relative intervening periods, at the end of the 2nd, 3rd, 4th, 5th, 7th, 10th water years and thereafter every five years. The chief executive may call for a Performance Review Report at any other time during the currency of the Licence (unscheduled Performance Review Report) if the chief executive is of the reasonable opinion that the water level decline of the underground water extraction is greater than the most recent prediction of water level decline reported by the licensee.

DRAFT CONDITIONS – FOR INTERNAL REVIEW

46. An unscheduled Performance Review Report will cover the period from the date of the immediately preceding Performance Review Report, be it an unscheduled or a scheduled Performance Review Report, and the date notified by the chief executive as the date of the unscheduled Performance Review Report, or such other period as the chief executive may determine.

The scheduled Performance Review Report next following an unscheduled Performance Review Report will cover the period from the date of that unscheduled Performance Review Report and the date of the scheduled Performance Review Report.

47. A Performance Review Report or Annual Monitoring Report will be due three months after the end of the relevant water year, or three months after notification of requirement of an unscheduled report.
48. The chief executive will advise the licensee of the acceptability of a Performance Review Report or Annual Monitoring Report within 60 days of the date of receipt of same. If the chief executive reasonably considers a report unacceptable, he will notify the licensee in writing of the deficiencies. The licensee will then submit a further report within 60 days of such notification, or such longer period as determined by the chief executive and the same procedure shall be followed as with the original report.
49. The licensee is to provide monitoring data in the format and at intervals specified in any protocol developed by the chief executive for the coordination of regional underground water data for the purposes of assessment of cumulative impacts.

Commented [D94]: CoG Imposed Condition 2(a)(ii)

GREAT ARTESIAN BASIN AQUIFER THRESHOLD LEVELS

Commented [D95]: CoG Condition 5

50. Prior to the commencement of dewatering authorised under this licence, and following analysis of underground water monitoring data obtained from monitoring bores in these geological units, the proponent must present a report outlining recommendations for low impact and high impact threshold levels for approval by the chief executive. The report must:
- (a) Provide recommendations for low impact and high impact threshold levels for the Dunda Beds and Clematis Sandstone
 - (b) Include an assessment of natural seasonal variation in the Dunda Beds and Clematis Sandstone aquifers
 - (c) Outline the investigation protocol when low impact and high impact threshold levels are exceeded, including any requirements for additional modelling or monitoring required
51. If the low impact threshold level is reached in any Dunda Beds or Clematis Sandstone bore, the proponent must notify the chief executive within 30 business days and provide a report pursuant to condition 50(c)
52. If the high impact threshold level is reached in any Dunda Beds or Clematis Sandstone bore, a suitably qualified person must complete an investigation pursuant to condition 50(c) and provide a written report to the chief executive within 60 business days
53. If the investigation under condition 52, concludes that the exceedance of the high impact threshold level is a result of mining activities, the proponent must

Commented [MJ96]: Will this be defined?

Commented [MJ97]: Need definition of low and high to consider appropriateness of timeframes

DRAFT CONDITIONS – FOR INTERNAL REVIEW

initiate a review of the latest underground water model and a review of the Underground water Monitoring and Management Plan

Commented [MJ98]: What is this plan? Terminology not consistent

54. If the high impact threshold level is reached, the chief executive may direct the licensee to construct additional monitoring bores
55. The proponent must ~~offset~~ the predicted take of water from the Great Artesian Basin for the life of the project as determined by the chief executive.
56. In considering offset measures required under condition 55, the chief executive may consider whether other offset work undertaken as part of other approvals meet condition 55.

Commented [MJ99]: Offset with what outcome and what bounds? This could had any meaning/measure?

Commented [D100]: Added this to allow consideration of commonwealth strategy

CLOSURE OF CARMICHAEL COAL MINE OPERATIONS

Commented [LD101]: standard conditions

57. One year prior to the closure of the mine, the licensee will provide to the chief executive a Pre-Closure Report which must contain:

The Act section 438 to 441 talk about end of tenure provision however provide access rights after cessation of tenure.

- (a) the water levels in the monitoring bores;
- (b) an assessment of the need for recalibration of the model used to assess water level impact;
- (c) a recalibrated model as assessed under condition 57(b);
- (d) details of any recalibration since the previous Performance Review Report to the model used to predict water level impact;
- (e) details of any make good measures carried out since the last Performance Review Report;
- (f) plans showing the prediction, using the then ~~current model~~, of the total water level impact from the commencement of pumping to at least 190 years after commencement of pumping or such other period as the chief executive may determine;
- (g) identify any bores that will likely have an impaired capacity in the future

Commented [MJ102]: Recalibrated model under 57©? This is a little confusing

58. Where the report identifies bores located in an **affected area**, or bores that will likely have, an **impaired capacity** in the future, for each bore that is not already subject to a make good agreement, the licensee must –
- (a) unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with conditions 8 to 12.
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 13; and
 - (c) comply with the make good agreement; and
 - (d) ~~if asked to vary the make good agreement under condition 17 – negotiate a variation of the make good agreement~~
 - ~~(e) subsection (a) does not apply if a bore assessment of the bore has already been undertaken.~~

59. The chief executive will advise the licensee of the acceptability of the Pre-Closure Report within 60 days of the date of receipt of the same. If the chief executive considers the report unacceptable, he will notify the licensee in writing of the deficiencies. The licensee will then submit a further report within 30 days of such notification or such longer period as determined by the chief executive and the same procedure shall be followed as with the original report until the final report is reasonably accepted by the chief executive.

Commented [MJ103]: Consider breaking this up into distinct conditions for clarity and enforceability

DRAFT CONDITIONS – FOR INTERNAL REVIEW

60. The licensee will fully implement arrangements pursuant to conditions 57 and 58 at least 90 days before Carmichael Coal Mine Project Operation closure.

Commented [MJ104]: How can this be achieved when this is submitted one year prior and does not require any recommendations or proposed strategies?

61. ~~Conditions 57 to 61 will operate even if this licence has expired or operations ceased at the relevant time unless a licence or other legislative requirements are then in place and otherwise regulates closure.~~

Commented [MJ105]: No head of power for this
If the licence expires it expires- no conditions apply
How would ceased operations even influence this?

HALING Narelle

From: MENZIES Janet
Sent: Monday, 13 February 2017 1:00 PM
To: LARSEN Daniel
Subject: RE: Draft Carmichael AWL Conditions
Attachments: 3_DRAFT_attachment_B_associated_water_licence_and_conditions_03FEB2017_EHP170213.docx

Hi Daniel,

Please see attached some comments on the conditions. Most of these I ran you through last week.

Talk to you this afternoon.

Janet

From: LARSEN Daniel
Sent: Monday, 6 February 2017 9:24 AM
To: MENZIES Janet; MESSER Michael
Cc: TARLINTON Sam; MEACLE Kristy; BATTS Kathy
Subject: Draft Carmichael AWL Conditions

Hi Janet,

As discussed last week, please find attached an updated draft of the proposed Carmichael AWL conditions.

There are still some sections we are getting further advice on e.g: emergency directions and dispute resolution process. This will be mainly be whether they remain as conditions in the AWL or are covered by the provisions in the Act.

We have also updated the draft assessment report which we can send through if required.

Regards
Daniel Larsen
Principal Project Officer, Hydrology

Department of Natural Resources and Mines
Phone: 07 4536 8360 **Fax:** 07 46501902
Email: daniel.larsen@dnrm.qld.gov.au
Web: www.dnrm.qld.gov.au
Landsborough Hwy, Longreach Q 4730
PO Box 210, Longreach Q 4730

ASSOCIATED WATER LICENCE

Water Act 2000



Reference <<Auth No.>> **Expiry Date** 30/06/2090

Licensee ADANI MINING PTY LTD

Authorised Activity The taking of underground water from Betts Creek Beds and adjacent formations with the point of take on or under Mining Leases 70505, 70506 and 70441.

Authorised Purpose Dewatering

This associated water licence is subject to the conditions endorsed hereon or attached hereto.

Given at <<Office>> this <<date>> day of <<Month>> <<Year>>.

Delegate of the Chief Executive
Department of Natural Resources and Mines

Client Ref: <<No.>> File Ref: <<No.>>
Location: <<address.>>
Postal: <<PO Box.>>
Telephone: +61 7 <<Phone.>> Facsimile: +61 7 <<fax.>>

Page 1 of 14

Associated Water Licence:
Expiry Date: 30/06/2090

Conditions: Schedule B

1. The Schedule B conditions associated with this licence are attached in Annexure A and are conditions, which the licensee must comply with under authority of this licence.

Annexure A

Recitals

Adani Mining Pty Ltd (hereinafter "the licensee") is the Principal holder of mining leases ML 70441, ML 70505 and ML 70506 for the Carmichael Coal project which proposes to construct and operate an open cut and underground coal mine approximately 150km north-west of the town of Clermont ("the mine") on the mining leases. The licensee will take associated underground water from the Betts Creek Formation with diffuse take also occurring from adjacent formations. The water taken as associated underground water may be used for the consumptive purpose/s authorised under this licence.

The take of associated underground water will impact on the underground water levels in the region of the mine during the life of the mine and for a period after the mines closure.

The licensee prior to the time of making application for a Licence, prepared an EIS that deals with the hydrology of the area and the effects of the proposed extraction on underground water. The EIS included predictions of the impact of the take of associated underground water on the aquifers in the region. These predictions, were referenced in the reports titled:

"Adani Mining Pty Ltd: Carmichael Coal Mine and Rail SEIS Mine Hydrogeology Report Addendum October 2013"

"Adani Mining Pty Ltd Carmichael Coal Mine and Rail Project SEIS: Report for Mine Hydrogeology Report. November 2013"

"Adani Mining Pty Ltd Carmichael Coal Project – Response to Federal Approval Conditions – Groundwater Flow Model, GHD November 2015"

The report *"Environmental Authority EPML01470513 – Carmichael Coal Mine Condition E3 - Baseline Monitoring Program, AECOM 31 May 2016"* outlines the underground water baseline monitoring network.

The conditions set out in Schedule A and Schedule B of this Licence are herewith after referred to as "the Conditions".

DEFINITIONS

In this Licence, unless the context otherwise requires:

"affected area" for the purposes of this associated water licence, means the area identified by the then current groundwater model where the water level is expected to decline more than 0.2m at any time due to the dewatering activities authorised by this associated water licence.

appropriately qualified hydrogeologist means an individual who has the minimum experience or qualifications, stated in the guidelines made under section 413 of the Water Act 2000, for undertaking a bore assessment.

"appropriately qualified person" means a person who has professional qualifications, training, skills, or experience related to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relative protocols, standards, methods or literature.

"bore owner" means the registered owner of the land on which a bore is located.

"business day" means a day on which trading banks are open for normal banking business in Brisbane;

"chief executive" means the Chief Executive, Department of Natural Resources and Mines.

"conditions" has the meaning ascribed to it in the Recitals;

"cooling-off period", for a make good agreement for a water bore, means a period of 5 business days—

- (a) starting on the day the make good agreement is entered into; and
- (b) ending at 5p.m. on the fifth business day.

"dewatering works" means works, such as bores, sumps and pumps constructed to extract associated water;

"existing water bore" means any water bore in existence before the original issue date of this associated water licence.

"impact report", means the reports,

Adani Mining Pty Ltd: Carmichael Coal Mine and Rail SEIS Mine Hydrogeology Report Addendum October 2013

Adani Mining Pty Ltd Carmichael Coal Mine and Rail Project SEIS: Report for Mine Hydrogeology Report. November 2013

Adani Mining Pty Ltd Carmichael Coal Project – Response to Federal Approval Conditions – Groundwater Flow Model, GHD November 2015

or any approved amendment or replacement to the report.

"impaired capacity" for an **existing water bore** means

- (a) there is a decline in the water level of the aquifer at the location of the bore and the take of associated water has, or has likely, caused or materially contributed to the decline; and
- (b) because of the decline, the bore can no longer provide a reasonable quantity or quality of water for its authorised use or purpose;

"impaired capacity" for a **new water bore** means

- (a) there is a decline in the water level of the aquifer at the location of the bore and the take of associated water has, or has likely, caused or materially contributed to the decline; and
- (b) the decline is more than the decline predicted at the location of the bore in the **impact report**; and
- (c) because of the decline, the bore can no longer provide a reasonable quantity or quality of water for its authorised use or purpose;

"licensee" has the meaning ascribed to it in the Recitals;

"make good measure" for a water bore means any of the following measures—

- (a) ensuring the bore owner has access to a reasonable quantity and quality of water for the bore's authorised use or purpose;
Examples—
 - bore enhancement by deepening the bore or improving its pumping capacity
 - constructing a new bore
 - providing a supply of an equivalent amount of water of a suitable quality by piping it from an alternative source
- (b) carrying out a plan to monitor the bore, including, for example, by undertaking periodic bore assessments;
- (c) giving the bore owner monetary or non-monetary compensation for the bore's impaired capacity.

"**monitoring bores**" means the initial monitoring bores as identified in the report ""*Environmental Authority EPML01470513 – Carmichael Coal Mine Condition E3 - Baseline Monitoring Program*, AECOM 31 May 2016"", and any monitoring bores identified in the Groundwater Monitoring Program.

Commented [MJ1]: Is this the underground water monitoring program required by condition 29?

"**new water bore**" means a water bore other than an existing water bore.

INTERPRETATION

In this Licence:

- (a) headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
- (b) a reference to days or months is a reference to business days and calendar months; and
- (c) words in the singular shall include the plural and vice versa.

NOTICES

- (a) Form of Notice

Any notices, consents, document, invoice or other communication ("notice") required or permitted to be given by this Licence:

- (i) must be in writing; and
- (ii) may be given by being delivered or sent by prepaid registered post, by facsimile transmission or by electronic mail.
- (iii) Underground water reports are to be submitted electronically via the online QDEX system.

- (b) Time Service Occurs

A notice is deemed to be served on a party, in the case of post, on the third business day after posting and, in the case of facsimile or electronic mail, on the day of transmission if the transmission is before 5.00pm on a business day and in all other circumstances on the business day following transmission of the facsimile or electronic mail.

PRELIMINARY

- A1 This associated water licence authorises the take and interference of all underground water taken or interfered with, during the course of, or that results from, the carrying out of an authorised activity for the tenure.

- A2 The chief executive may amend the conditions of this licence to be consistent with any cumulative management area that is declared over the area to which this licence authorises take.

MAKE GOOD OBLIGATIONS FOR WATER BORES

1. Make good obligations apply to a water bore, other than a monitoring bore, if—
 - (a) the taking of, or interference with, water from the bore is authorised under the Water Act 2000; and
 - (b) if the Planning Act or the repealed *Integrated Planning Act 1997* required a development approval under that Act in relation to the bore for operational work for the taking of, or interfering with, water under the Water Act 2000—the approval has been granted.
2. The licensee must enter into make good agreements with bore owners as required under condition 3:
 - (a) at least five years prior to the time a water bore is predicted to have an impaired capacity due to dewatering operations, or
 - (b) where a water bore is predicted to have an impaired capacity within the first five years of extraction - prior to extraction of water authorised under this associated water licence.
3. For all water bores located in the **affected area**, the licensee must -
 - (a) undertake a bore assessment of the bore in accordance with conditions 5-8; and
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 9; and
 - (c) comply with the make good agreement;
4. If the **impact report** is superseded or amended; and the new impact report or amendment to the report changes the area, or location of an **affected area** of an aquifer -
 - (a) for each bore in the affected area that is not already the subject of a make good agreement, the licensee must, unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with conditions 5-8.
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 9 and
 - (c) comply with the make good agreement;
 - (d) subsection (a) does not apply if a bore assessment of the bore has already been undertaken.

BORE ASSESSMENTS

5. The bore assessment undertaken by the licensee must establish -
 - (a) whether the bore has an impaired capacity; or
 - (b) whether the bore is likely to have an impaired capacity
6. In undertaking a bore assessment of a water bore, the licensee must comply with [the Queensland Government's Bore Assessment Guideline—](#)
 - (a) any guidelines¹ made by the chief executive under section 413 of the Water Act 2000; or
 - (b) if there are no guidelines—best practice industry standards for carrying out work similar in nature to undertaking a bore assessment.
7. The licensee must, at least 10 business days before undertaking a bore assessment of a water bore, give the bore owner of the bore a notice stating—
 - (a) when the bore assessment will be undertaken; and
 - (b) who will undertake the bore assessment.

¹ Current guidelines 'Bore Assessment Guidelines October 2016'

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Commented [MJ2]: The guidelines have been approved, if you want to refer to them then refer to them directly. These will be amended from time to time so state the title and then which version is applicable for compliance will depend on which is current at the time.

8. The licensee must give notice of the outcome of a bore assessment to the chief executive and the bore owner within –
 - (a) if the bore assessment was undertaken before the granting of this licence - 30 business days after the granting of this associated water licence; or
 - (b) otherwise – 30 business days after undertaking the bore assessment
9. The notice of the outcome of a bore assessment in Condition 8 must include the requirements specified in condition 6(c) of the Coordinator Generals evaluation report

MAKE GOOD AGREEMENTS

10. Where a make good agreement is required under condition 3, the licensee must use the licensee's best endeavours to enter into a make good agreement for the bore with the bore owner by –
 - (a) the day that is 40 business days after the bore assessment is undertaken; or
 - (b) if the chief executive agrees to a later day—that day.
11. The make good agreement between the licensee and the bore owner must provide for each of the following matters –
 - (a) the outcome of the bore assessment for the bore;
 - (b) whether the bore has or is likely to have an impaired capacity;
 - (c) if the bore has or is likely to have an impaired capacity—the make good measures for the bore to be taken by the responsible tenure holder
 - (d) that the agreement may be terminated by the bore owner [under section 432A of the Water Act](#) at any time during the cooling off period of the agreement.
12. The licensee must reimburse the bore owner for any accounting, hydrogeology, legal or valuation costs the bore owner necessarily and reasonably incurs in negotiating or preparing a make good agreement. However the holder is not required to reimburse the bore owner for hydrogeology costs incurred for work performed other than by an appropriately qualified hydrogeologist.

Commented [BR3]: Should this say by the licensee?

Commented [MJ4]: You cannot link back to the primary leg here- you must define cooling off period in the licence if you are establishing a complementary framework

13. The licensee must advise the chief executive if the licensee enters into a make good agreement.

DISPUTE RESOLUTION OVER INITIAL MAKE GOOD AGREEMENTS

14. The licensee or bore owner may seek a conference or independent ADR if –
 - (a) the licensee and the owner of a water bore can not agree on the terms of a make good agreement for the bore within the period provided for under condition 10, including whether or not the bore has an impaired capacity; or
 - (b) the parties to a make good agreement for a water bore can not agree about whether a matter stated in the agreement is appropriate because:
 - (i) of a material change in circumstances; or
 - (ii) 1 or more of the make good measures agreed to is not effective; or
 - (iii) another effective and more efficient make good measure is available.
15. If a dispute about a matter mentioned in condition 14 arises, either party may, by a notice –
 - (a) given to the other party and the chief executive—ask the chief executive to direct an authorised officer to call a conference to negotiate a resolution of the dispute; or
 - (b) given to the other party—call for the other party to agree to an alternative dispute resolution process (an **ADR**) to negotiate a resolution of the dispute.
16. The notice mentioned in condition 15 must state—
 - (a) details of the matters the subject of the dispute; and
 - (b) the contact details of the party giving the notice; and

- (c) where the notice calls for an ADR, it must –
 - (i) identify the ADR; and
 - (ii) if the party giving the notice is the licensee – state that the licensee bears the costs of the person who will facilitate the ADR.

Commented [MJ5]: Covered in condition 18

- 17. An ADR may be a process of any kind, including for example, conciliation or mediation. However, the person who facilitates the ADR must be independent of both parties

Commented [MJ6]: This is a definition

Commented [MJ7]: Establish this as the condition

- 18. The licensee must bear the costs of the person who will facilitate the ADR.

- 19. If a conference is requested, the authorised officer directed to conduct the conference must

- (a) ask the parties to attend a conference to negotiate a resolution of the dispute by a notice stating
 - (i) what the subject of the conference is, and
 - (ii) when and where it will be held
- (b) endeavour to help those attending to negotiate an early and inexpensive settlement of the dispute
- (c) take all reasonable steps to ensure it is finished within 30 business days after the election notice is given, unless both parties agree to a longer period.

Commented [BR8]: Seems curious to put a condition that relates to a govt dept into an industry licence – if this is not complied with then what happens – can't enforce against the company?

- 20. The following persons may attend a conference –
 - (a) the authorised officer directed to conduct the conference
 - (b) a party may be represented by an agent only if the authorised officer agrees
 - (c) someone else, with the authorised officer's approval, may be present to help a party attending the conference

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- (d) despite (b) and (c) However, a party can not be represented by a lawyer unless the other party agrees and the authorised officer is satisfied there is no disadvantage to a party

Commented [BR9]: Should this – along with condition 19 be a note or something?

- 21. If an ADR is called for, the parties must use their reasonable endeavours to finish it within 30 business days after the election notice is given, unless both parties agree to a longer period.

- 22. If, at the conference or ADR, the parties negotiate an agreement about the subject matters, the agreement must be written and signed by or for the parties.

- 23. If, after advice from the parties that an agreement pursuant to condition 22 cannot be reached, and in the opinion of the chief executive all reasonable attempts have been made to achieve agreement, then the chief executive:

- (a) may give a notice to the licensee to require the licensee to provide to the satisfaction of chief executive
 - (i) the outcome of any bore assessment for the bore;
 - (ii) any data necessary to determine whether the bore has or is likely to have an impaired capacity
 - (iii) any data necessary to determine the measures necessary to make good the supply of water from the bore;
- (b) will, in consultation with the licensee and the bore owner,
 - (i) determine whether the bore has or is likely to have an impaired capacity
 - (ii) determine the measures to be taken to make good the supply of water from the bore; and
- (c) will, upon determining the measures to be taken to make good the supply of water from the bore, give the licensee a notice to inform the licensee of the determination.

Commented [MJ10]: What is the head of power to give the chief executive additional powers than what is in the primary leg?

- 24. The licensee must implement, at the cost of the licensee, all measures determined by the chief executive and notified under condition 23.

EMERGENCY DIRECTIONS

25. The chief executive may, by notice given to a licensee, direct the licensee to take stated reasonable steps within a stated reasonable period if
- (a) the chief executive reasonably believes urgent action is necessary—
 - (i) to restore water supply to a water bore with an impaired capacity; or
 - (ii) to prevent or minimise the likelihood of a water bore having an impaired capacity; and
 - (b) the chief executive is satisfied or reasonably believes failure to take the action may result in 1 or more of the following—
 - (i) significant economic loss or damage to any person;
 - (ii) a significant risk to the health of stock;
 - (iii) a loss of supply of water for domestic purposes or essential services, including, for example, the generation of electricity or the distribution of town water.
26. If the licensee fails to comply with direction given under conditions 23 or 25, the chief executive may
- (a) take action to carry out necessary control measures, and
 - (b) give the licensee a cost recovery notice requiring the licensee to pay the stated costs and expenses reasonably incurred by the chief executive in taking the reasonable steps
27. Condition 31(b) does not apply if the chief executive is satisfied the licensee had a reasonable excuse for not complying with the direction.
28. The cost recovery notice mentioned in condition 25(b) must state the following—
- (a) the name of the licensee;
 - (b) the location of the water bore to which the action related;
 - (c) a description of the action taken;
 - (d) the amount of the costs and expenses incurred;
 - (e) a description of the costs and expenses incurred;
 - (f) that if the holder does not pay the amount to the chief executive within 30 days after the day the notice is given, the chief executive may recover the amount and any interest payable on the amount from the holder as a debt;
 - (g) the contact details of the chief executive.

Commented [MJ11]: As per previous comments provided on the 23/1/17

What is the head of power/grounds to create this condition.

Power to CE should sit in primary leg not through AWL conditions

Commented [BR12]: As above

MONITORING AND ASSESSMENT

29. Monitoring will be undertaken in accordance with the Underground ~~W~~water Monitoring Program and any subsequent revisions or replacements of that Program.
- In relation to the Underground Water Monitoring Program:
- (a) ~~t~~he monitoring program and any subsequent revisions of the program must be approved by the chief executive, and
 - (b) the requirements of the monitoring program may be incorporated within monitoring programs as required under other approvals.
30. The licensee must implement the Underground ~~W~~water Monitoring Program and any subsequent approved revisions of the Program.
31. The initial Underground ~~W~~water Monitoring Program is taken to include:
- (a) The monitoring bores listed in the baseline monitoring program (AECOM May 2016)
 - (b) The springs and waterway monitoring sites and as outlined in Table 1 and 2 below.

Commented [MJ14]: This should be reworded for enforceability

Commented [MJ15]: How is this different to condition 29?

Table 1 – Spring monitoring sites

Monitoring Location	Description	Latitude	Longitude	Monitoring Frequency
MS01	Mellaluka Spring	-22.318086	146.48369	At least Quarterly for water quality and level
MS02	Stories Spring	-22.296555	146.481523	
MS03	Lignum Spring	-22.26406	146.47457	
DS1	Little Moses Spring	-22.091048	146.269163	At least Quarterly for water quality and level
DS4	Moses Spring 1	-22.086698	146.239912	
DS10*	Joshua Spring	-22.069449	146.23513	

Table 2 – Waterway monitoring sites

Monitoring Location	Description	Latitude	Longitude	Monitoring and Frequency
CAR01	Carmichael River downstream	-22.0740740	146.4675990	Continuous monitoring of flow and EC
CAR04	Carmichael River at upstream Gauging Station	-22.1087960	146.3527180	Continuous Monitoring of flow and EC

- 31A Prior to the commencement of the take or interference with associated water authorised under this licence, the licensee must provide recommended locations to the chief executive for approval, for additional bores to monitoring sub E seam formations south of the mining lease.
32. The Underground ~~wa~~Water Monitoring Program must be reviewed at least every five years.
33. The licensee must, if directed by the chief executive, make any amendments considered necessary to the Underground ~~wa~~Water Monitoring Program to ensure that:
- the monitoring program is adequate to assess the effects of the extraction of underground water authorised under this license; and
 - the monitoring program takes into account requirements of any regional underground water monitoring and assessment program developed to address potential cumulative impacts.
34. Monitoring data is to be made publically available on the licensee's website within 5 business days from measurement.
35. The licensee must, if requested by the chief executive after consultation with the Coordinator General, contribute to the ongoing operation of any regional underground water monitoring and assessment program developed to address potential cumulative impacts.
36. The measurement of the volume of associated water taken must be undertaken in accordance with any requirements specified in section 334ZP(5)(a) of the *Mineral Resources Act 1989*.
37. The licensee must provide an Annual Monitoring Report to the chief executive during the operational life of the Carmichael Coal Mine. These reports must include:
- the monthly water volume extracted from dewatering works, and
 - the underground water levels on at least a quarterly basis in the monitoring bores [of the approved underground water monitoring program](#)
 - quarterly monitoring information relating to springs and river baseflow
 - raw data is also to be provided in a format as requested by the chief executive.

Commented [MJ16]: Why sub numbering?

Commented [BR17]: Are they then included through an amendment under condition 33?

Commented [MJ18]: How will this relate to EA review timing?

Commented [MJ19]: Why is this not an initial requirement of the program to begin with?

Commented [BR20]: Do we set what they must monitor ie the data they must gather

Commented [MJ21]: Required to be collected under the underground water monitoring program

Commented [MJ22]: Confirm this is not related to water quality analysis that will require lab analysis. Otherwise timeframes are not reasonable for compliance

Commented [MJ23]: How is this different to condition 33(b)?

An Annual Monitoring Report is not required in years where a Performance Review Report is required.

Commented [MJ24]: Separate condition

38. The licensee must provide to the chief executive a Performance Review Report in respect of the performance of the Carmichael Coal Mine project dewatering works and those monitoring bores as identified in the "Definitions" at the times stated in conditions 43 to 47. Topics addressed in any Performance Review Report must that includes:

Commented [MJ25]: Separate requirements of report and timing into separate conditions

- (a) the monthly volume of underground water extracted under the authority of this associated water licence;
- (b) any changes in water quality in the dewatering works and monitoring bores;
- (c) the water levels on at least a quarterly basis in the monitoring bores;
- (d) quarterly monitoring information relating to springs and river baseflow;
- (e) an assessment of the need for recalibration of the model used to assess water level impact;
- (f) plans showing the water level impact caused by the extraction of associated underground water;
- (g) details of any recalibration since the previous Performance Review Report to the model used in the impact report to predict water level impact, and if recalibrations have been made to the model, plans are to be provided showing:
 - (i) the revised prediction of the total water level impact from the commencement of underground extraction to at least 190 years after the commencement of underground extraction or such other period as the chief executive may determine, made using the recalibrated model; and
 - (ii) the difference between these predicted water level impacts and the water level impacts as predicted at the time of application for licences by the licence holder.
- (h) an assessment of any material departure of the actual water level impact from the impact predicted for the extraction volumes predicted in the **impact report**.
- (i) details of any bores which are predicted by the then current model to be located in the affected area have an impaired capacity due to the extraction of underground water under this licence; and
- (j) details of any make good measures carried out since the commencement of underground water extraction if it is the first Performance Review Report or since the previous Performance Review Report, in respect of bores with an impaired capacity due to the underground water extraction including details of water level decline, bore description and licence number
- (k) the outcome of any review of the Underground Water Monitoring Program pursuant to condition 32.
- (l) raw data is also to be provided in a format as requested by the chief executive

Commented [MJ26]: What are these? Maps?

Commented [MJ27]: How is this different to (f)?

Commented [BR28]: All licences (eg tenure, EA) or just this licence?

Commented [BR29]: Is this defined?

Commented [MJ30]: Needs to link to affected area as this is trigger for bore assessment.

Bore assessment will then investigate impaired capacity- it should not be assumed in the condition

Commented [BR31]: Or just make good agreements reached?

Commented [BR32]: Don't they have to give this information above as part of bore assessment

39. The first Performance Review Report must also contain any water level or water quality data collected through the baseline monitoring program required under the environmental authority, or through other pre-mining monitoring.

Commented [MJ33]: For that water year or for all years of the baseline program up until the date for the first performance review report?

40. In conjunction with the second Performance Review Report, the licensee must, in regards to the numerical underground water model referred to in the **impact report**:
- (a) review, revise and undertake a transient recalibration of the model to incorporate
 - (i) underground water monitoring data and measured mine dewatering volumes;
 - (ii) any revised hydrogeological conceptualisation and assumptions of the model, including from any revised geological interpretation, any outcomes from the Rewan Connectivity Research Plan or GAB Springs Research Plan; any assumptions of outflows from springs and other water users; and

- (iii) any recommendations of the independent review undertaken by Hydrogeologic in 2014;
- (b) provide to the chief executive a report on the revised model which is to include
 - (i) a review of work undertaken under condition 40(a)
 - (ii) revised predicted impacts using the revised model for a range of scenarios, including any changes to the **affected area**;
 - (iii) an evaluation of the accuracy of the model, and
 - (iv) a peer review of the model

Commented [MJ34]: By independent third party or suitably qualified person?

Commented [MJ35]: Should be more specific- extracted volumes or hydraulic conductivity if you want a particular outcome. Otherwise you find you must clearly articulate this/negotiate with the licensee on the scope and it may not achieve the outcome intended

Commented [MJ36]: Independent? Which part is being reviewed?

Commented [MJ37]: Not transient as per condition 40?

Commented [MJ38]: Not clear on is the recal is after conceptualization review or considering it etc

Commented [MJ39]: Duplication of condition 45

41. The licensee must review and recalibrate the underground water model at a minimum of 5 yearly intervals after the second Performance Review Report and provide a report on the recalibration to the chief executive which is to review the hydrogeological conceptualisation and assumptions of the model and include requirements as given in condition 40 (b)(ii) and (iii). ~~The report is to be provided to the chief executive within 3 months of completion of the review and recalibration.~~

42. The chief executive may request the licensee to review and or adjust the groundwater model by a period stated by the chief executive if;
- (a) an assessment made under 38(d) indicates a need to adjust the model, or
 - (b) the chief executive is of the reasonable opinion that the groundwater model predictions are not representative of actual monitoring data or impacts.

Commented [BR40]: Again strange to condition the CE

FREQUENCY OF REPORTING

43. The first water year shall be defined as the period covering the period from the commencement of extraction of underground water under the authority of this licence to the end of the next following June.

Commented [MJ41]: This should be a definition not a condition

Thereafter the water year shall commence on 1 July of any year and end on 30 June the year following. The first Performance Review Report shall cover the period as defined by the first water year.

Thereafter scheduled Performance Review Reports shall then be provided in respect of the relative intervening periods, at the end of the 2nd, 3rd, 4th, 5th, 6th, 8th, 10th water years and thereafter every two years. The chief executive may call for a Performance Review Report at any other time during the currency of the Licence (unscheduled Performance Review Report) if the chief executive is of the reasonable opinion that the water level decline of the underground water extraction is greater than the most recent prediction of water level decline reported by the licensee.

Commented [BR42]: confusing

44. An unscheduled Performance Review Report will cover the period from the date of the immediately preceding Performance Review Report, be it an unscheduled or a scheduled Performance Review Report, and the date notified by the chief executive as the date of the unscheduled Performance Review Report, or such other period as the chief executive may determine.

Commented [BR43]: confusing

The scheduled Performance Review Report next following an unscheduled Performance Review Report will cover the period from the date of that unscheduled Performance Review Report and the date of the scheduled Performance Review Report.

45. A Performance Review Report or Annual Monitoring Report will be due three months after the end of the relevant water year, or three months after notification of requirement of an unscheduled report.

Commented [MJ44]: separate and move back to annual report conditions for clarity and flow

46. The chief executive will advise the licensee of the acceptability of a Performance Review Report or Annual Monitoring Report within 60 days of the date of receipt of same. If the chief executive reasonably considers a report unacceptable, he will notify the licensee in writing of the deficiencies. The licensee will then submit a further

Commented [MJ45]: or unscheduled report?

report within 60 days of such notification, or such longer period as determined by the chief executive and the same procedure shall be followed as with the original report.

47. The licensee is to provide monitoring data in the format and at intervals specified in any protocol developed by the chief executive for the coordination of regional underground water data for the purposes of assessment of cumulative impacts.

Commented [MJ46]: Tie back to condition 35 and 33b or summarise/consolidate

GREAT ARTESIAN BASIN AQUIFER THRESHOLD LEVELS

48. At least 2 months prior to the commencement of the take or interference with associated water authorised under this licence, and following analysis of underground water monitoring data obtained from monitoring bores in these geological units, the proponent must present a report outlining recommendations for low impact and high impact threshold levels for approval by the chief executive. The report must:
- (a) Provide recommendations for low impact and high impact threshold levels for the Dunda Beds and Clematis Sandstone
 - (b) Include an assessment of natural seasonal variation in the Dunda Beds and Clematis Sandstone aquifers
 - (c) Outline the investigation protocol when low impact and high impact threshold levels are exceeded, including any requirements for additional modelling or monitoring required
49. The chief executive will, based on the report provided under condition 48, either approve the recommendations for the low and high impact thresholds, or specify other low and high impact thresholds. The chief executive will advise the licensee of the threshold values in writing.
50. If, the low impact threshold level is reached in any Dunda Beds or Clematis Sandstone bore, the proponent must notify the chief executive within 30 business days and provide a report pursuant to condition 48(c)
51. If the high impact threshold level is reached in any Dunda Beds or Clematis Sandstone bore, an appropriately qualified person must complete an investigation pursuant to condition 48(c) and provide a written report to the chief executive within 60 business days
52. If the investigation under condition 51, concludes that the exceedance of the high impact threshold level is a result of mining activities, the proponent must initiate a review of the latest underground water model and a review of the Underground water Monitoring Program
53. If the high impact threshold level is reached, the chief executive may direct the licensee to construct additional monitoring bores.
54. The proponent must offset the predicted take of water from the Great Artesian Basin (730 ML/yr) for the life of the project as determined by the chief executive.
55. In considering offset measures required under condition 55, the chief executive may consider whether other offset work undertaken as part of other approvals meet condition 55.

Commented [MJ47]: Do you need other measures?

CLOSURE OF CARMICHAEL COAL MINE OPERATIONS

56. One year prior to the closure of the mine, the licensee will provide to the chief executive [for approval](#), a Pre-Closure Report which must contain:
- (a) the volume of underground water taken under the authority of this licence;
 - (b) the water levels in the monitoring bores;
 - (c) monitoring information relating to springs and river baseflow;

Commented [BR48]: how will we know when that is?

- (d) an assessment of the need for recalibration of the model used to assess water level impact;
- (e) a recalibrated model as assessed under condition 56(c);
- (f) details of any recalibration since the previous Performance Review Report to the model used to predict water level impact;
- (g) details of any make good measures carried out since the last Performance Review Report;
- (h) plans showing the prediction, using the most current model, of the total water level impact in each aquifer from the commencement of pumping to at least 190 years after commencement of pumping or such other period as the chief executive may determine;
- (i) identification of any water bores that will likely have an impaired capacity in the future are located in the affected area;
- (j) identification of predicted long term impacts on springs and river baseflow, and recommendations and strategies to mitigate or offset predicted impacts on any water bores, springs or river baseflow, including timeframes for implementation of those recommendations and strategies..

Commented [MJ49]: Isn't this covered by (d) and (e) ?

Commented [MJ50]: Isn't condition 57 already stating what the strategy must be?

57. Where the report identifies bores located in an **affected area**, or bores that will likely have an impaired capacity in the future, for each bore that is not already subject to a make good agreement, the licensee must –
- (a) unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with conditions 5 to 9;
 - (b) enter into a make good agreement with the bore owner of the bore as required under condition 10; and
 - (c) comply with the make good agreement;

Commented [MJ51]: As per comment above- condition should not pre-empt the outcome of the bore assessment

58. The chief executive will advise the licensee of the acceptability of the Pre-Closure Report within 60 business days of the date of receipt of the same. If the chief executive considers the report unacceptable, he will notify the licensee in writing of the deficiencies.

Commented [BR52]: Conditioning the CE?

59. The licensee will then submit a further report within 30 business days of such notification or such longer period as determined by the chief executive and the same procedure shall be followed as with the original report until the final report is reasonably accepted by the chief executive.

Commented [MJ53]: Delete this is admin process- see change to condition 57 and 60

60. The licensee must implement the approved pre-closure report . will fully implement arrangements pursuant to conditions 56 and 57.

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